

BODY SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

**HVAC SYSTEM
(HEATER, VENTILATOR AND A/C)** AC

**HVAC SYSTEM (AUTO A/C)
(DIAGNOSTICS)** AC(diag)

AIRBAG SYSTEM AB

AIRBAG SYSTEM (DIAGNOSTICS) AB(diag)

SEAT BELT SYSTEM SB

LIGHTING SYSTEM LI

WIPER AND WASHER SYSTEMS WW

ENTERTAINMENT ET

COMMUNICATION SYSTEM COM

GLASS/WINDOWS/MIRRORS GW

BODY STRUCTURE BS

INSTRUMENTATION/DRIVER INFO IDI

SEATS SE

SECURITY AND LOCKS SL

**SUNROOF/T-TOP/CONVERTIBLE TOP
(SUNROOF)** SR

EXTERIOR/INTERIOR TRIM EI

EXTERIOR BODY PANELS EB

BODY SECTION**CRUISE CONTROL SYSTEM****CC****CRUISE CONTROL SYSTEM
(DIAGNOSTICS)****CC(diag)****IMMOBILIZER (DIAGNOSTICS)****IM(diag)**

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

AC

	Page
1. General Description	2
2. Refrigerant Pressure with Manifold Gauge Set.....	20
3. Refrigerant Recovery Procedure	21
4. Refrigerant Charging Procedure	22
5. Refrigerant Leak Check	25
6. Compressor Oil	26
7. Blower Motor Unit Assembly	27
8. Power Transistor (Auto A/C Model)	28
9. Blower Resistor (Without A/C Model and Manual A/C Model)	29
10. Heater Core.....	30
11. Control Unit (Manual A/C Model)	31
12. Control Unit (Auto A/C Model).....	32
13. Compressor.....	33
14. Condenser.....	35
15. Heater and Cooling Unit.....	36
16. Evaporator.....	37
17. Hose and Tube.....	38
18. Relay and Fuse	39
19. Pressure Switch (Dual Switch).....	40
20. Ambient Sensor (Auto A/C Model)	41
21. Sunload Sensor (Auto A/C Model)	42
22. Air Vent Grille	43
23. Heater Duct	44
24. Heater Vent Duct.....	45
25. Heater Cock Solenoid Valve	46
26. General Diagnostic Table.....	47

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: 4th position • 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)	—

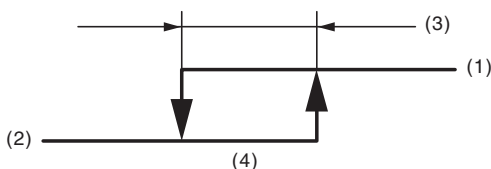
2. A/C SYSTEM

• 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-Ribbed 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)

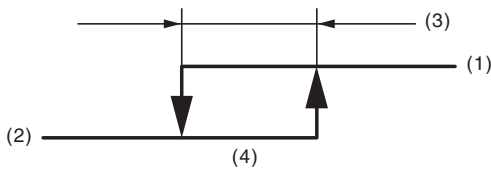
Item		Specifications	
Condenser fan (Sub fan)		Motor type	Magnet
		Power consumption	120 W (Turbo model), 70 W (Non-turbo model)
		Fan outer diameter	320 mm (12.6 in)
Radiator fan (Main fan)		Motor type	Magnet
		Power consumption	120 W (Turbo model), 70 W (Non-turbo model)
		Fan outer diameter	320 mm (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 kgf/cm ² , 40.3±4.2 psi)
		OFF → ON	287 ⁺³⁹ / ₋₂₅ kPa (2.9 ^{+0.4} / _{-0.25} kgf/cm ² , 42 ^{+5.7} / _{-3.6} psi)
	High-pressure switch operating pressure	ON → OFF	2,800±100 kPa (29±1 kgf/cm ² , 406±15 psi)
		DIFF	600±200 kPa (6.12±2 kgf/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-Ribbed 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)
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 kgf/cm ² , 40.3±4.2 psi)
		OFF → ON	287 ⁺³⁹ / ₋₂₅ kPa (2.9 ^{+0.4} / _{-0.25} kgf/cm ² , 42 ^{+5.7} / _{-3.6} psi)
	High-pressure switch operating pressure	ON → OFF	2,800±100 kPa (29±1 kgf/cm ² , 406±15 psi)
		DIFF	600±200 kPa (6.12±2 kgf/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)	

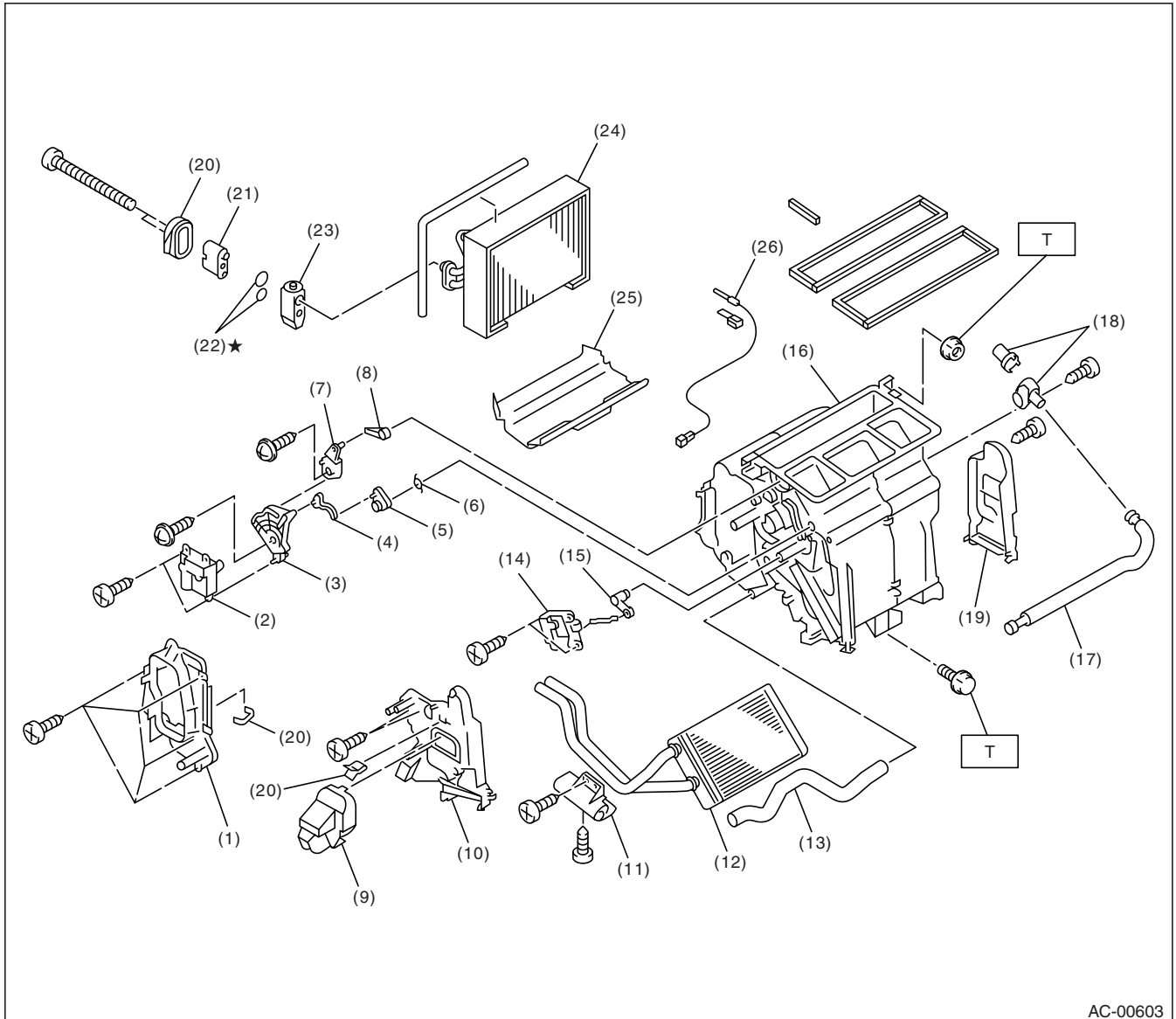
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

B: COMPONENT

1. HEATER COOLING UNIT

• AUTO A/C MODEL



AC-00603

- | | | |
|-------------------------|-------------------------|-------------------------|
| (1) Unit cover | (11) Heater core clamp | (21) Cooling unit block |
| (2) Mode actuator | (12) Heater core | (22) O-ring |
| (3) Side link | (13) Drain hose | (23) Expansion valve |
| (4) Mode actuator lever | (14) Mix actuator | (24) Evaporator |
| (5) Foot lever | (15) Mix actuator lever | (25) Evaporator cover |
| (6) Spring | (16) Unit assembly | (26) Thermistor |
| (7) Mode actuator link | (17) Aspirator hose | |
| (8) Defroster lever | (18) Aspirator | |
| (9) Foot nozzle | (19) Foot duct | |
| (10) Unit duct cover | (20) Packing | |

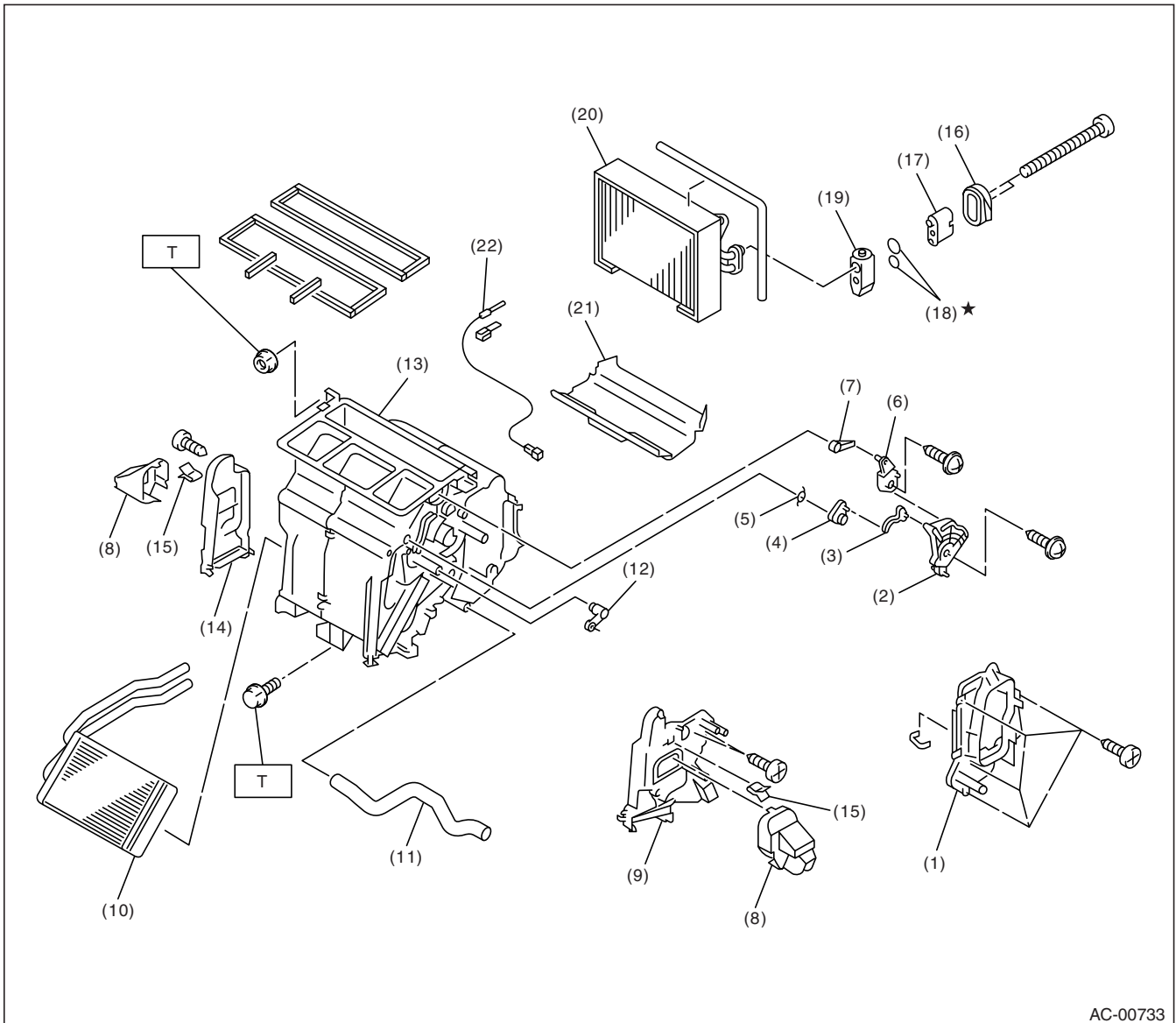
Tightening torque: N·m (kgf-m, ft-lb)

T: 7.4 (0.75, 5.4)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• MANUAL A/C MODEL



- (1) Unit cover
- (2) Side link
- (3) Mode lever
- (4) Foot lever
- (5) Spring
- (6) Mode link
- (7) Defroster lever
- (8) Foot nozzle
- (9) Unit duct cover

- (10) Heater core
- (11) Drain hose
- (12) Mix lever
- (13) Unit assembly
- (14) Foot duct
- (15) Clip
- (16) Packing
- (17) Cooling unit block

- (18) O-ring
- (19) Expansion valve
- (20) Evaporator
- (21) Evaporator cover
- (22) Thermistor

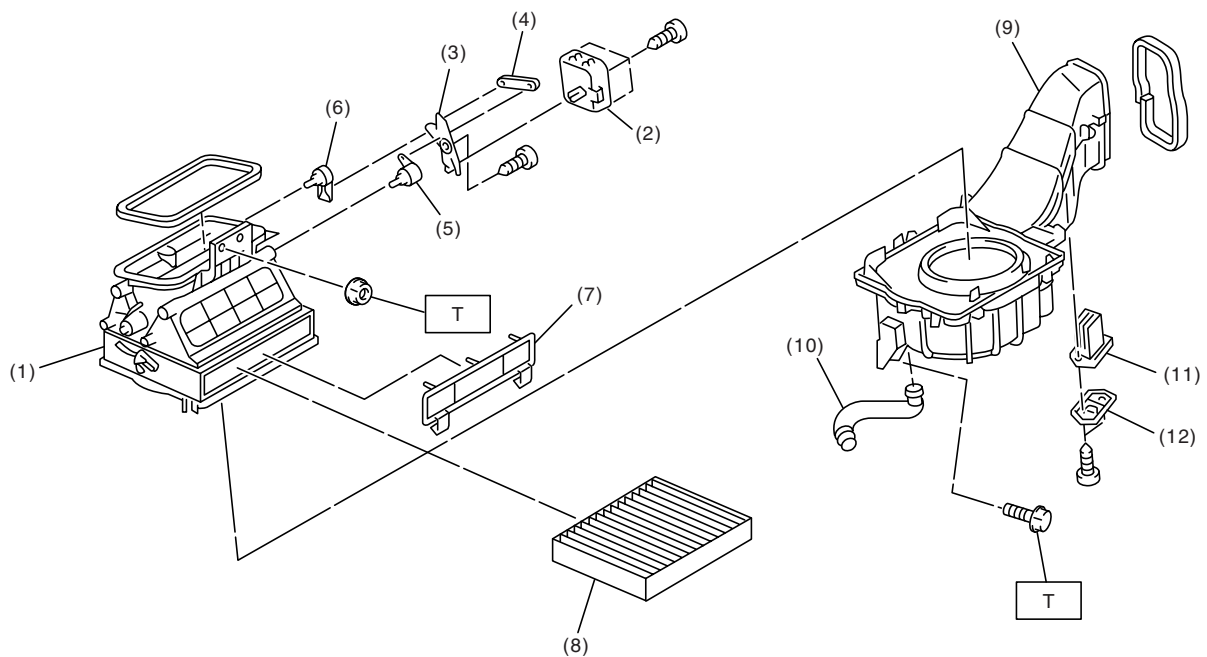
Tightening torque: N·m (kgf-m, ft-lb)
T: 7.4 (0.75, 5.4)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

2. BLOWER MOTOR UNIT

• AUTO A/C MODEL



AC-00605

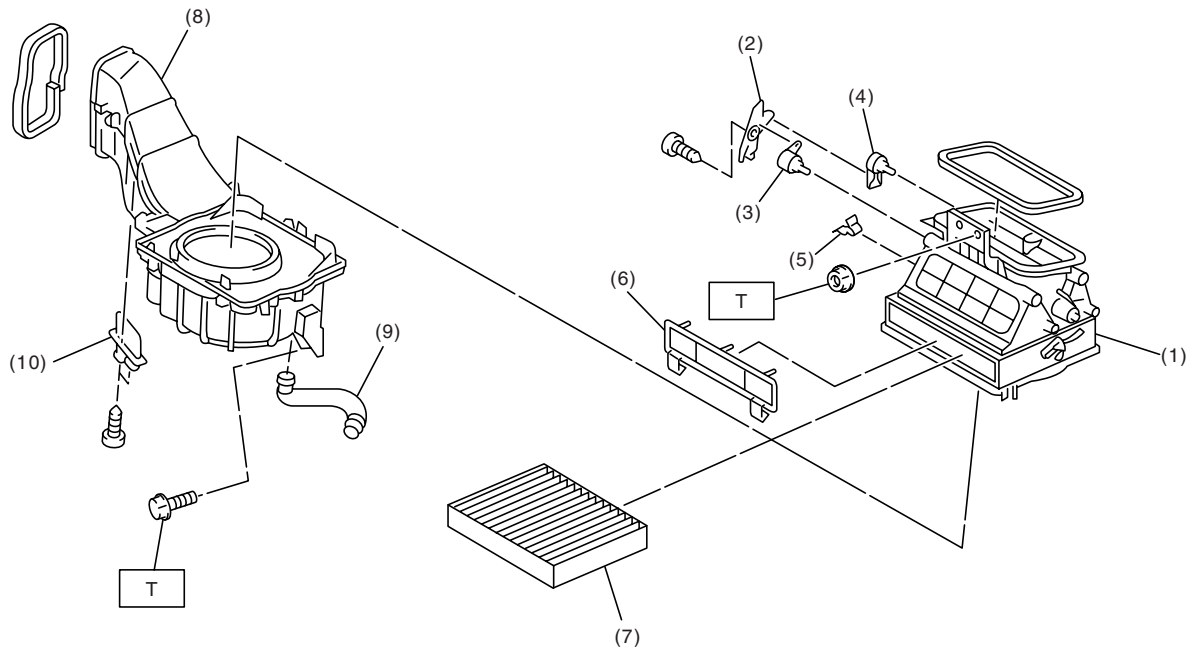
- | | |
|-------------------------|---------------------------|
| (1) Upper case | (6) Blower link lever C |
| (2) Servo motor | (7) Filter cover |
| (3) Blower link | (8) Filter |
| (4) Blower link lever A | (9) Blower motor assembly |
| (5) Blower link lever B | (10) Hose |

- | |
|-----------------------------|
| (11) Power transistor |
| (12) Power transistor cover |

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

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

- **WITHOUT A/C MODEL AND MANUAL A/C MODEL**



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

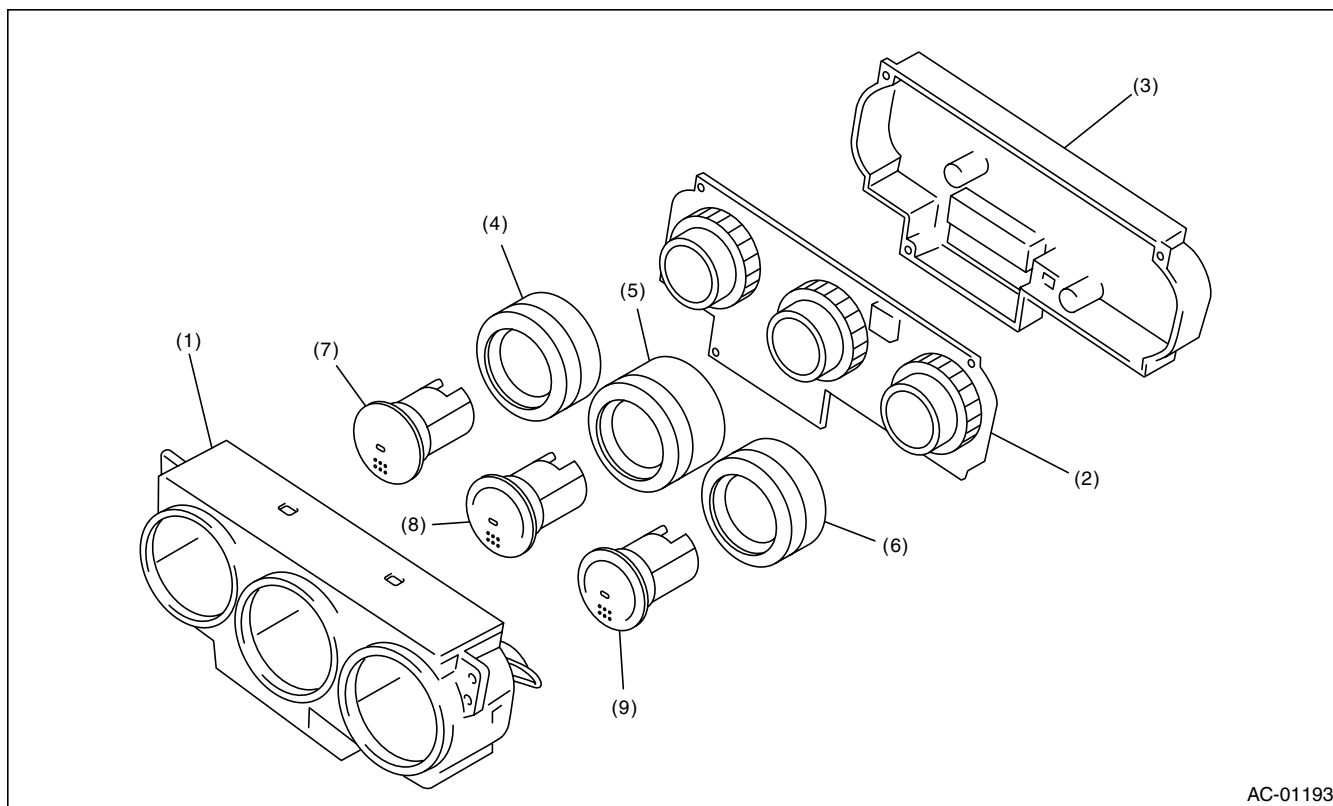
Tightening torque: N·m (kgf-m, ft-lb)
T: 7.4 (0.75, 5.4)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

3. CONTROL UNIT

• AUTO A/C MODEL

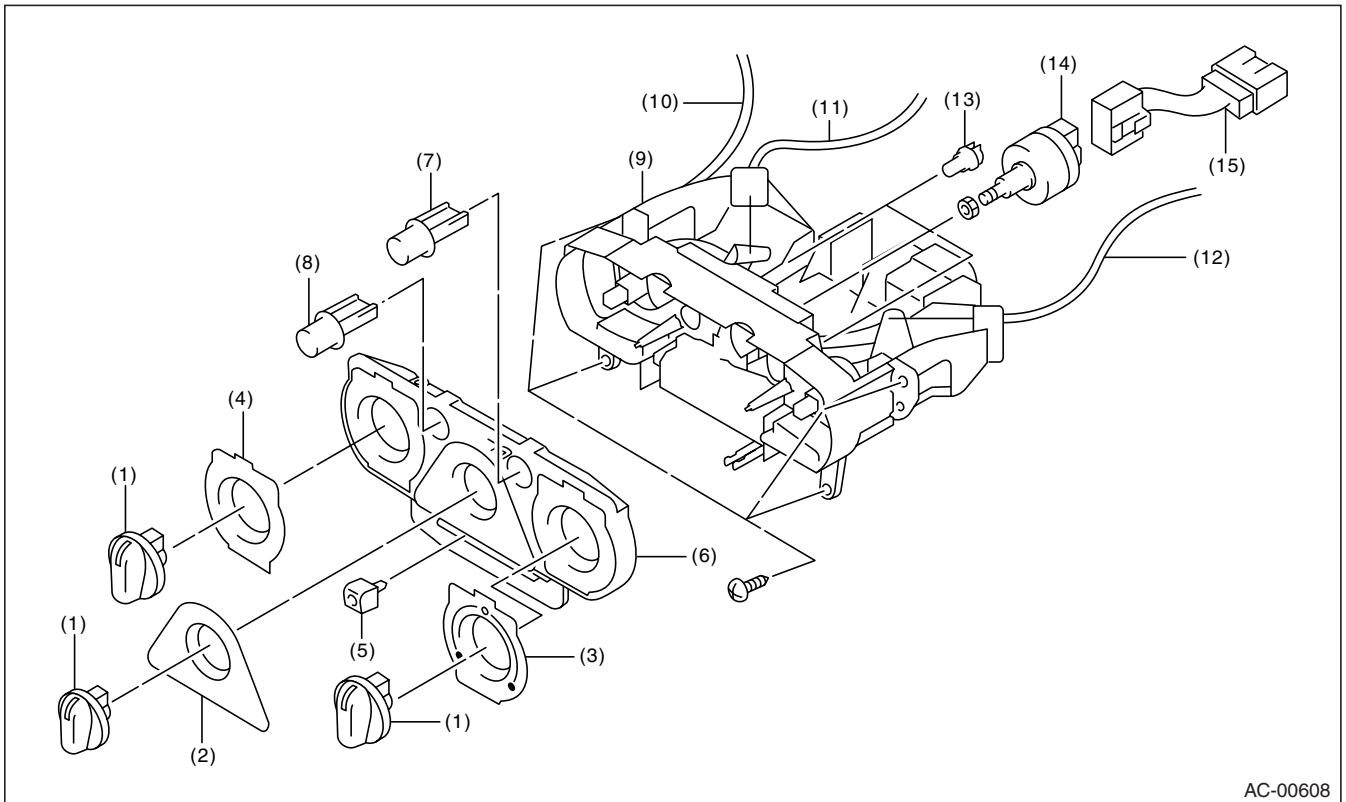


- | | | |
|------------------|------------------------------|---------------------------------|
| (1) Panel | (4) Mode control dial | (7) Rear window defogger switch |
| (2) Switch base | (5) Fan speed control dial | (8) FRESH/RECIRC switch |
| (3) Control case | (6) Temperature control dial | (9) A/C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

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• WITHOUT A/C MODEL AND MANUAL A/C MODEL



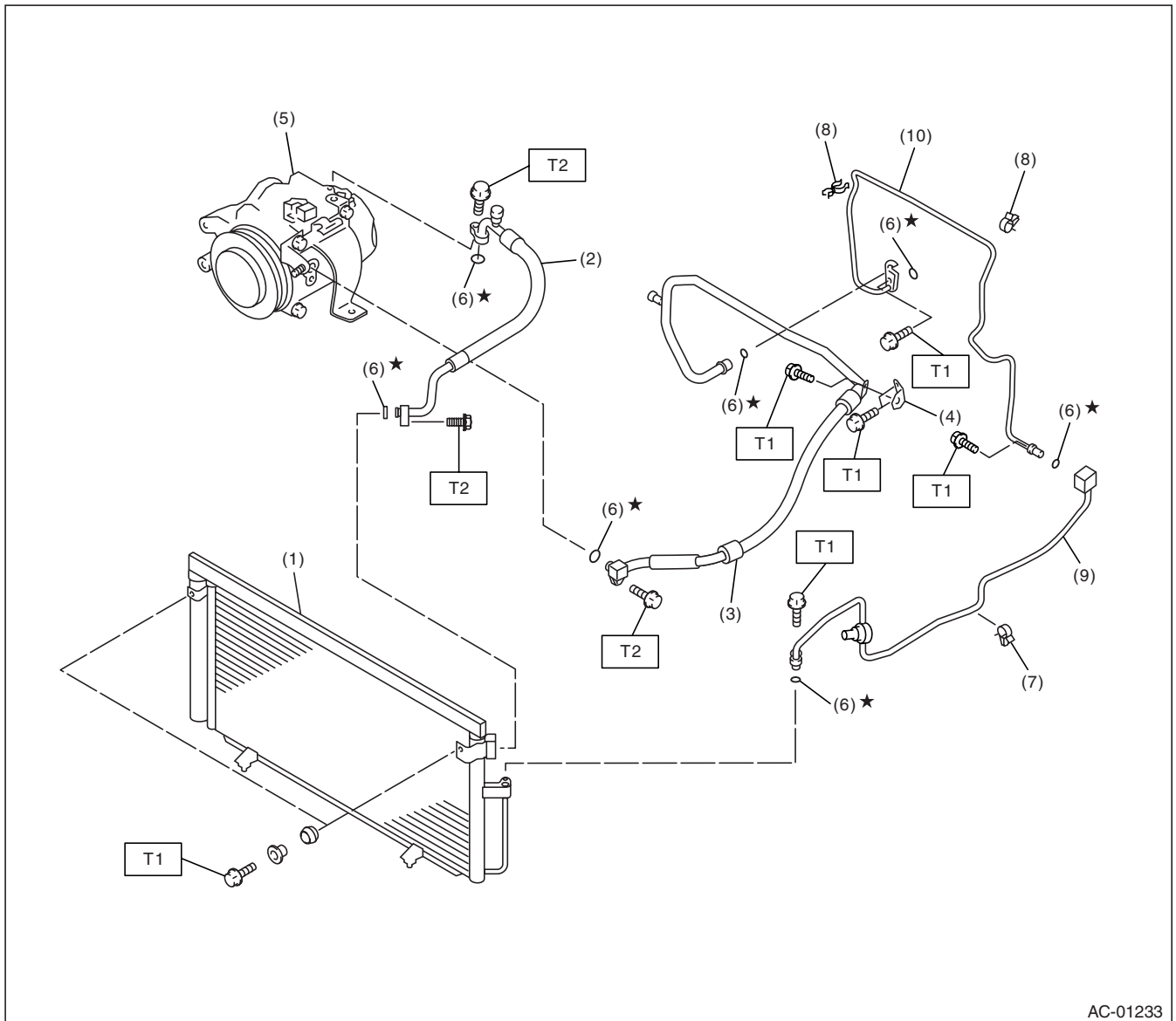
- | | | |
|---------------------------------|---------------------------------|------------------------|
| (1) Dial | (6) Heater control panel | (11) Mode cable |
| (2) Fan control plate | (7) A/C switch (with A/C model) | (12) Temperature cable |
| (3) Temperature control plate | (8) Rear window defogger 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

• LHD MODEL



AC-01233

- | | |
|--------------------------|---------------------------|
| (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)

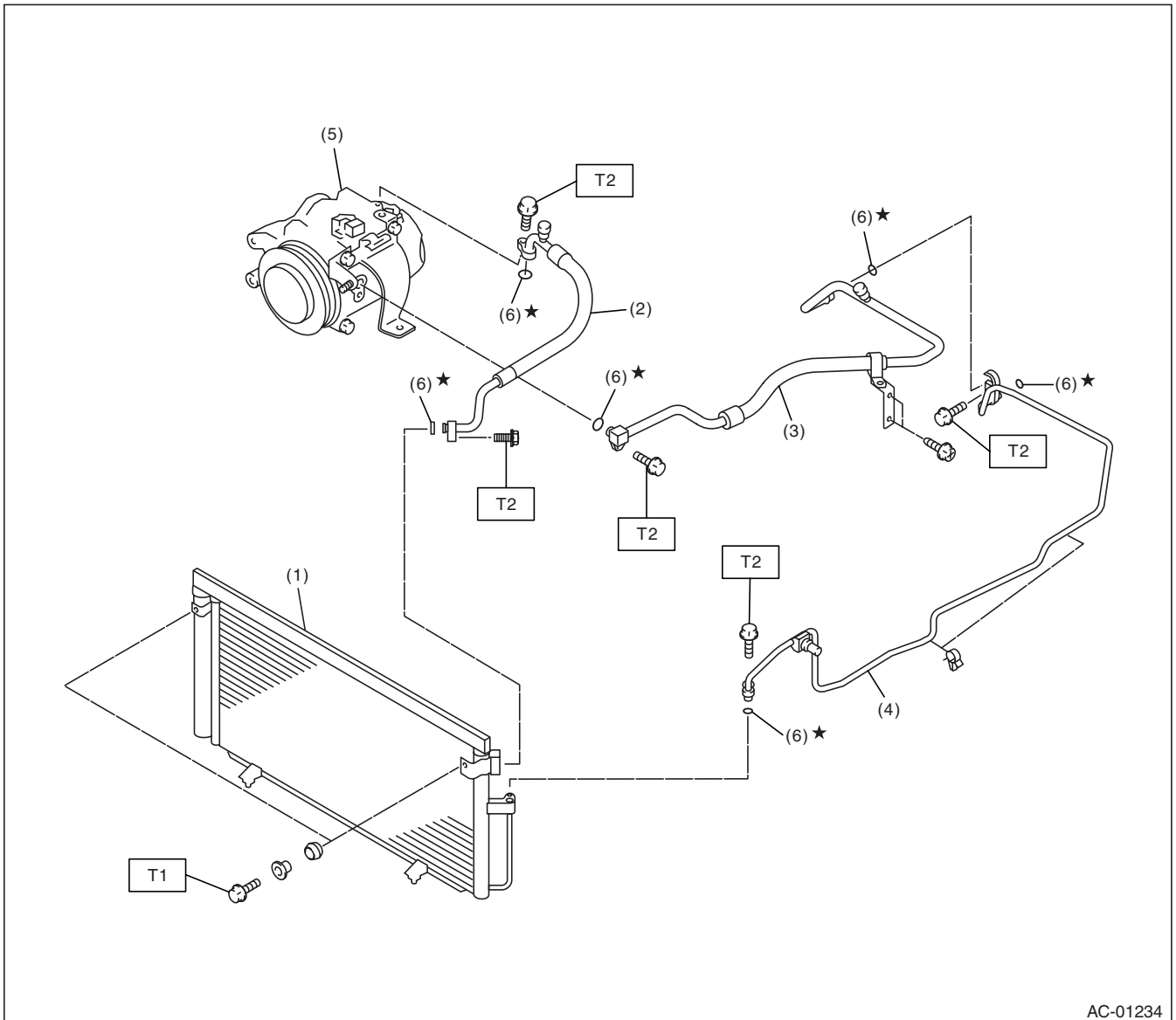
T1: 7.4 (0.75, 5.4)

T2: 15 (1.5, 10.8)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• RHD MODEL



AC-01234

- | | |
|--------------------------|----------------|
| (1) Condenser | (4) Tube |
| (2) Hose (High-pressure) | (5) Compressor |
| (3) Hose (Low-pressure) | (6) O-ring |

Tightening torque: N·m (kgf·m, ft·lb)

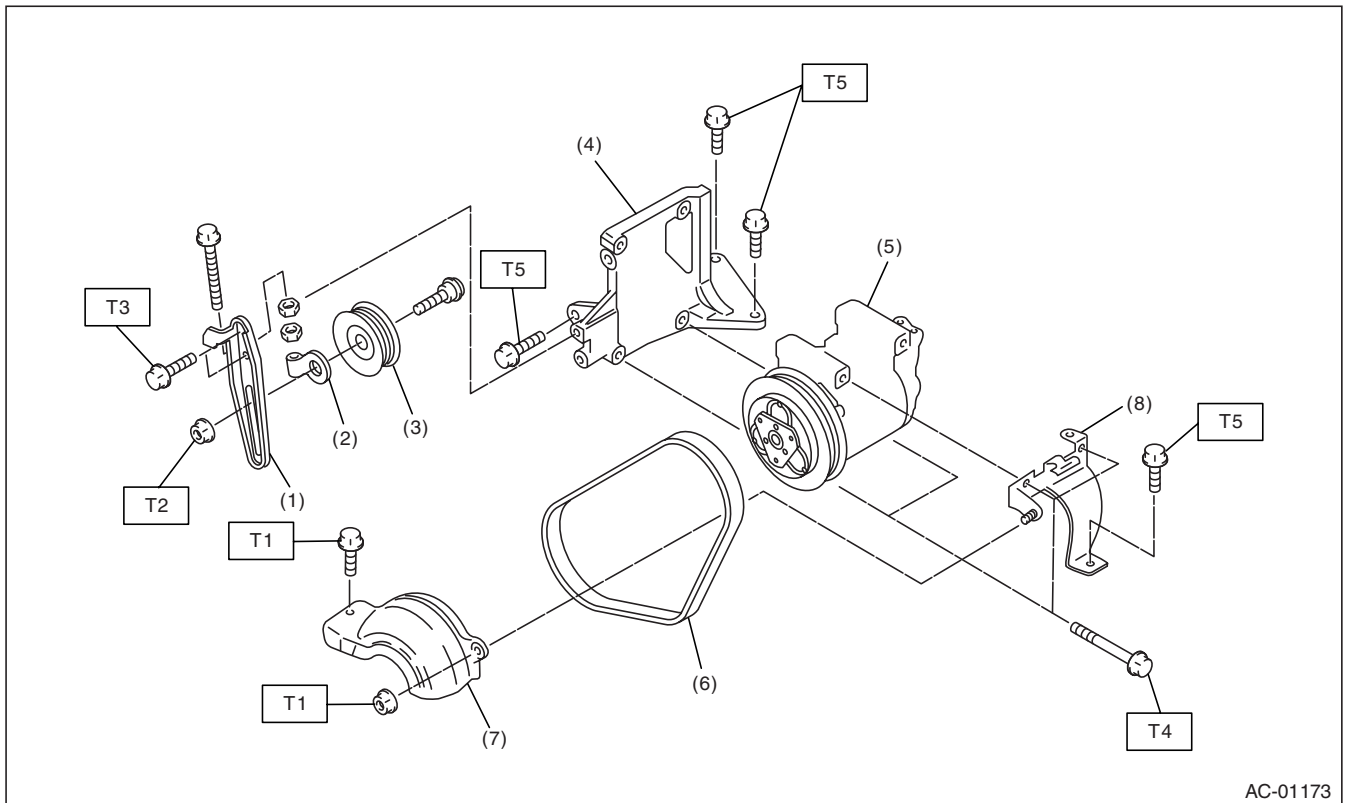
T1: 7.4 (0.75, 5.4)

T2: 15 (1.5, 10.8)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

5. COMPRESSOR



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

- (7) Compressor belt cover
- (8) Compressor bracket

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)

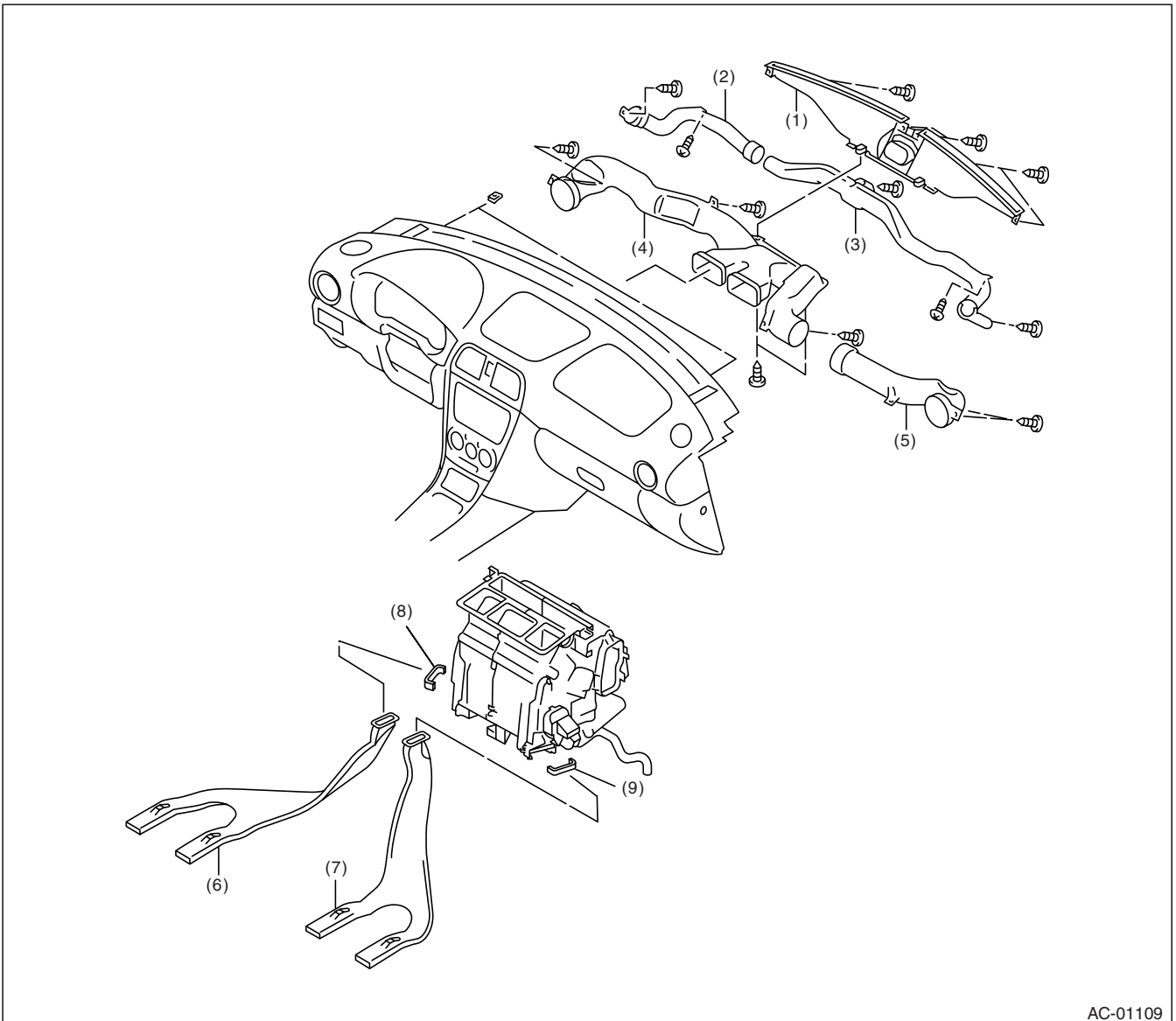
T4: 28.9 (2.95, 21.3)

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) |

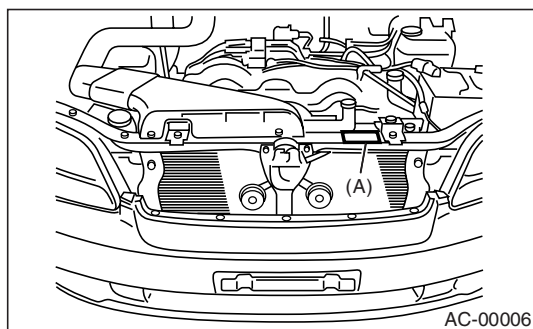
General Description

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

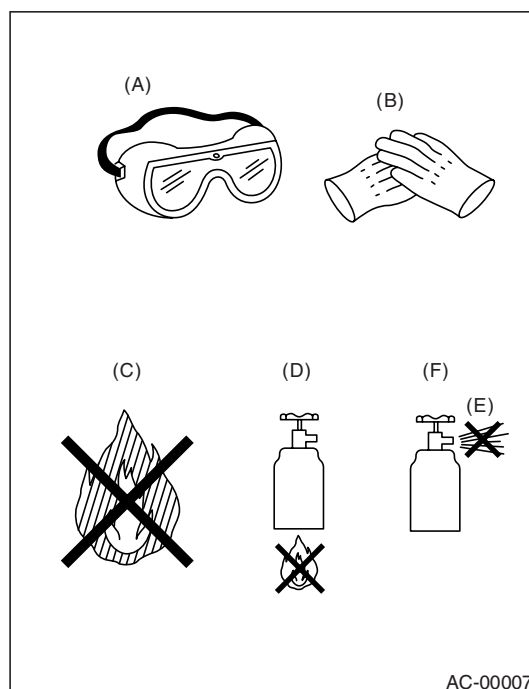
- HFC-134a compressor oil has no compatibility with that for CFC-12 system.
 - Use only the manufacturer-authorized compressor oil for the HFC-134a system; only use DH-PR.
 - Do not mix multiple compressor oils.
- If CFC-12 compressor oil is used in a HFC-134a A/C system, the compressor may become stuck 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.



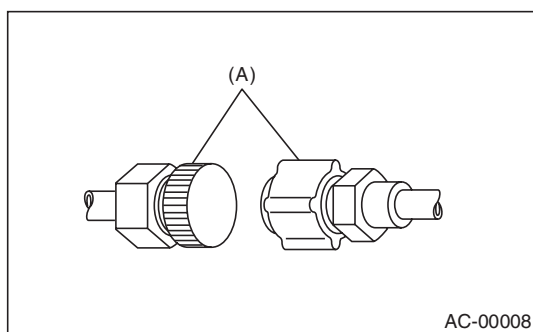
- (A) Goggles
- (B) Gloves
- (C) Avoid open flame
- (D) No direct heat on container
- (E) Do not discharge
- (F) Loosen

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

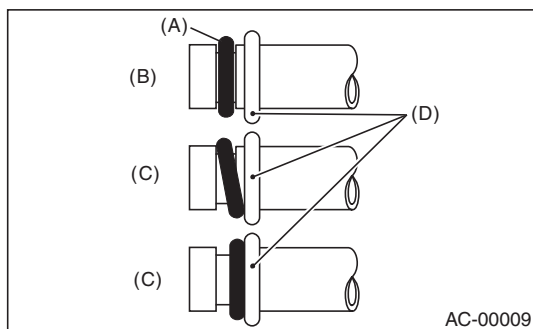
5. O-RING CONNECTIONS

- 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.



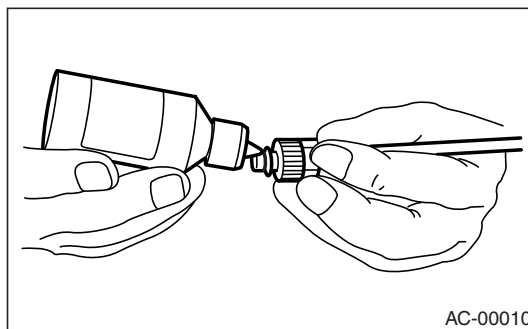
(A) Seal

- 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:

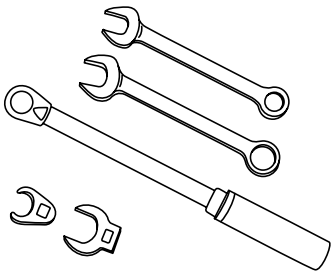
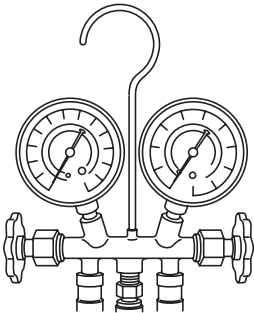
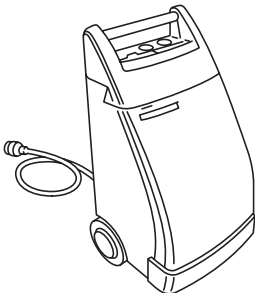
When working on vehicles with the HFC-134a system, only use HFC-134a specified tools and parts. Do not mix with CFC-12 tools and parts. If HFC-134a and CFC-12 refrigerant or compressor oil is mixed, poor lubrication will result and the compressor itself may be destroyed.

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

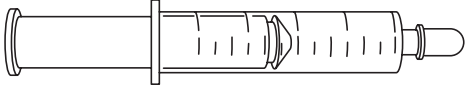
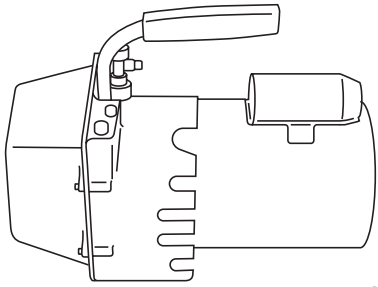
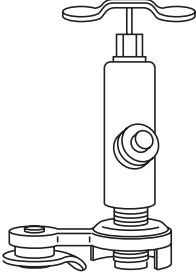
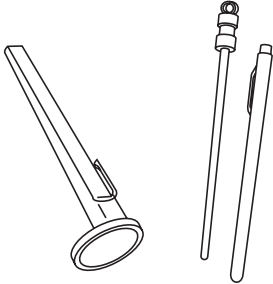
General Description

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.

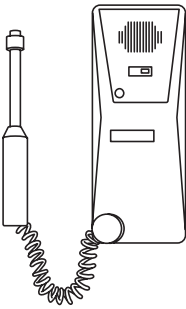
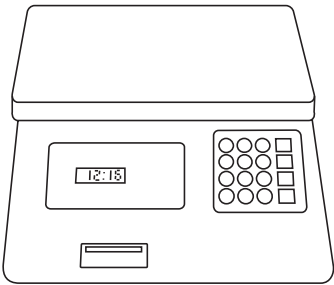
General Description

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 kgf/cm², 18 — 28 psi)

High pressure: 1,471 — 1,667 kPa (15 — 17 kgf/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 revacuating the receiver dryer, 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 evacuate the expansion valve.
Low-pressure side is unusually high.	• Defective compressor • Defective expansion valve • Too much refrigerant	• Replace the compressor. • Replace the expansion valve. • Discharge refrigerant.
Low-pressure side is unusually low.	• Not enough refrigerant • Clogged expansion valve • Expansion valve frozen temporarily by moisture • Saturated receiver dryer	• Check for leaks. • Replace the expansion valve. • Replace the receiver dryer.

Refrigerant Recovery Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

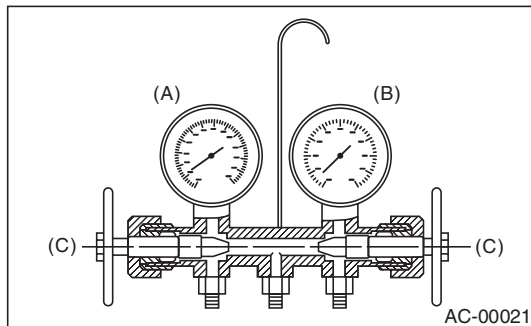
3. Refrigerant Recovery Procedure

A: PROCEDURE

CAUTION:

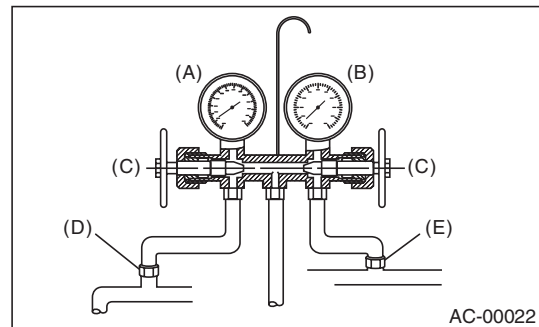
- During operation, be sure to wear safety goggles and protective gloves.
- Connect the refrigerant recovery system with the manifold gauge set to discharge the refrigerant from the A/C system and reuse it.
- When reusing the discharged refrigerant, keep service cans on hand. Because the discharge rate 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-26, PROCEDURE, Compressor Oil.>
- 2) Stop the engine.
- 3) Make sure the valves on low-/high-pressure sides of manifold gauge set are fully closed.



- (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:

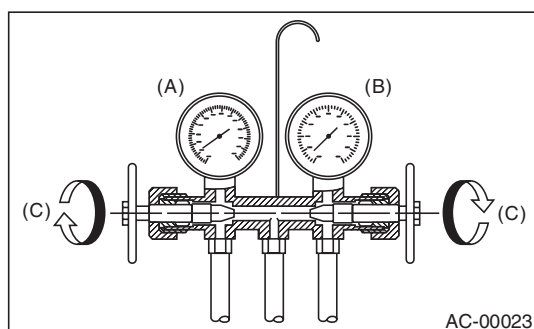
- During operation, be sure to wear safety goggles and protective gloves.
- Before charging the refrigerant, evacuate the system to remove small amounts of moisture remaining in the system.

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)

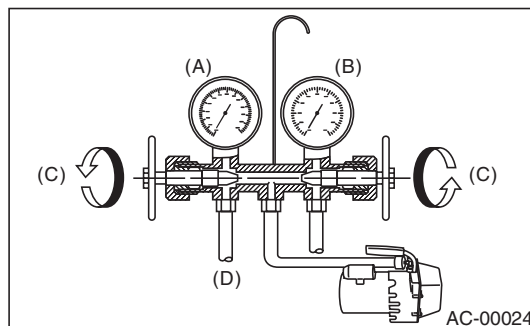
- 1) Close the valves on low-/high-pressure sides of the manifold gauge.



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

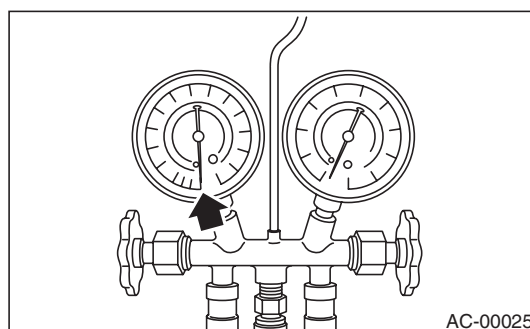
- 2) Install the low-/high-pressure hoses to the corresponding service ports on the vehicle respectively.
- 3) Connect the center hose of the manifold gauge set with the vacuum pump.

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

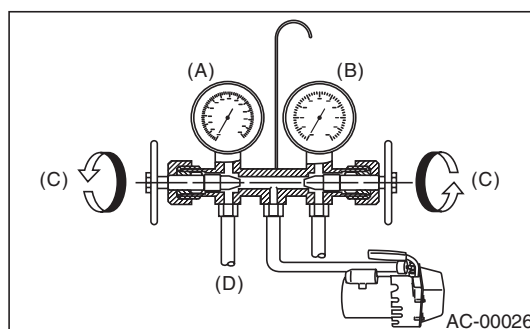


- (A) Low-pressure gauge (Compound pressure gauge)
- (B) High-pressure gauge
- (C) Slowly open
- (D) Vacuum pump turn on

- 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.

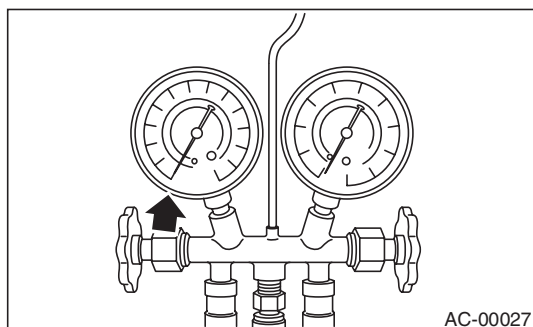


- (A) Low-pressure gauge (Compound pressure gauge)
- (B) High-pressure gauge
- (C) Close
- (D) Vacuum pump turn off

Refrigerant Charging Procedure

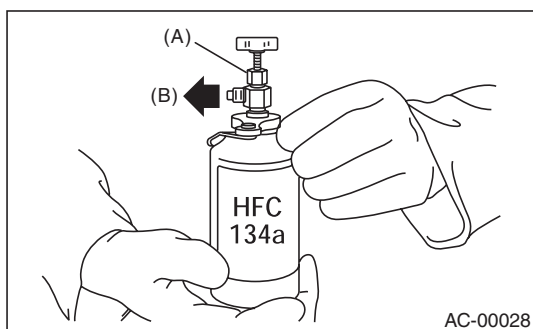
HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

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.

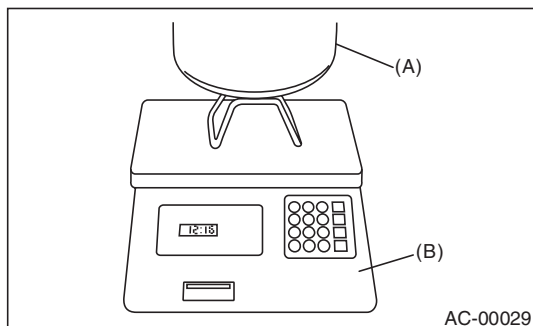
9) Following the can tap operation manual instructions, install it to the refrigerant can.



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

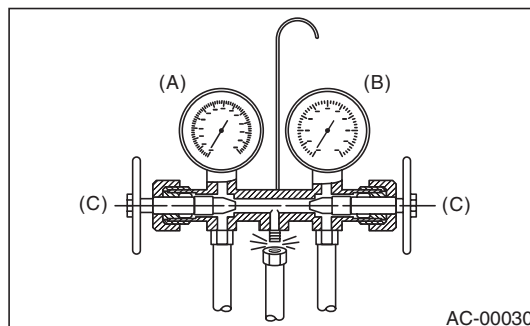
10) Disconnect the center manifold hose from the vacuum pump, and connect the hose to the tap valve.

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

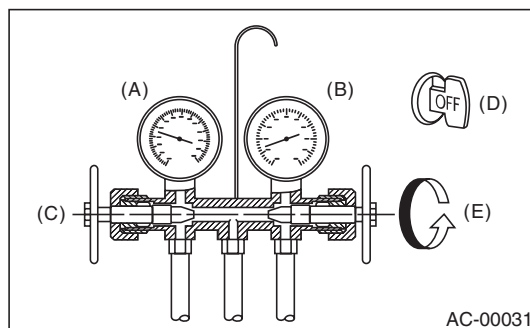
13) Open the valve on the HFC-134a source.

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 kgf/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)

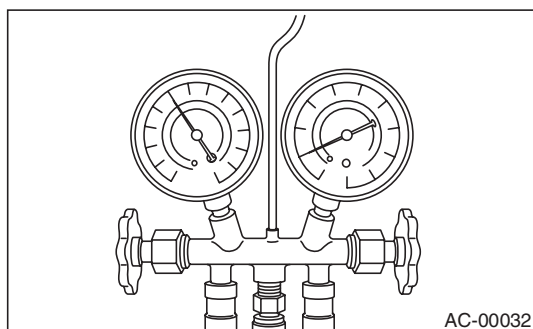
17) After confirming that there are no leaks with the leak test, charge the required amount of refrigerant.

CAUTION:

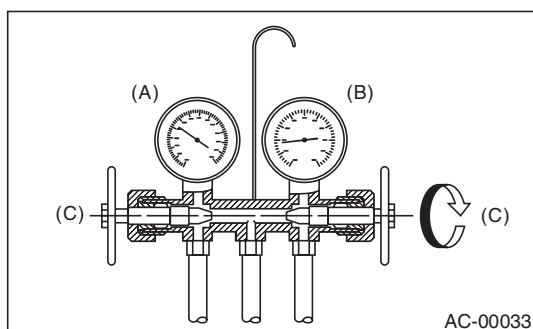
Never run the engine during charging from the high-pressure side.

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.

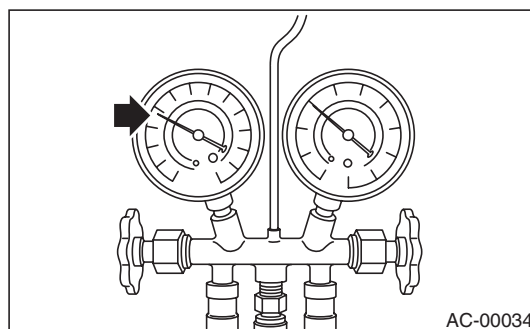
22) Set up the vehicle to the following status:

- 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 kgf/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 kgf/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.

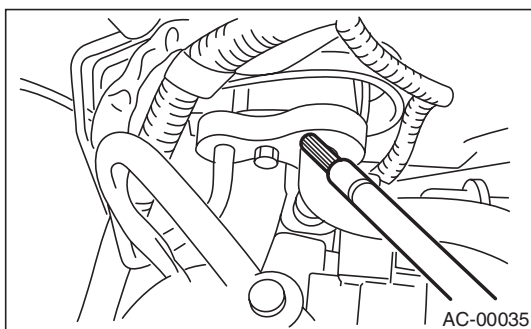
6) Check the machined area of compressor and other joints on the compressor.

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

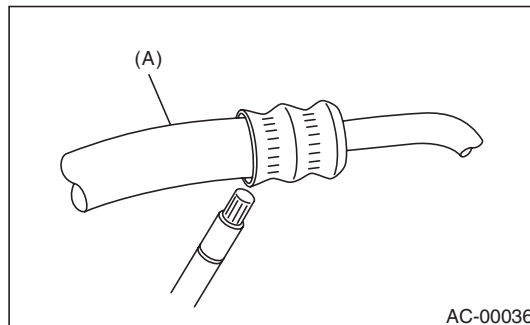


9) Visually check the rubber area of the flexible hose for cracks.

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.

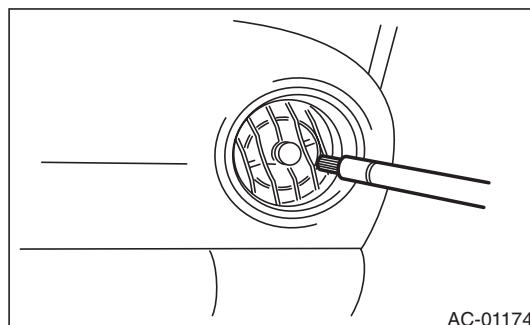


(A) Flexible hose

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

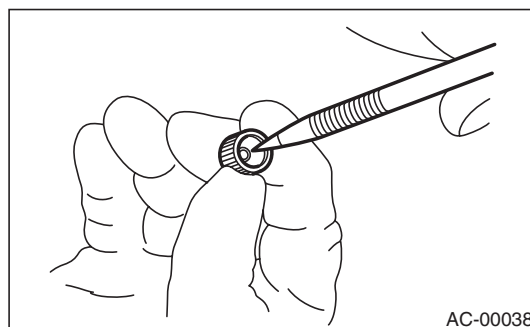
After the test is finished, reconnect the drain hose.

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.



Compressor Oil

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

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

B: REPLACEMENT

NOTE:

- If a component is replaced, add an appropriate amount of compressor oil.
- When replacing the compressor, the new compressor will already have the specified amount of oil in it. Install the new compressor after removing the same amount of oil that is remaining in the compressor removed.

Replacement parts	Amount of oil replenishment
Evaporator	114 m ℓ (3.9 US fl oz, 4.0 Imp fl oz)
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)

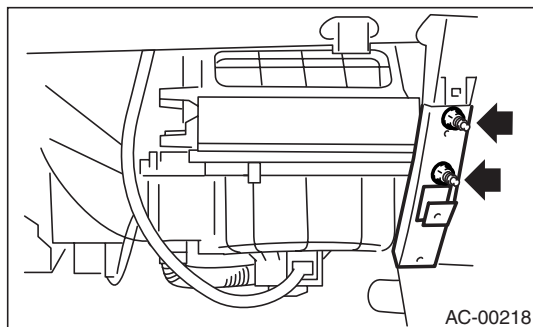
Blower Motor Unit Assembly

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

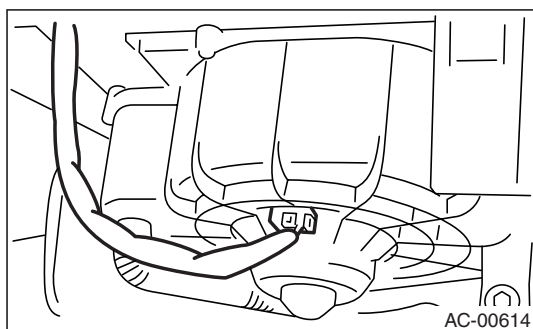
7. Blower Motor Unit Assembly

A: REMOVAL

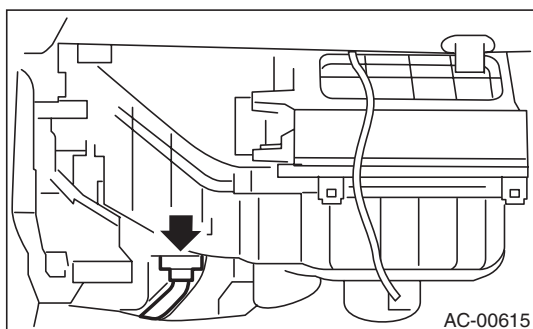
- 1) Disconnect the ground cable from battery.
- 2) Remove the glove box. <Ref. to EI-42, REMOVAL, Glove Box.>
- 3) Loosen the nut to remove the support beam stay.



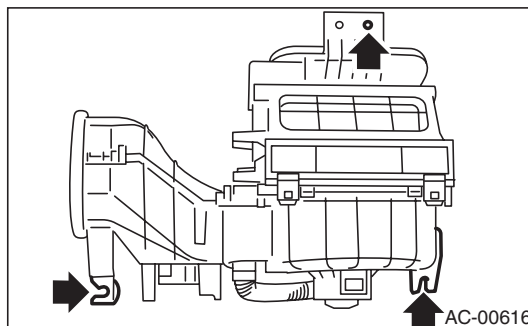
- 4) Disconnect the blower motor connector.



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



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



B: INSTALLATION

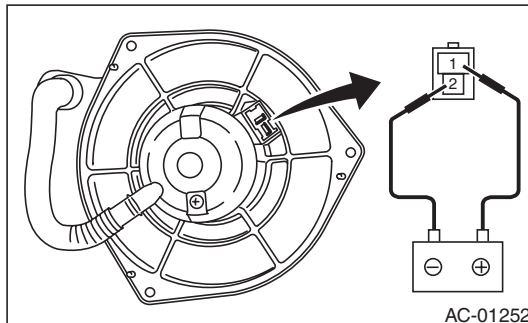
Install in the reverse order of removal.

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.



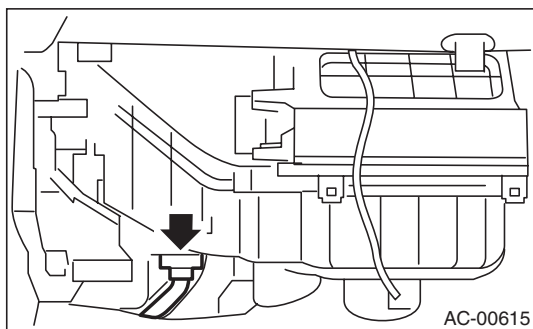
Power Transistor (Auto A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

8. Power Transistor (Auto A/C Model)

A: REMOVAL

- 1) Remove the glove box. <Ref. to EI-42, 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.

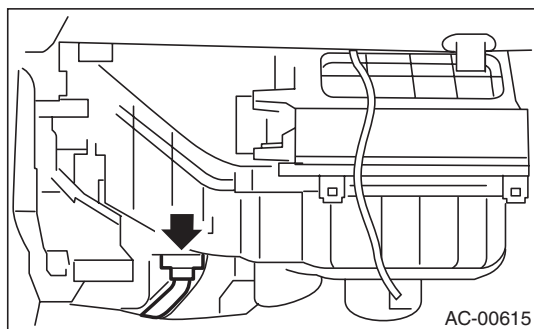
Blower Resistor (Without A/C Model and Manual A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

9. Blower Resistor (Without A/C Model and Manual A/C Model)

A: REMOVAL

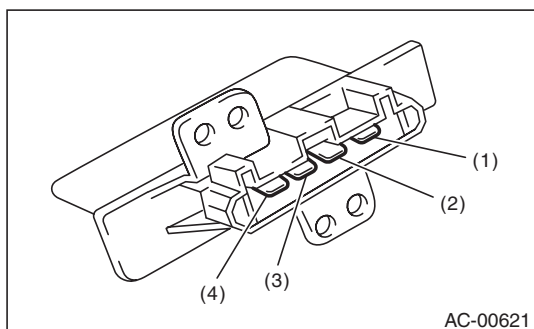
- 1) Remove the glove box. <Ref. to EI-42, REMOVAL, Glove Box.>
- 2) Disconnect the blower resistor connector.
- 3) Loosen the two screws to remove the blower resistor.



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.

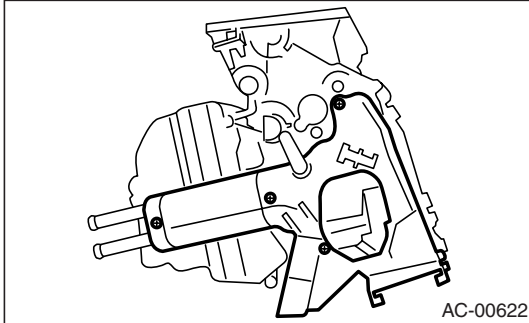
Heater Core

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

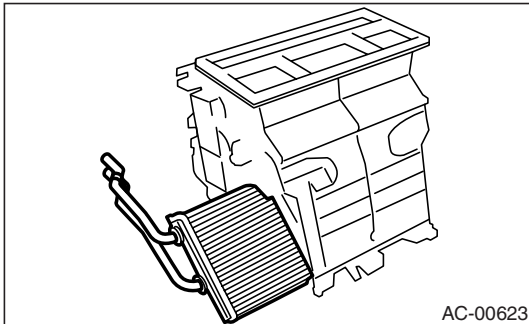
10.Heater Core

A: REMOVAL

- 1) Remove the heater and cooling unit. <Ref. to AC-36, 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.

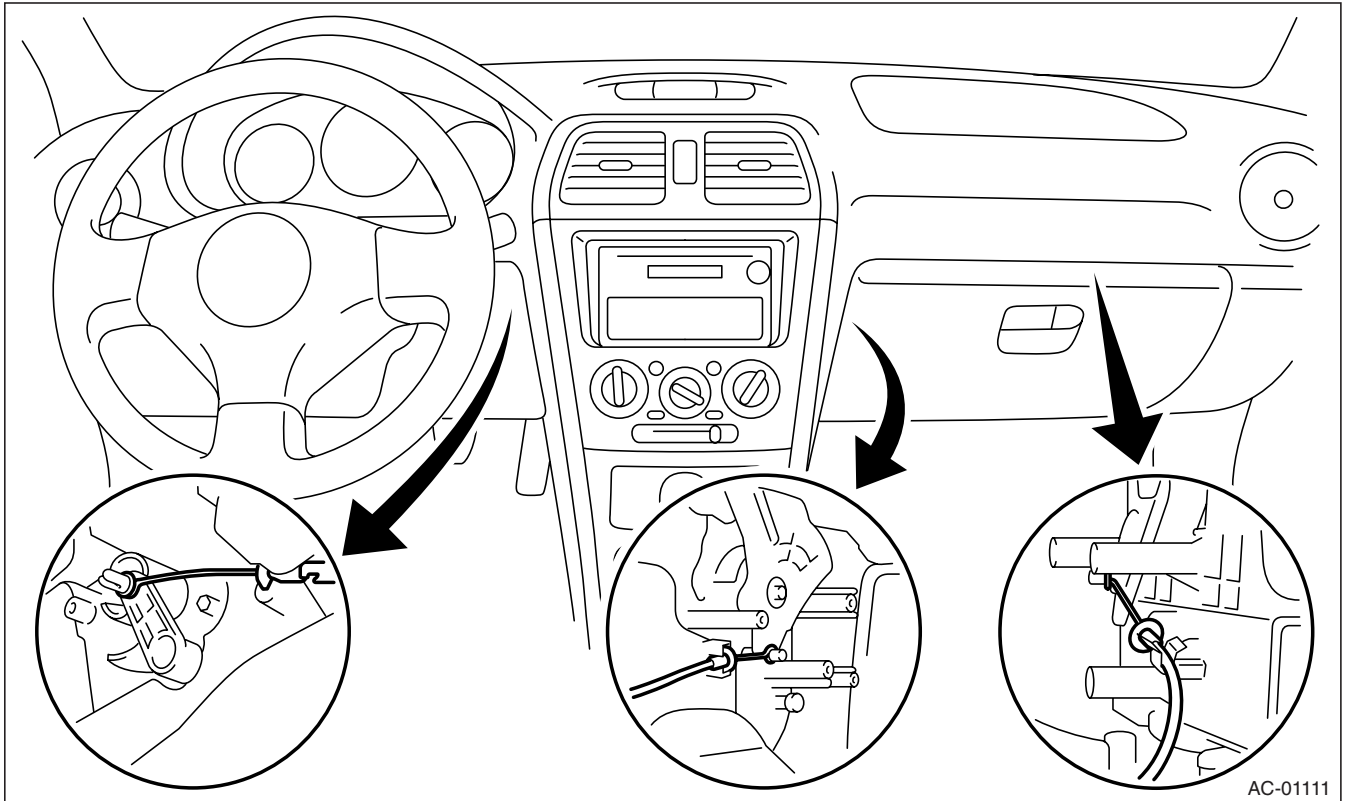
Control Unit (Manual A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

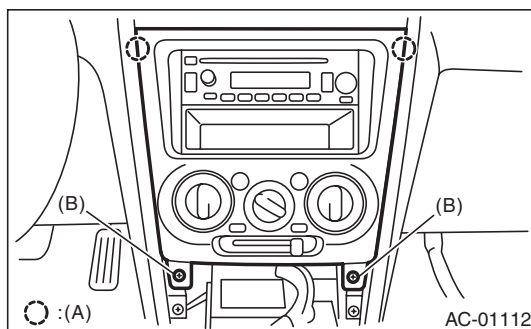
11. Control Unit (Manual A/C Model)

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the glove box. <Ref. to EI-42, REMOVAL, Glove Box.>
- 3) Remove the lower panel. <Ref. to EI-46, Instrument Panel Assembly.>
- 4) Remove the control wires.

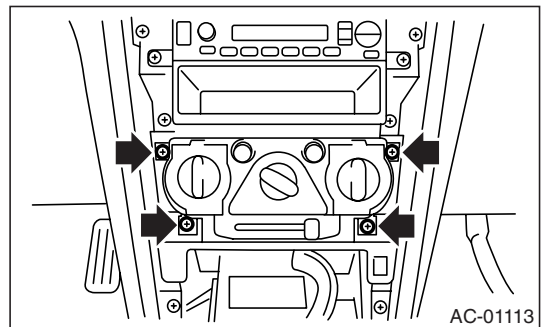


- 5) Remove the console front panel.
- 6) Remove the center console panel.



- (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.

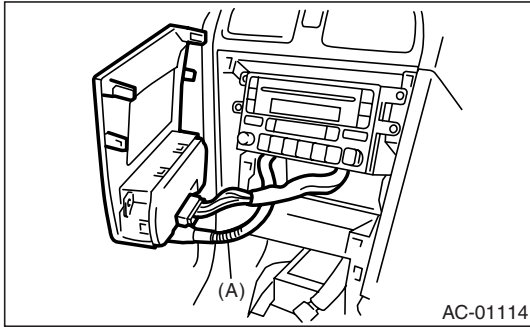
Control Unit (Auto A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

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.

Compressor

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

13.Compressor

A: INSPECTION

1. MAGNETIC CLUTCH CLEARANCE

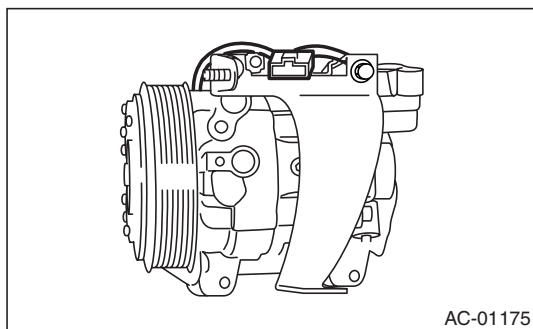
Check the clearance of the entire circumference around the drive plate and pulley.

Standard:

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

2. MAGNETIC CLUTCH OPERATION

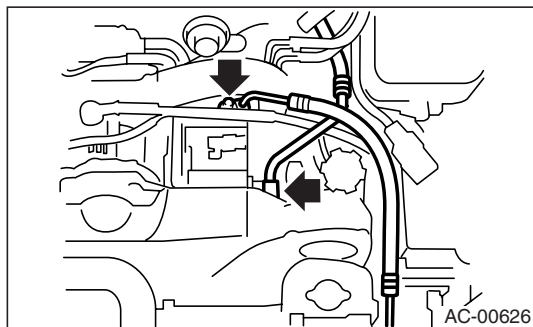
- 1) Disconnect the compressor connector.
- 2) Connect the battery positive (+) terminal to the terminal of compressor connector.



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

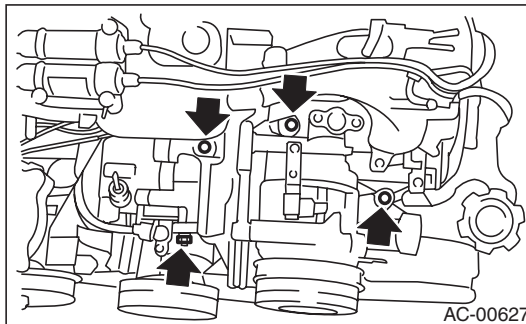
B: REMOVAL

- 1) Perform the compressor oil return operation.
<Ref. to AC-26, 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-21, PROCEDURE, Refrigerant Recovery Procedure.>
- 4) Disconnect the ground cable from battery.
- 5) Remove the V-belt. <Ref. to ME(H4SO)-41, REMOVAL, V-belt.> or <Ref. to ME(H4DOTC)-53, REMOVAL, V-belt.>
- 6) Remove the generator. <Ref. to SC(H4SO)-14, REMOVAL, Generator.>
- 7) Remove the low-pressure hose and high-pressure hose.

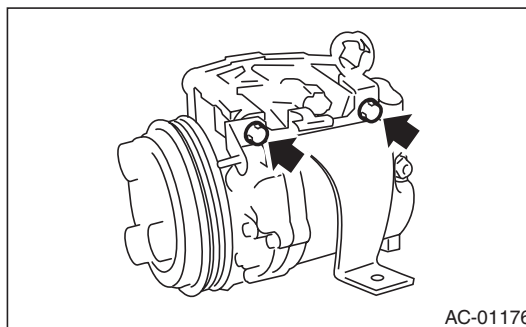


- 8) Disconnect the compressor harness from body harness.

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



- 10) Remove the bolts, and then separate the compressor and bracket.



Compressor

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

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-26, PROCEDURE, Compressor Oil.>
- 4) Charge refrigerant. <Ref. to AC-22, 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-13, COMPRESSOR, COMPONENT, General Description.>

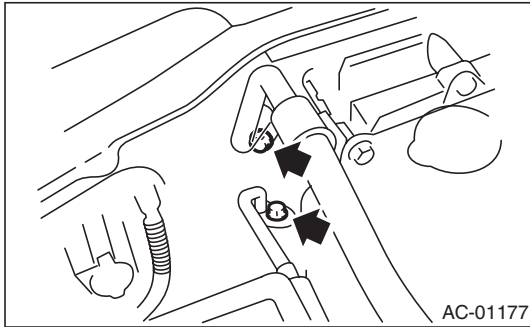
Condenser

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

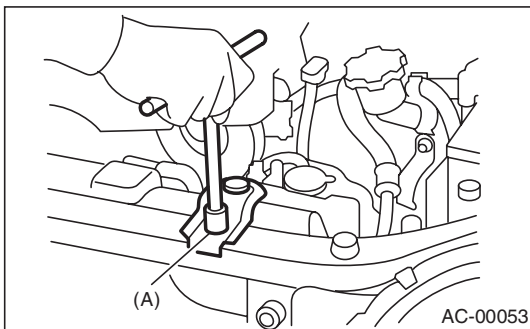
14. Condenser

A: REMOVAL

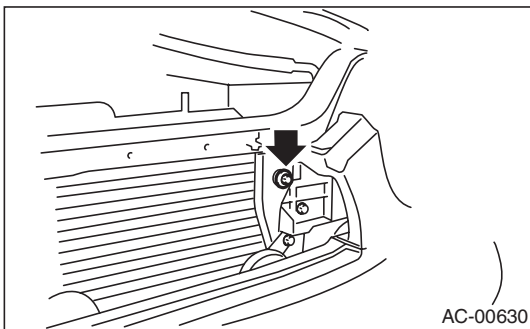
- 1) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Recovery Procedure.>
- 2) Disconnect the ground cable from battery.
- 3) Disconnect the pressure hose and pipe from condenser.



- 4) Remove the radiator bracket (A).



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



CAUTION:

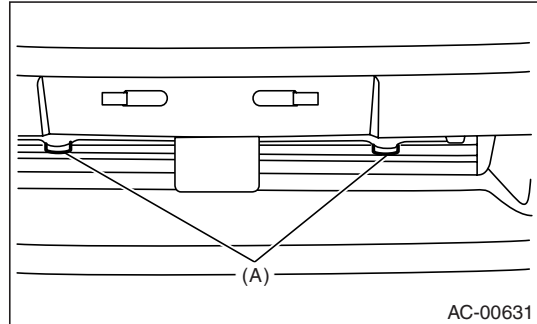
- Be careful not to damage the condenser fins. If a damaged fin is found, repair it using a thin screwdriver.
- If the condenser is replaced, add appropriate amount of compressor oil to the compressor. <Ref. to AC-26, REPLACEMENT, Compressor Oil.>

B: INSTALLATION

- 1) Install in the reverse order of removal.

CAUTION:

Replace the O-rings on hoses or pipes with new 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-22, 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)-6, **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

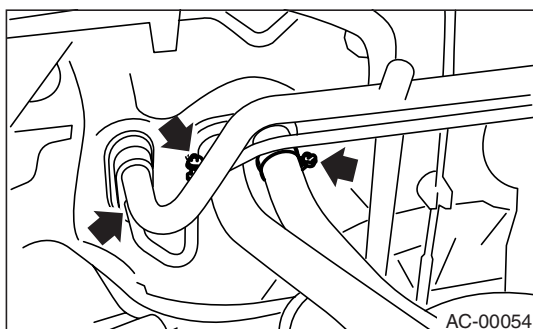
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Recovery Procedure.>
- 3) Drain engine coolant 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.

• LHD MODEL

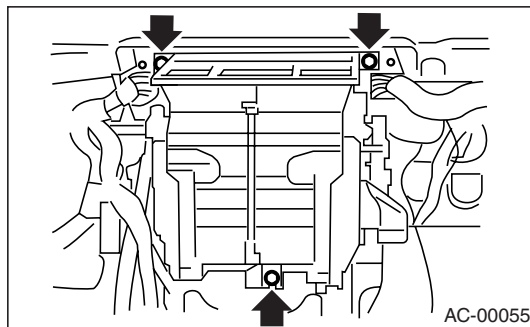


• RHD MODEL



- 5) Remove the instrument panel. <Ref. to EI-46, REMOVAL, Instrument Panel Assembly.>
- 6) Remove the support beam.
- 7) Remove the blower motor unit assembly. <Ref. to AC-27, REMOVAL, Blower Motor Unit Assembly.>
- 8) Disconnect the servo motor 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-22, PROCEDURE, Refrigerant Charging Procedure.>

Tightening torque:

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

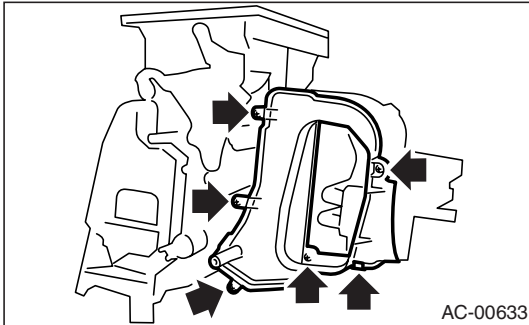
Evaporator

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

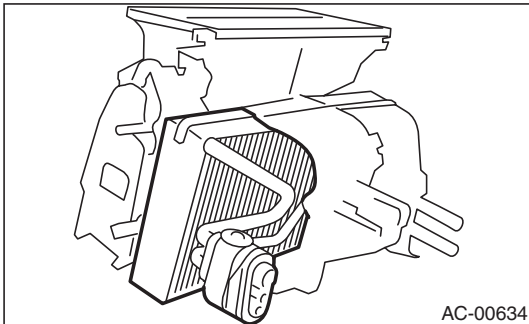
16. Evaporator

A: REMOVAL

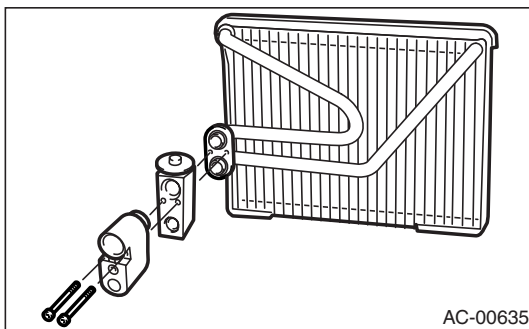
- 1) Remove the heater and cooling unit. <Ref. to AC-36, REMOVAL, Heater and Cooling Unit.>
- 2) Loosen the screws and clip to remove the evaporator cover.



- 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-26, REPLACEMENT, Compressor Oil.>

B: INSTALLATION

Install in the reverse order of removal.

Hose and Tube

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

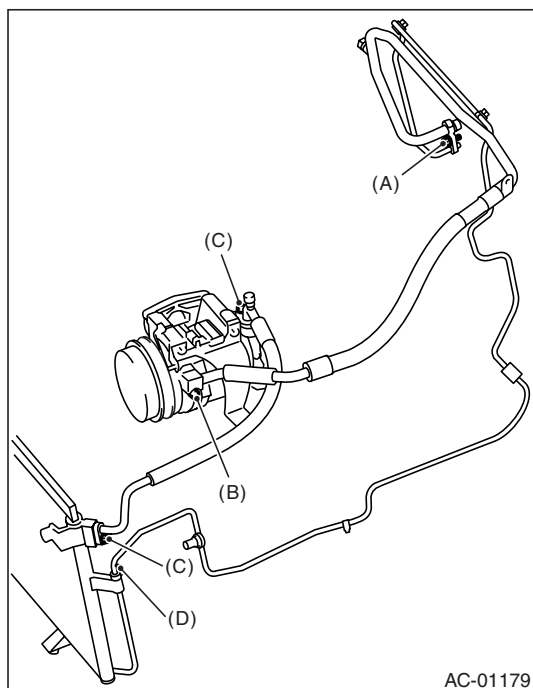
17.Hose and Tube

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-21, 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-22, 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:

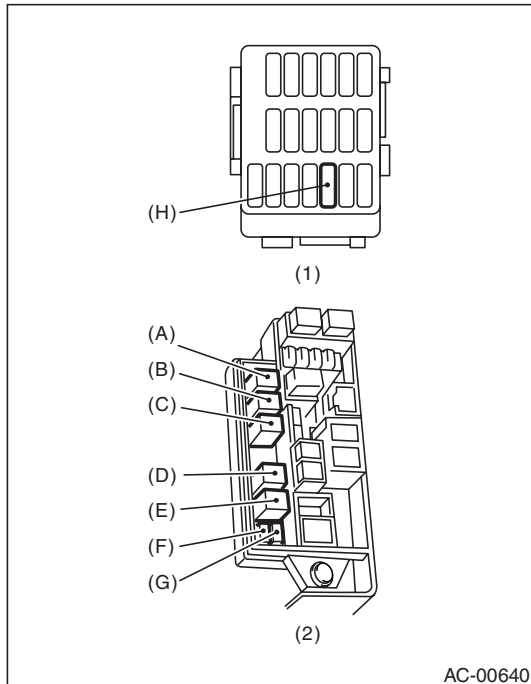
If cracking, damage, or swelling is found on a hose, replace it with a new one.

Relay and Fuse

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

18. Relay and Fuse

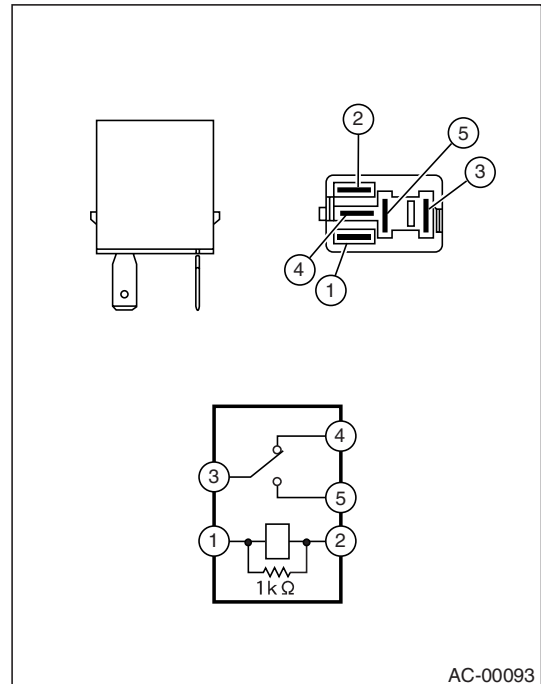
A: LOCATION



- (1) Joint box
(2) Main fuse box

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



- (1) — (2): Continuity exists.
(3) — (4): Continuity exists.
(3) — (5): No continuity

While applying battery voltage to the terminal between (1) and (2), check continuity between (3) and (5).

If no continuity exists, replace the relay with a new one.

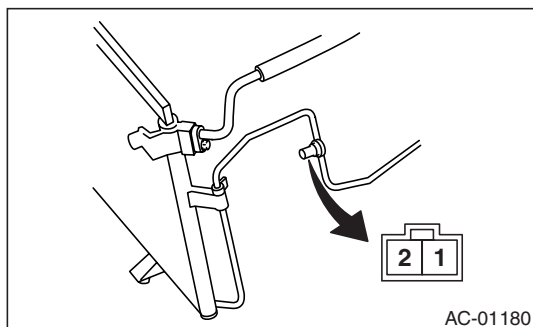
Pressure Switch (Dual Switch)

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 (kgf/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 ⁺⁵⁷ / _{-3.6})
			Decreasing to 2,200±200 (22.4±2, 319±29)

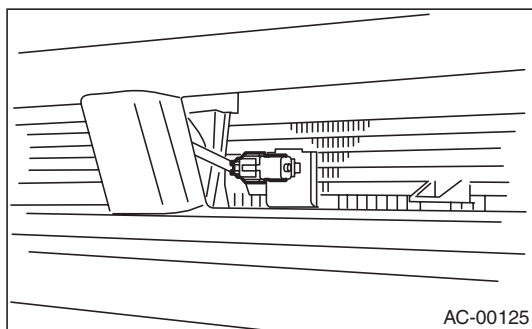
Ambient Sensor (Auto A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

20. Ambient Sensor (Auto A/C Model)

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)-29, AMBIENT SENSOR, Diagnostic Procedure for Sensors.>

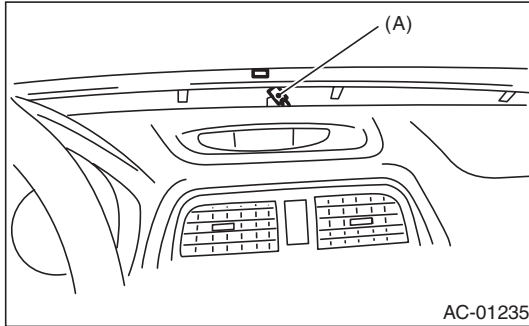
Sunload Sensor (Auto A/C Model)

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)-33, SUNLOAD SENSOR, Diagnostic Procedure for Sensors.>

Air Vent Grille

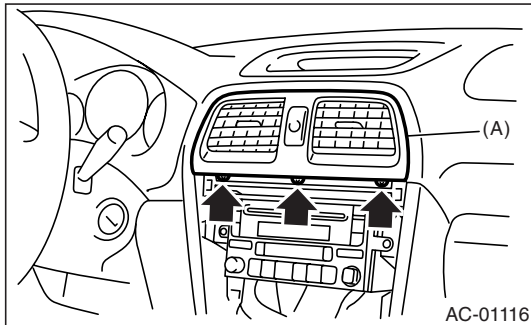
HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

22. Air Vent Grille

A: REMOVAL

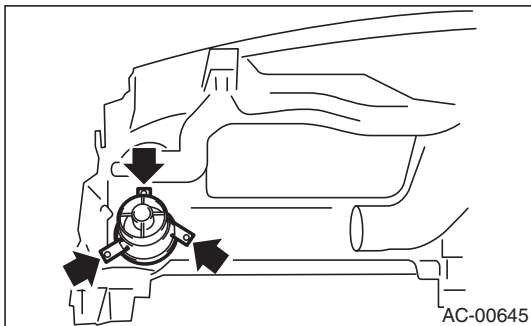
1. CENTER GRILLE

- 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-45, 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.

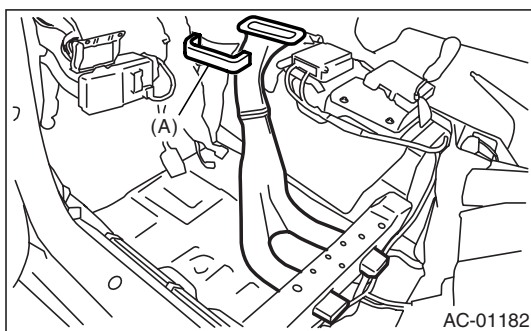
Heater Duct

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

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-45, Console Box.>
- 3) Remove the side sill front cover, side sill rear cover and center pillar lower trim. <Ref. to EI-50, 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.

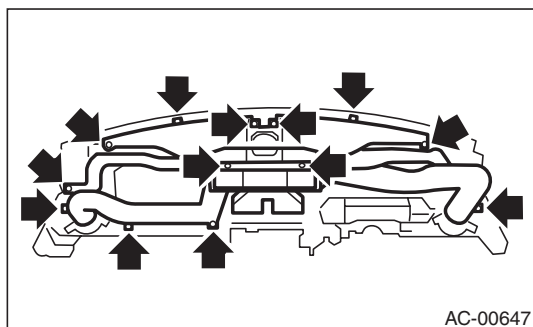
Heater Vent Duct

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

24.Heater Vent Duct

A: REMOVAL

- 1) Remove the instrument panel. <Ref. to EI-46, 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.

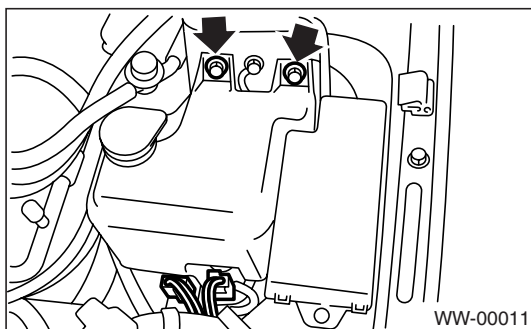
Heater Cock Solenoid Valve

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

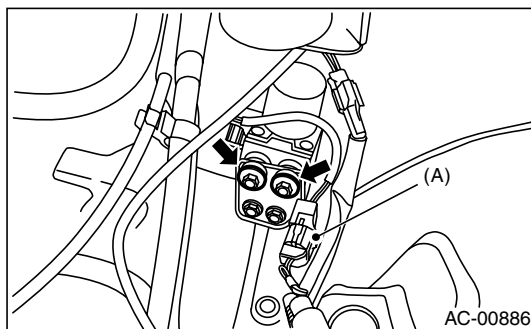
25.Heater Cock Solenoid Valve

A: REMOVAL

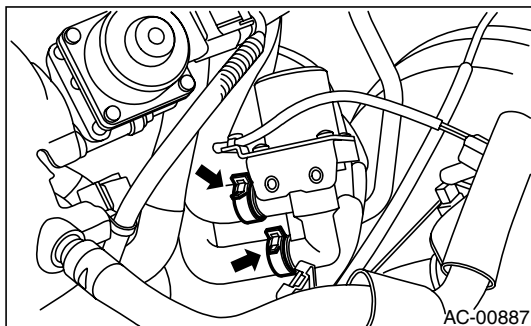
- 1) Drain the engine coolant.
<Ref. to CO(H4SO)-15, DRAINING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>
- 2) Remove the battery.
- 3) Remove the two bolts and disconnect harness connector, and move the washer tank forward.



- 4) Disconnect the harness connector (A) of the heater cock solenoid valve.
- 5) Remove the two bolts to remove the heater cock solenoid from the bracket.



- 6) Pull out the heater cock solenoid. Loosen the hose clamp and disconnect the two heater hoses.

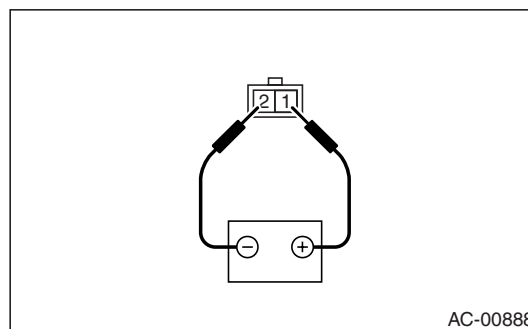


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

- 1) Remove the heater cock solenoid valve. <Ref. to AC-46, REMOVAL, Heater Cock Solenoid Valve.>
- 2) Connect the positive terminal of battery to No. 1 terminal of heater cock solenoid valve, and the ground terminal to No. 2 terminal. Check that the heater cock solenoid valve opens and closes normally.



If any failure is found, replace the heater cock solenoid valve.

General Diagnostic Table

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

26. 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)

General Diagnostic Table

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

AC(diag)

	Page
1. Basic Diagnostic Procedure	2
2. General Description	3
3. Electrical Component Location	5
4. Auto A/C Control Module I/O Signal.....	7
5. Diagnostic Chart for Self-Diagnosis	9
6. Diagnostics for A/C System Malfunction	12
7. Diagnostic Procedure for Actuators	23
8. Diagnostic Procedure for Sensors	29
9. Diagnostics with Phenomenon.....	35

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)-9, OPERATION, Diagnostic Chart for Self-Diagnosis.>	Does the self-diagnosis operate?	Go to step 2.	<Ref. to AC(diag)-12, A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE, Diagnostics for A/C System Malfunction.>
2 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 at maximum cold position. 3) Check the compartment temperature changes.	Is the compartment temperature changed?	Go to step 4.	<Ref. to AC(diag)-16, COMPARTMENT TEMPERATURE DOES NOT CHANGE, OR A/C SYSTEM DOES NOT RESPOND PROMPTLY., Diagnostics for A/C System Malfunction.>
4 CHECK A/C SYSTEM RESPONSE. Change the temperature setting, and check the response of A/C system.	Does the A/C system respond quickly?	A/C system is OK.	<Ref. to AC(diag)-16, 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 A/C control module.
- 3) Before disconnecting the connectors of each sensor and the A/C control module, be sure to turn off the ignition switch.
 - Otherwise, the Auto A/C control module may be damaged.
- 4) Every Auto 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 (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 (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

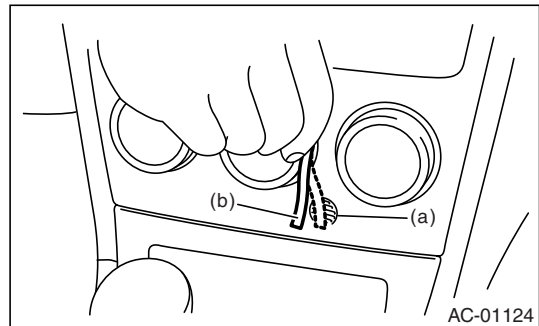
- 2) Check the condition of the fuses for A/C system power supply and other fuses.
- 3) Check the condition of the harnesses and harness connectors connection.

2. ASPIRATOR HOSE

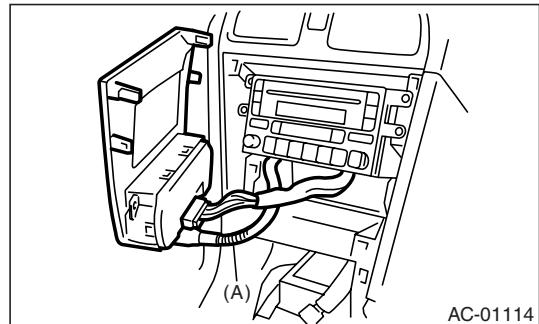
- 1) Turn the ignition switch to ON and push the A/C switch.
- 2) Turn the temperature control dial to maximum hot position.
- 3) Turn the air flow control dial to "DEF" position.
- 4) Turn the fan speed control dial to 4th position.
- 5) Firmly hold a thin paper (b) in front of the in-vehicle sensor suction port (a) for the auto A/C control module 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.

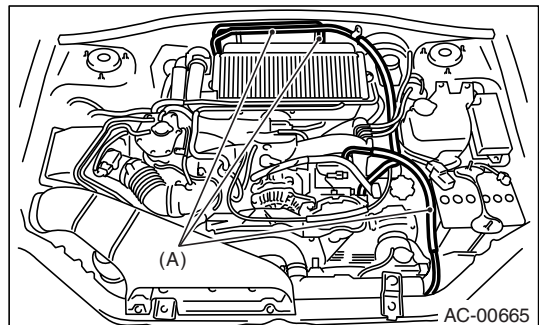


- 6) If the paper does not move at all, remove the auto A/C control module <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).> and check for improper connection of the aspirator hose (A), auto A/C control unit and heater unit, and secure as necessary.



3. REFRIGERANT LINE

Check the connection for refrigerant line (A) and high-pressure pipe.



4. CONTROL LINKAGE

- 1) Check the state of mode door linkage.
- 2) Check the state of air mix door linkage.
- 3) Check the state of 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 more than 1 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 A/C switch longer more than 1 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.

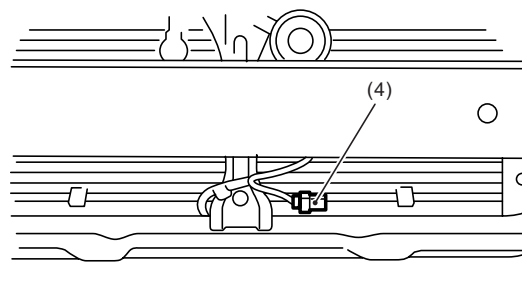
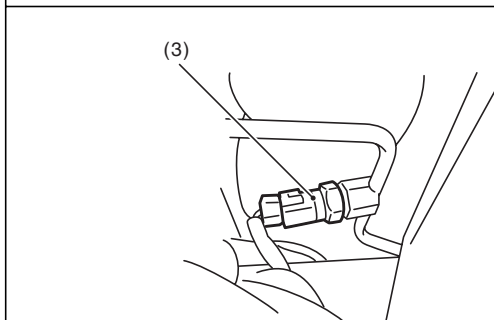
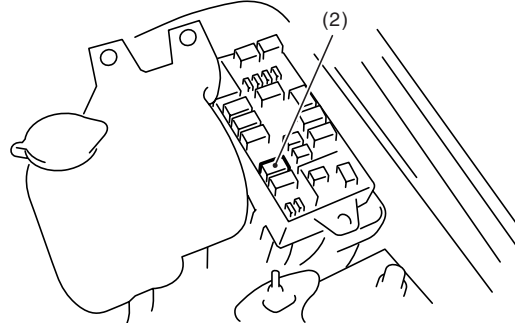
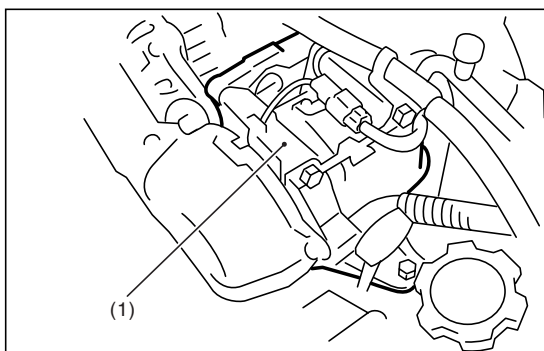
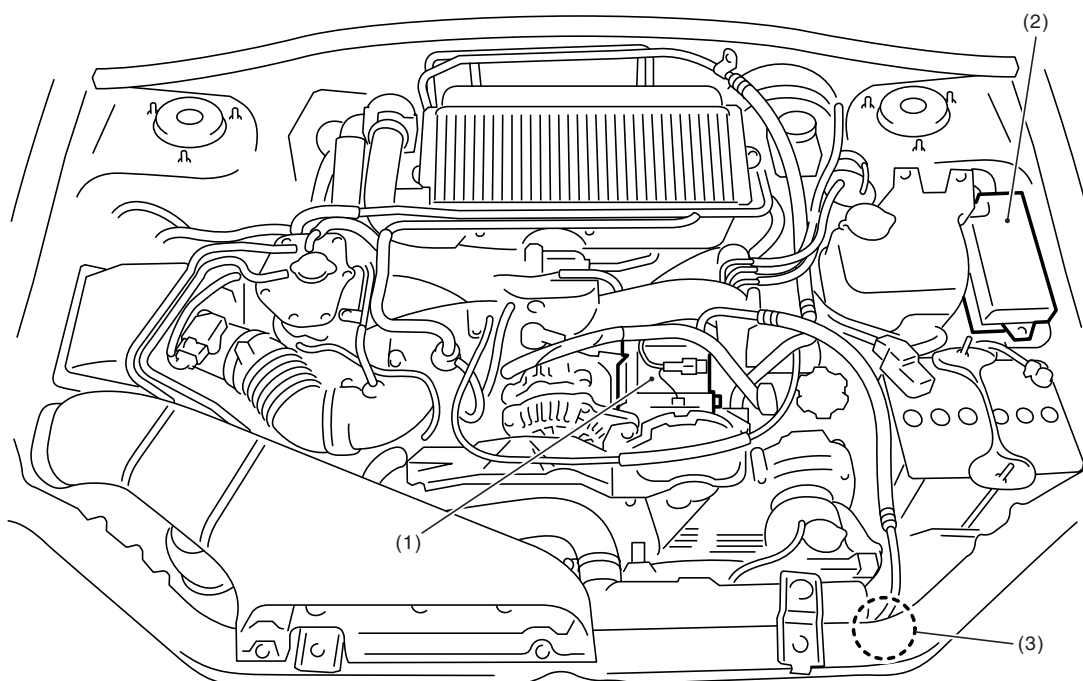
Electrical Component Location

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

3. Electrical Component Location

A: LOCATION

1. ENGINE COMPARTMENT



AC-01194

(1) A/C compressor

(3) Pressure switch

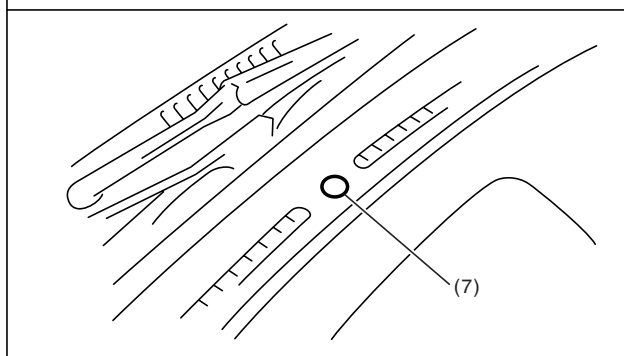
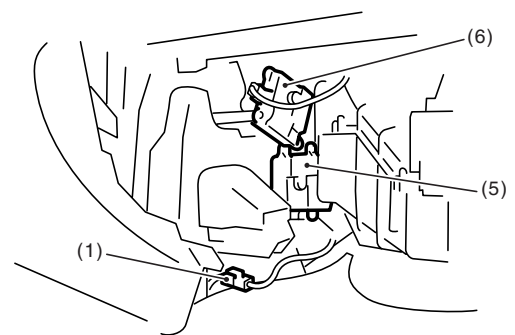
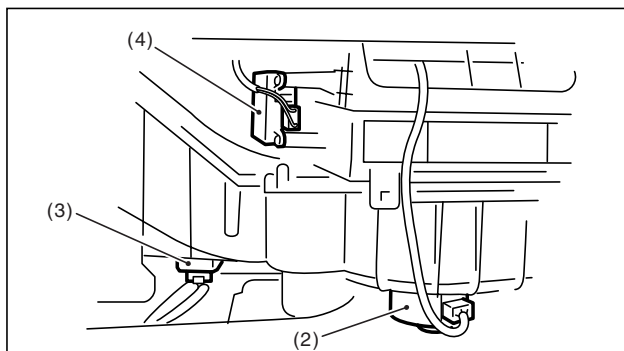
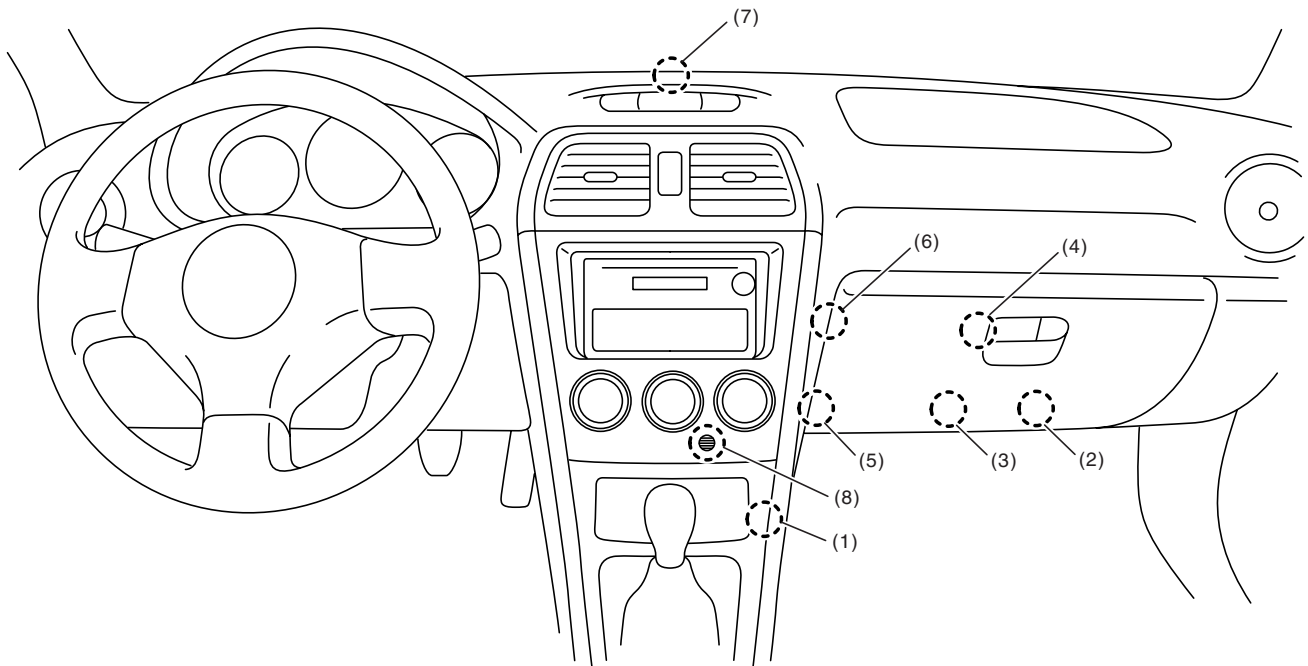
(4) Ambient sensor

(2) A/C relay

Electrical Component Location

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

2. PASSENGER COMPARTMENT



AC-01127

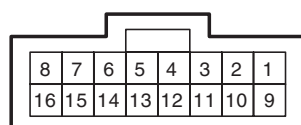
- | | | |
|---------------------------|---------------------------|---|
| (1) Evaporator sensor | (4) Intake door actuator | (7) Sunload sensor |
| (2) Blower motor | (5) Air mix door actuator | (8) In-vehicle sensor (built-in with Auto A/C control module) |
| (3) Blower motor resistor | (6) Mode door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

Auto A/C Control Module I/O Signal

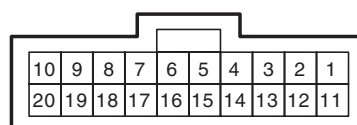
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

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)
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	
Engine coolant temperature sensor	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	A13 — B12	0 (ignition switch ON, rear window defogger switch ON)

Auto A/C Control Module I/O Signal

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

B: WIRING DIAGRAM

1. AIR CONDITIONER AUTO A/C LHD MODEL

<Ref. to WI-153, MANUAL A/C LHD MODEL, WIRING DIAGRAM, Air Conditioning System.>

2. AIR CONDITIONER AUTO A/C RHD MODEL

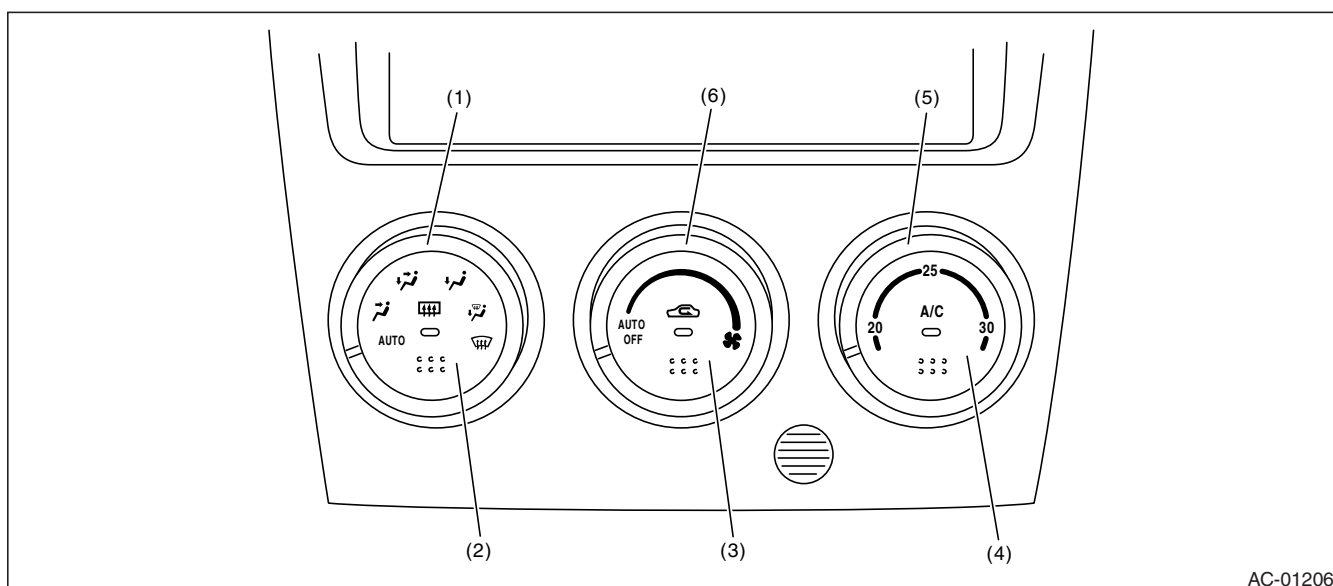
<Ref. to WI-159, MANUAL A/C RHD MODEL, WIRING DIAGRAM, Air Conditioning System.>

Diagnostic Chart for Self-Diagnosis

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

5. Diagnostic Chart for Self-Diagnosis

A: OPERATION



AC-01206

- | | | |
|---------------------------------|-------------------------|------------------------------|
| (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)-12, 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)-11, 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)-29, 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)-25, 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)-14, 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)-11, 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 so that 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)

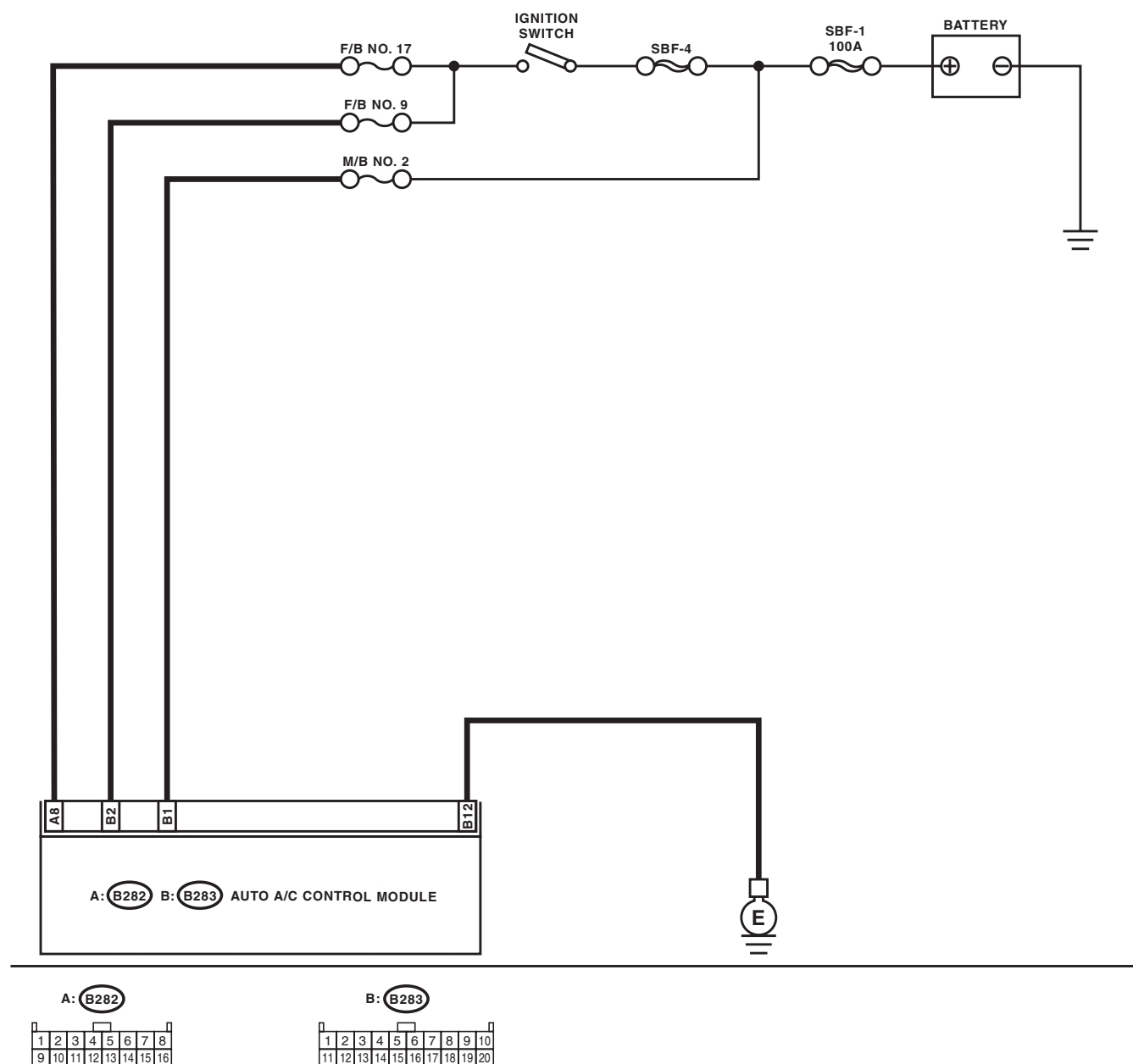
6. Diagnostics for A/C System Malfunction

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

TROUBLE SYMPTOM:

- "Set" temperature is not indicated on the display, switch LEDs are faulty and switches do not operate.
- Self-diagnosis system does not operate.

WIRING DIAGRAM:



AC-01236

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 A/C CONTROL MODULE POWER CIRCUIT. 1) Pull out the A/C control module connector. 2) Measure the voltage between 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 open circuit in harness for power supply line.
4 CHECK A/C CONTROL MODULE POWER CIRCUIT. Measure the voltage between 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 open circuit in harness for power supply line.
5 CHECK A/C CONTROL MODULE POWER CIRCUIT. Measure the voltage between 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 open circuit in harness for power supply line.
6 CHECK A/C CONTROL MODULE GROUND CIRCUIT. Measure the resistance of harness between 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 open circuit in harness for ground line.
7 CHECK POOR CONTACT. Check poor contact in A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.

Diagnostics for A/C System Malfunction

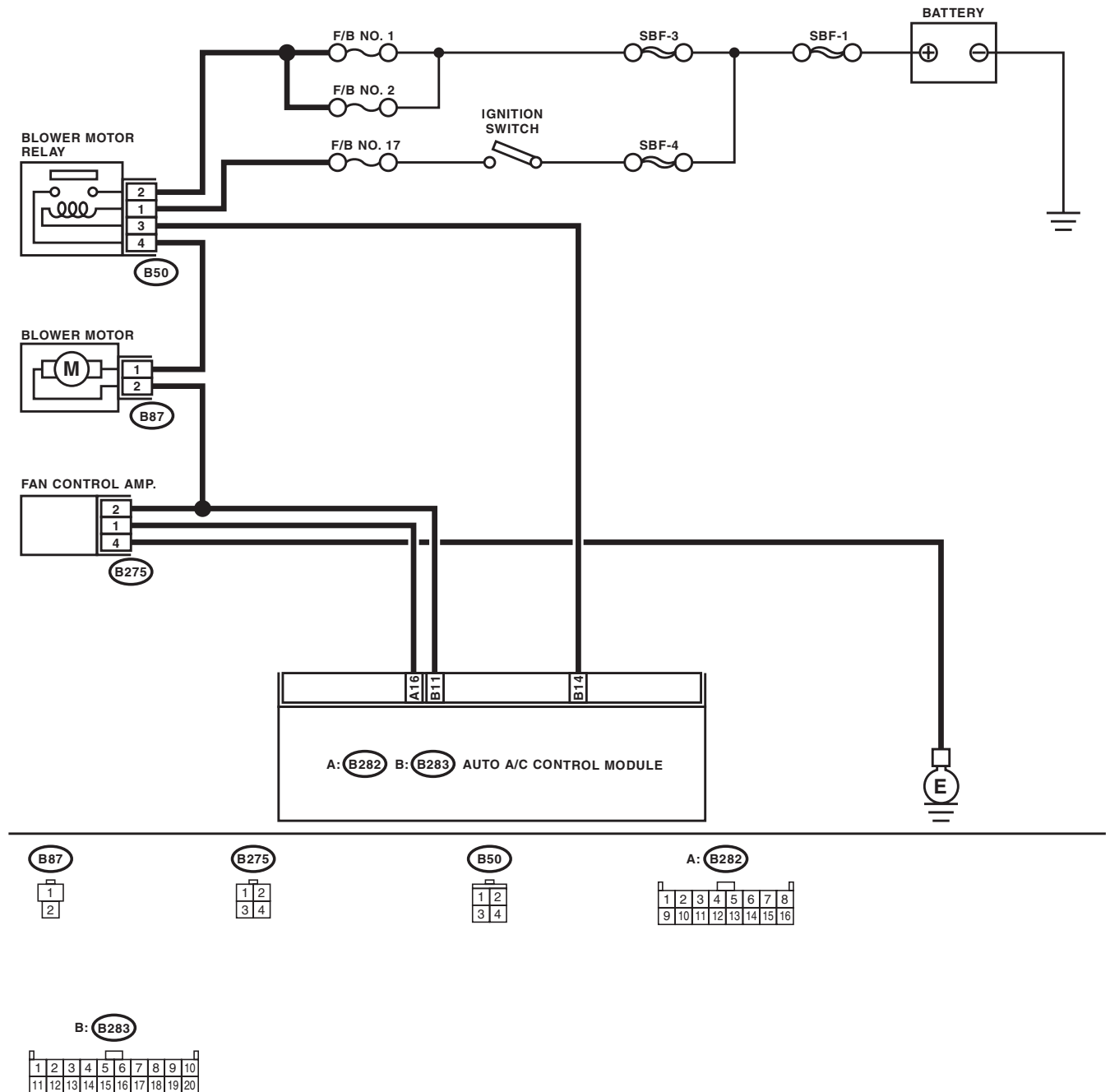
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

B: BLOWER FAN DOES NOT ROTATE.

TROUBLE SYMPTOM:

- Blower motor is not rotated.
- Blower motor is not rotated in "HI".

WIRING DIAGRAM:



AC-01237

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 blower switch to ON. 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 relay 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) Check 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. Check poor contact in A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.

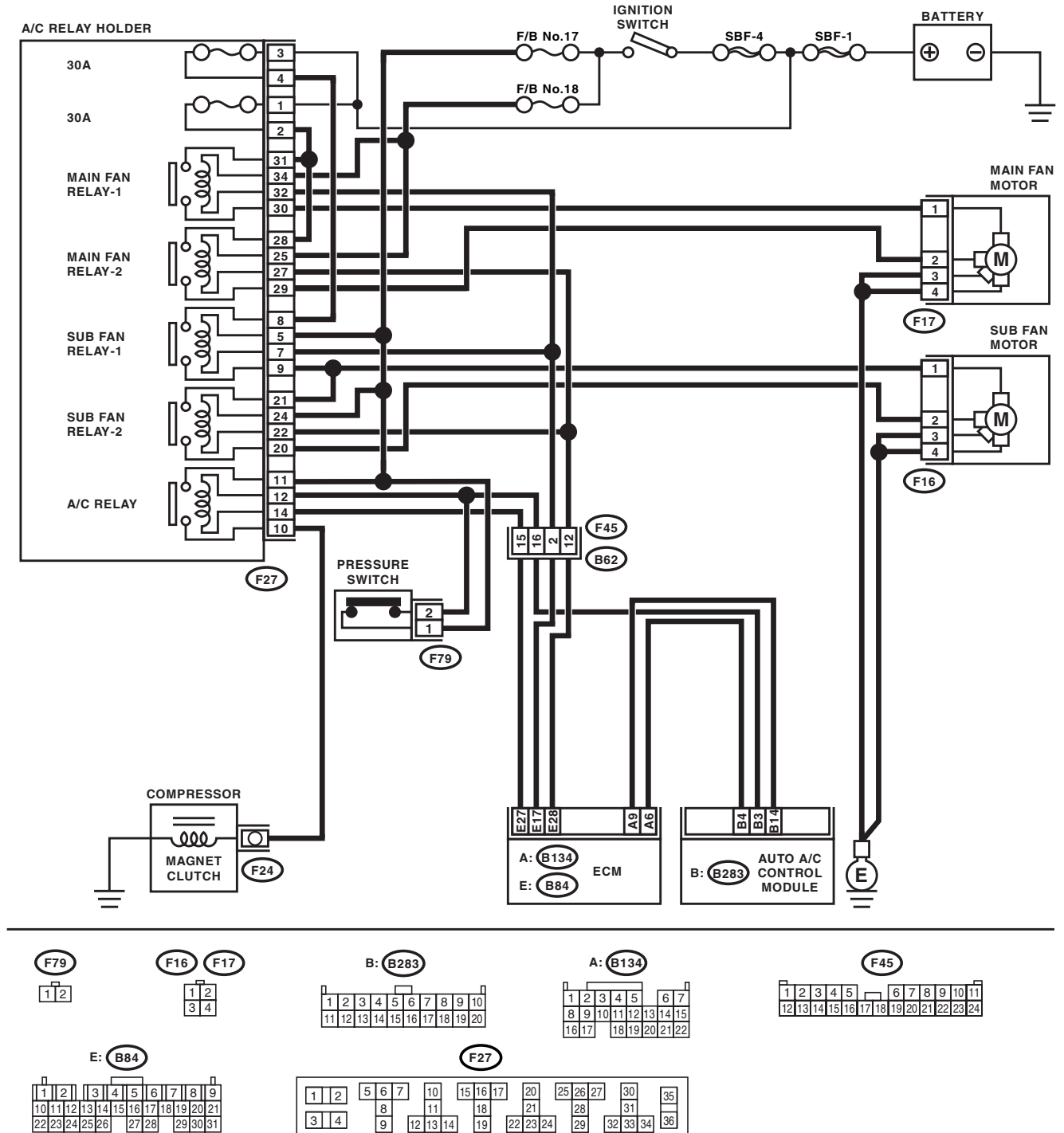
Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

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

WIRING DIAGRAM:

- LHD TURBO MODEL

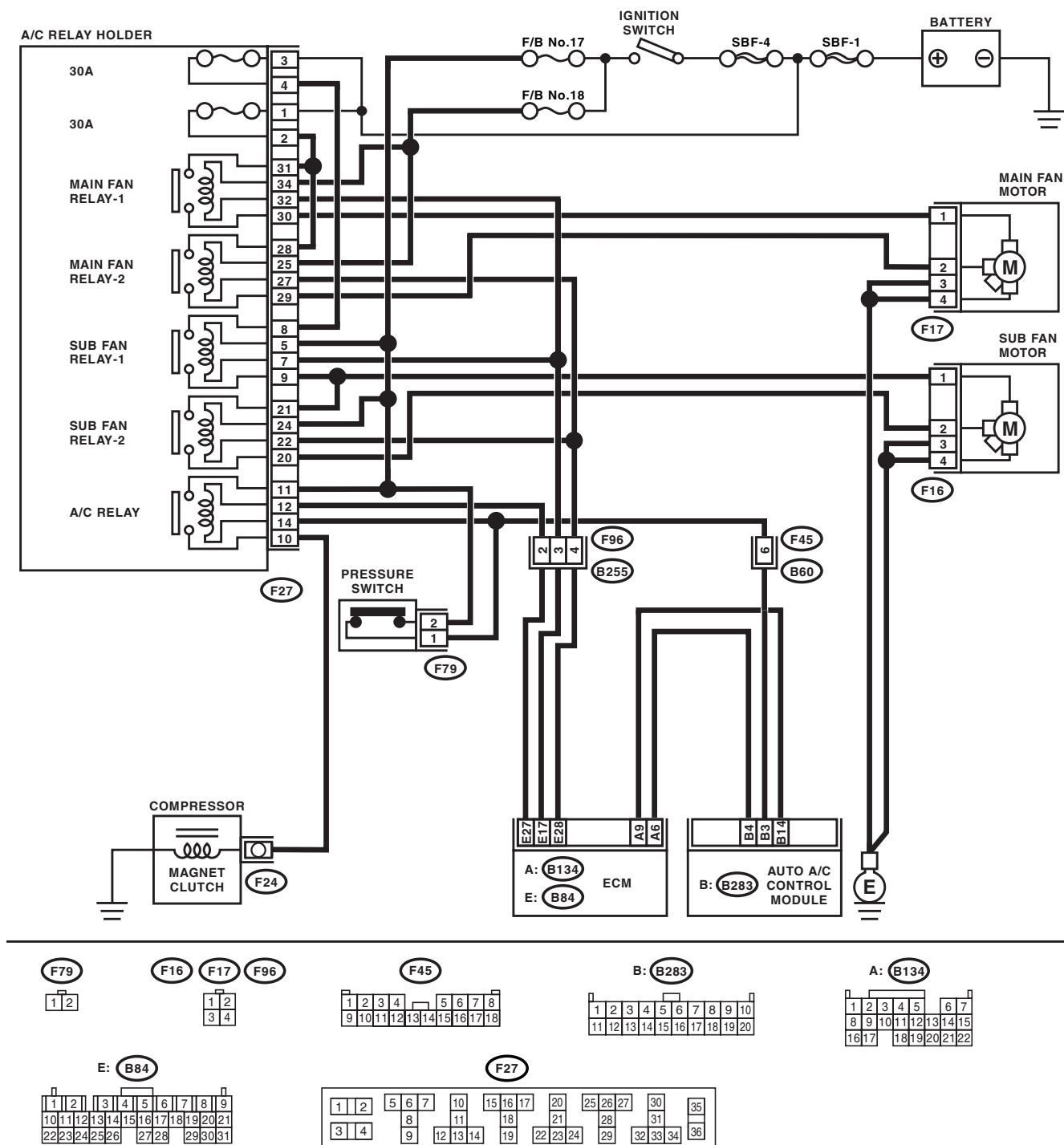


AC-01238

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

• RHD TURBO MODEL

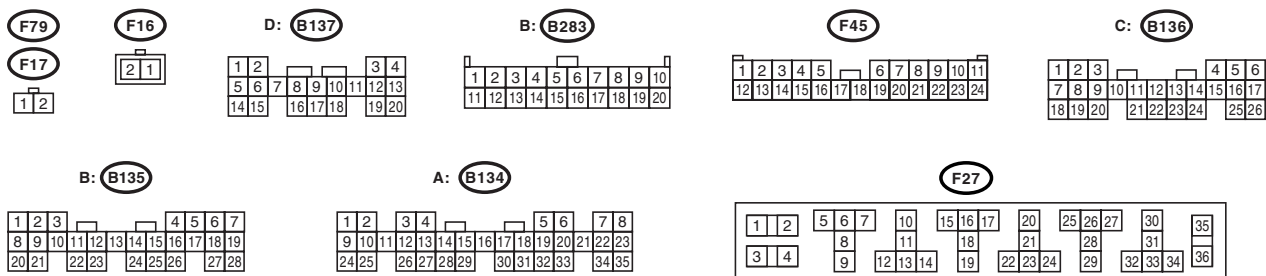
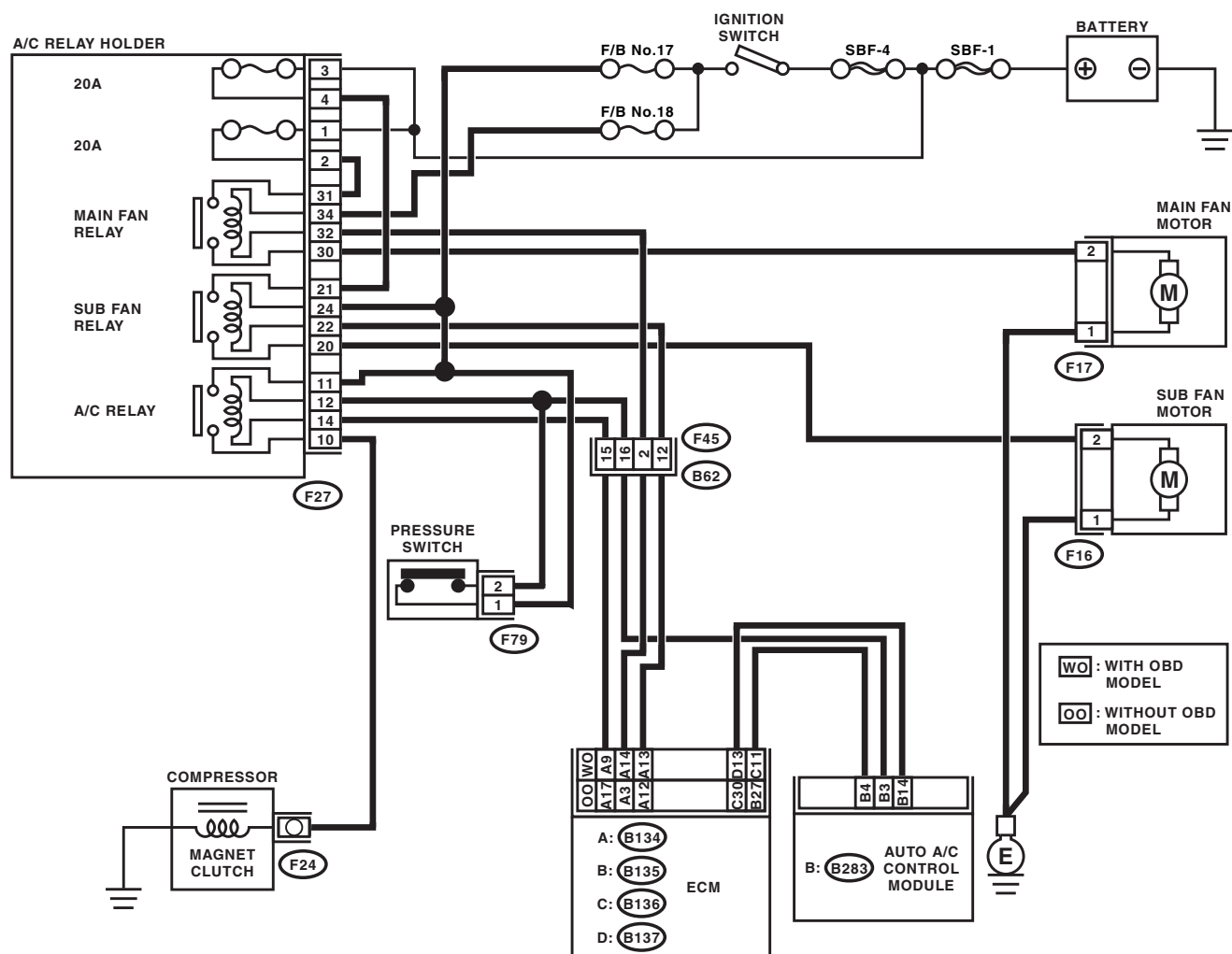


AC-01239

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

• LHD NON-TURBO MODEL

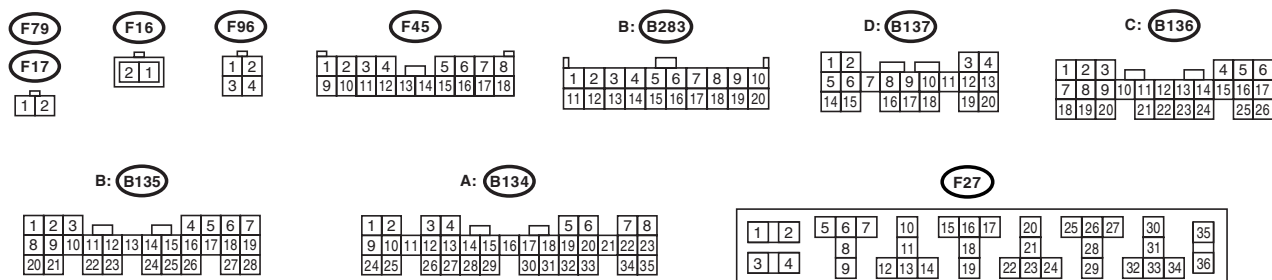
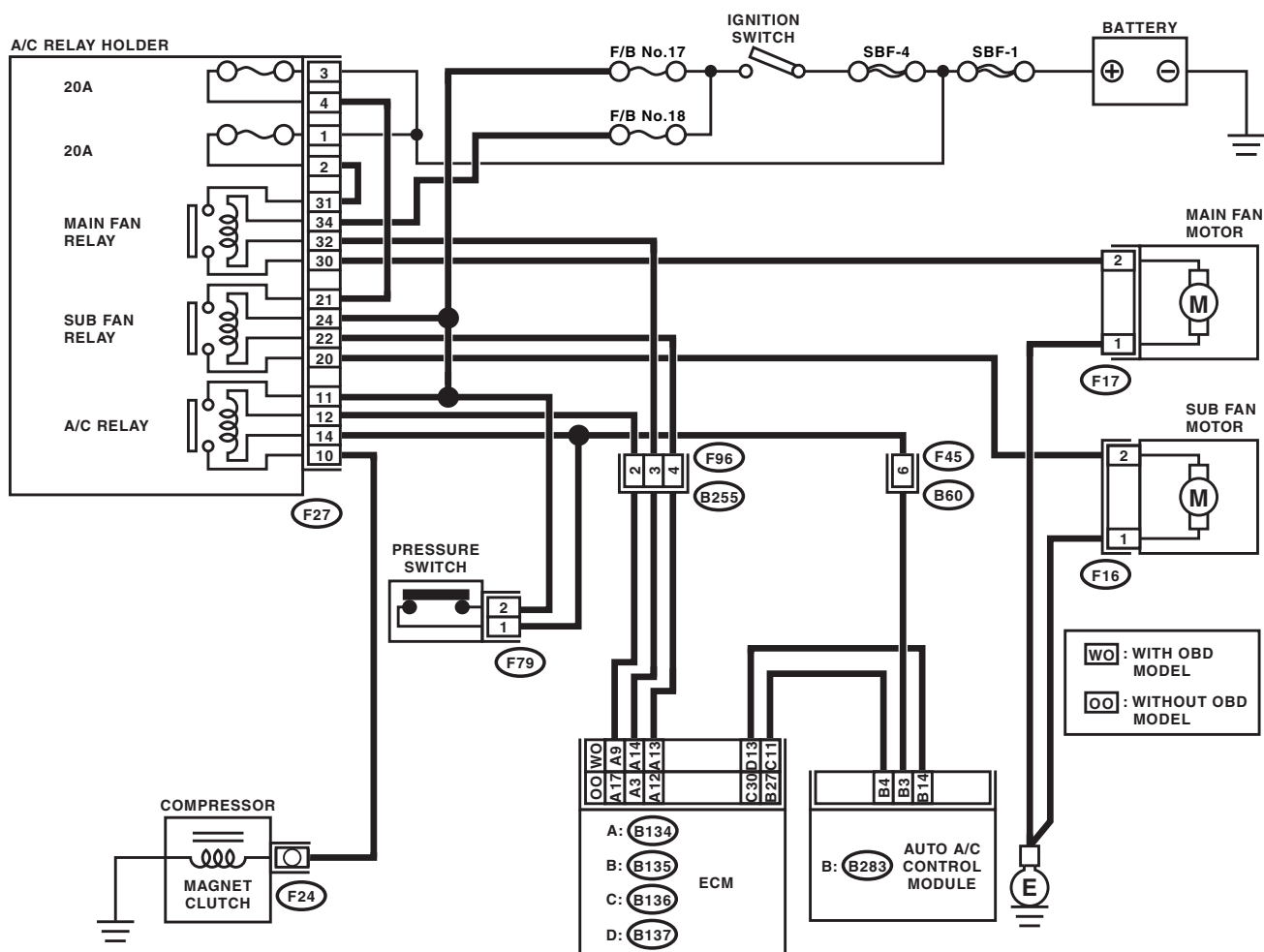


AC-01240

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

• RHD NON-TURBO MODEL



AC-01241

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) Stop the engine, and turn the ignition switch to ON. 2) Measure the signal voltage between A/C relay and chassis ground. Connector & terminal (F27) No. 12 (+) — 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-39, 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 Turbo model: (F17) No. 1, 2 (+) — Chassis ground (-): Non-turbo model: (F17) No. 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 Turbo model: (F17) No. 3, 4 — Chassis ground: Non-turbo model: (F17) No. 1 — 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.

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

	Step	Check	Yes	No
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.
9	CHECK MAIN FAN MOTOR. Connect the battery to main fan motor, and check rotate the main fan motor. Battery positive (+) terminal: No. 1, No. 2 (Turbo model) No. 2 (Non-turbo model) Battery negative (-) terminal: No. 3, No. 4 (Turbo model) No. 1 (Non-turbo model)	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 Turbo model: (F16) No. 1, 2 (+) — Chassis ground (-): Non-turbo model: (F16) No. 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 Turbo model: (F16) No. 3, 4 — Chassis ground: Non-turbo model: (F16) No. 1 — 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 to sub fan motor, and check rotate the sub fan motor. Battery positive (+) terminal: No. 1, No. 2 (Turbo model) No. 2 (Non-turbo model) Battery negative (-) terminal: No. 3, No. 4 (Turbo model) No. 1 (Non-turbo model)	Does the sub fan rotate?	Repair the poor contact in sub fan motor connector.	Replace the sub fan motor with a new one.

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
15 CHECK EACH SENSOR AND POTENTIOMETER. Check the sensors and potentiometer for proper operation using the self-diagnostic function. <Ref. to AC(diag)-9, 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)-29, Diagnostic Procedure for Sensors.>
16 CHECK CONNECTION OF ASPIRATOR HOSE. Check the connection of aspirator hose.	Is the connection of aspirator hose correct?	Go to step 17.	Connect the aspirator hose correctly.
17 CHECK EACH ACTUATOR. Check the actuators for proper operation using the self-diagnostic function. <Ref. to AC(diag)-9, 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)-23, Diagnostic Procedure for Actuators.>
18 CHECK POOR CONTACT. Check poor contact in A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.

Diagnostic Procedure for Actuators

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

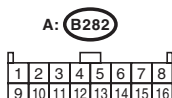
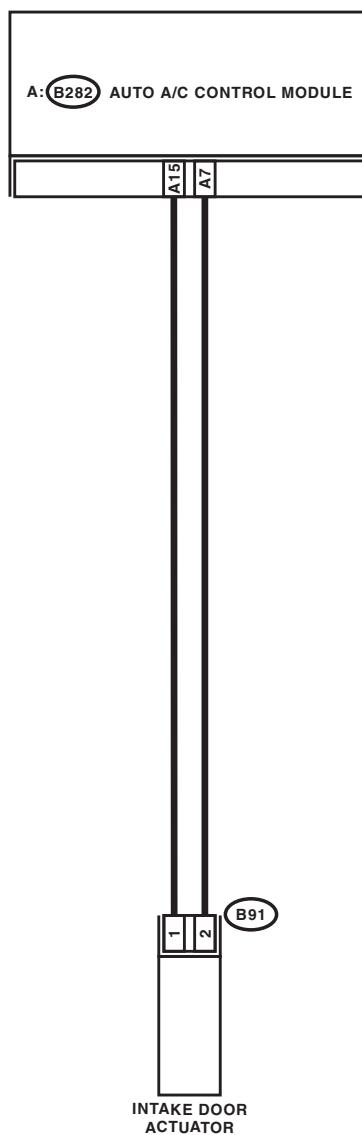
7. Diagnostic Procedure for Actuators

A: INTAKE DOOR ACTUATOR

TROUBLE SYMPTOM:

FRESH/RECIRC mode is not changed.

WIRING DIAGRAM:



AC-01242

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 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 open 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 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 open circuit in harness for power supply line.
4 CHECK HARNESS CONNECTOR BETWEEN A/C CONTROL MODULE AND FRESH/RECIRC ACTUATOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from A/C control module and intake door actuator. 3) Measure the resistance of harness between 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 A/C control module and intake door actuator.
5 CHECK HARNESS CONNECTOR BETWEEN A/C CONTROL MODULE AND FRESH/RECIRC ACTUATOR. Measure the resistance of harness between 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 A/C control module and intake door actuator.
6 CHECK POOR CONTACT. Check poor contact in A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.

Diagnostic Procedure for Actuators

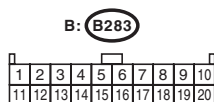
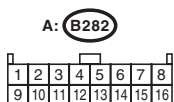
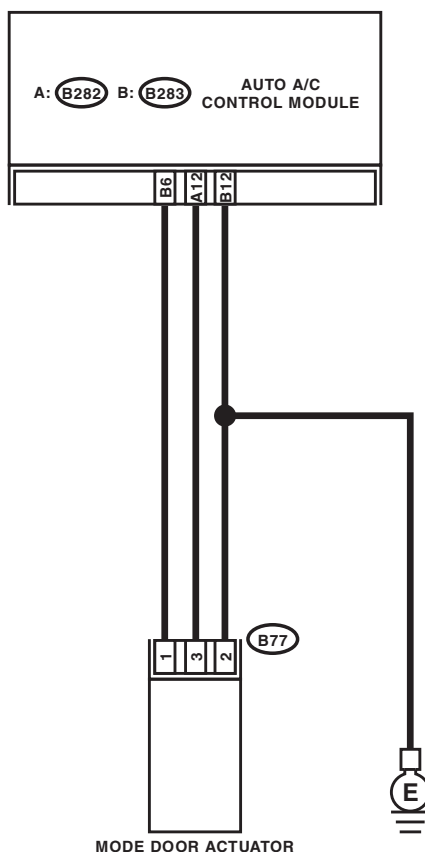
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

B: MODE DOOR ACTUATOR

TROUBLE SYMPTOM:

Air flow outlet is not changed.

WIRING DIAGRAM:



AC-01243

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. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.

Diagnostic Procedure for Actuators

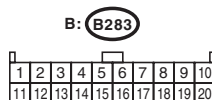
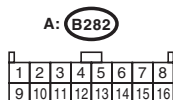
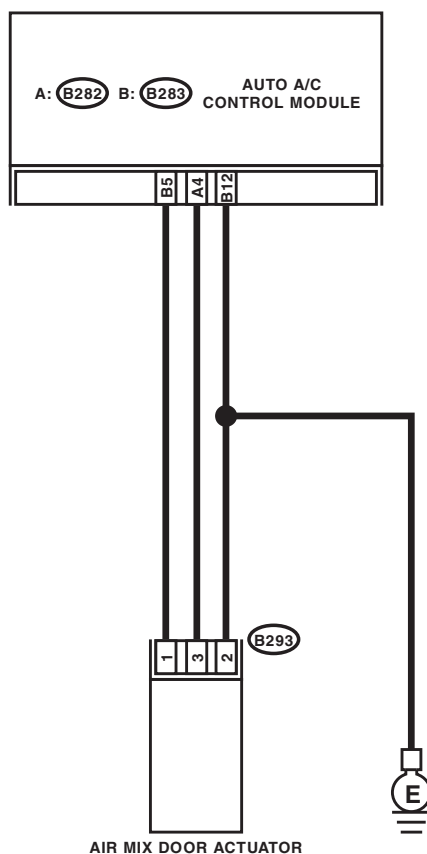
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

C: AIR MIX DOOR ACTUATOR

TROUBLE SYMPTOM:

Outlet air temperature is not changed.

WIRING DIAGRAM:



AC-01244

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. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

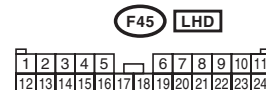
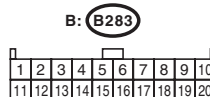
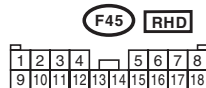
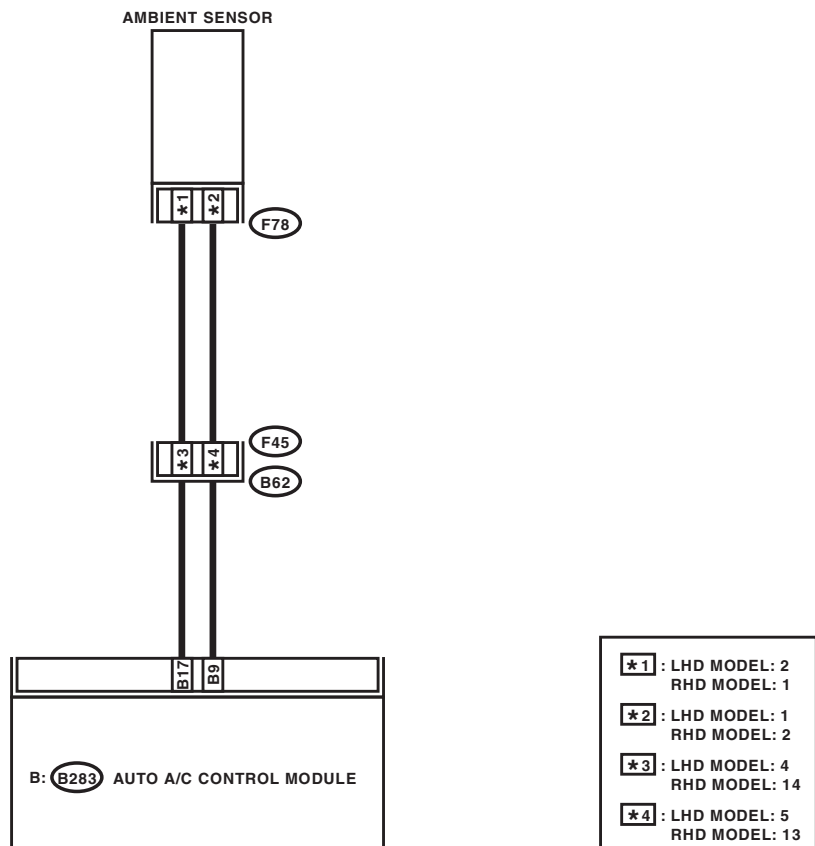
8. Diagnostic Procedure for Sensors

A: AMBIENT SENSOR

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



AC-01245

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. Terminals No. 1 — No. 2:	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. Connector & terminal LHD model: (F78) No. 1 (+) — No. 2 (-): RHD model: (F78) No. 2 (+) — No. 1 (-):	Is the voltage approx. 5 V?	Go to step 6.	Go to step 3.
3 CHECK OUTPUT SIGNALS FROM A/C CONTROL MODULE. 1) Turn the ignition switch to OFF. 2) Pull out the 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 A/C control module. Connector & terminal (B283) No. 9 (+) — No. 17 (-):	Is the voltage approx. 5 V?	Go to step 4.	Go to step 6.
4 CHECK HARNESS CONNECTOR BETWEEN A/C CONTROL MODULE AND AMBIENT SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from A/C control module. 3) Measure the resistance of harness between A/C control module and ambient sensor. Connector & terminal LHD model: (F78) No. 1 — (B283) No. 9: RHD model: (F78) No. 2 — (B283) No. 9:	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the open circuit in harness between A/C control module and ambient sensor.
5 CHECK HARNESS CONNECTOR BETWEEN A/C CONTROL MODULE AND AMBIENT SENSOR. Measure the resistance of harness between A/C control module and ambient sensor. Connector & terminal LHD model: (F78) No. 2 — (B283) No. 17: RHD model: (F78) No. 1 — (B283) No. 17:	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit in harness between A/C control module and ambient sensor.
6 CHECK POOR CONTACT. Check poor contact in A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

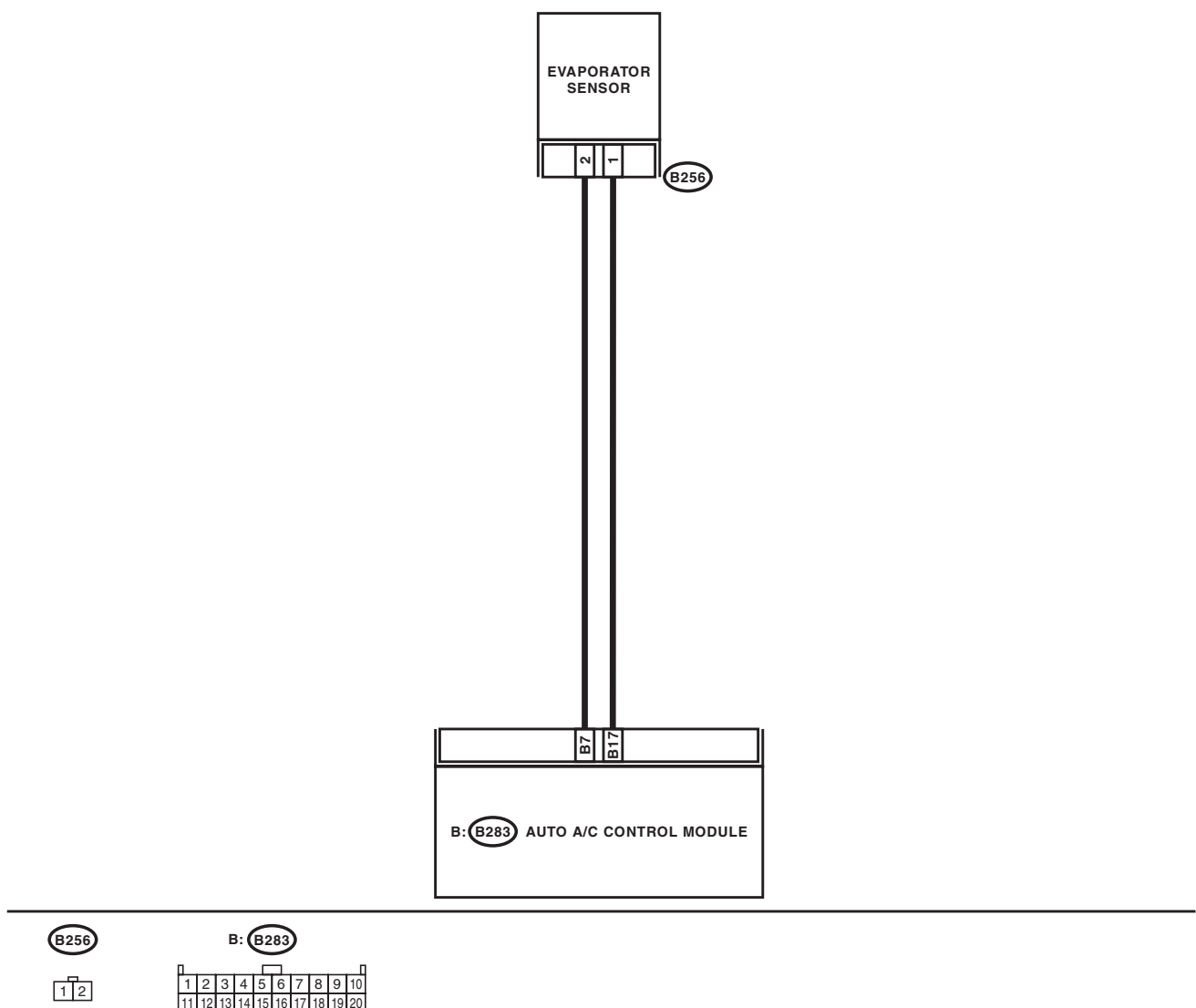
B: IN-VEHICLE SENSOR

TROUBLE SYMPTOM:

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

C: EVAPORATOR SENSOR

WIRING DIAGRAM:



AC-01246

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 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 A/C CONTROL MODULE. 1) Turn the ignition switch to OFF. 2) Pull out the A/C control module. 3) Turn the ignition switch to ON. 4) Measure the voltage between 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 A/C CONTROL MODULE AND EVAPORATOR SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from A/C control module. 3) Measure the resistance of harness between 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 A/C control module and evaporator sensor.
5	CHECK HARNESS CONNECTOR BETWEEN A/C CONTROL MODULE AND EVAPORATOR SENSOR. Measure the resistance of harness between 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 A/C control module and evaporator sensor.
6	CHECK POOR CONTACT. Check poor contact in A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

D: SUNLOAD SENSOR

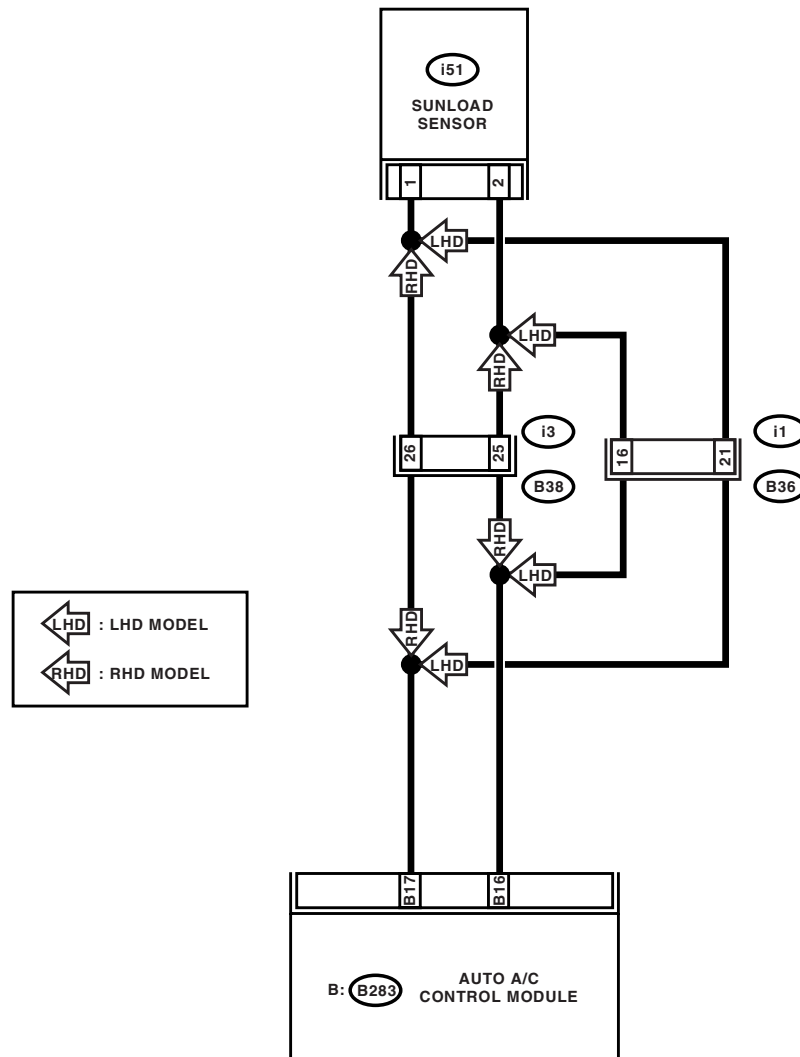
TROUBLE SYMPTOM:

- 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, open circuit might be indicated. Always check the sunload sensor at a place where sun shines directly on it.

WIRING DIAGRAM:



i51

B: B283

i1

i3

1	2
---	---

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

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

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				

AC-01247

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. Connector & terminal (i51) No. 2 (+) — Chassis ground (-):	Is the voltage approx. 5 V?	Go to step 3.	Go to step 2.
2	CHECK HARNESS CONNECTOR BETWEEN A/C CONTROL MODULE AND SUNLOAD SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from A/C control module. 3) Measure the resistance of harness between A/C control module and sunload sensor. Connector & terminal (i51) No. 2 — (B283) No. 16:	Is the resistance less than 1 Ω ?	Go to step 3.	Repair the open circuit in harness between A/C control module and sunload sensor.
3	CHECK HARNESS CONNECTOR BETWEEN A/C CONTROL MODULE AND SUNLOAD SENSOR. Measure the resistance of harness between A/C control module and sunload sensor. Connector & terminal (i51) No. 1 — (B283) No. 17:	Is the resistance less than 1 Ω ?	Go to step 4.	Repair the open circuit in harness between A/C control module and sunload sensor.
4	CHECK THE INPUT VOLTAGE TO A/C CONTROL MODULE. 1) Connect the A/C control module connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between A/C control module connector terminals. Connector & terminal (B283) No. 16 (+) — (B283) No. 17 (-):	Is the voltage approx. 2.5 V?	Go to step 5.	Replace the sunload sensor.
5	CHECK POOR CONTACT. Check poor contact in A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the 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. 2, F/B No. 9, 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. 2, F/B No. 9, 17) • Connector (Poor contact)
Blower fan does not rotate or fan speed cannot be controlled.	• Fuse (F/B No. 1, 2, 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

Diagnostics with Phenomenon

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

AIRBAG SYSTEM

AB

	Page
1. General Description	2
2. Airbag Connector	8
3. Inspection Locations After a Collision	10
4. Driver's Airbag Module	12
5. Passenger's Airbag Module	13
6. Side Airbag Module	14
7. Airbag Control Module	16
8. Side Airbag Sensor	17
9. Roll Connector	18
10. Front Sub Sensor	19
11. Airbag Module Disposal (Deployment Processing On Vehicle)	20
12. Airbag Module Disposal (Deployment Processing After Removal from Vehicle)	24

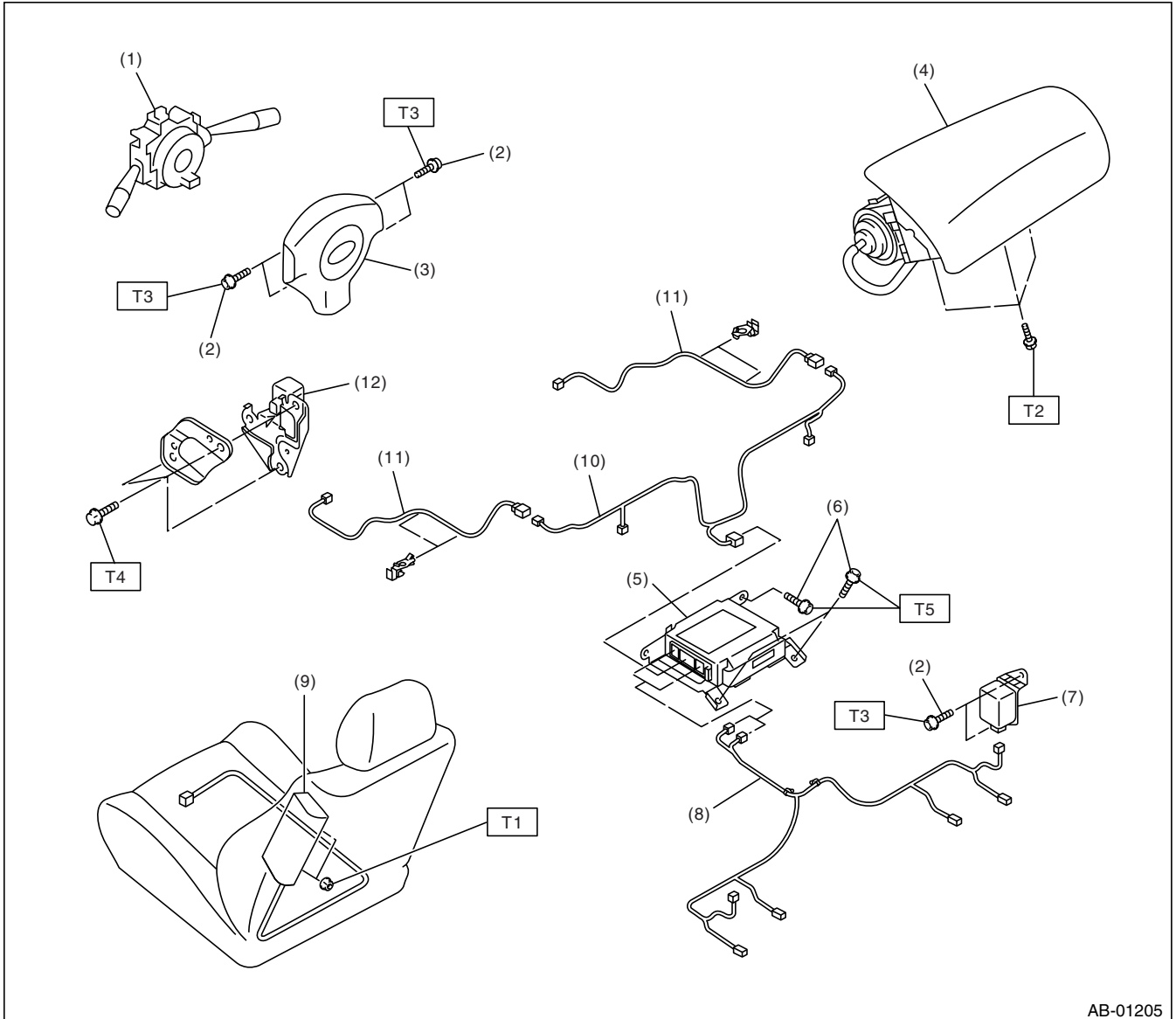
General Description

AIRBAG SYSTEM

1. General Description

A: COMPONENT

1. SRS AIRBAG



AB-01205

- (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

Tightening torque: N·m (kgf-m, ft-lb)

T1: 6 (0.61, 4.4)

T2: 7.5 (0.76, 5.5)

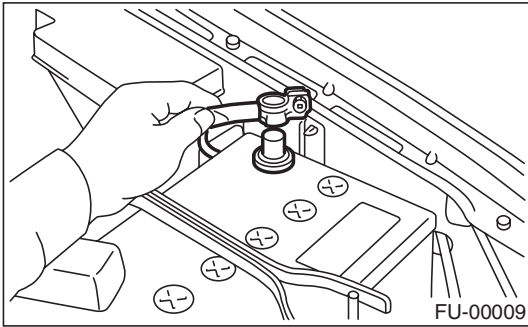
T3: 10 (1.0, 7.2)

T4: 20 (2.0, 14.5)

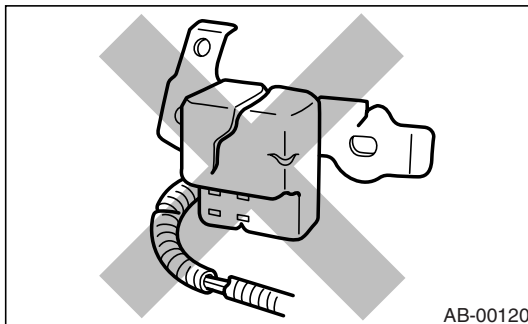
T5: 25 (2.5, 18.1)

B: CAUTION

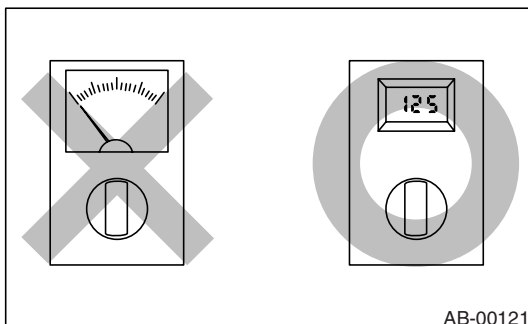
- When servicing a vehicle, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for more than 20 seconds before starting work.
- The airbag system is fitted with a backup power source. If the airbag system is serviced within 20 seconds after the ground cable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



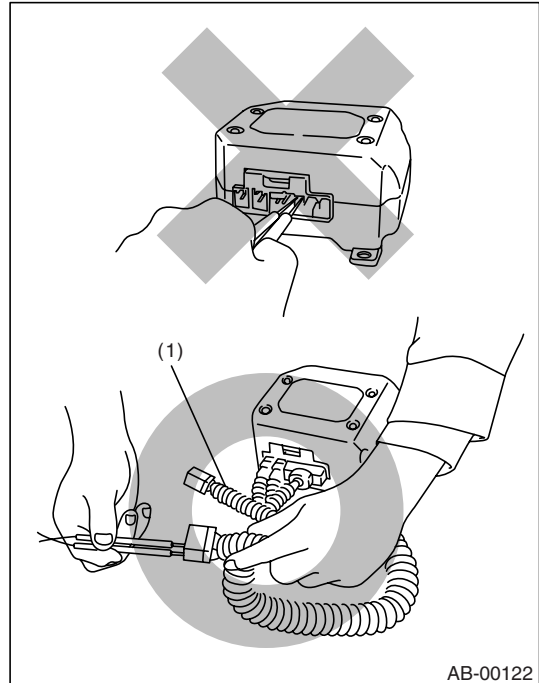
- If the airbag warning light illuminates, repair the vehicle immediately. Airbag or pretensioner may inflate incorrectly, or not inflate in collision.
- If sensors, airbag module, airbag control module, pretensioner, and harness are deformed or damaged, replace them with new genuine parts.



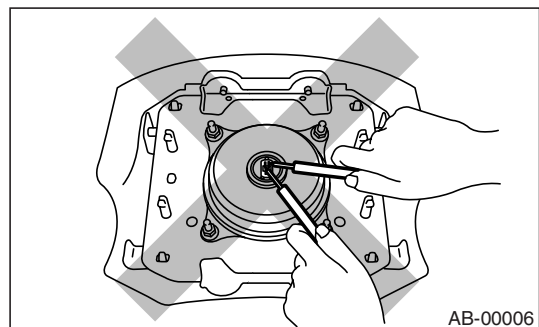
- When checking the airbag system, be sure to use a digital circuit tester. Infinitesimal electric current in an analog circuit tester may cause the airbag to activate erroneously.



- 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.



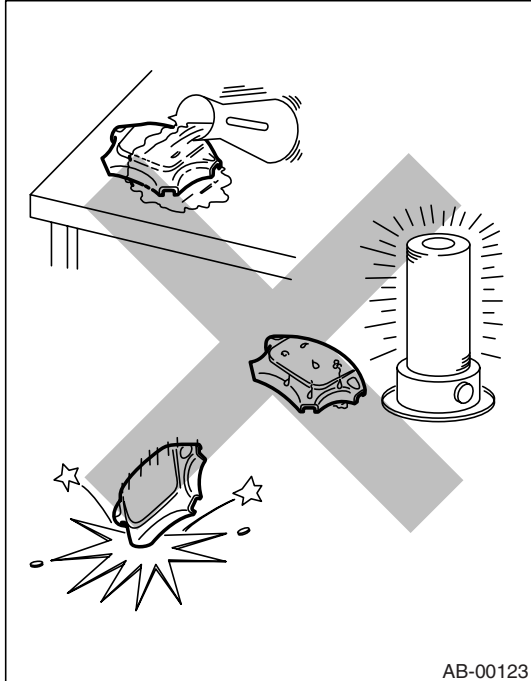
- Do not check continuity of either of the airbag modules for driver, passenger or side, or pretensioner.



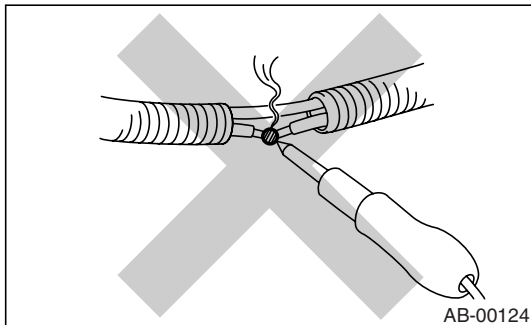
General Description

AIRBAG SYSTEM

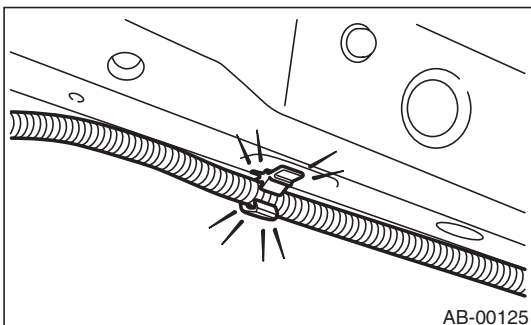
- Do not drop the airbag modulator parts, subject them to high temperature over 93°C (199°F), or let water, oil, or grease get on them; otherwise, the internal parts may be damaged and reliability greatly lowered.



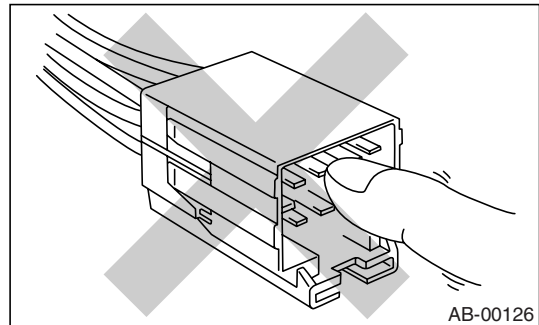
- If any damage, opening, or rust is found on the airbag system wire harness, do not attempt to repair using soldering equipment. Be sure to replace the faulty harness with a new genuine part.



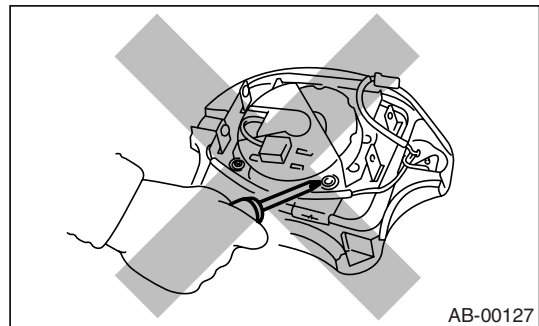
- Install the wire harness securely with the specified clips to avoid interference or tangled up with other parts.



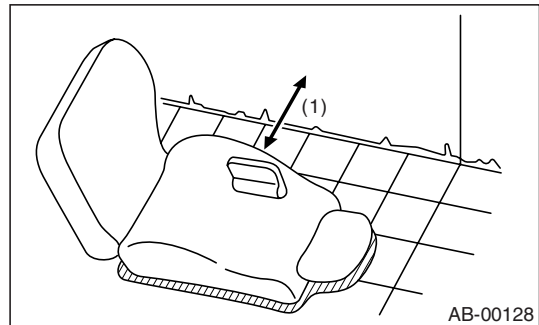
- Do not allow water or oil to come in contact with the connector terminals. Do not touch the connector terminals.



- 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.



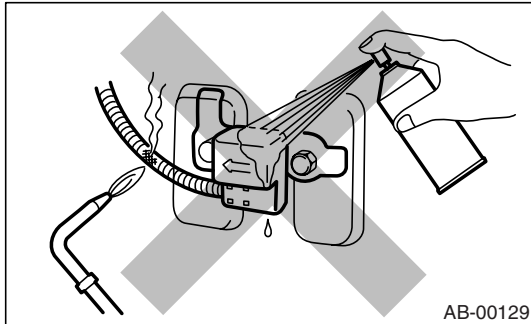
(1) More than 200 mm (8 in)

- 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.

General Description

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.

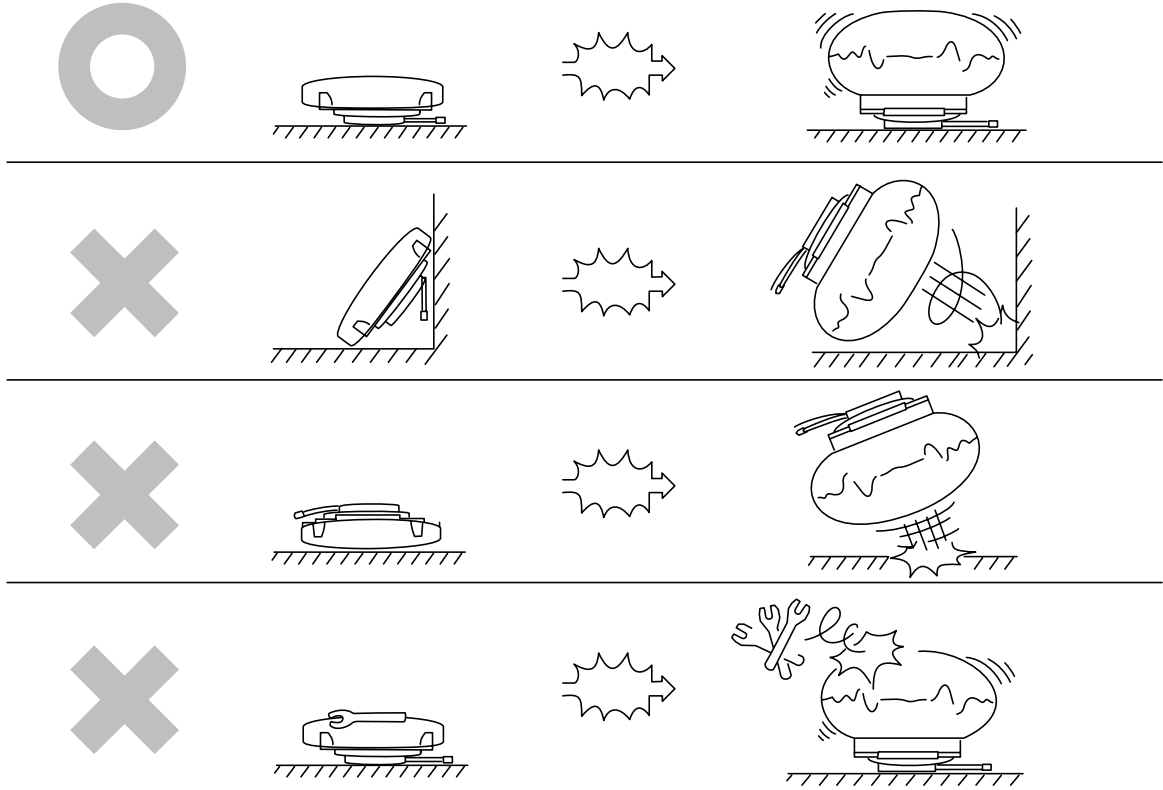


General Description

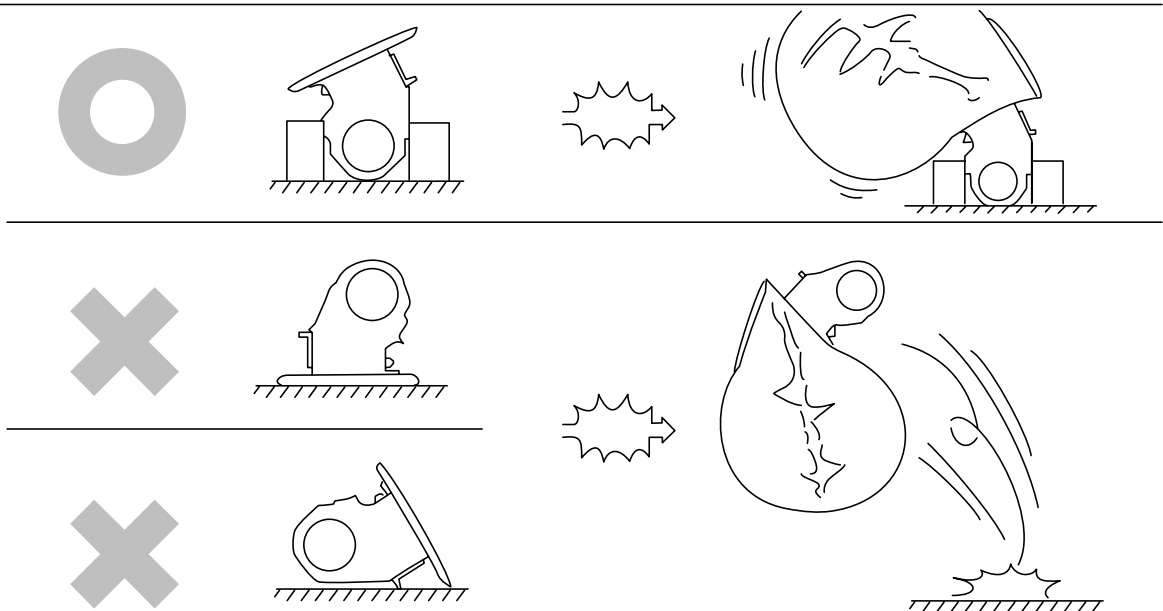
AIRBAG SYSTEM

- 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)



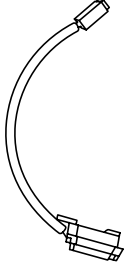
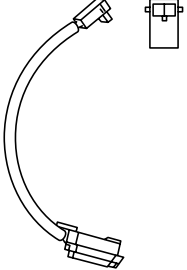
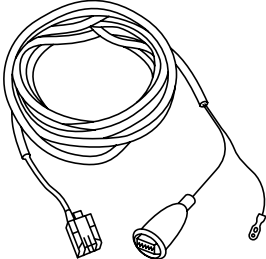
AB-00130

(1) Driver's airbag module

(2) Passenger's airbag module

C: PREPARATION TOOL

1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299FC030	98299FC030	DEPLOYMENT ADAPTER A	- Used for deploying the driver's airbag module. - Used for deploying the passenger's airbag module. - Used for deploying the side airbag module. - Used with DEPLOYMENT TOOL (98299PA030).
 ST98299SA010	98299SA010	DEPLOYMENT ADAPTER D	- Used for deploying the driver's airbag module. - Used with DEPLOYMENT TOOL (98299PA030). - Can not reuse.
 ST98299PA030	98299PA030	DEPLOYMENT TOOL	- Used for deploying the airbag module. - Used with each DEPLOYMENT ADAPTER.

2. GENERAL TOOL

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

Airbag Connector

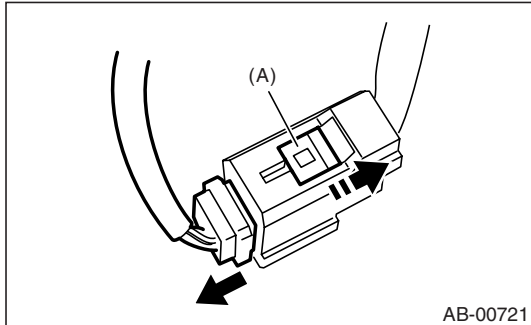
2. Airbag Connector

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.

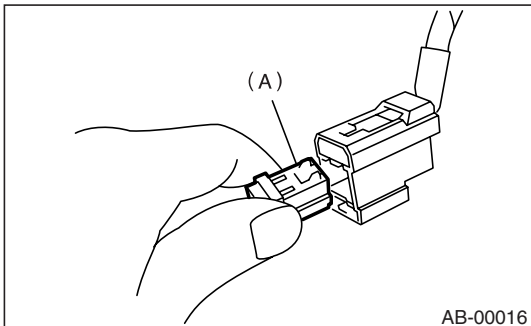


CAUTION:

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.



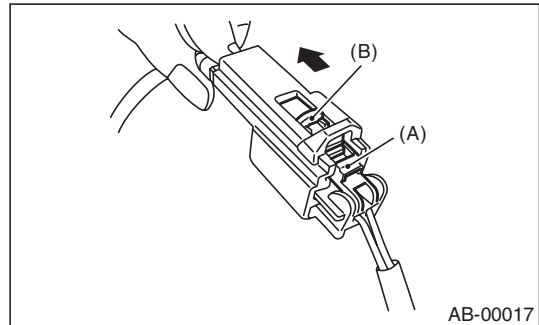
CAUTION:

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 (BETWEEN AIRBAG HARNESS AND ROLL CONNECTOR), PASSENGER'S AIRBAG AND SIDE AIRBAG

1) How to disconnect:

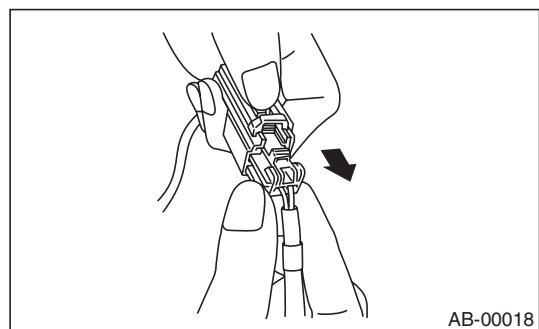
- (1) Push the lock arm (A).
- (2) With the lock arm (A) pushed in, move the slide lock (B) in the direction of the arrow.



- (3) With the slide lock (B) pulled, release the lock arm (A) to its original position, and then disconnect the connector.

CAUTION:

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

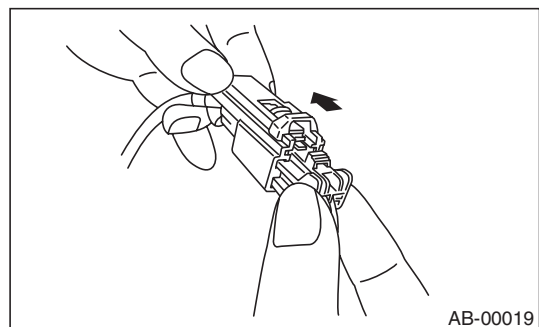


2) How to connect:

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

CAUTION:

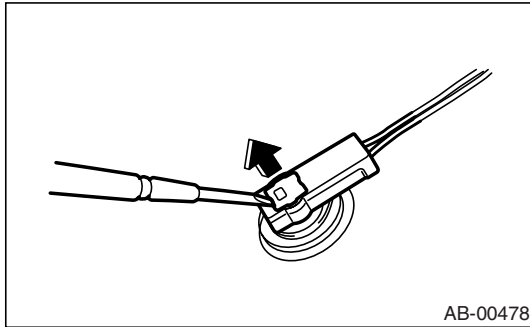
Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.



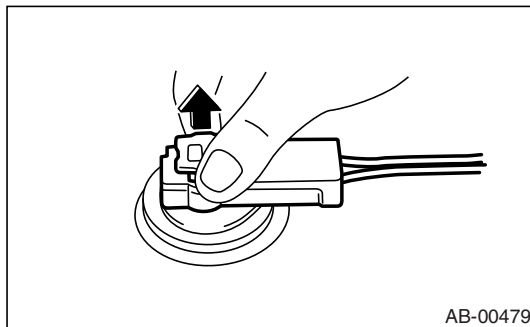
3. DRIVER'S AIRBAG MODULE AND PRE-TENSIONER

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.

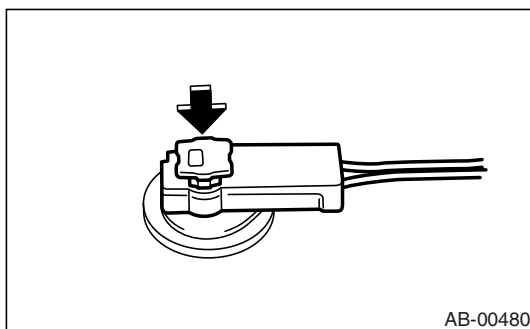


2) How to connect:

Connect the connector in reverse order of disconnecting. At this time, be sure to insert the connector 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.



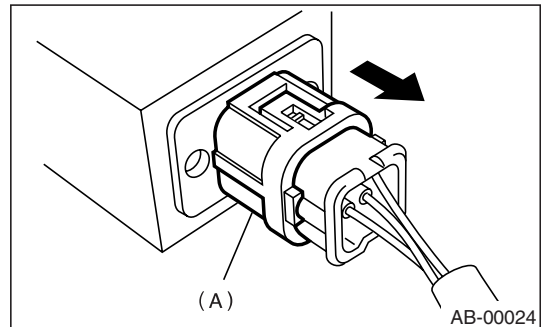
4. FRONT SUB-SENSOR AND SIDE AIRBAG SENSOR

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.

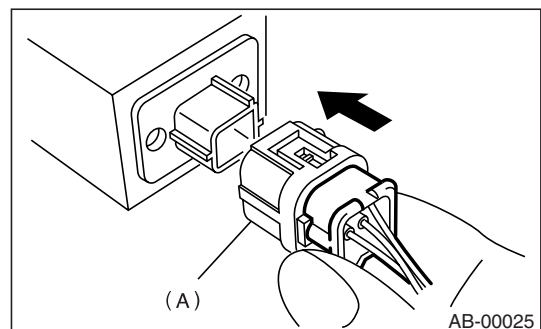


2) How to connect:

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.



Inspection Locations After a Collision

AIRBAG SYSTEM

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)
- 3) Side airbag module (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 on any side, 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.

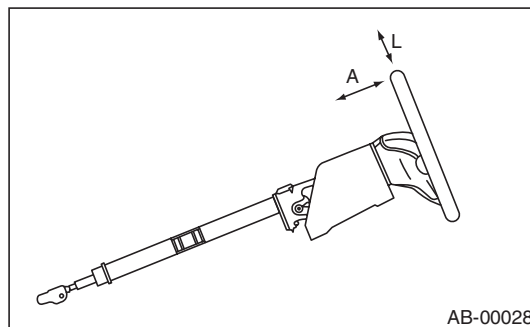
Specifications:

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.

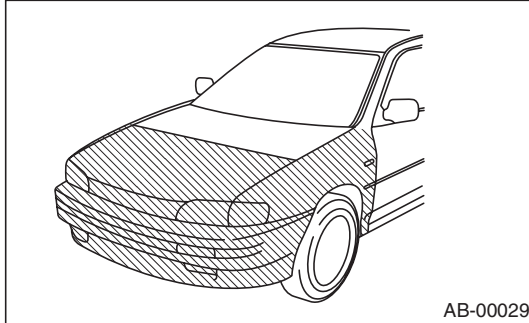
4. AIRBAG CONTROL MODULE

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

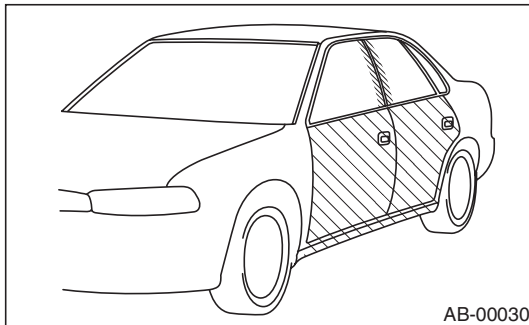
If the section of vehicle as shown in the figure is damaged, check for the following items, and replace the damaged parts with new parts.



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

6. SIDE AIRBAG SENSOR

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



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

7. ROLL CONNECTOR

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

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

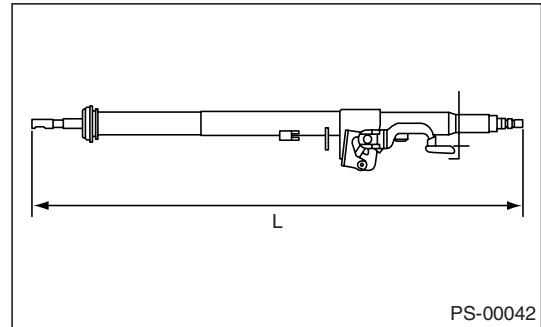
8. STEERING SHAFT

Check for the following, and replace damaged parts with new parts.
Overall length of steering column should be within specifications.

Specifications:

Overall length L

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



If necessary, replace it with a new part.

Driver's Airbag Module

AIRBAG SYSTEM

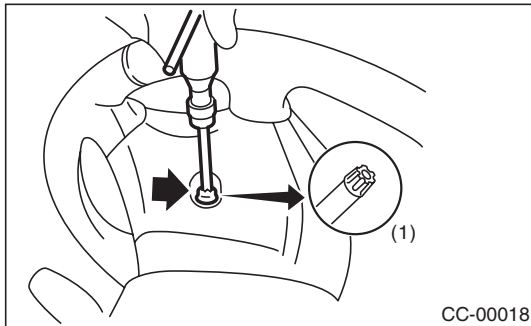
4. Driver's Airbag Module

A: REMOVAL

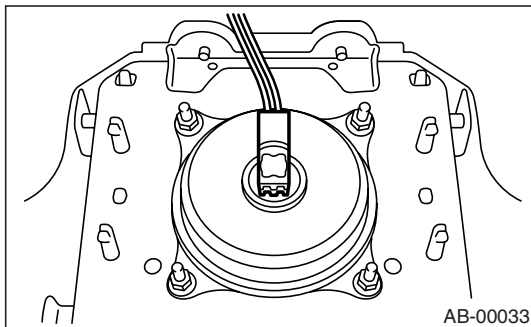
CAUTION:

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 (1), remove the two TORX® bolts on side of steering wheel.



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



- 7) Refer to "CAUTION" for handling of a removed airbag module. <Ref. to AB-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.

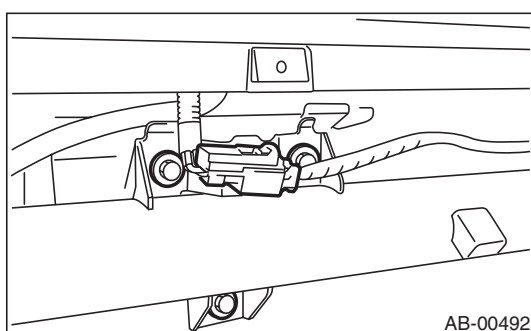
5. Passenger's Airbag Module

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-42, 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 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.

Side Airbag Module

6. Side Airbag Module

A: REMOVAL

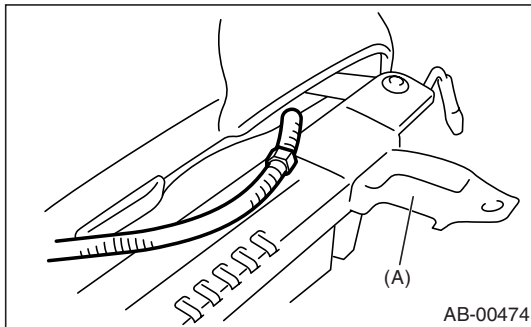
CAUTION:

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

NOTE:

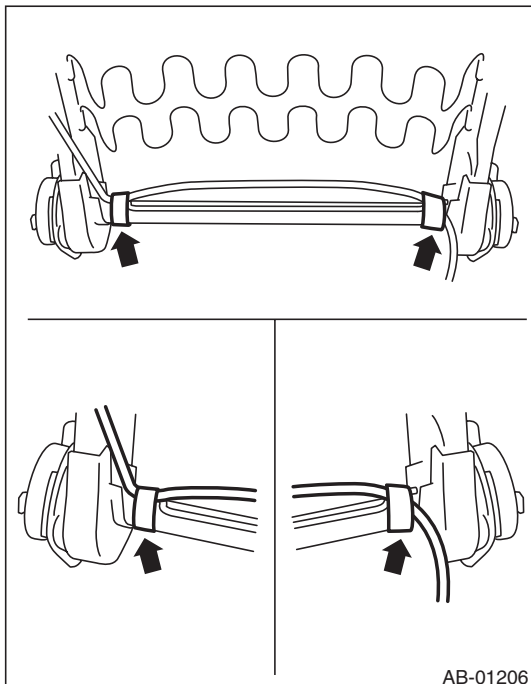
Remove the passenger's side by referring to driver's side.

- 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 seat from the vehicle. <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.

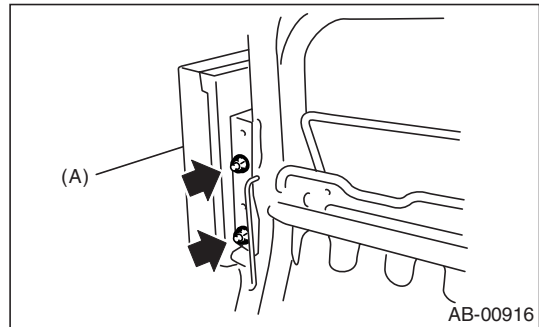


- 5) Remove the backrest cover. <Ref. to SE-6, DIS-ASSEMBLY, Front Seat.>

- 6) Remove the side airbag harness from backrest frame assembly.



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

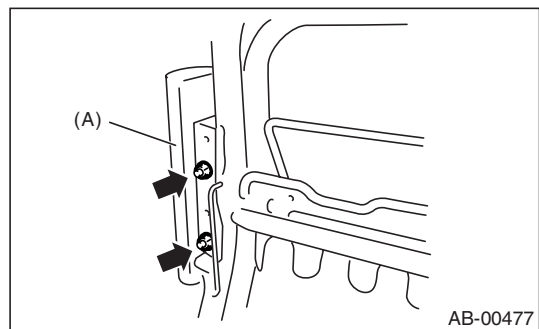


B: INSTALLATION

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

Tightening torque:

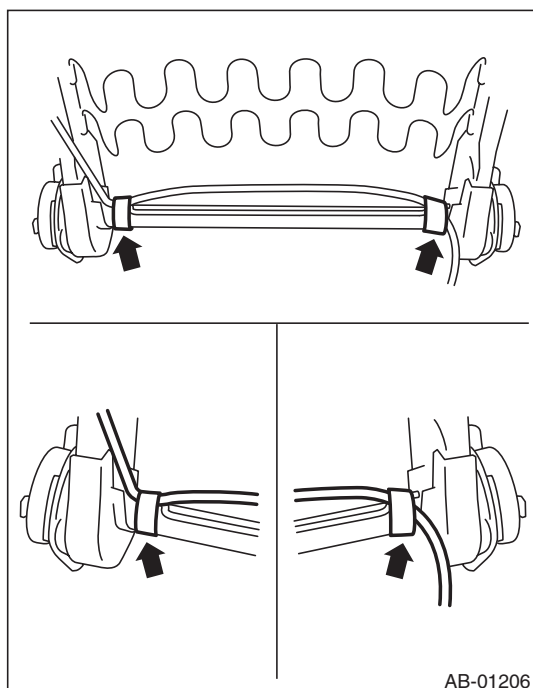
6 N·m (0.61 kgf-m, 4.4 ft-lb)



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

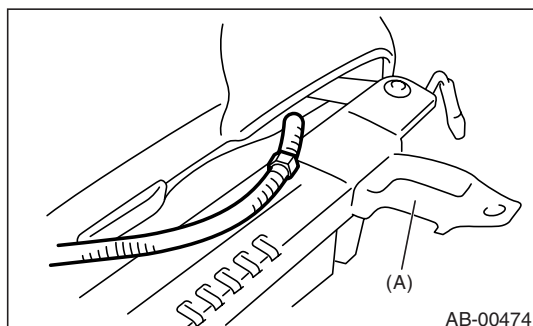
NOTE:

Secure the harness to its original position of seat.



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

5) Install the side airbag harness to slide rail IN (A).



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)

<Replacement parts>

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

<Other replacement parts, which found to be damaged by visual check>

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

2) 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.

3) Without side clash (dirt and damage of cover)

Replace the corresponding part with a new one.

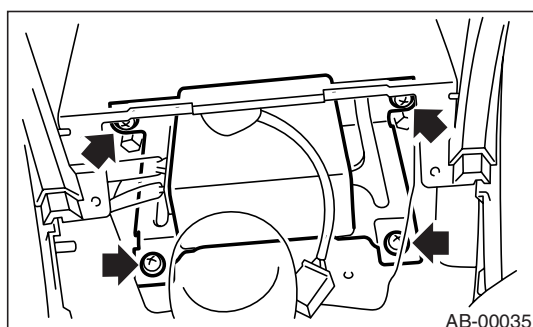
7. Airbag Control Module

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

- 1) Turn 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-45, REMOVAL, Console Box.>
- 4) Remove the center console panel. <Ref. to EI-46, REMOVAL, Instrument Panel Assembly.>
- 5) Disconnect the connector from airbag control module.
- 6) Remove the four bolts to remove airbag control module.



B: INSTALLATION

CAUTION:

Use new hexagon head bolts (exclusive part) 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

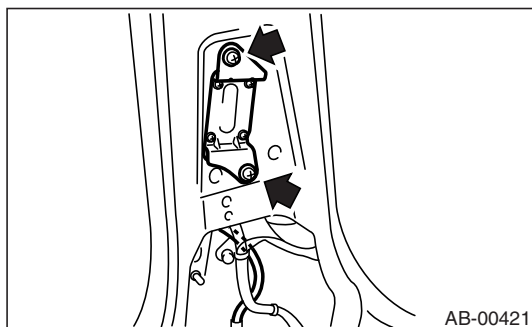
Check for the following, and replace damaged parts with new parts.

- 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-12, 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

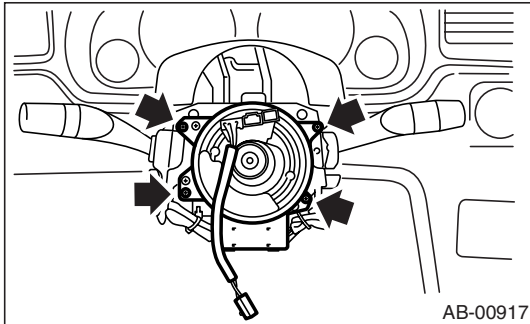
Check for the following, and replace damaged parts with new parts.

- Bracket or connector for side airbag sensor is damaged.
- Side airbag is deployed.

9. Roll Connector

A: REMOVAL

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery, and wait for at least 20 seconds before starting work.
- 3) Remove the driver's airbag module. <Ref. to AB-12, Driver's Airbag Module.>
- 4) Remove the steering wheel. <Ref. to PS-28, 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.>

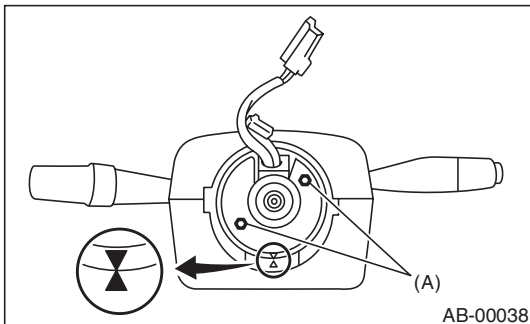
C: INSPECTION

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

- Combination switch and roll connector is cracked or deformed.

D: ADJUSTMENT

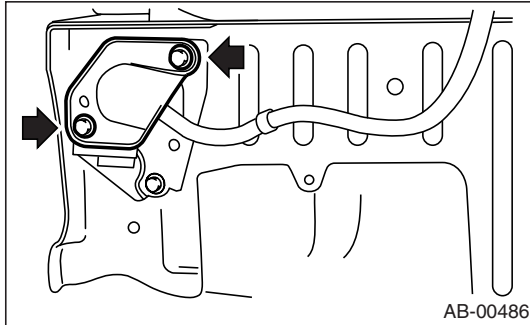
- 1) Check that the front wheels are positioned in straight ahead direction.
- 2) Turn the roll connector pin (A) clockwise until it stops.
- 3) Turn the roll connector pin (A) counterclockwise approx. 3.25 turns until "▲" marks are aligned.



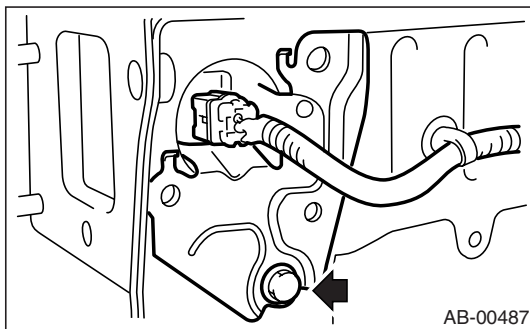
10. Front Sub Sensor

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-23, 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 Module Disposal (Deployment Processing On Vehicle)

AIRBAG SYSTEM

11. Airbag Module Disposal (Deployment Processing On Vehicle)

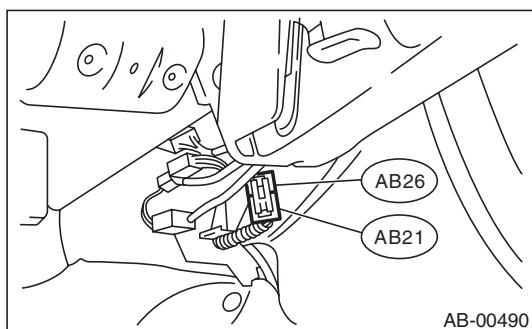
A: PROCEDURE

CAUTION:

- Do not discard an undeployed airbag module because it may cause serious personal injury when accidentally deployed.
- As a rule, the airbag module should be deployed while still installed in the vehicle. Do not remove it unless necessary.
- Deployment of the airbag module should be done on a flat place free from any possible danger. Avoid deploying outdoors during rainy or windy weather.
- Deploying the airbag module causes a high explosive noise, be sure to warn people in the area, and do not allow anyone within a 5 m (16 ft) radius of the disposal site.
- Some smoke will be emitted from deployment of the airbag module. Therefore, it must be deployed in a well-ventilated place with no fire alarms nearby.
- Wear gloves, goggles, and earplugs during this operation. Wash your hands afterwards.
- After deployment, the airbag module will be especially hot. Leave it unattended for 40 minutes, and then discard it.
- Do not let water get on the deployed airbag module.
- Wrap the deployed airbag module in an airtight vinyl bag, and discard it.
- If circumstances do not permit airbag module deployment, contact a SUBARU dealer.

1. DRIVER'S AIRBAG MODULE

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery, and wait for at least 20 seconds before starting work.
- 3) Remove the instrument panel lower cover.
- 4) Disconnect the airbag connector (AB26) and (AB21) below steering column.

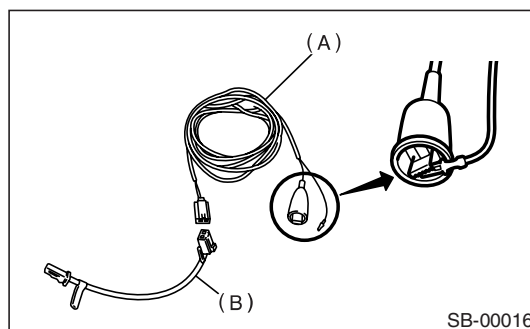


- 5) Short the terminal to alligator clip furnished as deployment tool (A).

- 6) Connect the deployment tool (A) and deployment adapter A (B).

CAUTION:

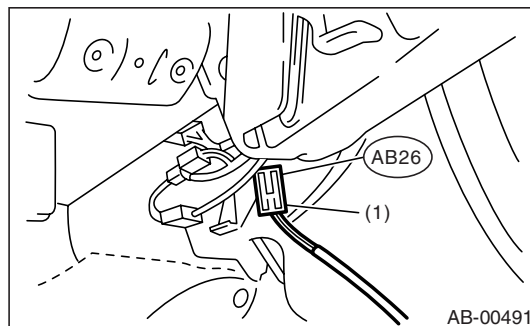
The deployment tool should be kept shorted terminals until just before deployment of the airbag module.



(A) Deployment tool: (Tool No. 98299PA030)

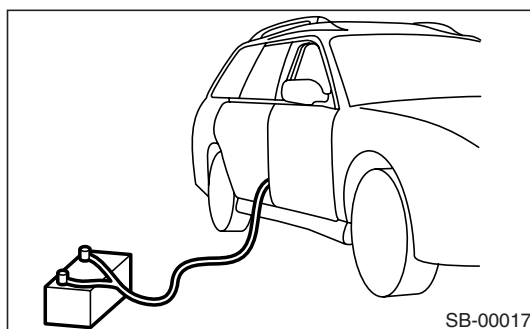
(B) Deployment adapter A: (Tool No. 98299FC030)

- 7) Connect the deployment adapter A to airbag connector (AB26).



(1) Deployment adapter A: (Tool No. 98299FC030)

- 8) Extend the deployment tool to the limit, and make sure that the vehicle is empty. Close all windows, sunroof, and rear gate completely.

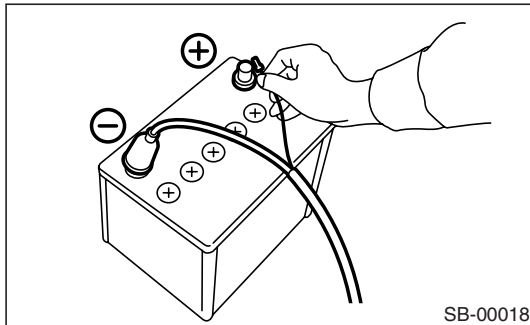


- 9) Move the battery at least 5 m (16 ft) from vehicle, and secure the nearby area. Connect the deployment tool alligator clip to the battery negative (-) terminal.

Airbag Module Disposal (Deployment Processing On Vehicle)

AIRBAG SYSTEM

10) Connect the other cable of the deployment tool to the battery positive (+) terminal and deploy the airbag module.

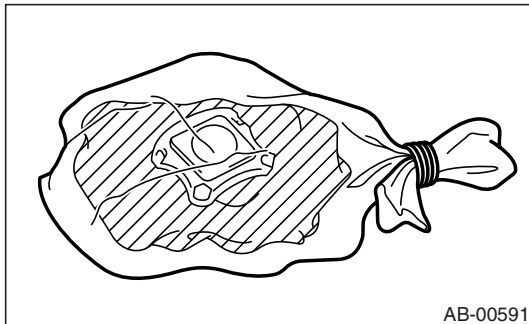


CAUTION:

- After deployment, the airbag module will be especially hot. Leave it unattended for 40 minutes, and then discard it.
- Do not let water get on the deployed airbag module.

11) Remove the airbag module. <Ref. to AB-12, Driver's Airbag Module.>

12) Wrap the deployed airbag module in an airtight vinyl bag, and discard it.

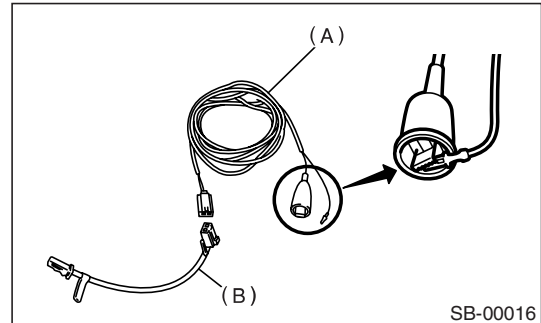


2. PASSENGER'S AIRBAG MODULE

- 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.
- 4) Disconnect the airbag connectors (AB27).
- 5) Short the terminal to alligator clip furnished as deployment tool (A).
- 6) Connect the deployment tool (A) and deployment adapter A (B).

CAUTION:

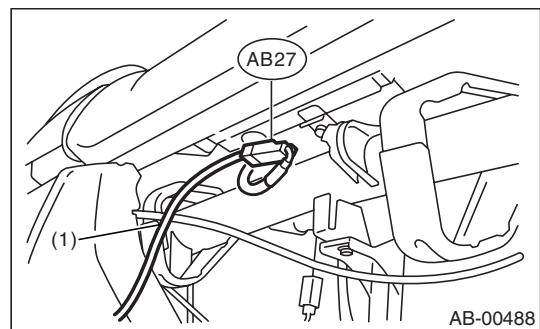
The deployment tool should be kept shorted terminals until just before deployment of the airbag module.



(A) Deployment tool: (Tool No. 98299PA030)

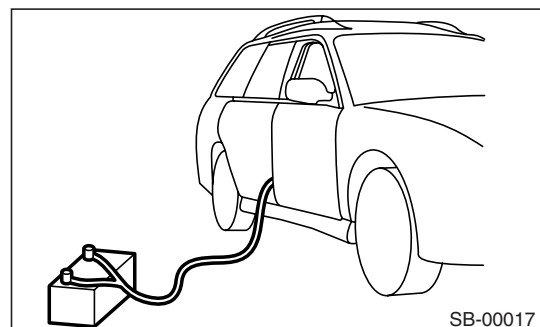
(B) Deployment adapter A: (Tool No. 98299FC030)

7) Connect the deployment adapter A to airbag connector (AB27).



(1) Deployment adapter A: (Tool No. 98299FC030)

8) Extend the deployment tool to the limit, and make sure that the vehicle is empty. Close all windows, sunroof, and rear gate completely.

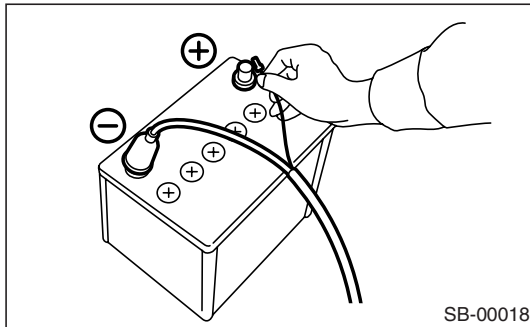


9) Move the battery at least 5 m (16 ft) from vehicle, and secure the nearby area. Connect the deployment tool alligator clip to the battery negative (-) terminal.

Airbag Module Disposal (Deployment Processing On Vehicle)

AIRBAG SYSTEM

10) Connect the other cable of the deployment tool to the battery positive (+) terminal and deploy the airbag module.

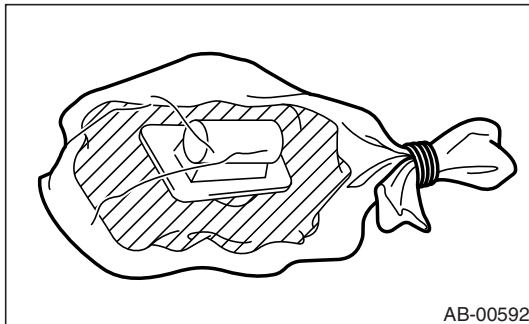


CAUTION:

- After deployment, the airbag module will be especially hot. Leave it unattended for 40 minutes, and then discard it.
- Do not let water get on the deployed airbag module.

11) Remove the airbag module. <Ref. to AB-13, Passenger's Airbag Module.>

12) Wrap the deployed airbag module in an airtight vinyl bag, and discard it.

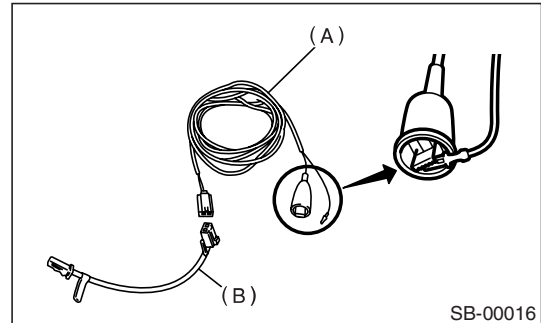


3. SIDE AIRBAG MODULE

- 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) Disconnect the side airbag module connector (yellow) under the front seat cushion.
- 4) Adjust both the front seat and front seat backrest to center positions.
- 5) Short the terminal to alligator clip furnished as deployment tool (A).
- 6) Connect the deployment tool (A) and deployment adapter A (B).

CAUTION:

The deployment tool should be kept shorted terminals until just before deployment of the airbag module.



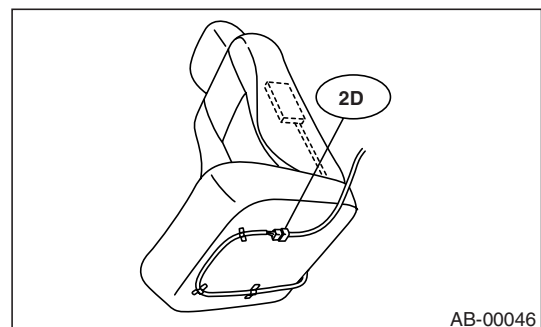
(A) Deployment tool: (Tool No. 98299PA030)

(B) Deployment adapter A: (Tool No. 98299FC030)

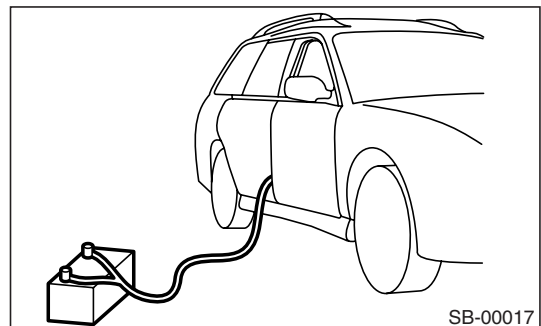
7) Connect the deployment adapter A connector (2D) to side airbag module connector (yellow).

CAUTION:

Do not put any objects on the front seat.



8) Extend the deployment tool to the limit, and make sure that the vehicle is empty. Close all windows, sunroof, and rear gate completely.

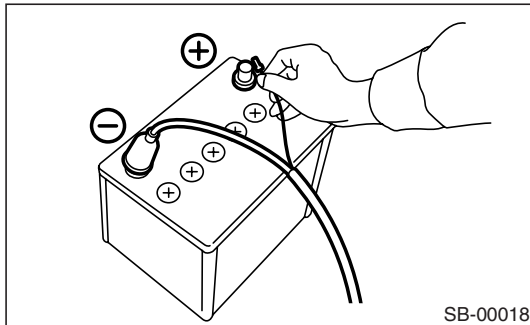


9) Move the battery at least 5 m (16 ft) from vehicle, and secure the nearby area. Connect the deployment tool alligator clip to the battery negative (-) terminal.

Airbag Module Disposal (Deployment Processing On Vehicle)

AIRBAG SYSTEM

10) Connect the other cable of the deployment tool to the battery positive (+) terminal and deploy the airbag module.

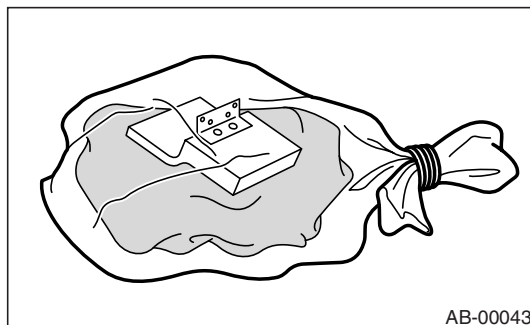


CAUTION:

- After deployment, the airbag module will be especially hot. Leave it unattended for 40 minutes, and then discard it.
- Do not let water get on the deployed airbag module.

11) Remove the side airbag module. <Ref. to AB-14, REMOVAL, Side Airbag Module.>

12) Wrap the deployed airbag module in an airtight vinyl bag, and discard it.



12. Airbag Module Disposal (Deployment Processing After Removal from Vehicle)

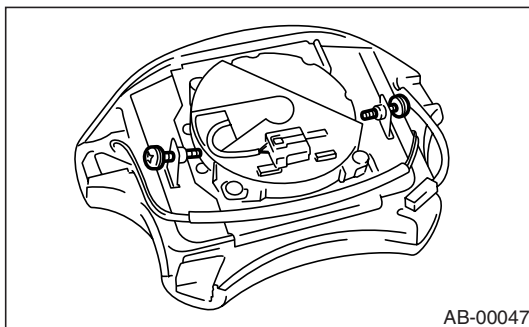
A: PROCEDURE

CAUTION:

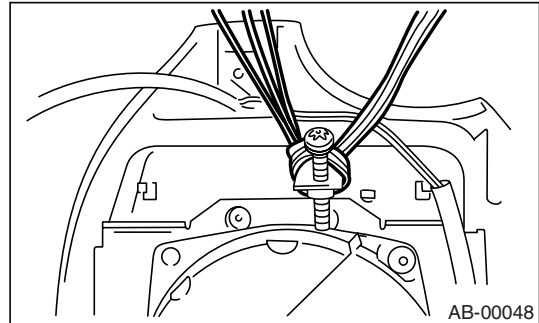
- Do not discard an undeployed airbag module because it may cause serious personal injury when accidentally deployed.
- As a rule, the airbag module should be deployed while still installed in the vehicle. Do not remove it unless necessary.
- Deployment of the airbag module should be done on a flat place free from any possible danger. Avoid deploying outdoors during rainy or windy weather.
- Do not damage the airbag module or drop it.
- Deploying the airbag module causes a high explosive noise, be sure to warn people in the area, and do not allow anyone within a 5 m (16 ft) radius of the disposal site.
- Some smoke will be emitted from deployment of the airbag module. Therefore, it must be deployed in a well-ventilated place with no fire alarms nearby.
- Wear gloves, goggles, and earplugs during this operation. Wash your hands afterwards.
- After deployment, the airbag module will be especially hot. Leave it unattended for 40 minutes, and then discard it.
- Do not let water get on the deployed airbag module.
- Wrap the deployed airbag module in an airtight vinyl bag, and discard it.
- If circumstances do not permit airbag module deployment, contact a SUBARU dealer.

1. DRIVER'S AIRBAG MODULE

- 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 airbag module. <Ref. to AB-12, Driver's Airbag Module.>
- 4) Install the removed bolts to airbag module.



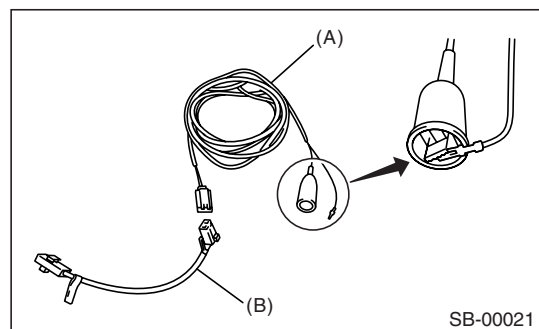
- 5) Bundle three wire automotive harnesses [each with a sectional area of 1.25 mm² (0.00194 sq in) or more], and bind them twofold around the airbag module stay.



- 6) Short the terminal to alligator clip furnished as deployment tool (A).
- 7) Connect the deployment tool (A) and deployment adapter D.

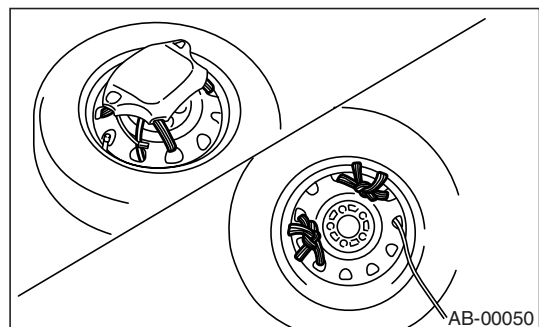
CAUTION:

The deployment tool should be kept shorted terminals until just before deployment of the airbag module.



- (A) Deployment tool: (Tool No. 98299PA030)
(B) Deployment adapter D: (Tool No. 98299SA010)

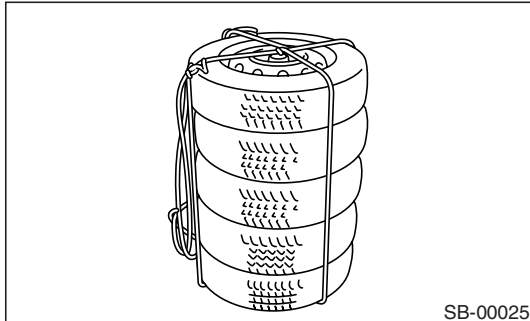
- 8) Connect the deployment adapter D connector (2D) to airbag module.
- 9) Install the airbag module with pad side facing upward on a wheel with tire.



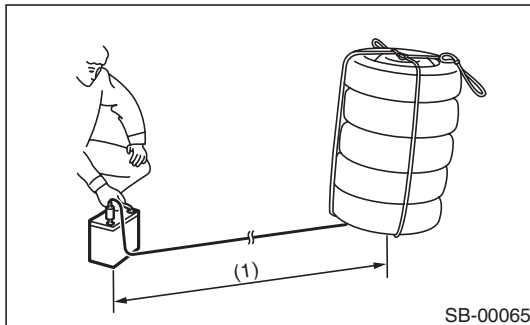
Airbag Module Disposal (Deployment Processing After Removal from Vehicle)

AIRBAG SYSTEM

10) Put three tires without a wheel on the tire installed with the airbag module. Put on an additional tire with a wheel, and then fasten them tight with a rope.

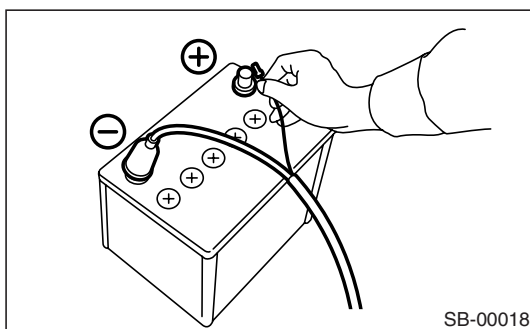


11) Move the battery at least 5 m (16 ft) from tires, and secure the nearby area. Connect the deployment tool alligator clip to the battery negative (-) terminal.



(1) More than 5 m (16 ft)

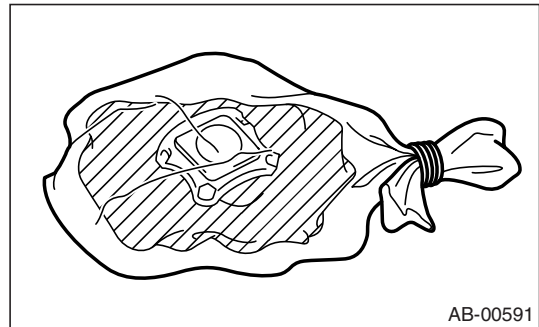
12) Connect the other cable of the deployment tool to the battery positive (+) terminal and deploy the airbag module.



CAUTION:

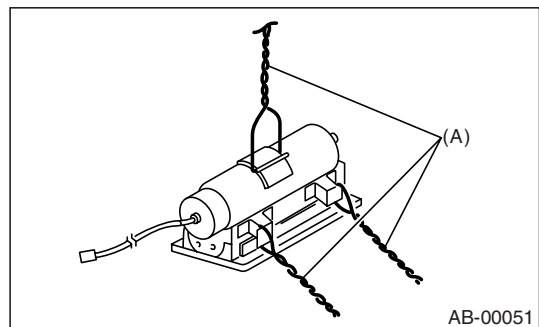
- After deployment, the airbag module will be especially hot. Leave it unattended for 40 minutes, and then discard it.
- Do not let water get on the deployed airbag module.

13) Wrap the deployed airbag module in an airtight vinyl bag, and discard it.



2. PASSENGER'S AIRBAG MODULE

- 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 airbag module. <Ref. to AB-13, Passenger's Airbag Module.>
- 4) Bundle three wire automotive harnesses [each with a sectional area of 1.25 mm^2 (0.00194 sq in) or more], and route them through the airbag module bracket. Then, twist them for added strength (A).



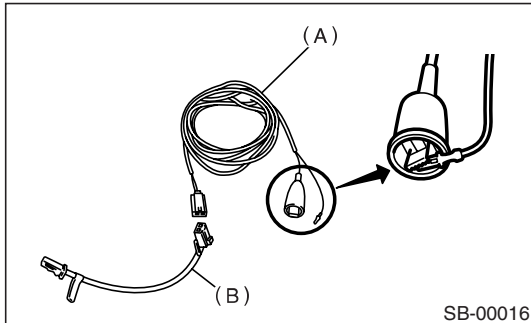
- 5) Short the terminal to alligator clip furnished as deployment tool (A).
- 6) Connect the deployment tool (A) and deployment adapter A (B).

Airbag Module Disposal (Deployment Processing After Removal from Vehicle)

AIRBAG SYSTEM

CAUTION:

The deployment tool should be kept shorted terminals until just before deployment of the airbag module.

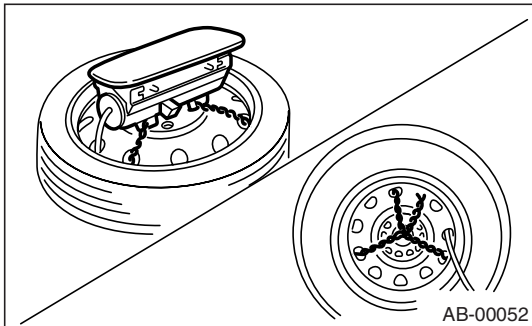


(A) Deployment tool: (Tool No. 98299PA030)

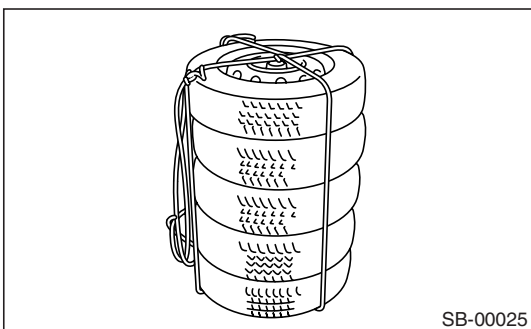
(B) Deployment adapter A: (Tool No. 98299FC030)

7) Connect the adapter A connector to airbag module.

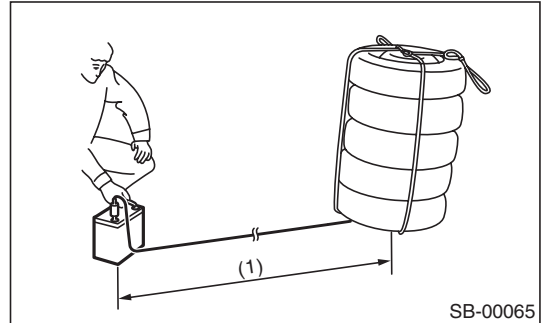
8) Install the airbag module with pad side facing upward on 14 inch or greater size wheel with tire.



9) Put three tires without a wheel on the tire installed with the airbag module. Put on an additional tire with a wheel on top, and then fasten them tight with a rope.

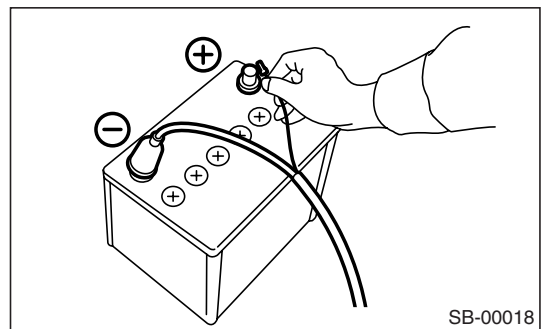


10) Move the battery at least 5 m (16 ft) from tires, and secure the nearby area. Connect the deployment tool alligator clip to the battery negative (-) terminal.



(1) More than 5 m (16 ft)

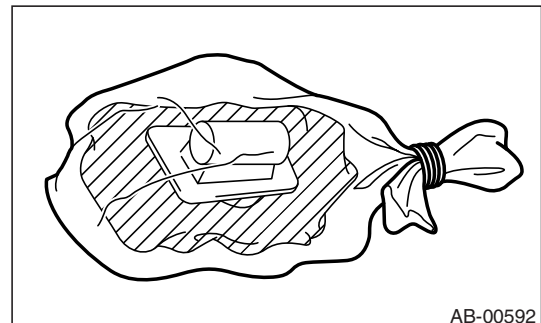
11) Connect the other cable of the deployment tool to the battery positive (+) terminal and deploy the airbag module.



CAUTION:

- After deployment, the airbag module will be especially hot. Leave it unattended for 40 minutes, and then discard it.
- Do not let water get on the deployed airbag module.

12) Wrap the deployed airbag module in an airtight vinyl bag, and discard it.

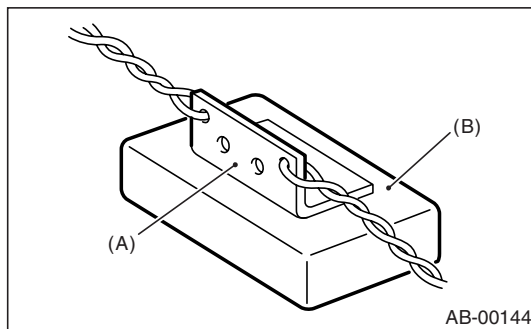


Airbag Module Disposal (Deployment Processing After Removal from Vehicle)

AIRBAG SYSTEM

3. SIDE AIRBAG MODULE

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery, and wait for at least 20 seconds before starting work.
- 3) Remove the front seat. <Ref. to SE-6, REMOVAL, Front Seat.>
- 4) Remove the side airbag module. <Ref. to AB-14, REMOVAL, Side Airbag Module.>
- 5) Bundle three wire automotive harnesses [each with a sectional area of 1.25 mm^2 (0.00194 sq in) or more], and then bind them through the holes in airbag module bracket.

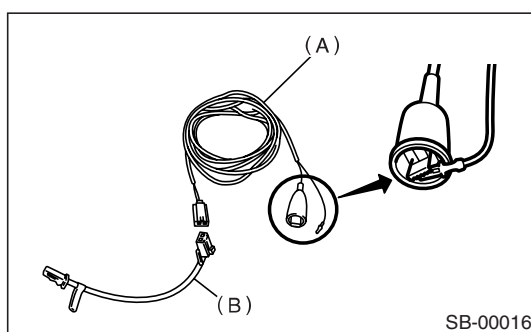


(A) Airbag module bracket
(B) Side airbag module

- 6) Short the terminal to alligator clip furnished as deployment tool (A).
- 7) Connect the deployment tool (A) and deployment adapter A (B).

CAUTION:

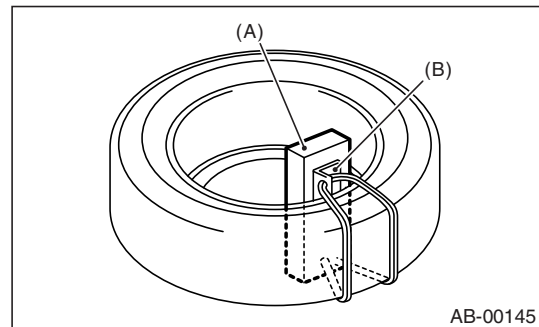
The deployment tool should be kept shorted terminals until just before deployment of the airbag module.



(A) Deployment tool: (Tool No. 98299PA030)
(B) Deployment adapter A: (Tool No. 98299FC030)

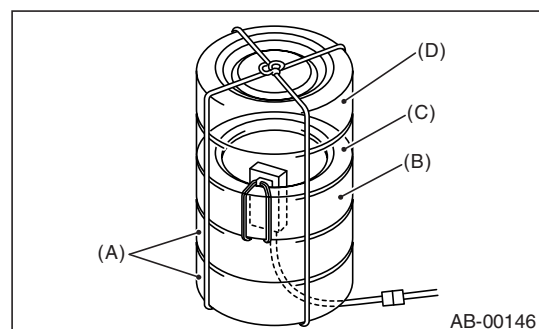
- 8) Connect the deployment adapter A connector to airbag module.

- 9) Install the side airbag module on 14 inch or greater size tire without disk wheel.

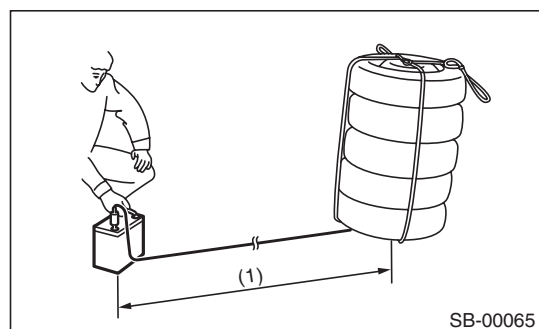


(A) Pad
(B) Airbag module bracket

- 10) Put two tires without a wheel (A) under the tire (B) installed with the side airbag module. Put on an additional tire without disk wheel (C), and then put a tire with a wheel (D) on top. Fasten them tight with a rope.



- 11) Move the battery at least 5 m (16 ft) from the tires, and secure the nearby area. Connect the deployment tool alligator clip to the battery negative (-) terminal.

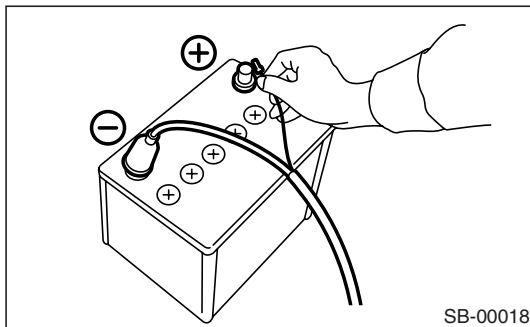


(1) More than 5 m (16 ft)

Airbag Module Disposal (Deployment Processing After Removal from Vehicle)

AIRBAG SYSTEM

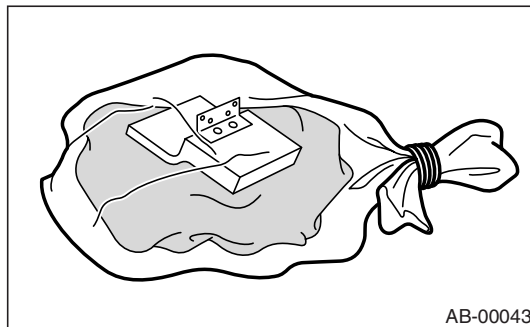
12) Connect the other cable of the deployment tool to the battery positive (+) terminal and deploy the airbag module.



CAUTION:

- After deployment, the airbag module will be especially hot. Leave it unattended for 40 minutes, and then discard it.
- Do not let water get on the deployed airbag module.

13) Wrap the deployed airbag module in an airtight vinyl bag, and discard it.



AIRBAG SYSTEM (DIAGNOSTICS)

AB(diag)

	Page
1. Basic Diagnostic Procedure	2
2. Check List for Interview	3
3. General Description	4
4. Electrical Component Location	16
5. Airbag Control Module I/O Signal.....	18
6. Airbag Connector	19
7. Airbag Warning Light Illumination Pattern	21
8. Read Diagnostic Trouble Code (DTC)	22
9. Inspection Mode.....	23
10. Clear Memory Mode.....	24
11. Airbag Warning Light Failure.....	25
12. List of Diagnostic Trouble Code (DTC)	32
13. Diagnostic Chart with Trouble Code	35

Basic Diagnostic Procedure

AIRBAG SYSTEM (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

	Step	Check	Yes	No
1	READ DTC. <Ref. to AB(diag)-22, 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)-22, Read Diagnostic Trouble Code (DTC).>	Is the DTC being detected?	Go to step 3.	Go to "Airbag Warning Light Failure". <Ref. to AB(diag)-25, Airbag Warning Light Failure.>
3	PERFORM THE DIAGNOSIS. 1) Judge the possible cause from "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-32, 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)-24, Clear Memory Mode.> 5) Perform the inspection mode. <Ref. to AB(diag)-23, 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	☐ Starting ☐ Idling ☐ Driving (☐ Constant Speed ☐ Acceleration ☐ Deceleration) ☐ Steering wheel turn ☐ Other:		
Details of Problem			
Check Airbag Warning Light	☐ Normal (Illuminates 6 seconds after ignition switch turned to ON, and then goes off) ☐ Remains ON ☐ Remains OFF		
Check DTC	☐ Normal Code ☐ DTC: (Code:)		

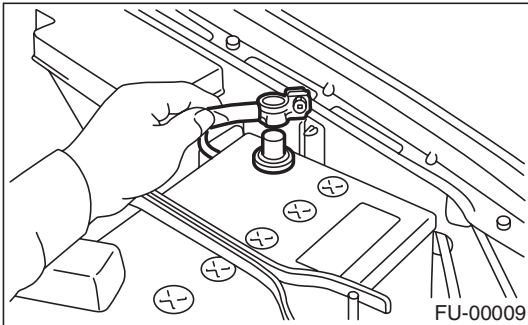
General Description

AIRBAG SYSTEM (DIAGNOSTICS)

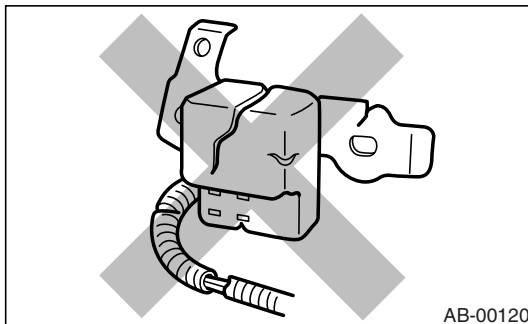
3. General Description

A: CAUTION

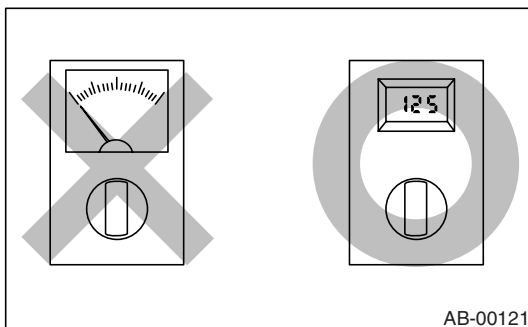
- When servicing a vehicle, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for more than 20 seconds before starting work.
- The airbag system is fitted with a backup power source. If the airbag system is serviced within 20 seconds after the ground cable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



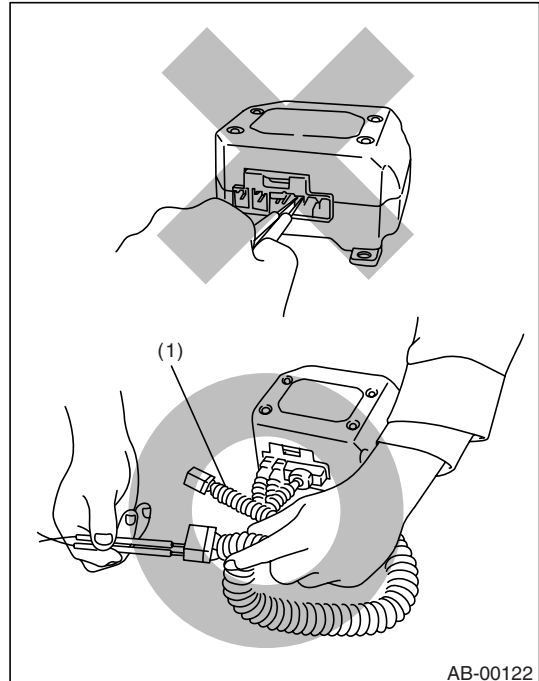
- If sensors, airbag module, airbag control module, pretensioner, and harness are deformed or damaged, replace them with new genuine parts.



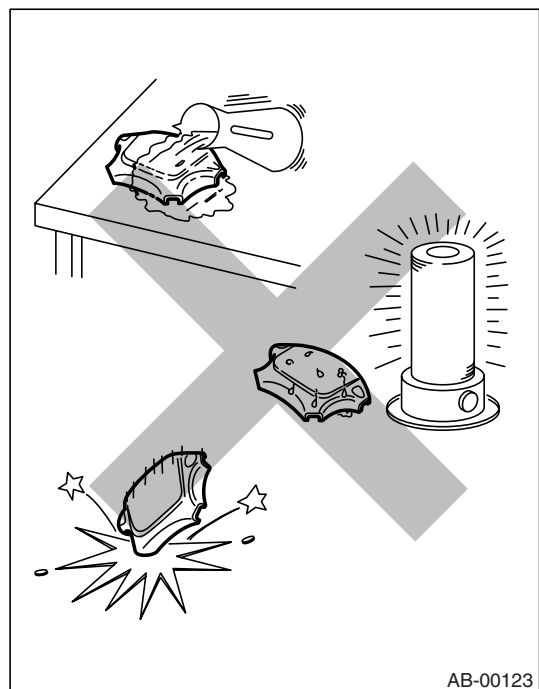
- Do not use the airbag system and pretensioners on other vehicles. When replacing parts, be sure to replace them with new parts.
- When checking the airbag system, be sure to use a digital circuit tester. Infinitesimal electric current in an analog circuit tester may cause the airbag to activate erroneously.



- When checking, use a test harness (1). To avoid damaging connector terminal, 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.



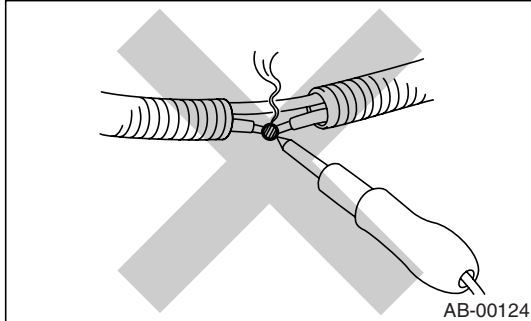
- Do not drop the airbag modulator parts, subject them to high temperature over 93°C (199°F), or let water, oil, or grease get on them; otherwise, the internal parts may be damaged and may be reliability greatly lowered.



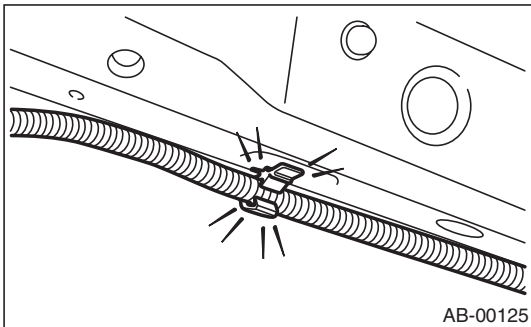
General Description

AIRBAG SYSTEM (DIAGNOSTICS)

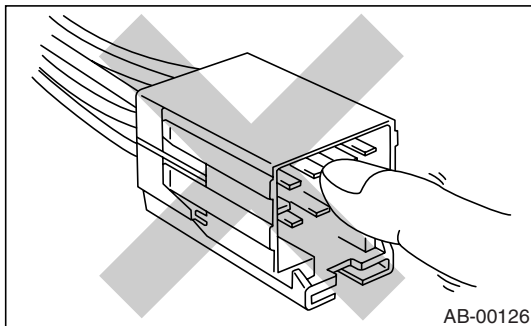
- If any damage, opening, or rust is found on the airbag system wire harness, do not attempt to repair using soldering equipment. Be sure to replace the faulty harness with a new genuine part.



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

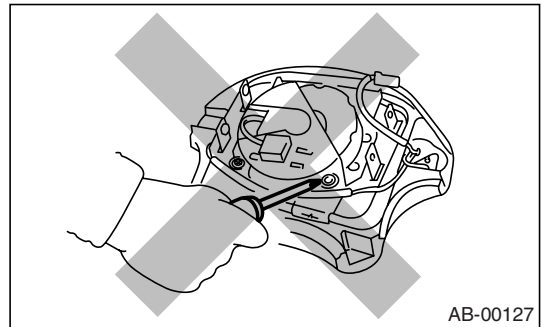


- Do not allow water or oil to come in contact with the connector terminals. Do not touch the connector terminals.

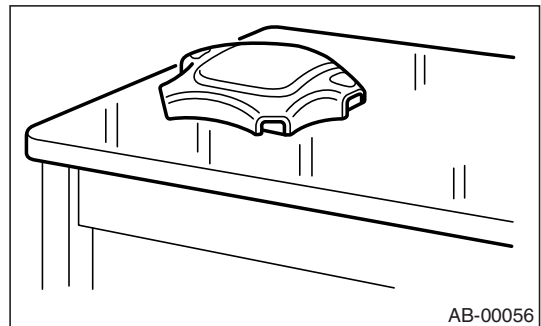


- Either of the airbag modules for driver, passenger or side, or pretensioner must not be disassembled.

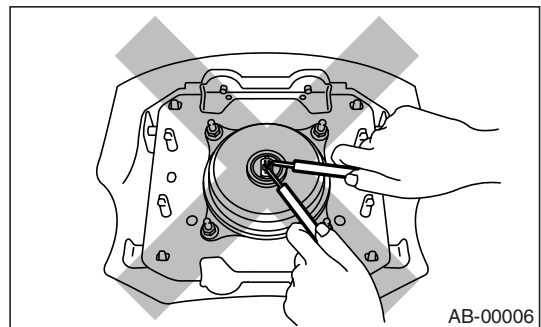
- The airbag module cannot be used again if once inflated.



- 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.



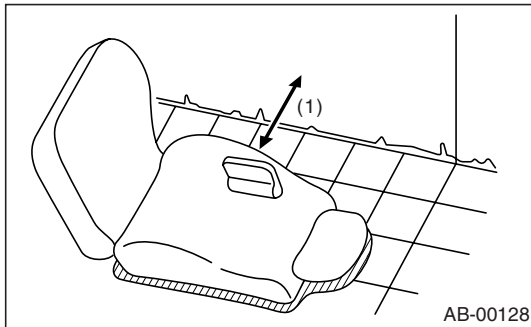
- Do not check continuity of either of the airbag modules for driver, passenger or side, or pretensioner.



General Description

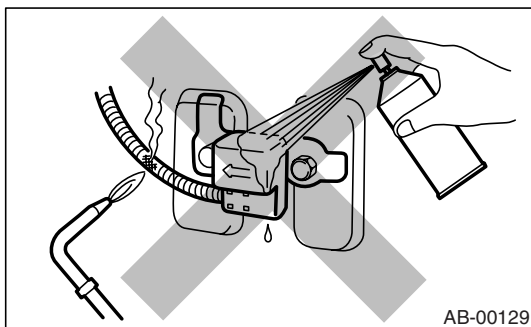
AIRBAG SYSTEM (DIAGNOSTICS)

- 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.



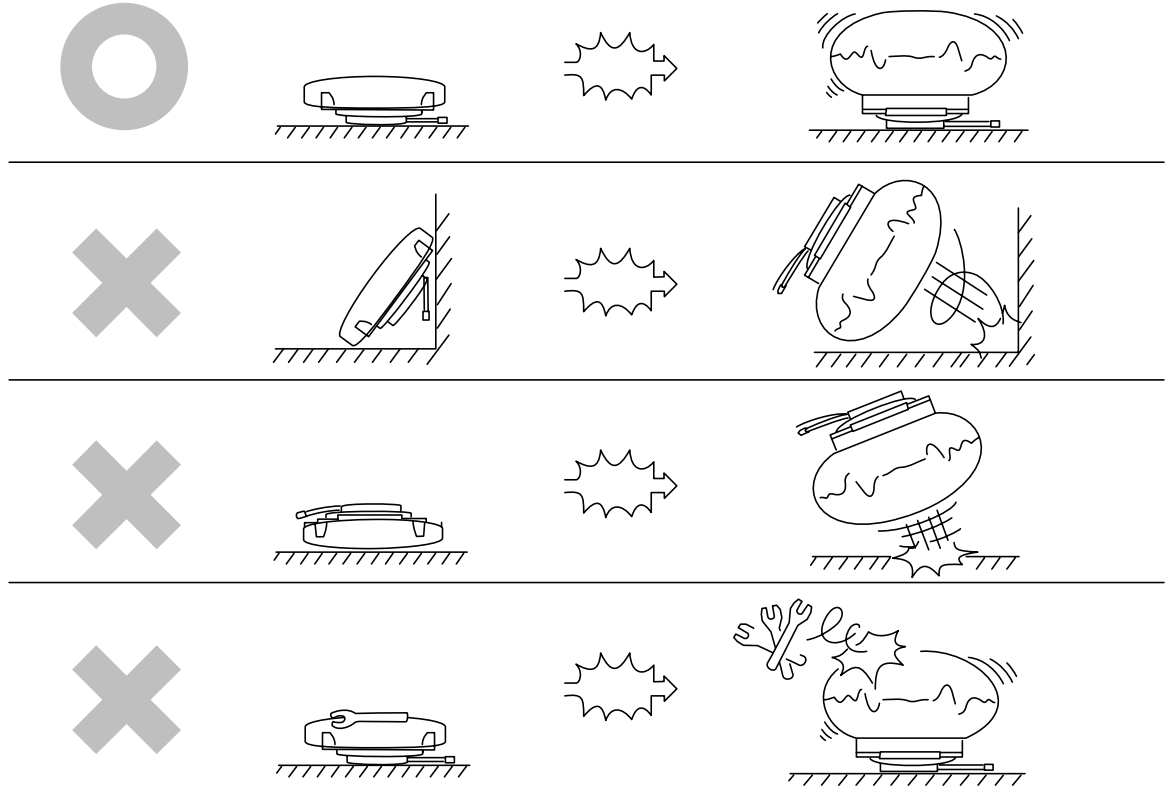
- Do not discard undeployed airbag modules. They could easily cause a serious accident if accidentally deployed.

General Description

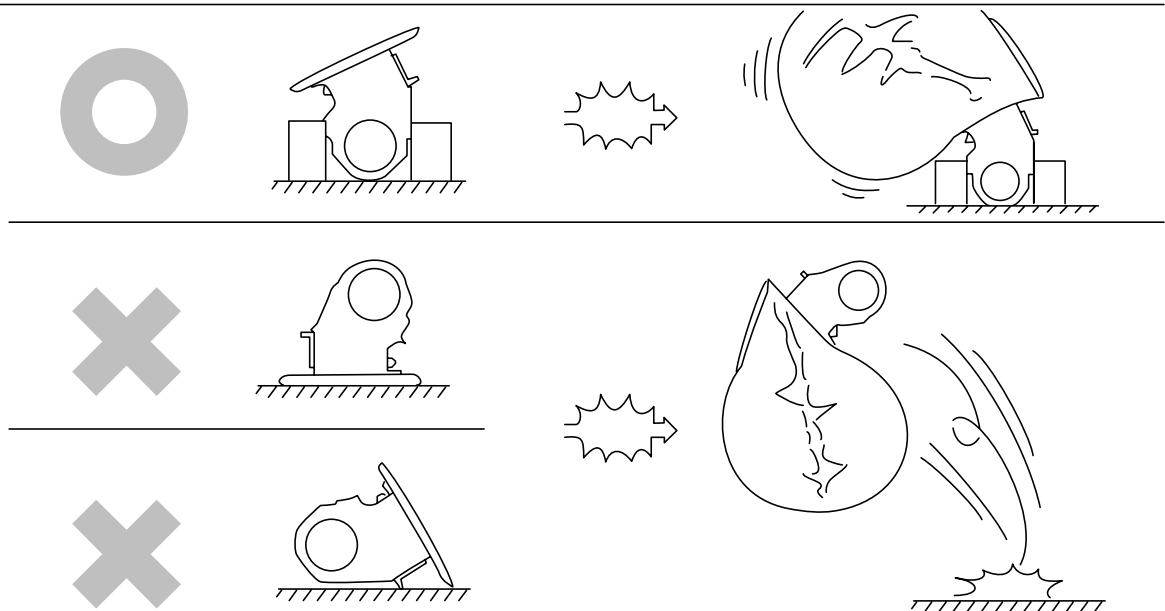
AIRBAG SYSTEM (DIAGNOSTICS)

- 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

AIRBAG SYSTEM (DIAGNOSTICS)

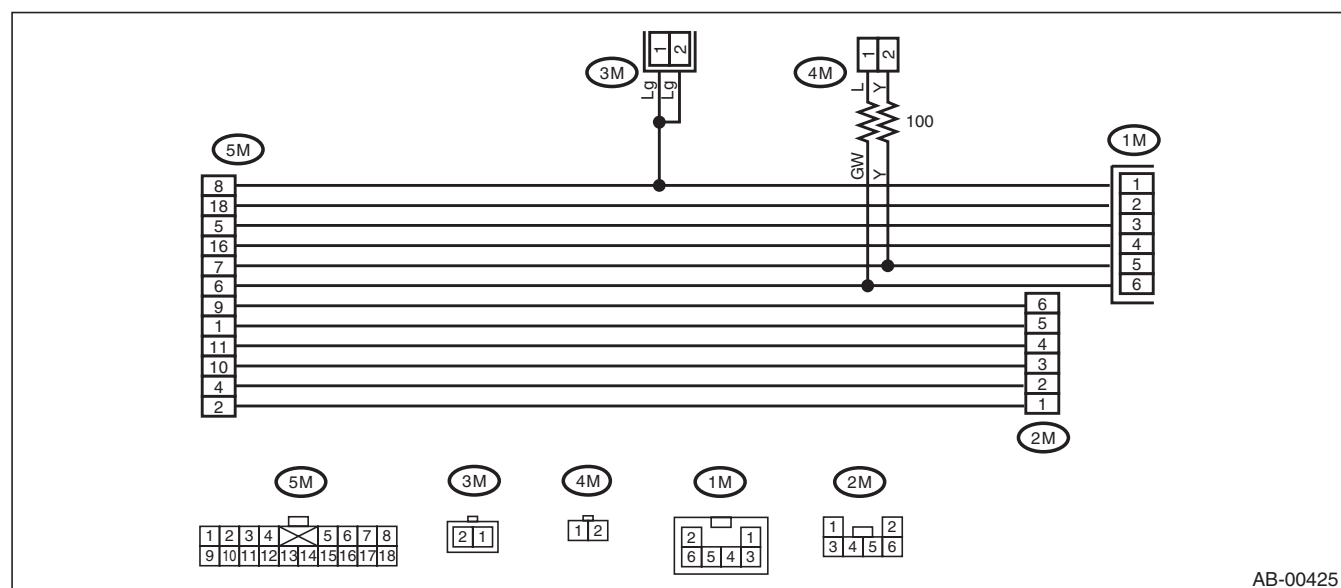
Before diagnosing, check the following items that might be related to the engine problem:

Measure the battery voltage and specific gravity of electrolyte.

Specific gravity: Above 1.260

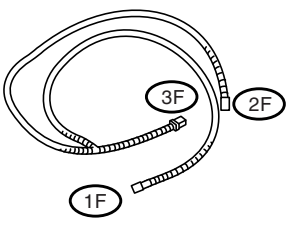
1. SPECIAL TOOL

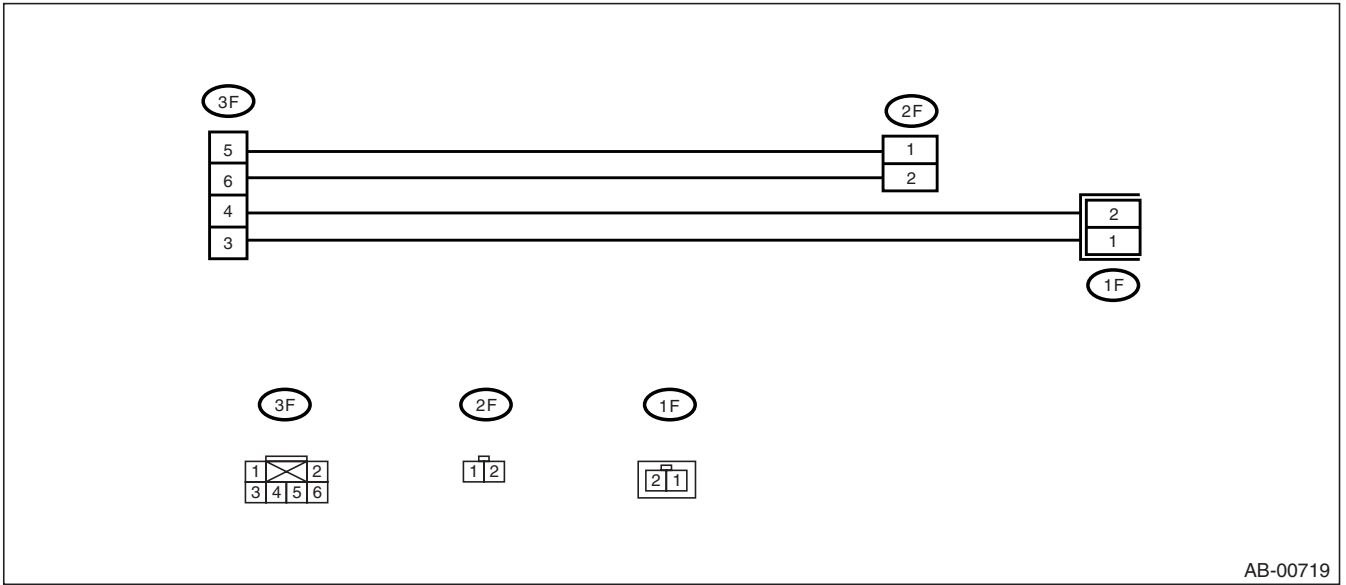
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
ST98299FE020	98299FE020	TEST HARNESS M	• Used when measuring voltage, resistance of airbag system. • Used with test harness T (98299SA060).



General Description

• TEST HARNESS F

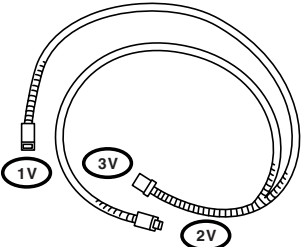
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299FC010	98299FC010	TEST HARNESS F	Used when measuring voltage, resistance of air-bag module harness.

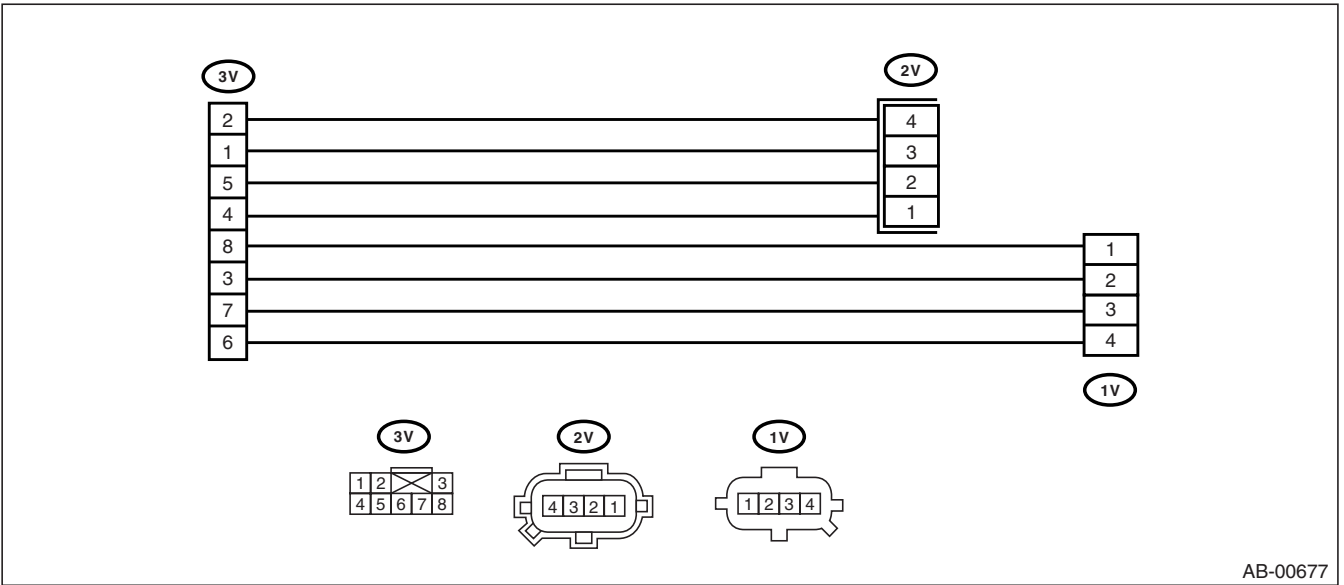


General Description

AIRBAG SYSTEM (DIAGNOSTICS)

• TEST HARNESS V

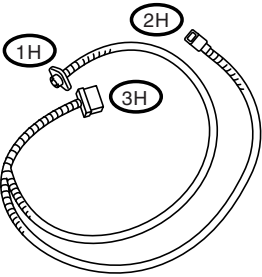
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG010	98299AG010	TEST HARNESS V	Used when measuring voltage and resistance of side airbag sensor.

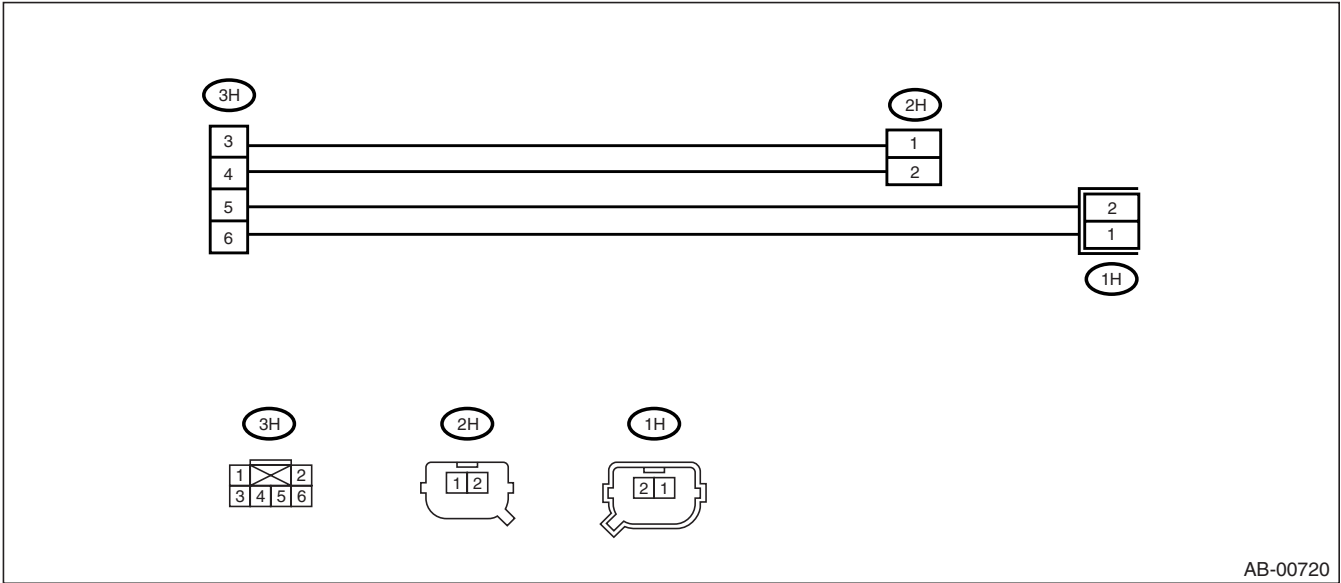


General Description

AIRBAG SYSTEM (DIAGNOSTICS)

• TEST HARNESS H

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

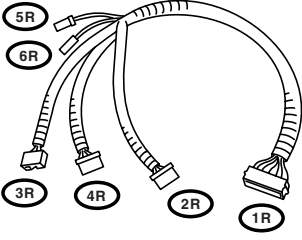


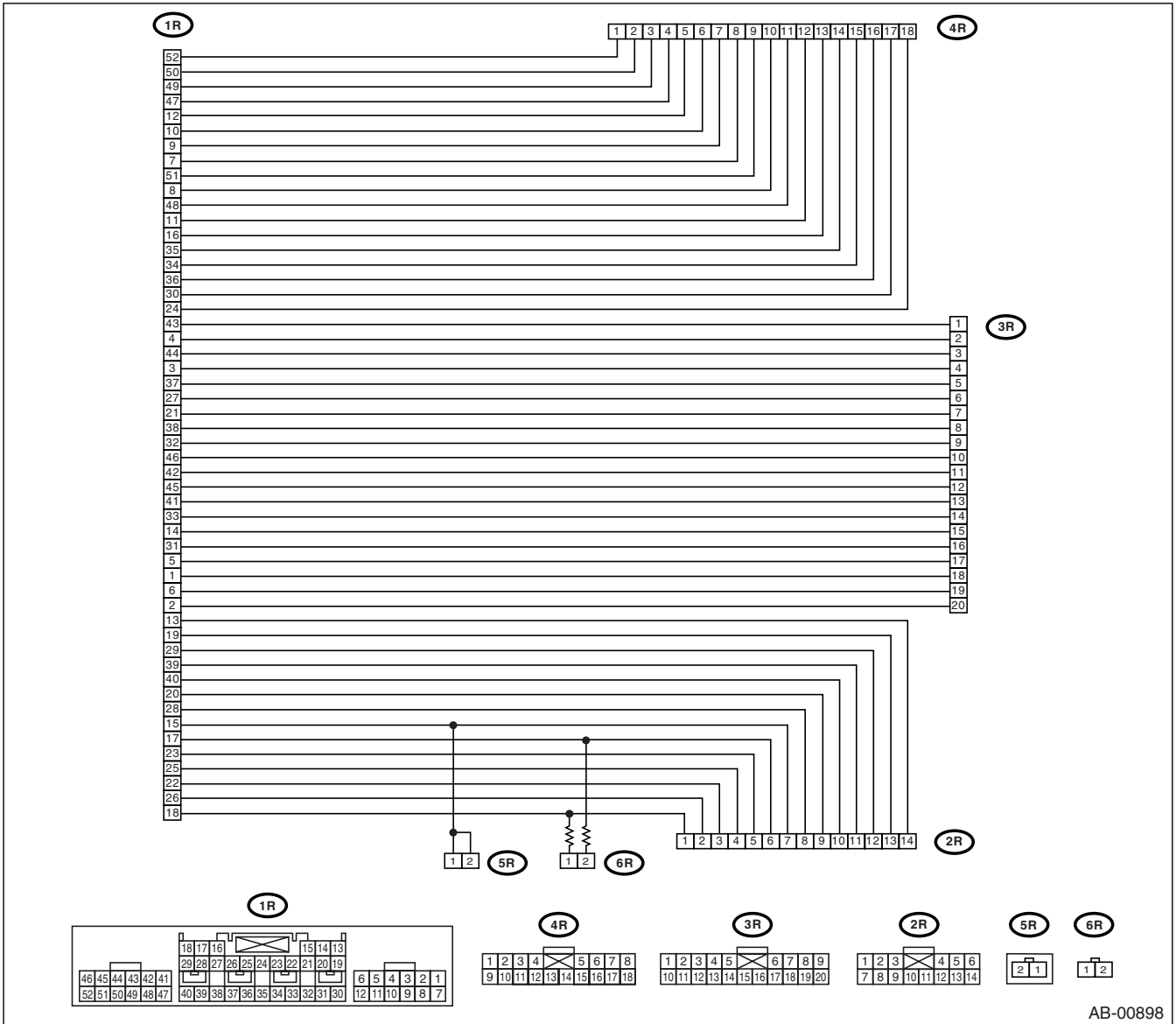
AB-00720

General Description

AIRBAG SYSTEM (DIAGNOSTICS)

• TEST HARNESS R

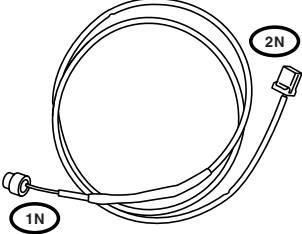
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299FE030	98299FE030	TEST HARNESS R	Used when measuring voltage, resistance of air-bag control module.

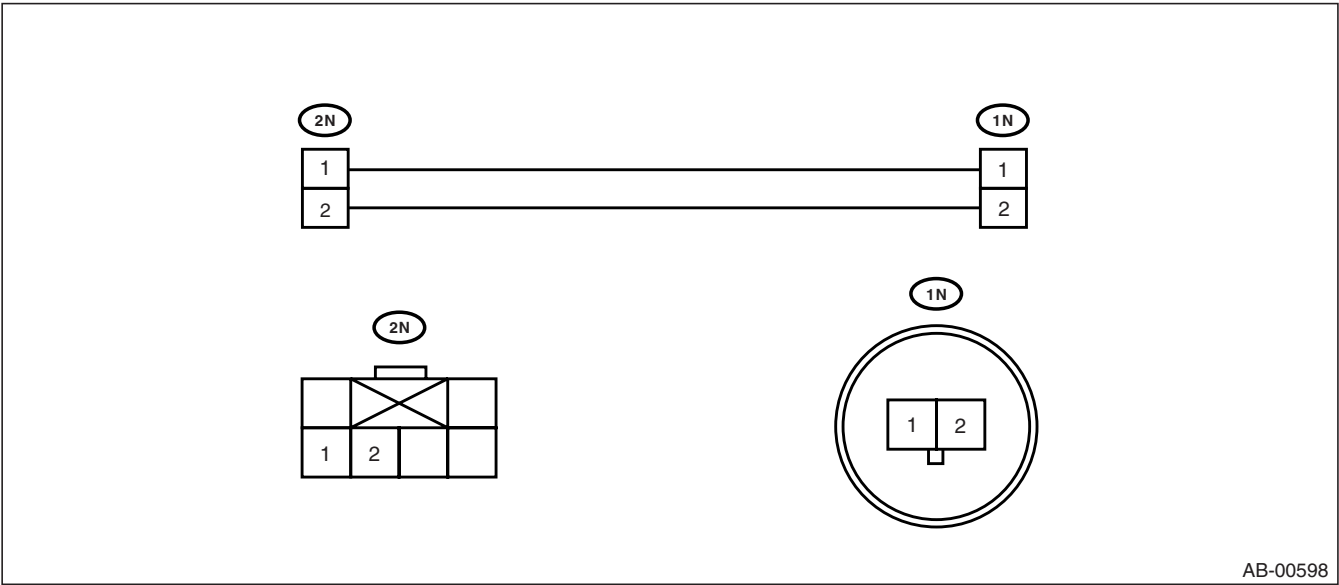


General Description

AIRBAG SYSTEM (DIAGNOSTICS)

• TEST HARNESS N

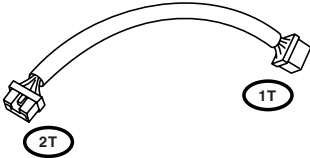
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299SA000	98299SA000	TEST HARNESS N	Used when measuring voltage, resistance of driver's airbag module and seat belt pretensioner.

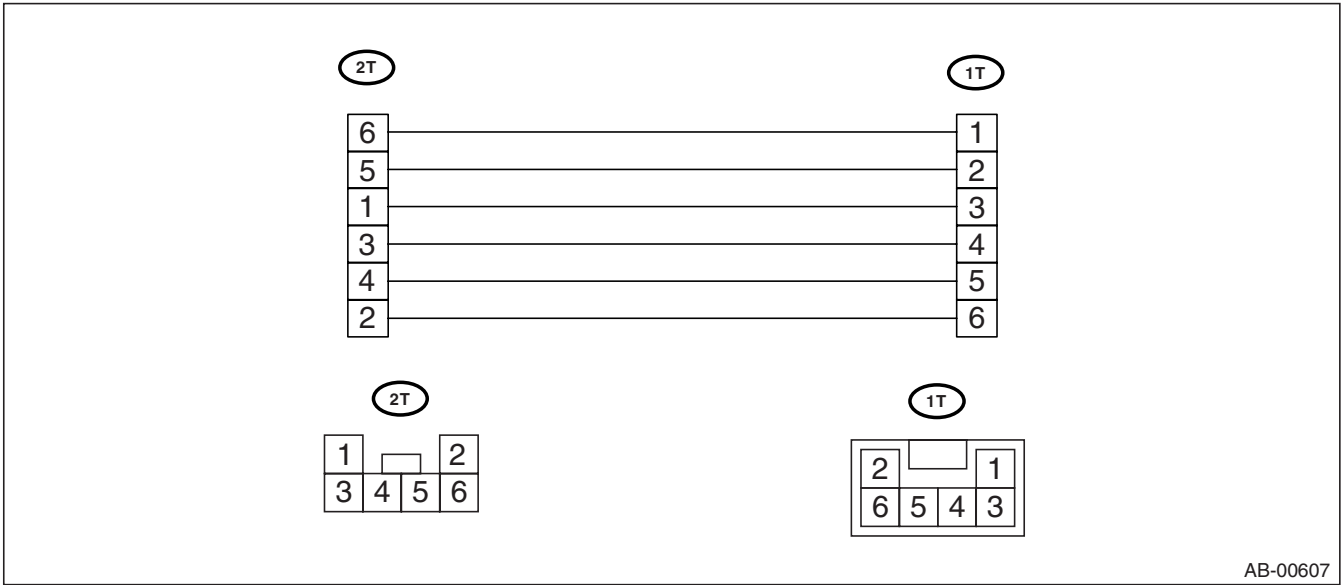


General Description

AIRBAG SYSTEM (DIAGNOSTICS)

• TEST HARNESS T

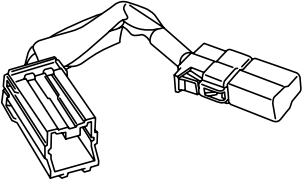
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299SA060	98299SA060	TEST HARNESS T	• Used when measuring voltage, resistance of airbag system. • Used with test harness M (98299FE020). • Only LHD

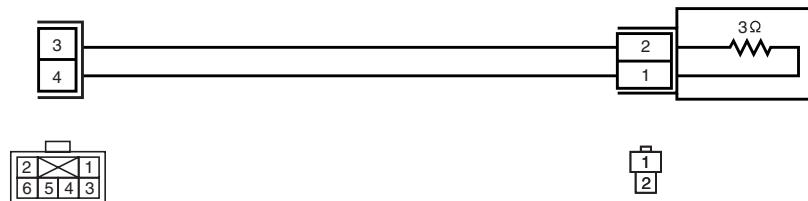


General Description

AIRBAG SYSTEM (DIAGNOSTICS)

• 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.



AB-00433

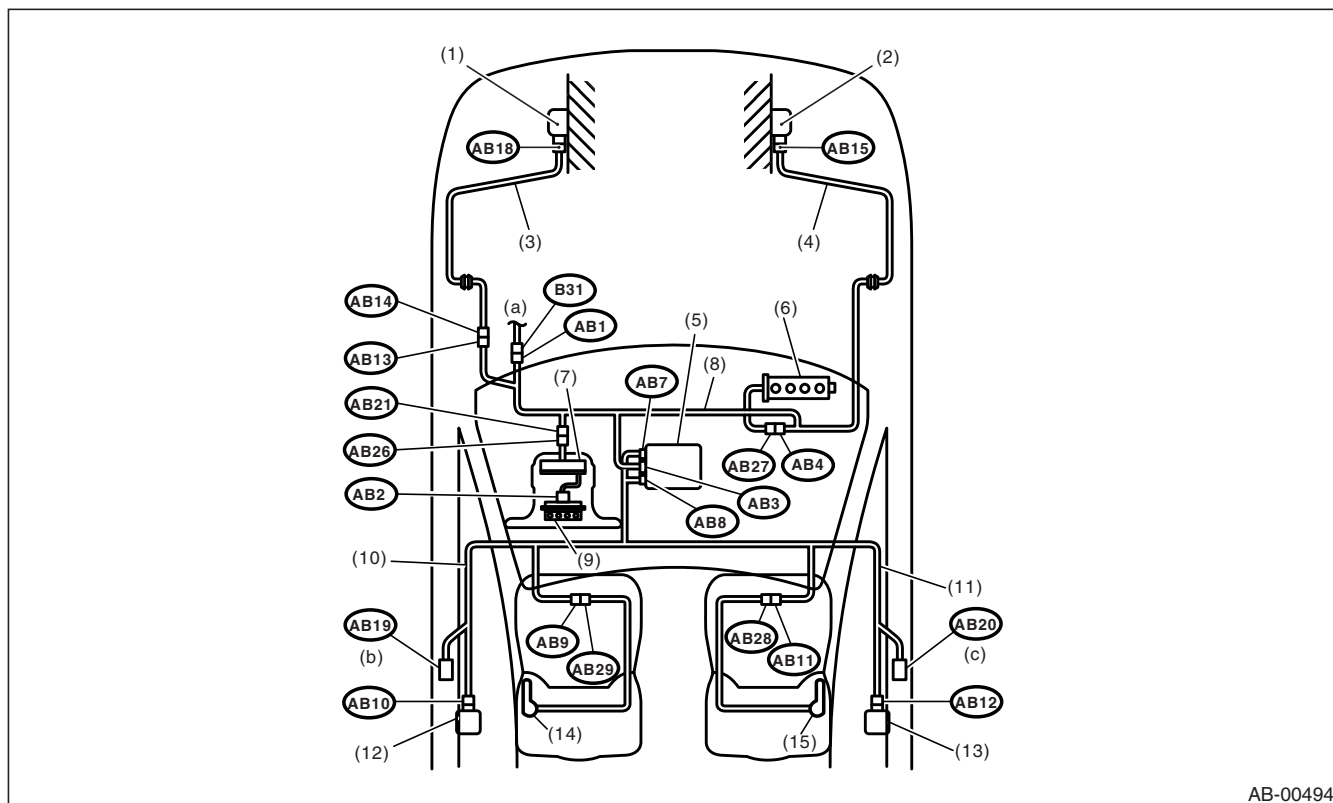
Electrical Component Location

AIRBAG SYSTEM (DIAGNOSTICS)

4. Electrical Component Location

A: LOCATION

1. LHD MODEL



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
Connector 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			
Connector color	Yellow	Yellow	Black	Black	Yellow	Yellow	Yellow	Yellow	Yellow			
Male/Female	Female	Female	Female	Female	Female	Male	Male	Male	Male			

AIRBAG SYSTEM (DIAGNOSTICS)

5. Airbag Control Module I/O Signal

A: WIRING DIAGRAM

1. AIRBAG LHD MODEL

<Ref. to WI-165, LHD MODEL, WIRING DIAGRAM, Airbag System.>

2. AIRBAG RHD MODEL

<Ref. to WI-168, RHD MODEL, WIRING DIAGRAM, Airbag System.>

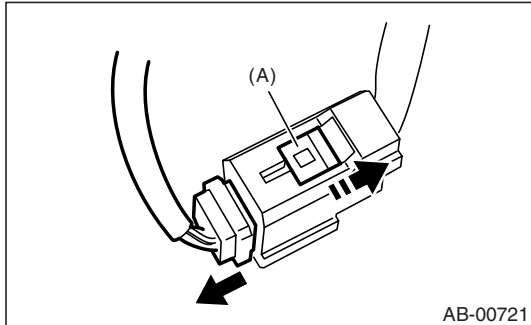
6. Airbag Connector

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 slide lock (A) moved.

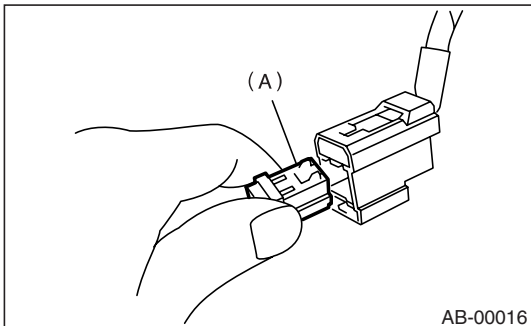


CAUTION:

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:

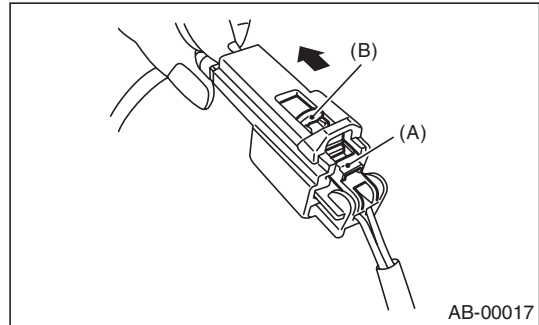
Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.

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

1) How to disconnect:

- (1) Push the lock arm (A).

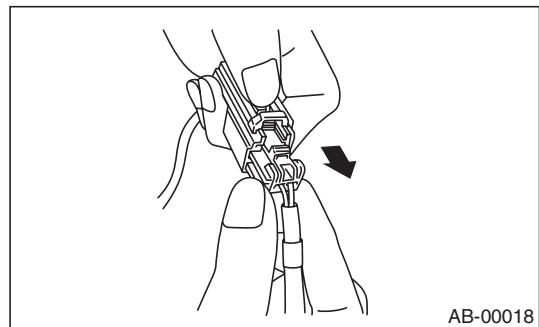
- (2) With the lock arm (A) pushed in, move the slide lock (B) in the direction of the arrow.



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

CAUTION:

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

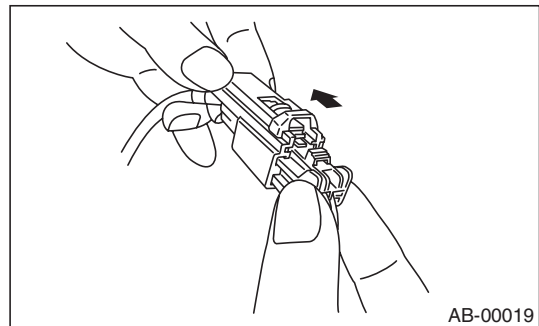


2) How to connect:

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

CAUTION:

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



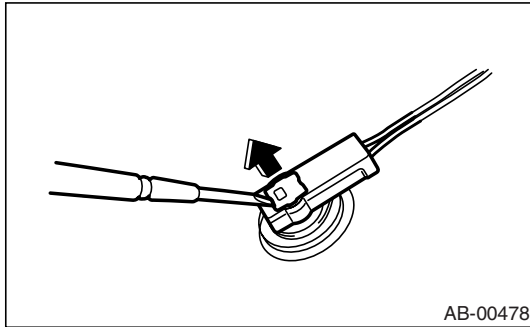
Airbag Connector

AIRBAG SYSTEM (DIAGNOSTICS)

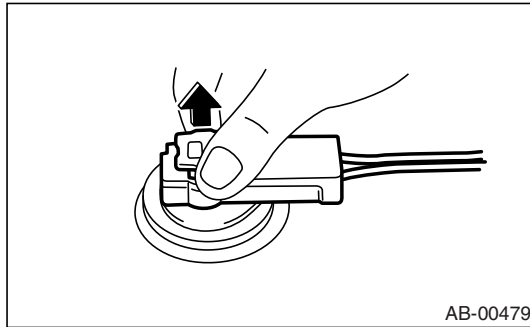
3. DRIVER'S AIRBAG MODULE AND PRE-TENSIONER

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.

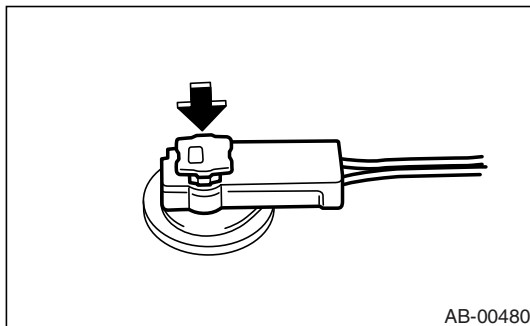


2) How to connect:

Connect the connector in reverse order of disconnecting. At this time, be sure to push the push lock 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.



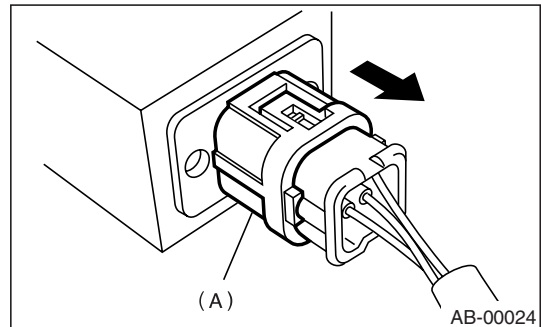
4. FRONT SUB-SENSOR AND SIDE AIRBAG SENSOR

1) How to disconnect:

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

CAUTION:

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

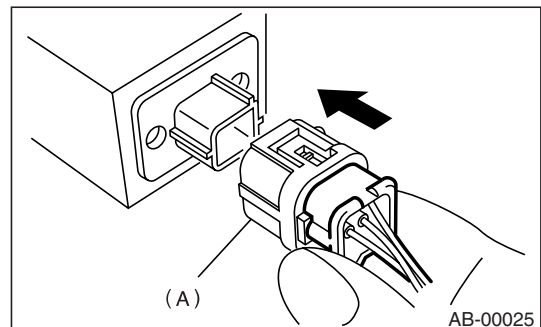


2) How to connect:

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.



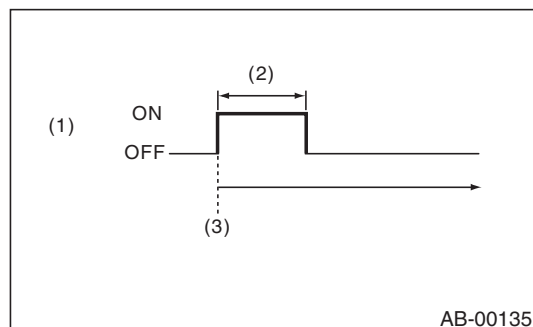
Airbag Warning Light Illumination Pattern

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)

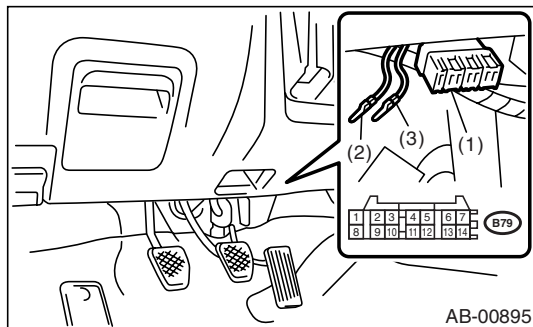
8. Read Diagnostic Trouble Code (DTC)

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.

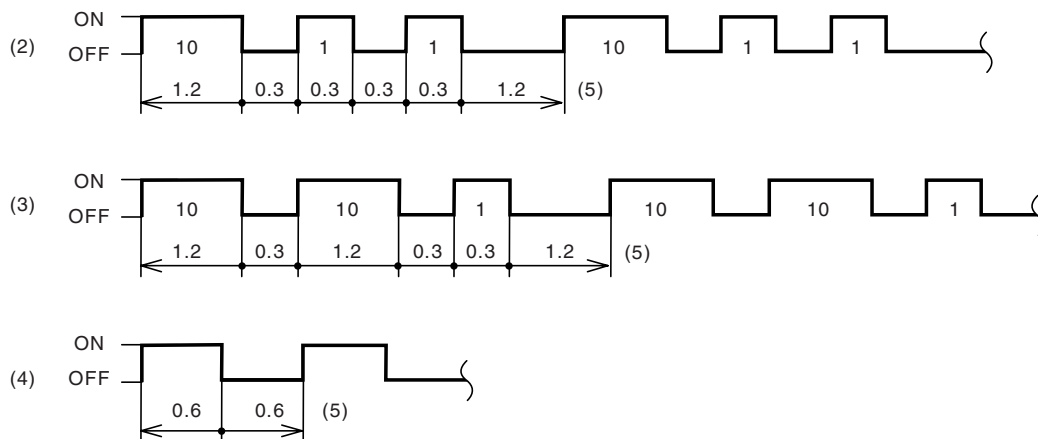
The airbag warning light flashes a code corresponding to the faulty parts.

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)-32, List of Diagnostic Trouble Code (DTC).>
- "Airbag Warning Light Failure" <Ref. to AB(diag)-25, 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.

Clear Memory Mode

AIRBAG SYSTEM (DIAGNOSTICS)

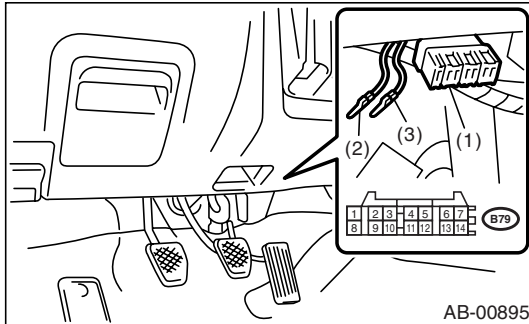
10. Clear Memory Mode

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.

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:

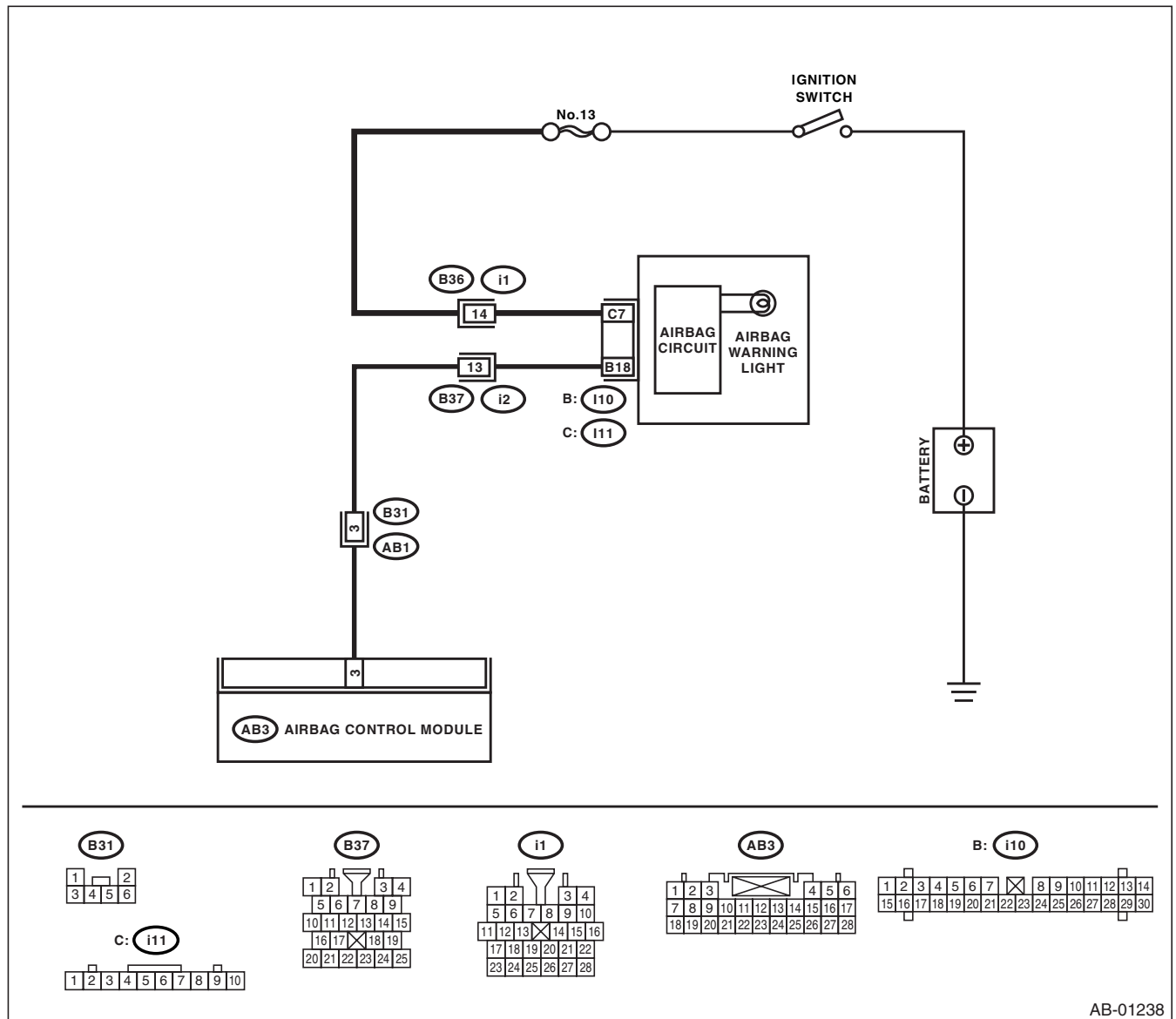
- Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner roll connector, control module, and sensor, reconnect each part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

Airbag Warning Light Failure

AIRBAG SYSTEM (DIAGNOSTICS)

1. LHD MODEL

WIRING DIAGRAM:



AB-01238

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 airbag main harness with body harness.	Go to step 2.

Airbag Warning Light Failure

AIRBAG SYSTEM (DIAGNOSTICS)

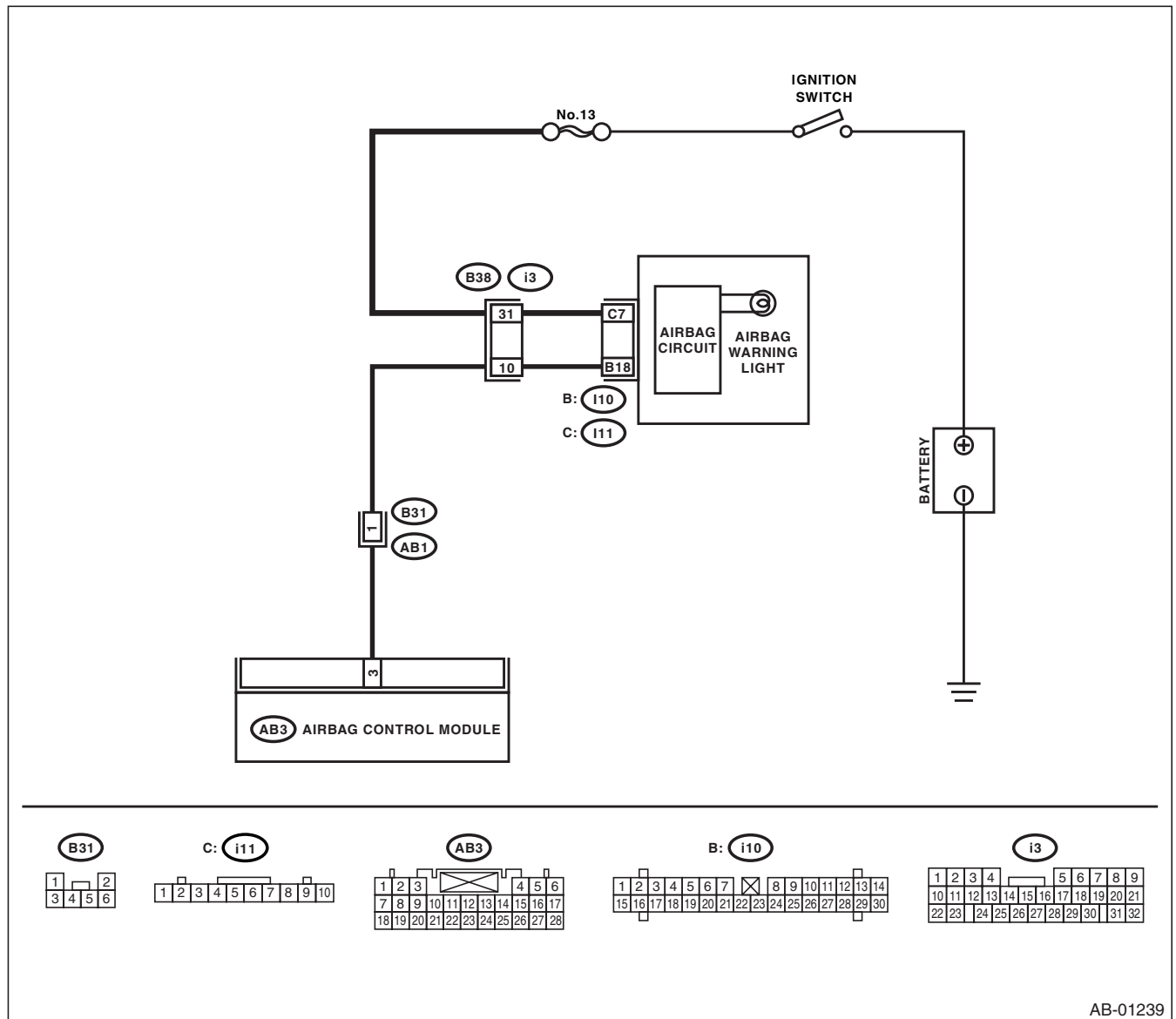
Step	Check	Yes	No
2 CHECK AIRBAG WARNING LIGHT. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Connect the connector (1T) in test harness T to the body harness connector (B31). 3) Connect the connector (1M) in test harness M to the connector (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-12, 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 airbag main harness with body 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 airbag main harness with body harness.
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.

Airbag Warning Light Failure

AIRBAG SYSTEM (DIAGNOSTICS)

2. RHD MODEL

WIRING DIAGRAM:



AB-01239

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 airbag main harness with body harness.	Go to step 2.

Airbag Warning Light Failure

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
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 (1M) in test harness M to the body harness connector (B31). 3) Connect the battery ground cable and turn the ignition switch to ON. 4) 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-12, 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 airbag main harness with body 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 airbag main harness with body harness.
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.

Airbag Warning Light Failure

AIRBAG SYSTEM (DIAGNOSTICS)

B: AIRBAG WARNING LIGHT REMAINS OFF

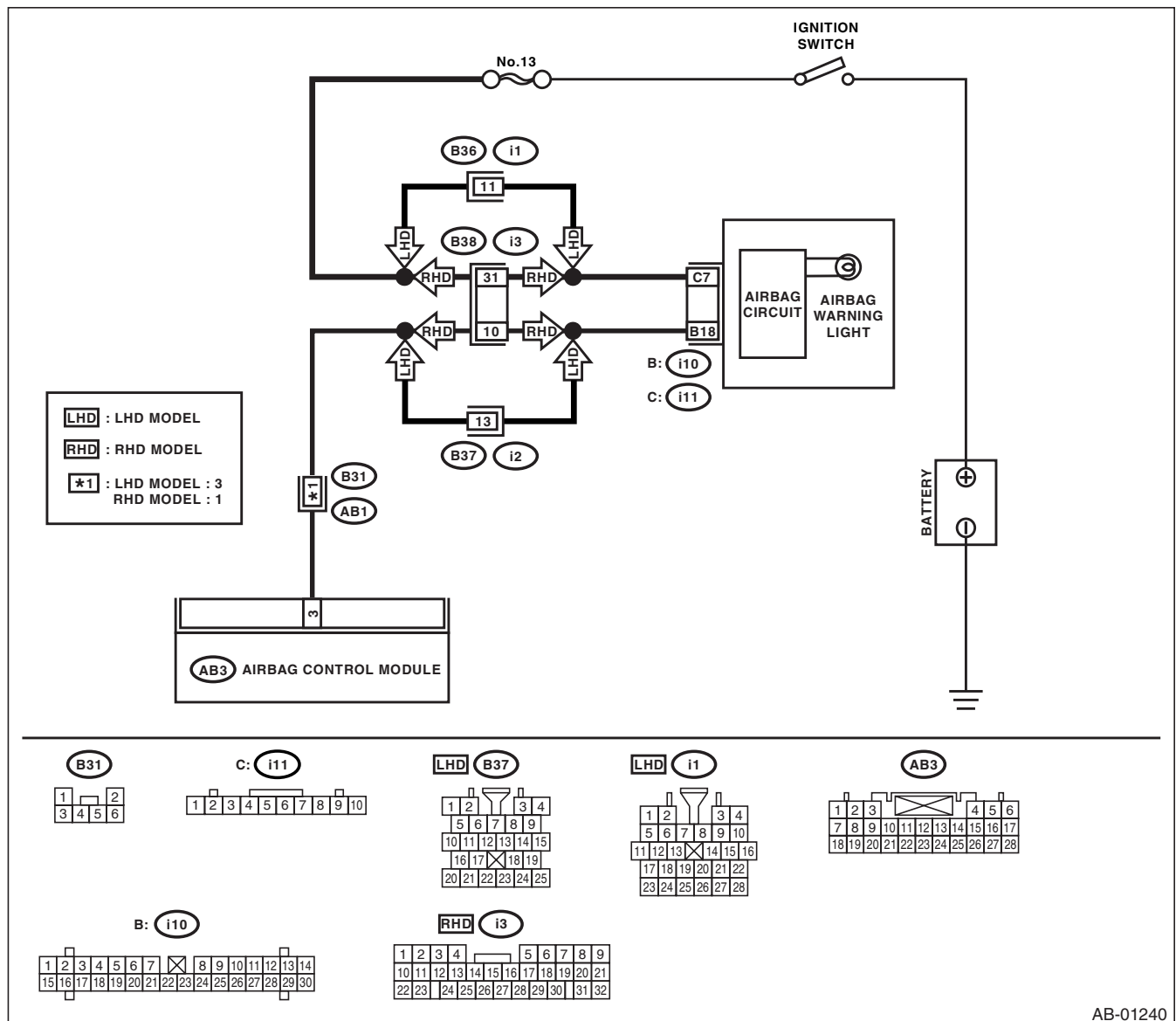
DIAGNOSIS:

- 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-01240

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-12, 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 airbag main harness with body 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	Index No.
11	Provided.	- Airbag main harness circuit is open, shorted or shorted to ground. - Airbag module harness (driver) circuit is open, shorted or shorted to ground. - Roll connector circuit is open, shorted or shorted to ground. - Airbag control module is faulty. - Driver's airbag module is faulty.	<Ref. to AB(diag)-35, 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)-37, 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)-39, 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)-41, DTC 16, Diagnostic Chart with Trouble Code.>
21	Provided.	Airbag control module is faulty.	<Ref. to AB(diag)-42, DTC 21, Diagnostic Chart with Trouble Code.>
22	Provided.	Front airbag module and seat belt pretensioner (LH/ RH) are inflated.	<Ref. to AB(diag)-43, 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)-44, 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)-45, 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)-47, 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)-49, DTC 31, Diagnostic Chart with Trouble Code.>

List of Diagnostic Trouble Code (DTC)

AIRBAG SYSTEM (DIAGNOSTICS)

DTC	Memory function	Contents of diagnosis	Index No.
32	Provided.	- Front sub-sensor harness (LH) circuit is shorted. - Front sub-sensor harness (LH) circuit is open. - Front sub-sensor (LH) is faulty. - Airbag control module is faulty.	<Ref. to AB(diag)-52, 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)-55, DTC 41, Diagnostic Chart with Trouble Code.>
42	Provided.	- Side airbag harness (LH) is faulty. - Side airbag module (LH) is faulty. - Airbag control module is faulty.	<Ref. to AB(diag)-57, 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)-59, 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)-61, 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)-63, 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)-65, DTC 52, Diagnostic Chart with Trouble Code.>
53	Provided.	Side airbag sensor (RH) is faulty.	<Ref. to AB(diag)-67, DTC 53, Diagnostic Chart with Trouble Code.>
54	Provided.	Side airbag sensor (LH) is faulty.	<Ref. to AB(diag)-67, DTC 54, Diagnostic Chart with Trouble Code.>
55	Provided.	Side airbag module is inflated.	<Ref. to AB(diag)-67, 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)-68, 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)-70, 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)-72, DTC 65, Diagnostic Chart with Trouble Code.>

List of Diagnostic Trouble Code (DTC)

AIRBAG SYSTEM (DIAGNOSTICS)

DTC	Memory function	Contents of diagnosis	Index No.
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)-74, DTC 66, Diagnostic Chart with Trouble Code.>

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

13.Diagnostic Chart with Trouble Code

A: DTC 11

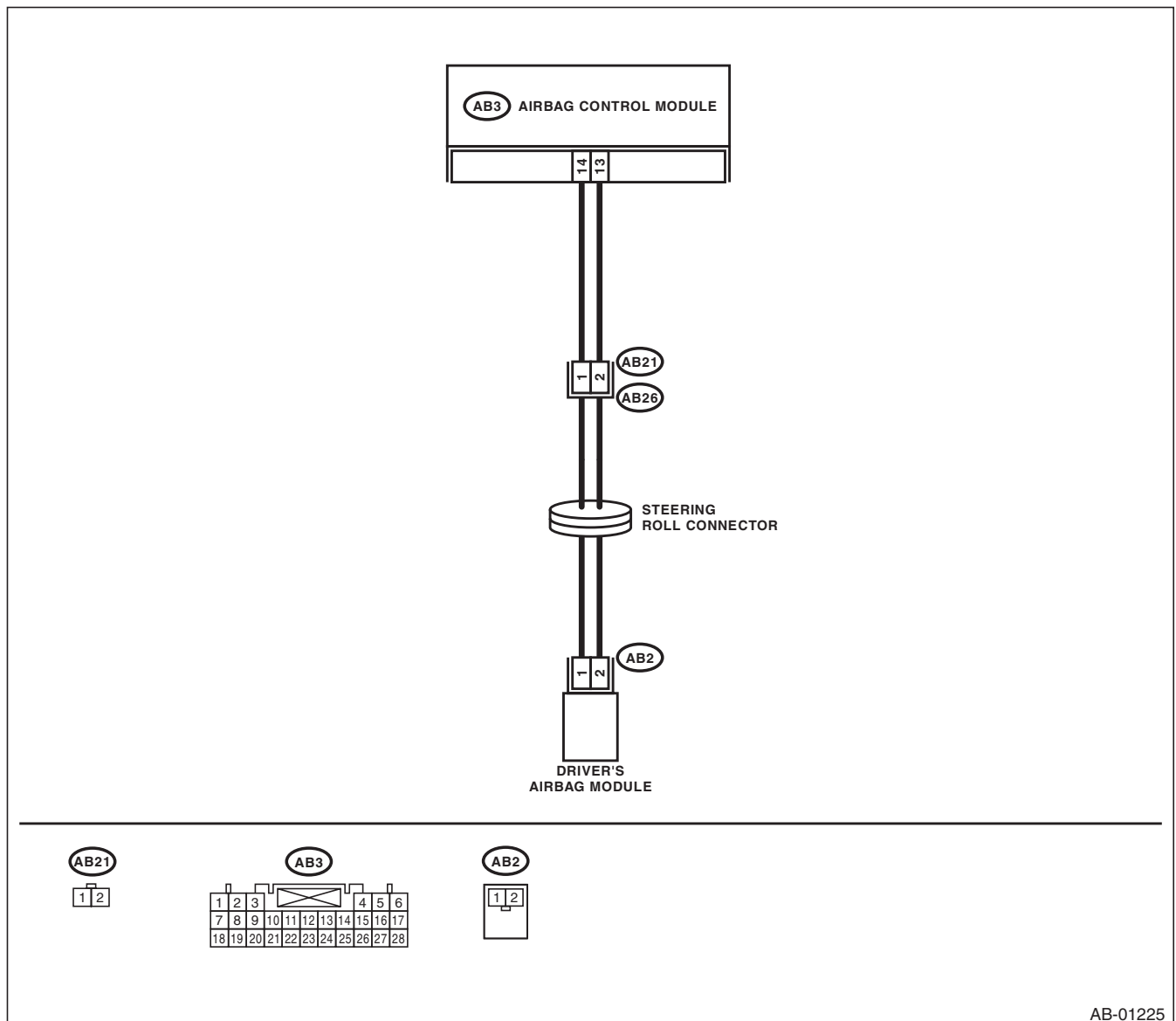
DIAGNOSIS:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch 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-01225

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, <Ref. to AB-13, Passenger's Airbag Module.> and disconnect 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) 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. 4: (2R) No. 4 — (3F) No. 3:	Is the resistance less than 10 Ω ?	Go to step 4.	Replace the airbag main harness with body 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 airbag main harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

B: DTC 12

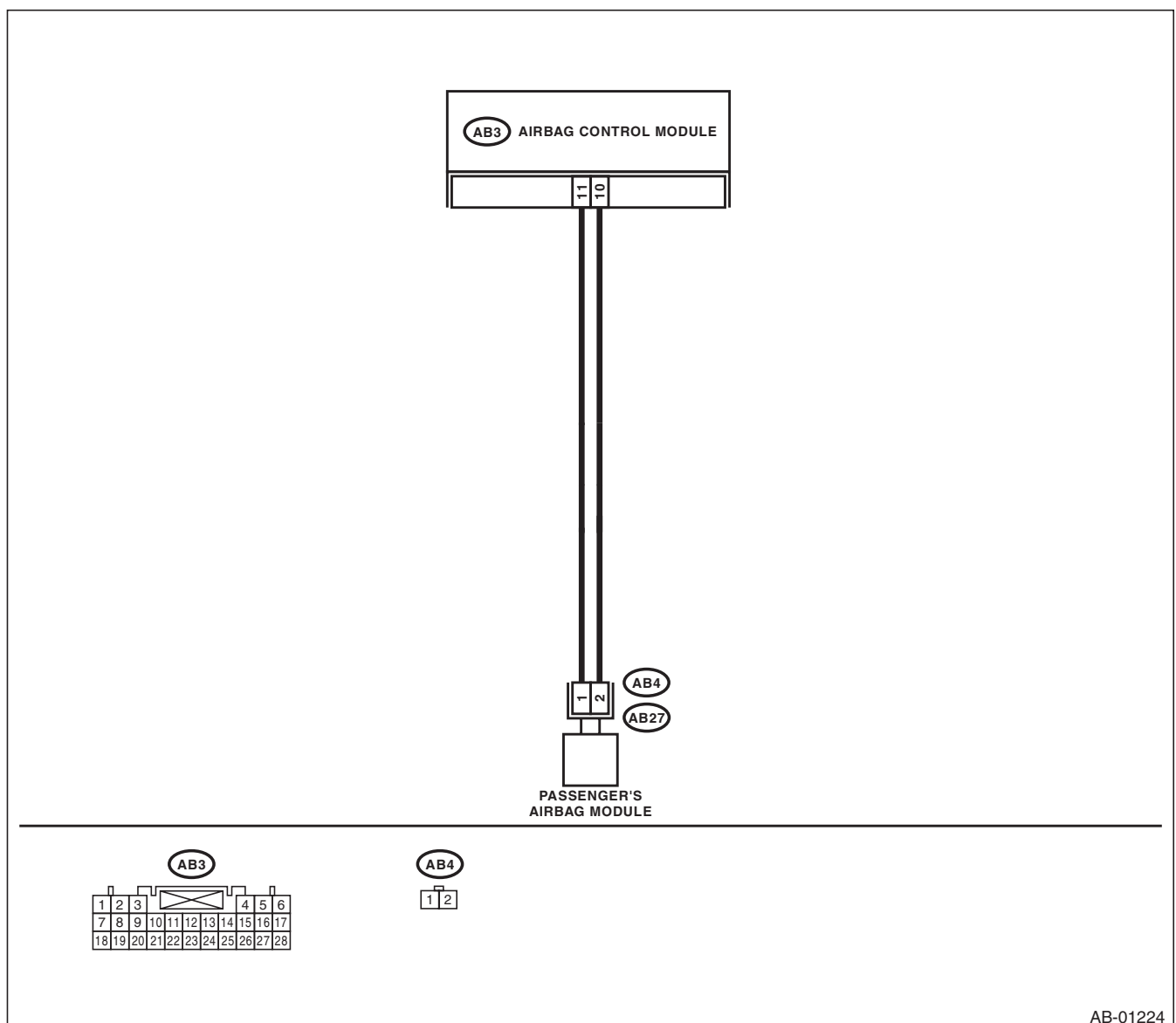
DIAGNOSIS:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch 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 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. 3: (2R) No. 5 — (3F) No. 4:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the airbag main harness with body 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 airbag main harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

C: DTC 15

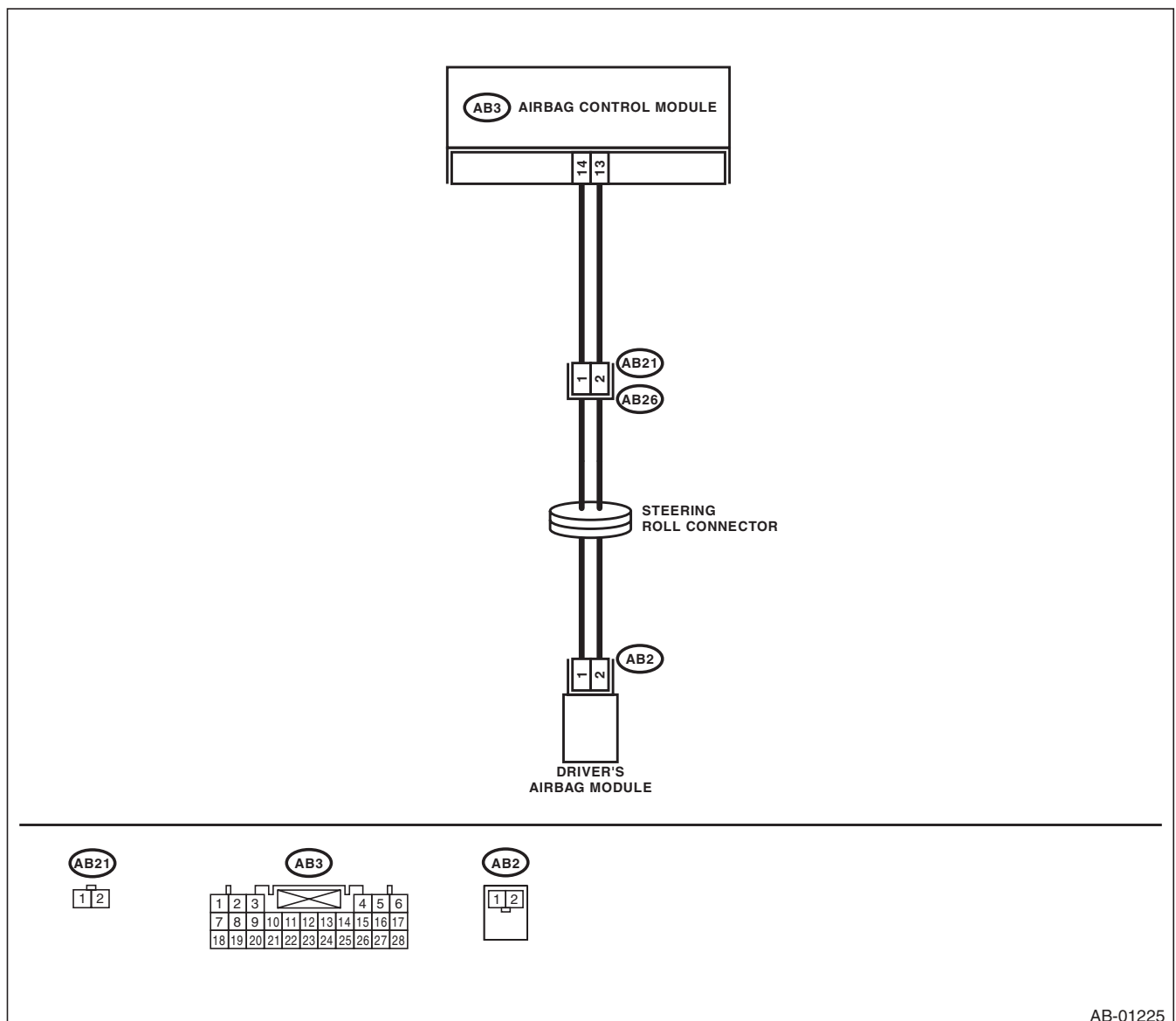
DIAGNOSIS:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch 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 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 airbag main harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

D: DTC 16

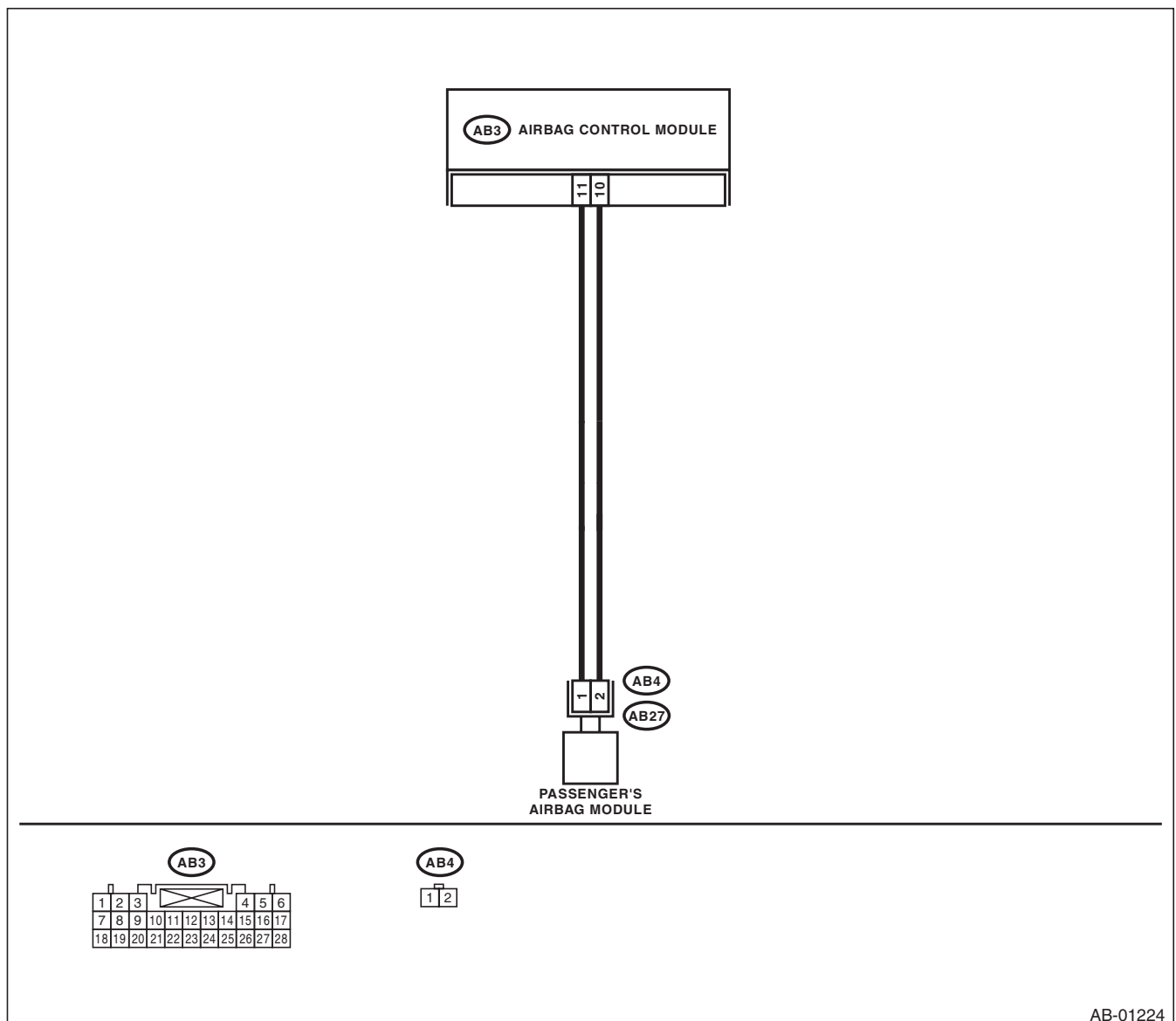
DIAGNOSIS:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch 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 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 airbag main harness with body harness.

E: DTC 21

DIAGNOSIS:

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.

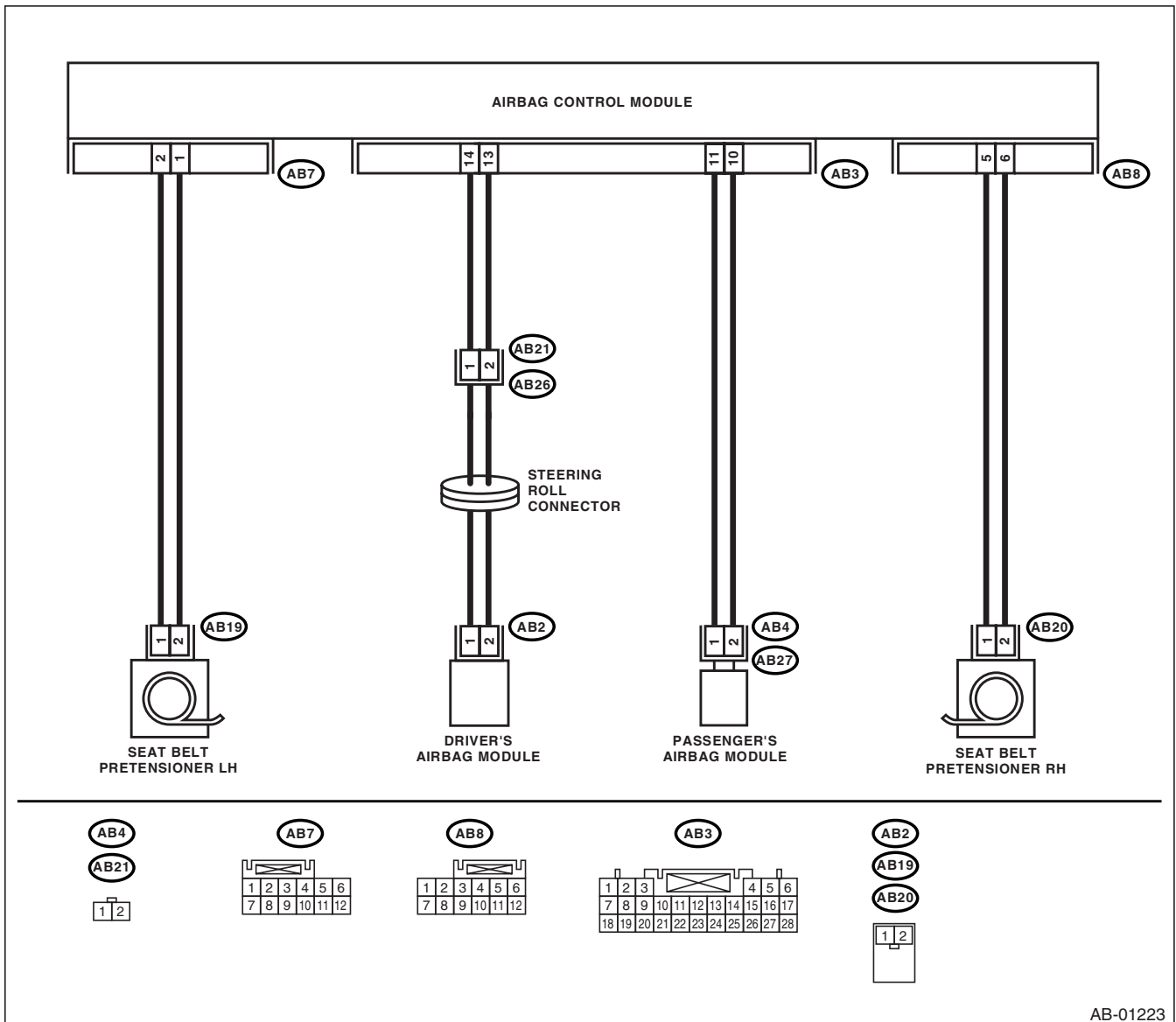
Step	Check	Yes	No
1 CHECK IF DTC 21 IS INDICATED. Read the DTC. <Ref. to AB(diag)-22, Read Diagnostic Trouble Code (DTC).>	Is the airbag warning light DTC 21 indicated?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Perform clear memory. <Ref. to AB(diag)-24, Clear Memory Mode.>

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

F: DTC 22

WIRING DIAGRAM:



AB-01223

This code is indicated when the front airbag and the pretensioner are in operation.

Once this code 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-12, Front Seat Belt.>

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

G: DTC 23

DIAGNOSIS:

(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.>	Is there rust or damage on the harness connector and the control module connector?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.> Replace the airbag main harness with body 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

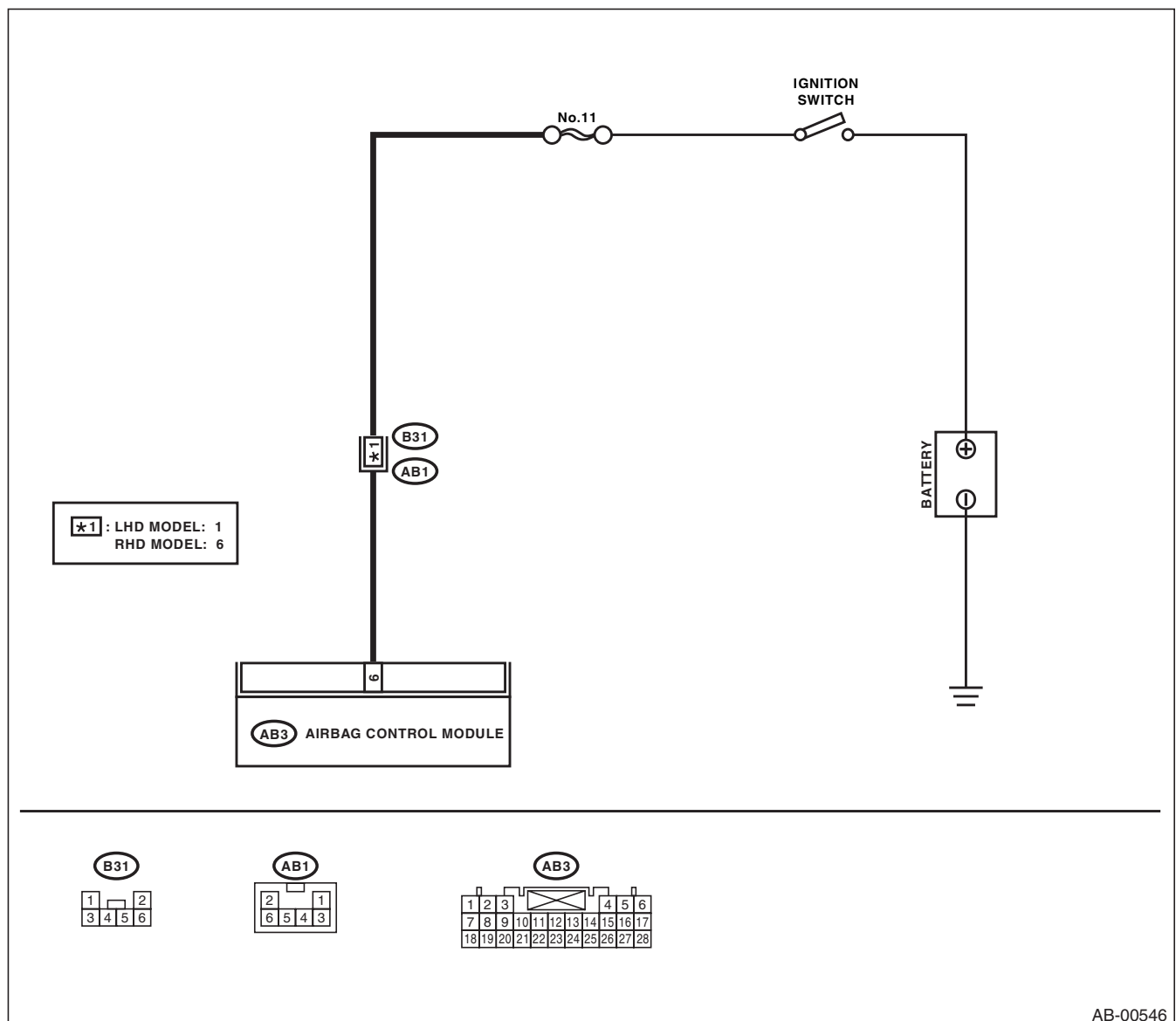
DIAGNOSIS:

- 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:



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 LHD MODEL: (5M) No. 2 — (2R) No. 1: RHD MODEL: (5M) No. 9 — (2R) No. 1:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the airbag main harness with body harness.
3	CHECK AIRBAG MAIN HARNESS. Measure the following resistance with the above-mentioned condition maintained. Connector & terminal LHD MODEL: (5M) No. 2 — Chassis ground: (2R) No. 1 — Chassis ground: RHD MODEL: (5M) No. 9 — Chassis ground: (2R) No. 1 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 4.	Replace the airbag main harness with body 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

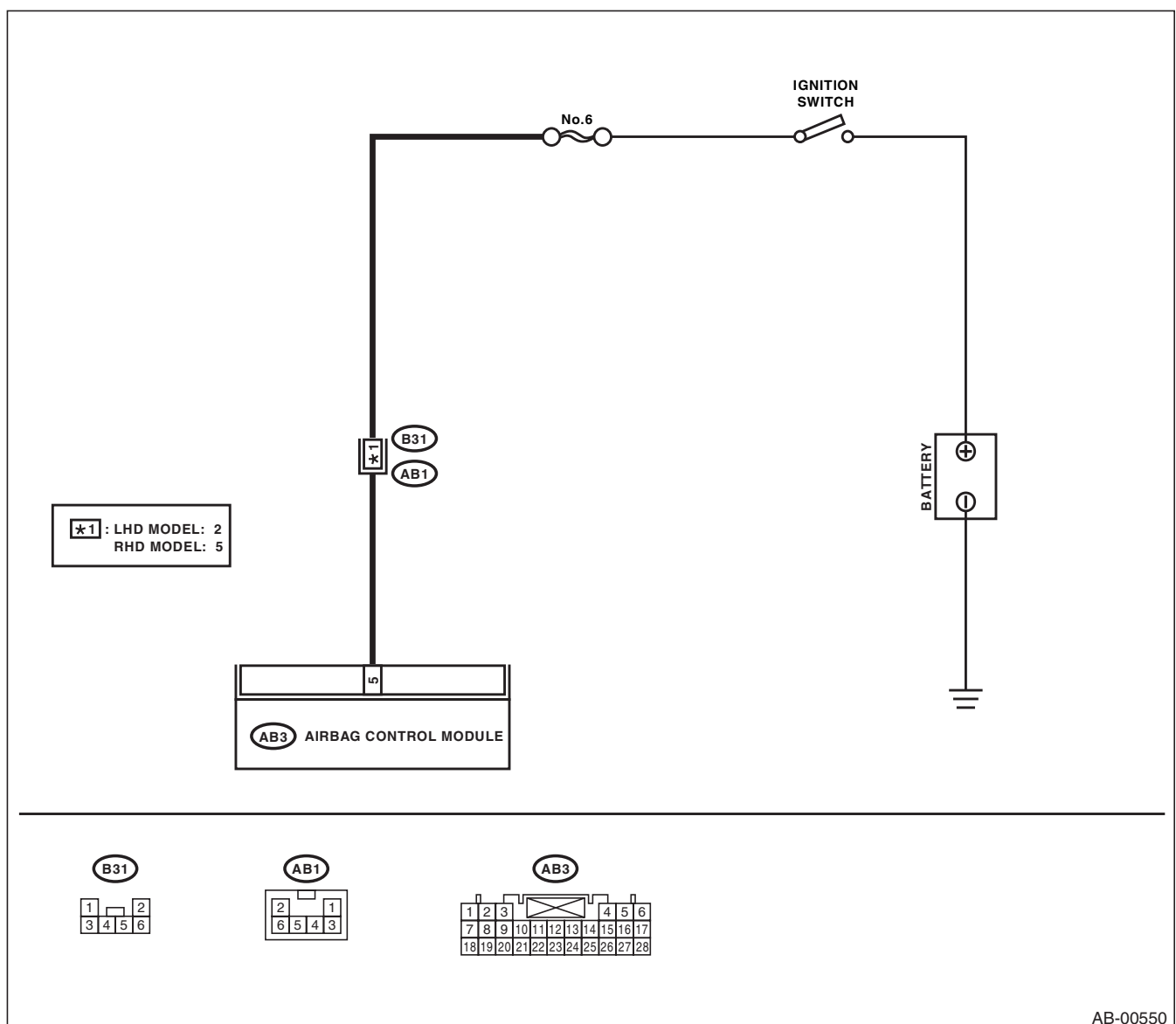
DIAGNOSIS:

- 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-00550

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 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 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 LHD MODEL: (5M) No. 4 — (2R) No. 6: RHD MODEL: (5M) No. 1 — (2R) No. 6:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the airbag main harness with body harness.
3 CHECK AIRBAG MAIN HARNESS. Measure the following resistance with the above-mentioned condition maintained. Connector & terminal LHD MODEL: (5M) No. 4 — Chassis ground: (2R) No. 6 — Chassis ground: RHD MODEL: (5M) No. 1 — Chassis ground: (2R) No. 6 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 4.	Replace the airbag main harness with body harness.
4 CHECK FUSE No. 6 (IN JOINT BOX). 1) Confirm that the ignition switch is turned OFF. 2) Remove the fuse No. 6 (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

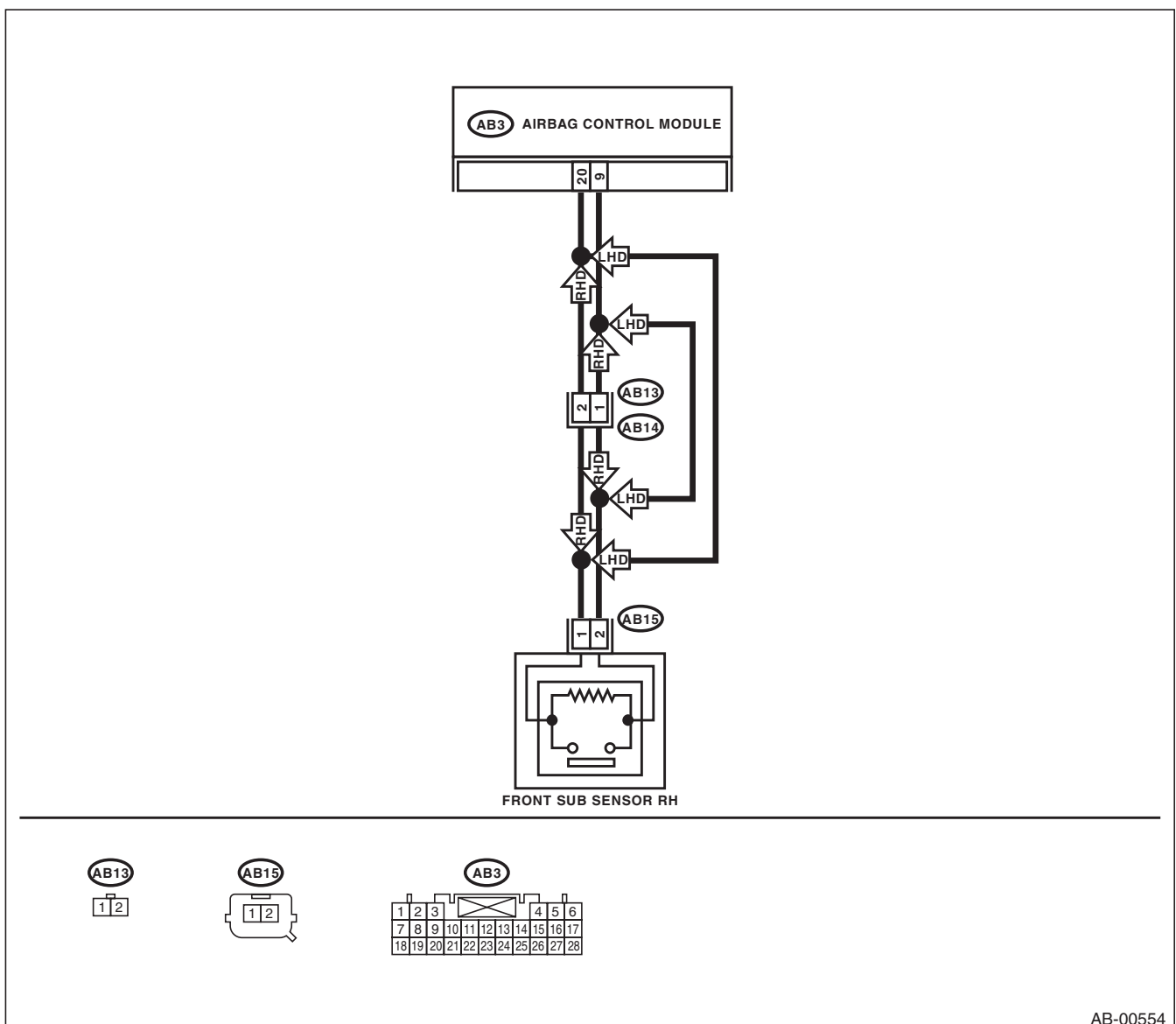
DIAGNOSIS:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch 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-00554

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. 5: (3R) No. 9 — (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 (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 ?	LHD model: Finish the diagnosis. RHD model: Go to step 9.	LHD model: Replace the front sub-sensor (RH). <Ref. to AB-19, Front Sub Sensor.> RHD model: Go to step 5.
5 CHECK AIRBAG MAIN HARNESS 1) Disconnect the connector (AB14) from (AB13), and connect the connector (1F) in test harness F to connector (AB13). 2) Measure the resistance between connector (3R) in test harness R and connector (3F) in test harness F. Connector & terminal (3R) No. 7 — (3F) No. 4: (3R) No. 9 — (3F) No. 3:	Is the resistance less than 10 Ω ?	Go to step 6.	Replace the airbag main harness with body harness.
6 CHECK AIRBAG MAIN HARNESS 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 ?	Go to step 7.	Replace the airbag main harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

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

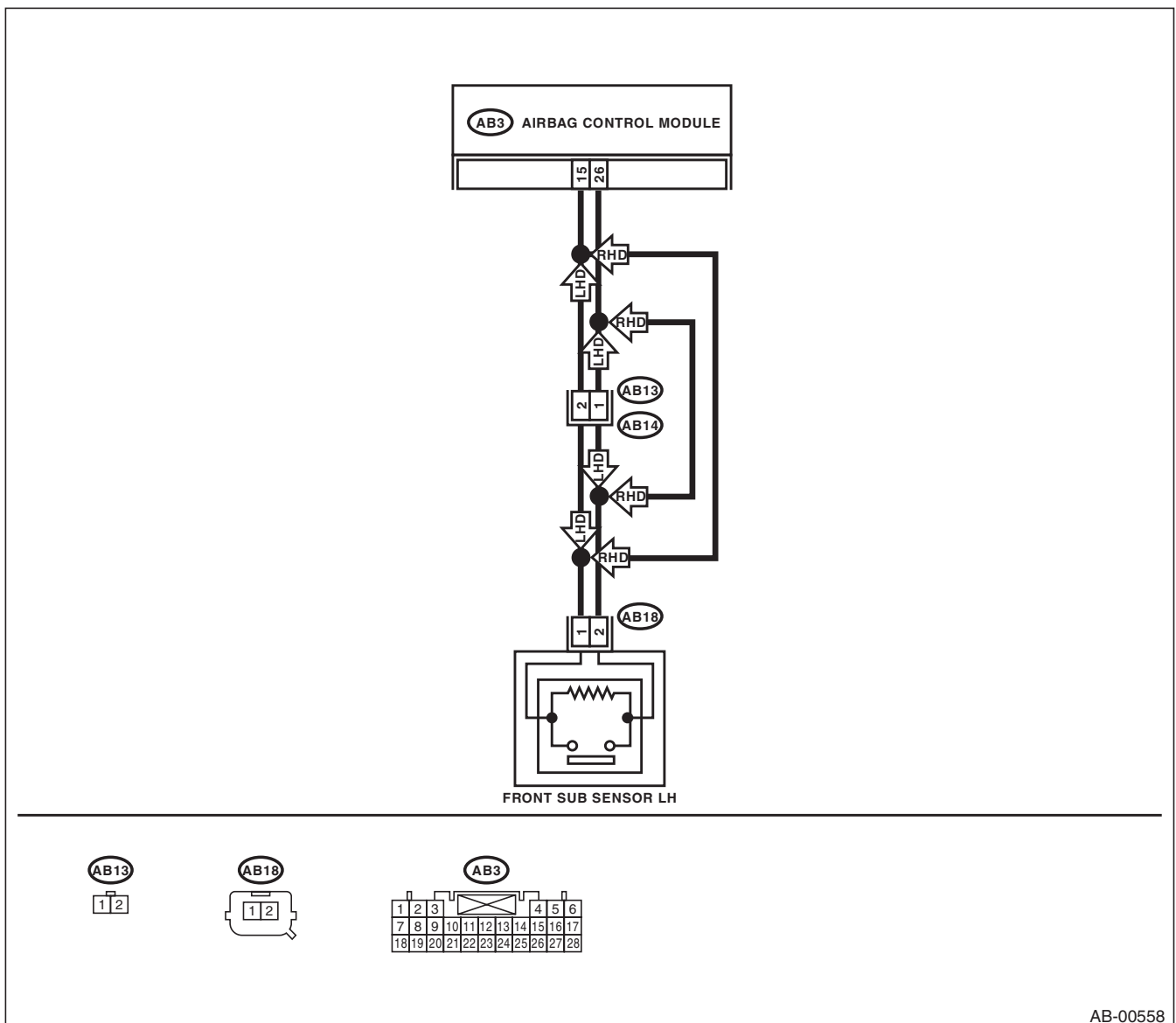
DIAGNOSIS:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch 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-00558

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. 6: (3R) No. 8 — (3H) No. 5:	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 ?	LHD MODEL: Go to step 9. RHD MODEL: Finish the diagnosis.	LHD MODEL: Go to step 5. RHD MODEL: Replace the front sub-sensor (LH). <Ref. to AB-19, Front Sub Sensor.>
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 airbag main harness with body 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 airbag main harness with body 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 front sub-sensor harness (LH) with body harness.
8 CHECK FRONT SUB-SENSOR HARNESS (LH). Measure the resistance between connector (3F) in test harness F and the chassis ground. Connector & terminal (3F) No. 5 — Chassis ground: (3F) No. 6 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 9.	Replace the front sub-sensor harness (LH) with body harness.
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

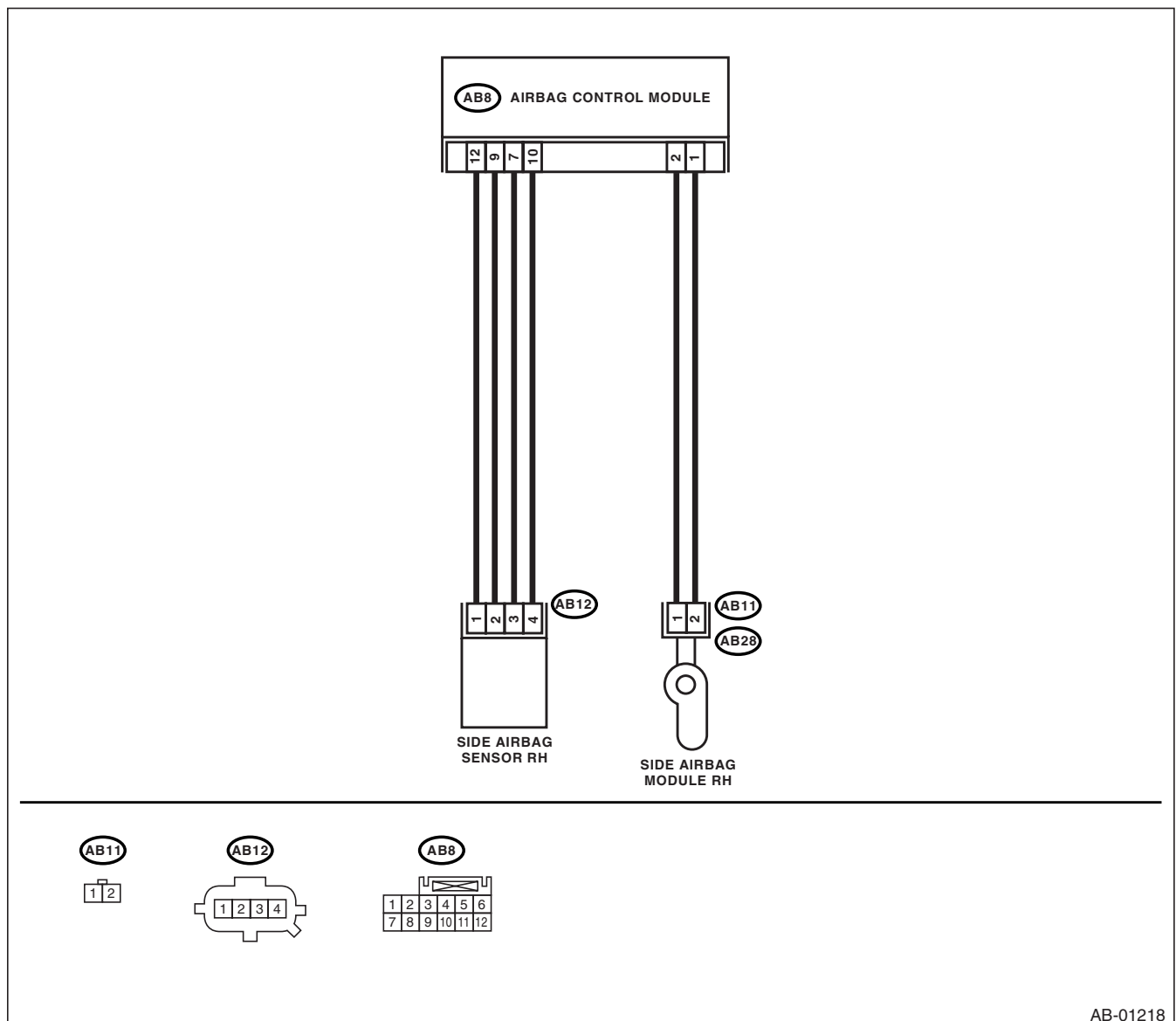
DIAGNOSIS:

- 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-01218

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-12, 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 side airbag harness with body 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 side airbag harness with body 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 side airbag harness with body 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 side airbag harness with body 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 side airbag harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

M: DTC 42

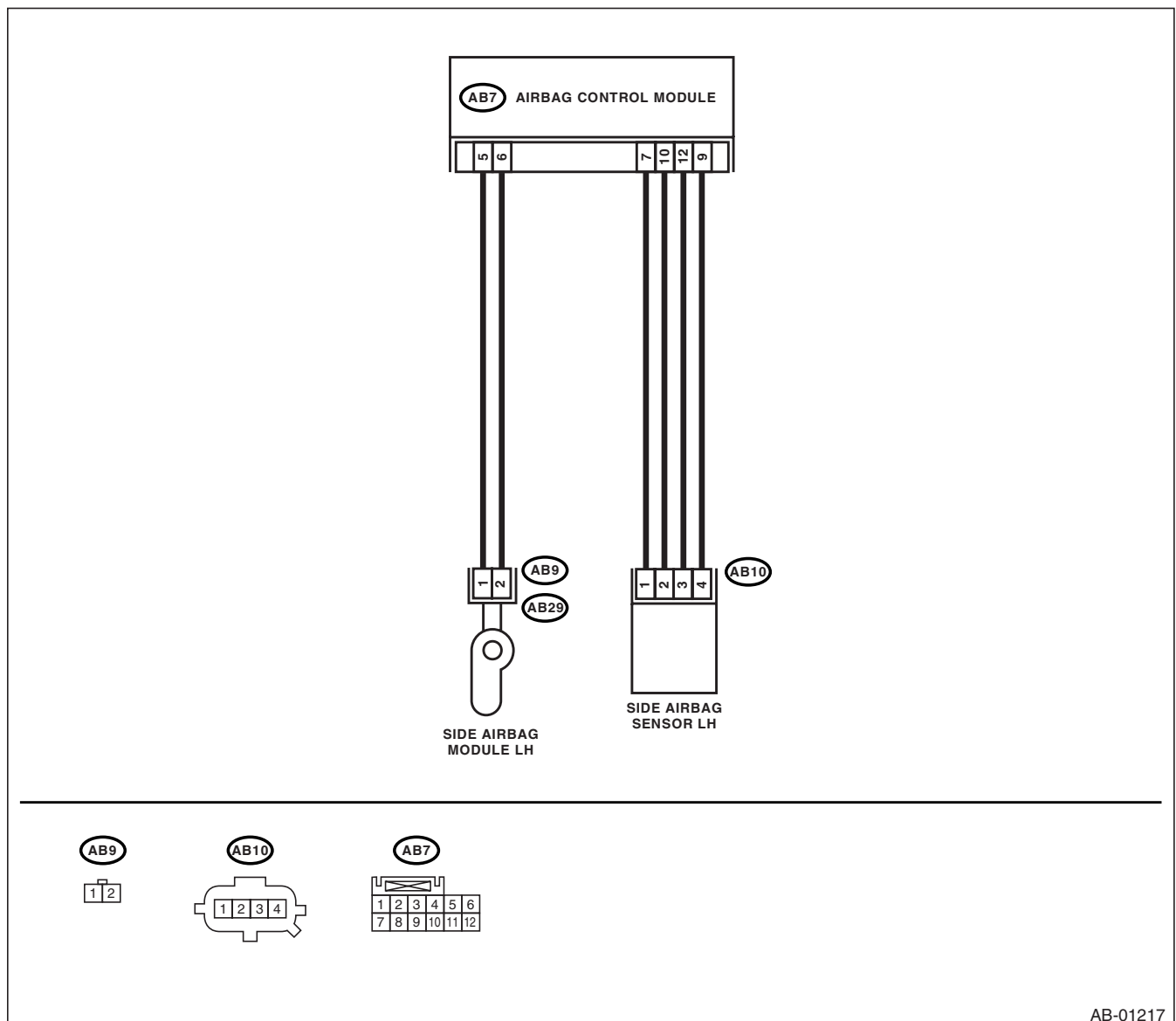
DIAGNOSIS:

- 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-12, 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. 4: (3R) No. 10 — (3F) No. 3:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the side airbag harness with body 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 side airbag harness with body 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 side airbag harness with body 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 side airbag harness with body 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 side airbag harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

N: DTC 45

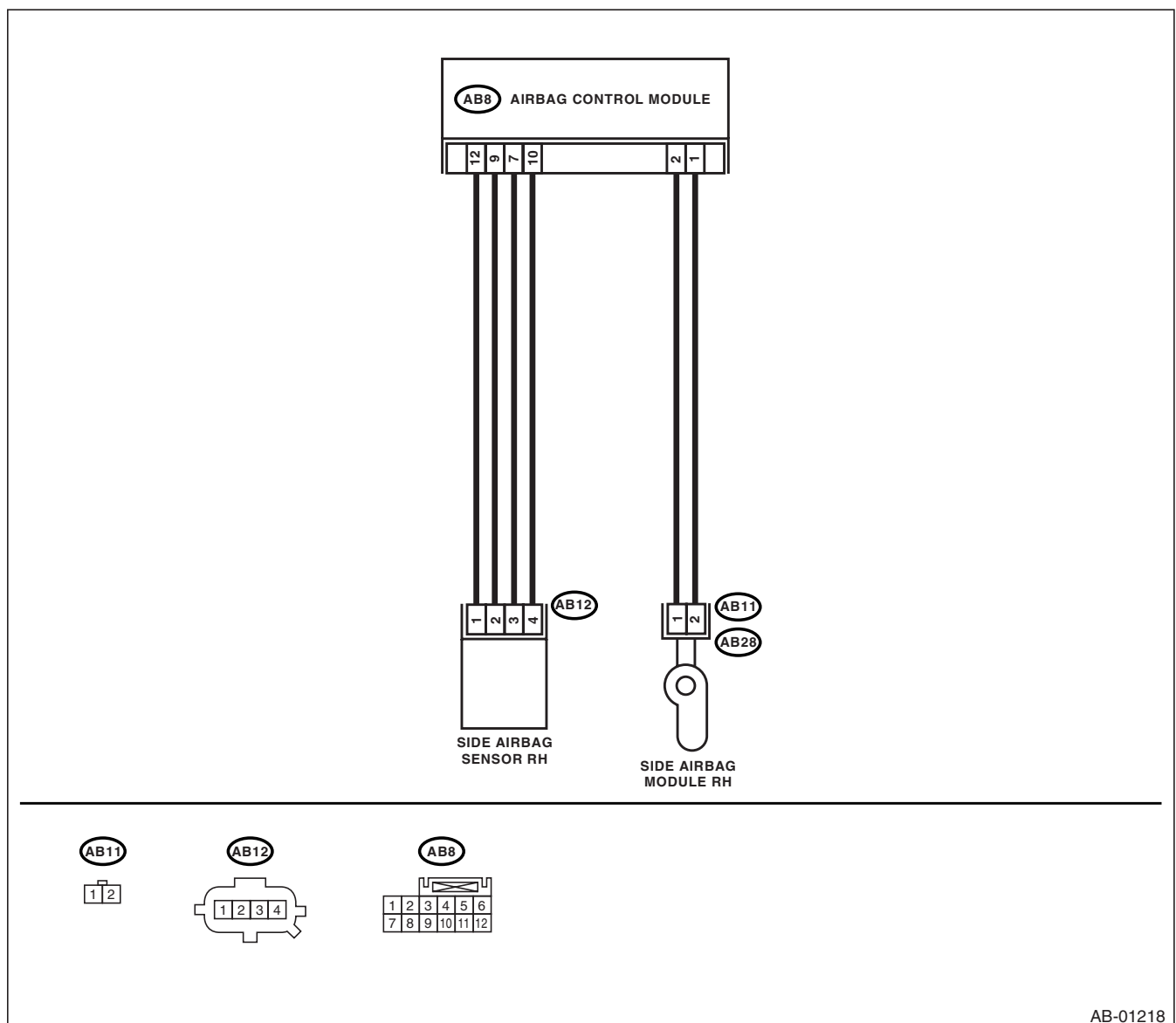
DIAGNOSIS:

- 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:



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-12, 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 side airbag harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

O: DTC 46

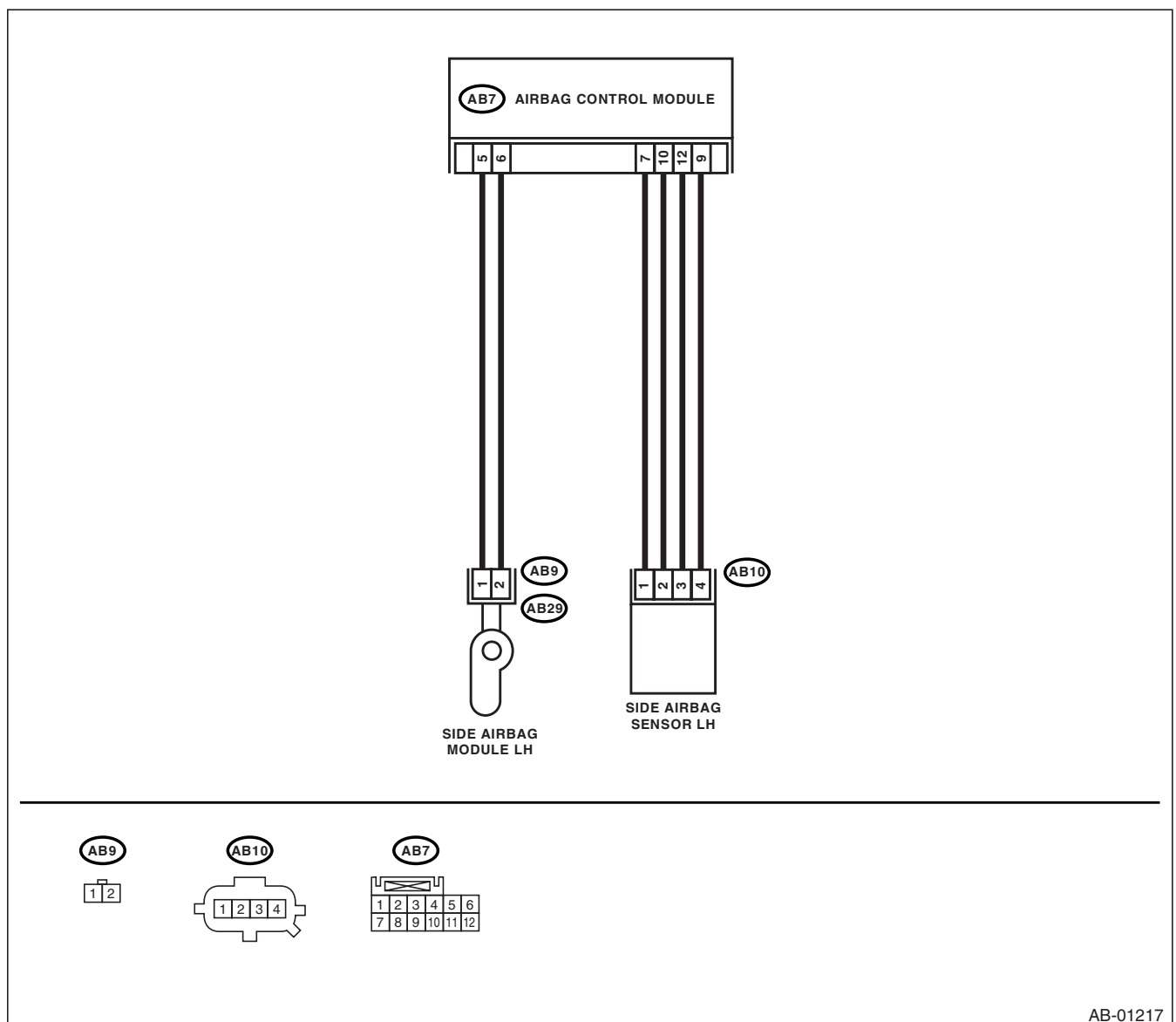
DIAGNOSIS:

- 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:



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-12, 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 side airbag harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

P: DTC 51

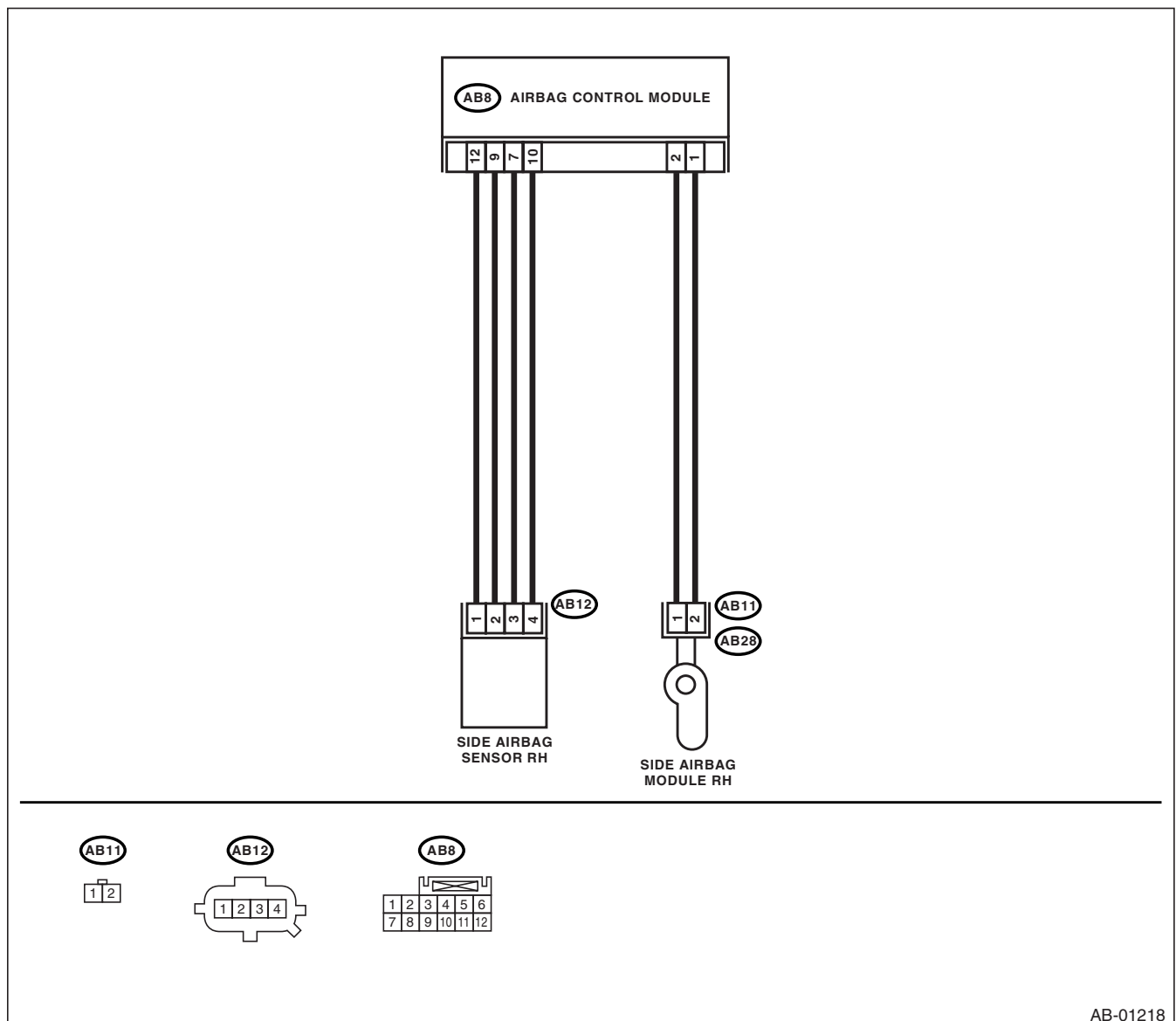
DIAGNOSIS:

- 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-01218

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-12, 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 side airbag harness with body 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 side airbag harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Q: DTC 52

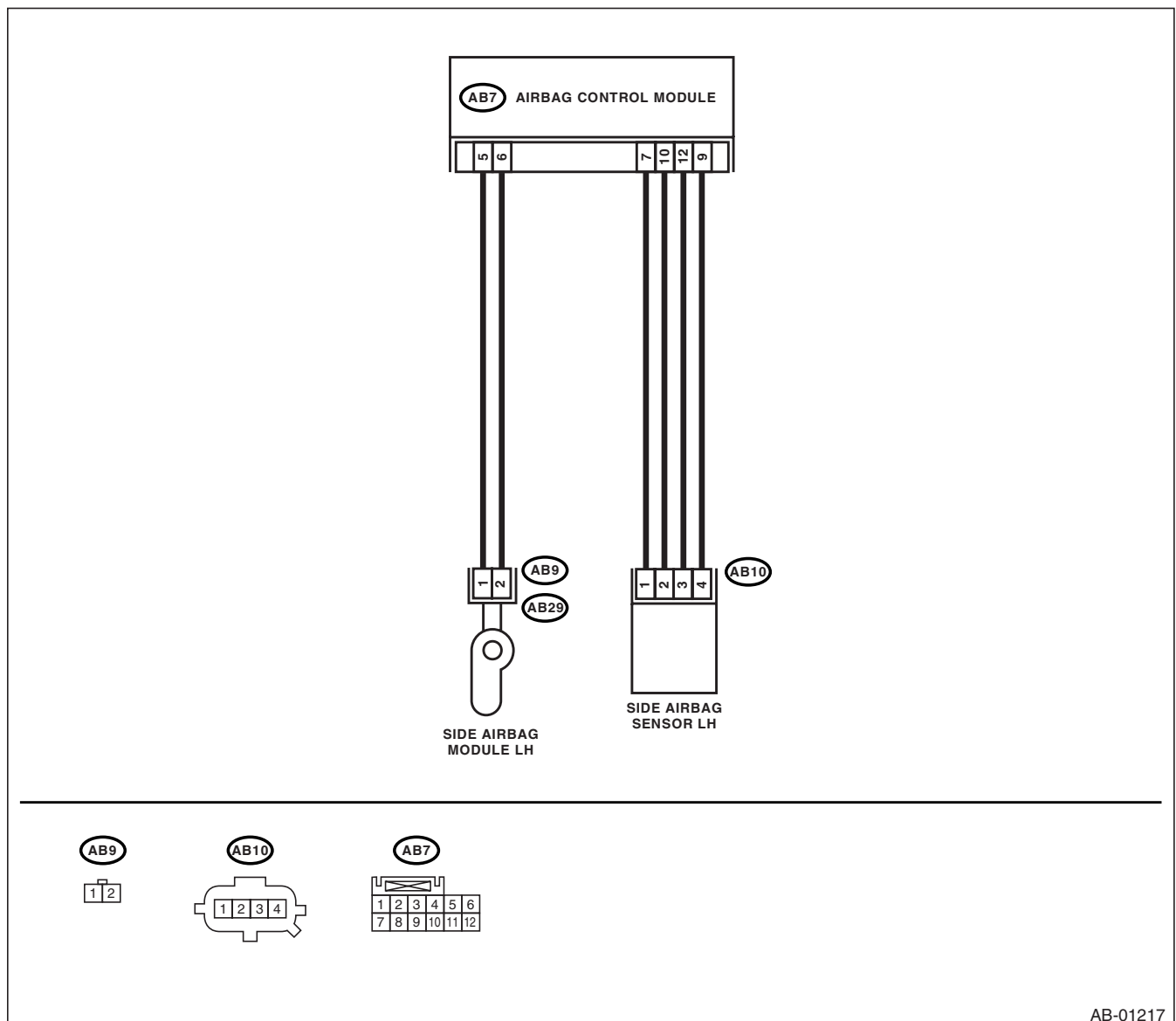
DIAGNOSIS:

- 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:



AB-01217

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-12, 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 side airbag harness with body 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 M Ω ?	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 side airbag harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

R: DTC 53

DIAGNOSIS:

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

DIAGNOSIS:

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 code is displayed when the side airbag is deployed .

When this code 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

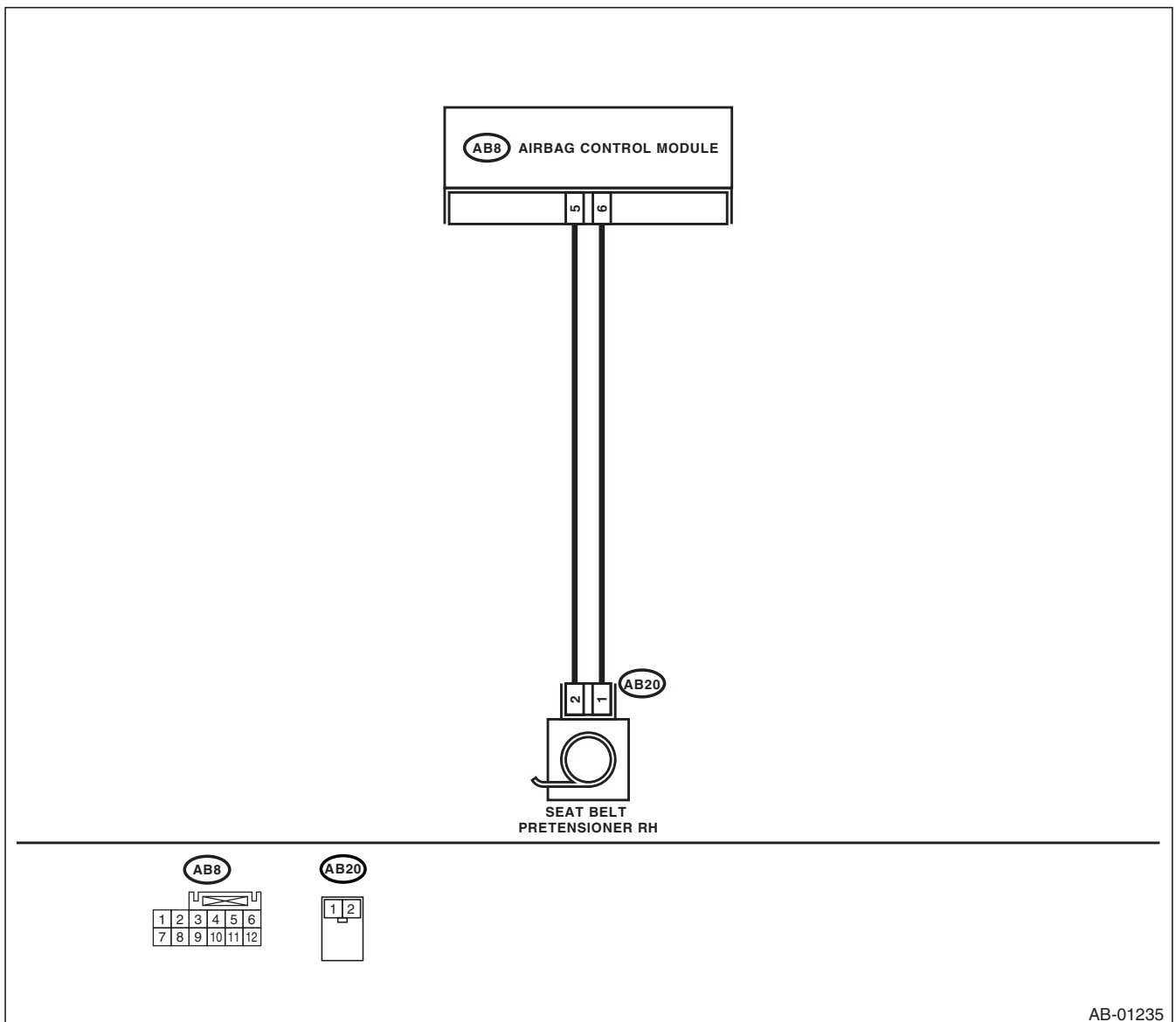
DIAGNOSIS:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch 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:



AB-01235

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-12, 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-12, 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. 2: (3R) No. 17 — (2N) No. 1:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the side airbag harness with body 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 side airbag harness with body 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 side airbag harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

V: DTC 62

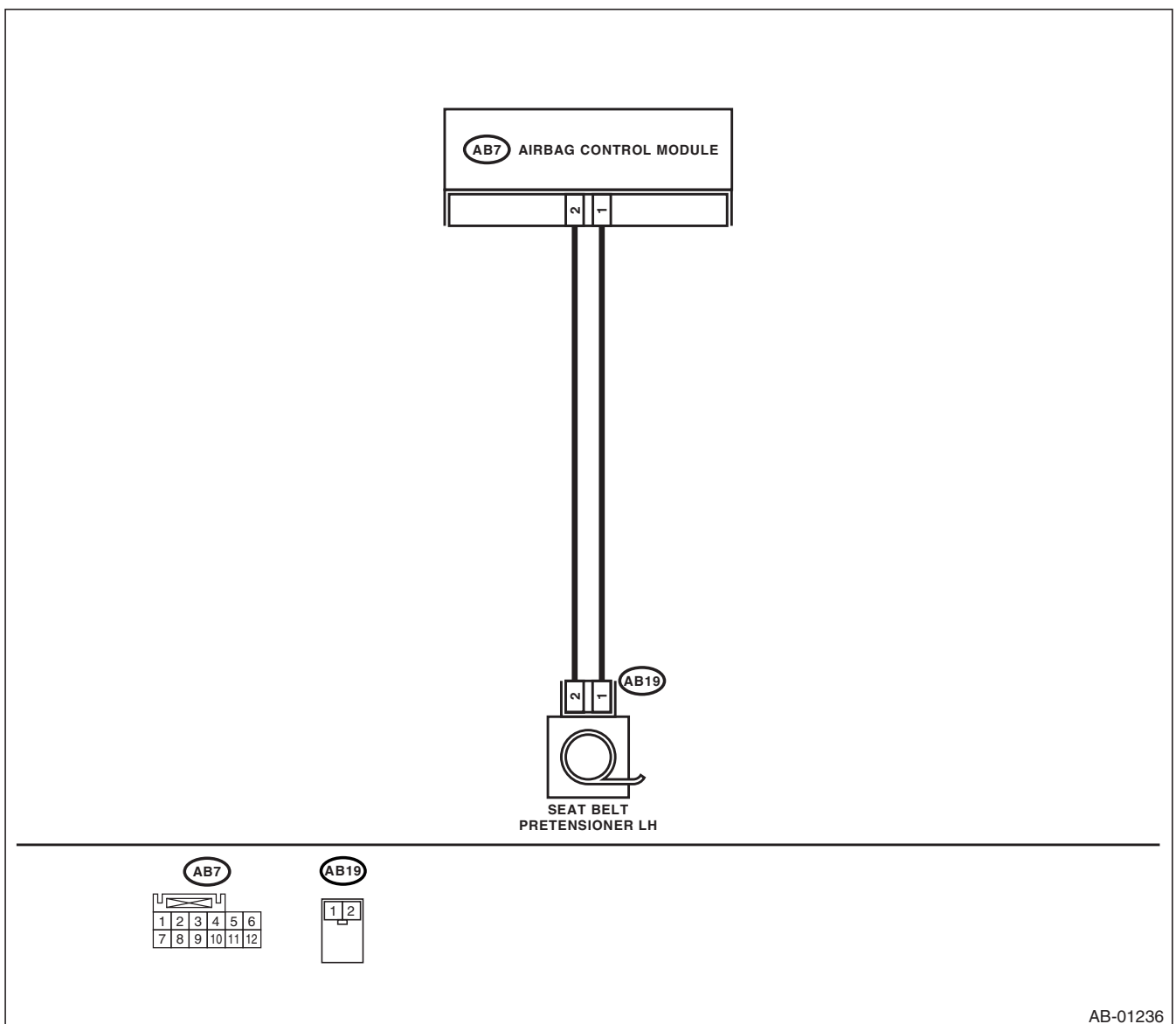
DIAGNOSIS:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch 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-12, 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-12, 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. 1: (3R) No. 13 — (2N) No. 2:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the side airbag harness with body 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 side airbag harness with body 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 side airbag harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

W: DTC 65

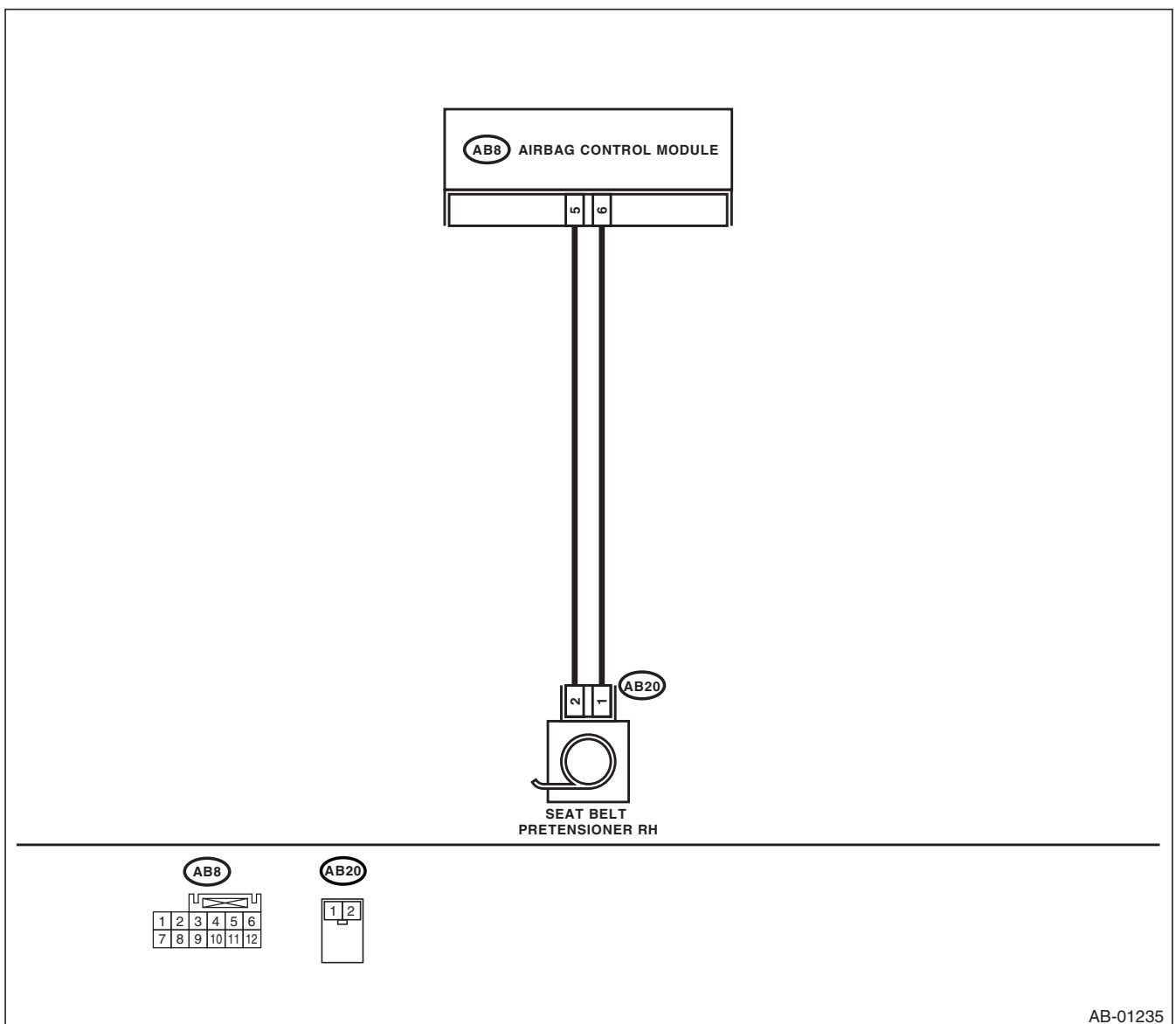
DIAGNOSIS:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch 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-12, 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-12, 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 side airbag harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

X: DTC 66

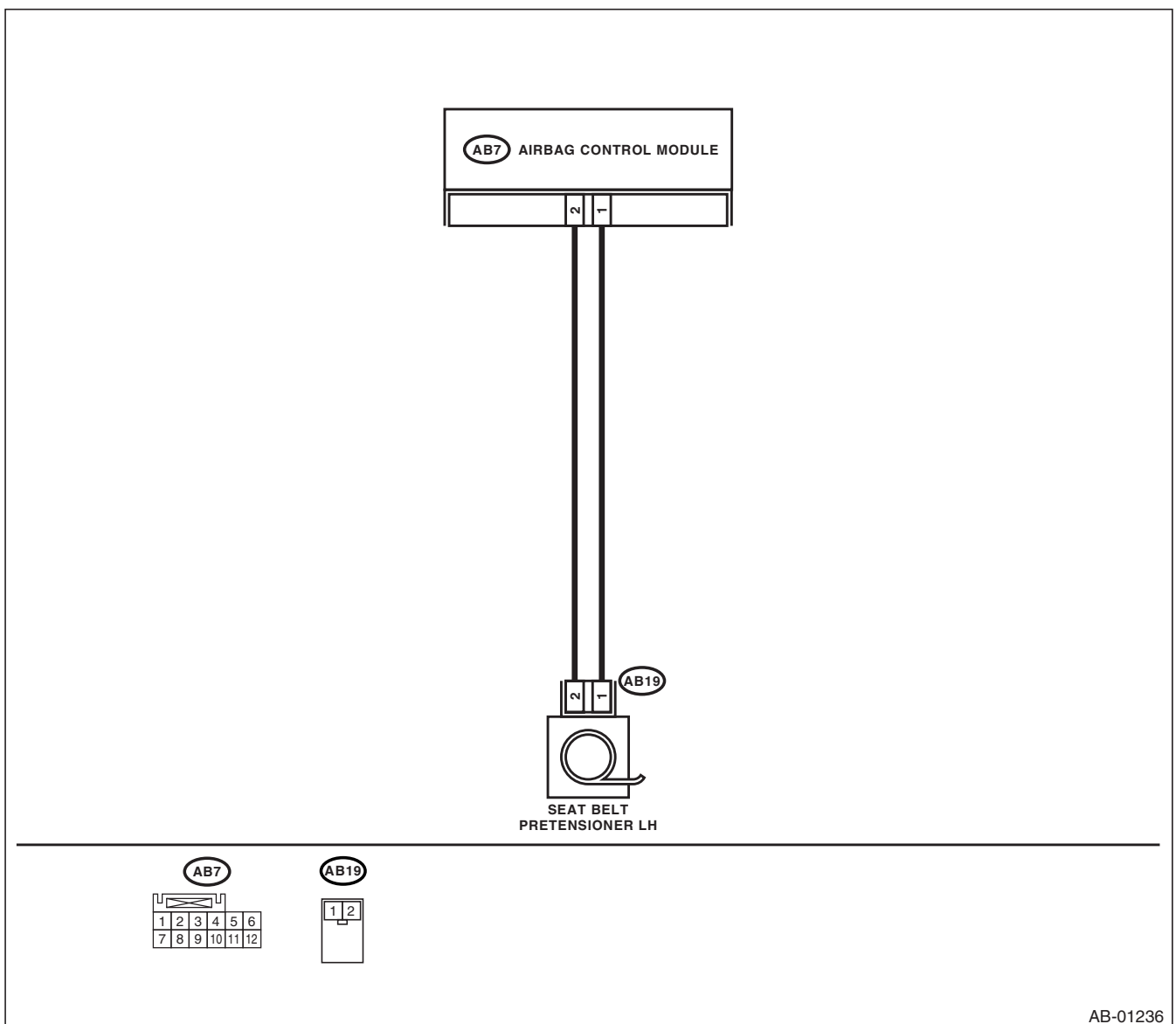
DIAGNOSIS:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch 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-12, 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-12, 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 side airbag harness with body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

SEAT BELT SYSTEM

SB

	Page
1. General Description	2
2. Pretensioner Connector	6
3. Seat Belt Warning System	7
4. Inspection Locations After a Collision	11
5. Front Seat Belt	12
6. Rear Seat Belt	14
7. Disposal of Pretensioner	17

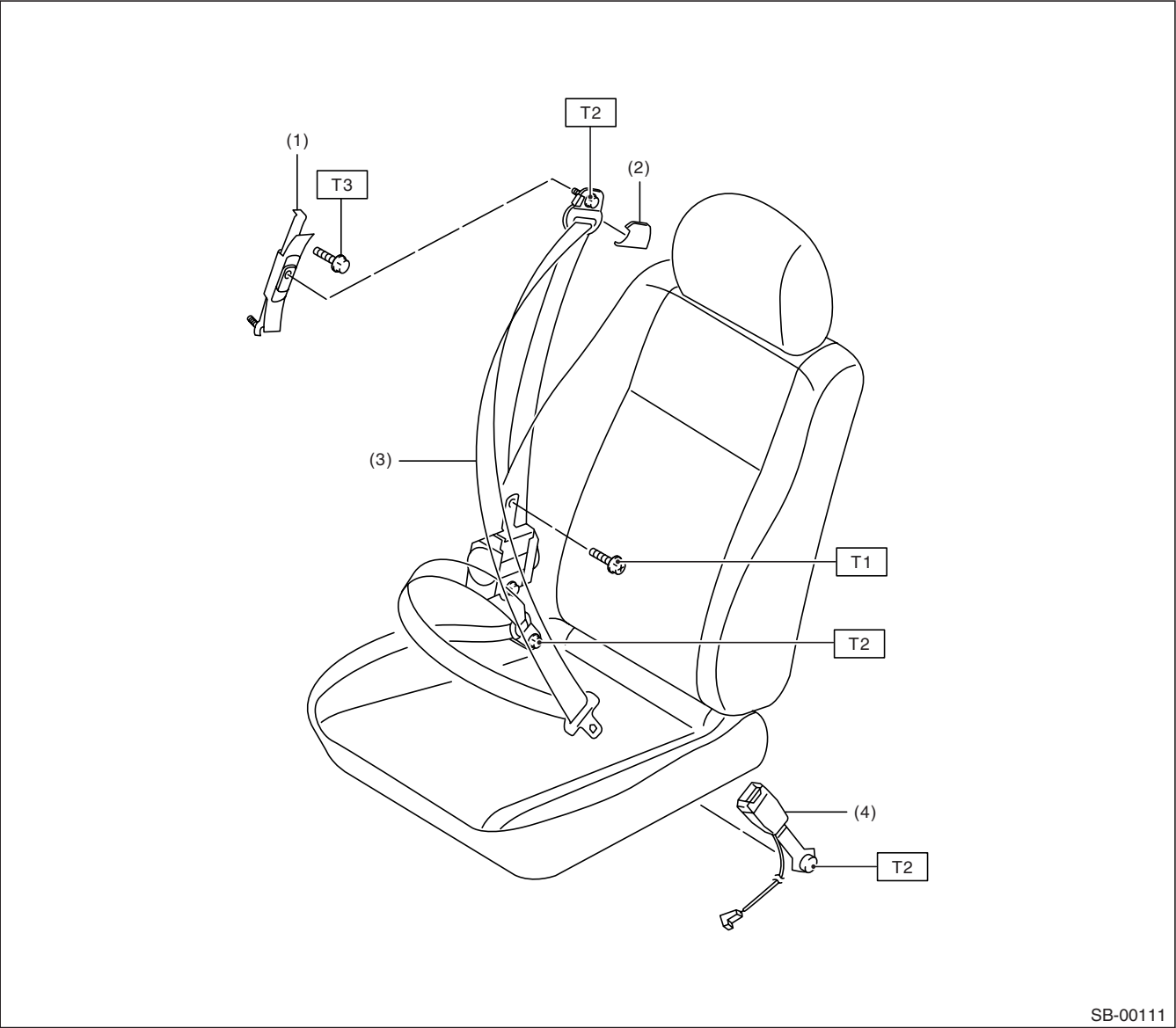
General Description

SEAT BELT SYSTEM

1. General Description

A: COMPONENT

1. FRONT SEAT BELT

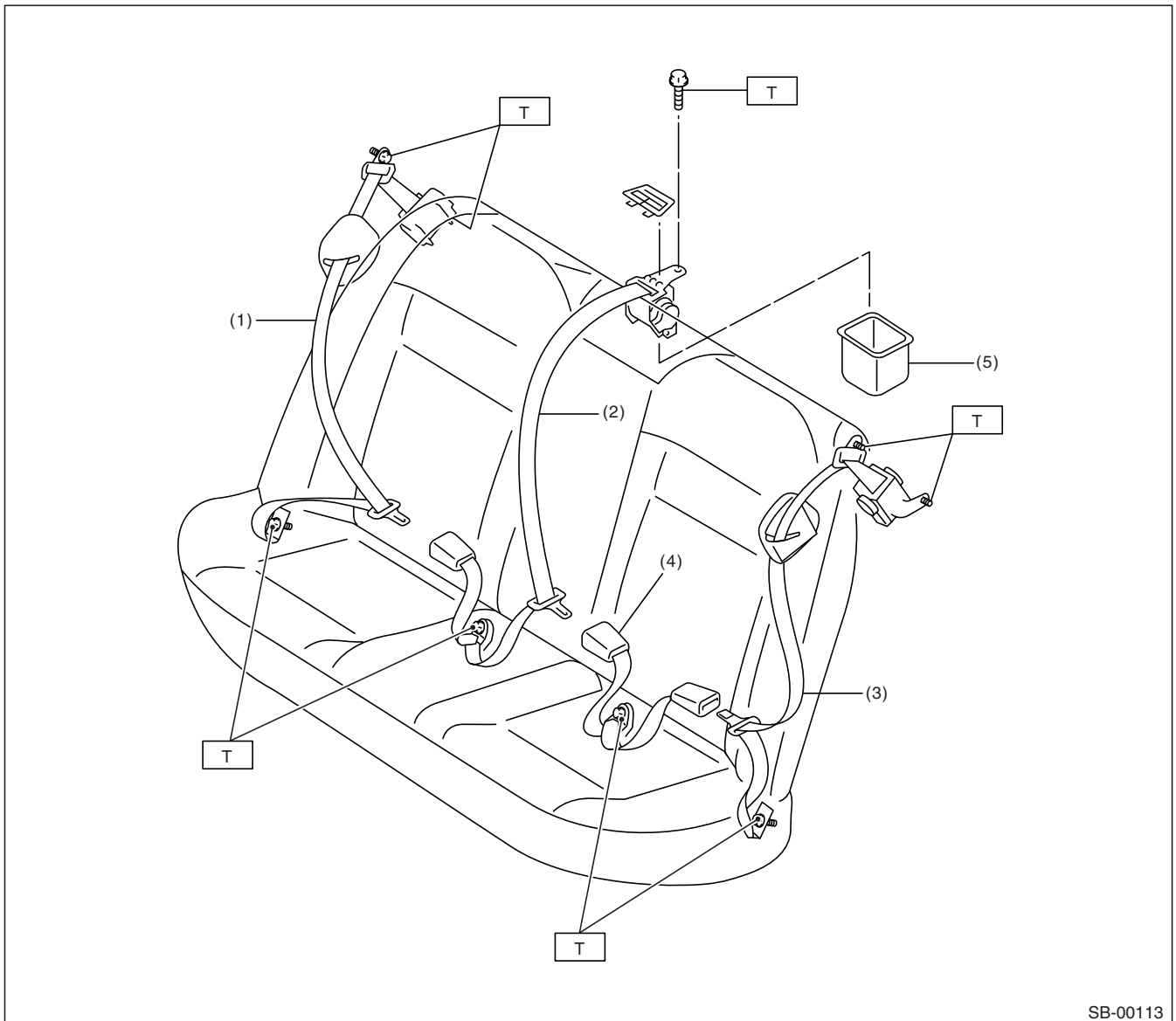


SB-00111

- | | |
|--------------------------|--------------------------|
| (1) Adjuster anchor ASSY | (3) Outer seat belt ASSY |
| (2) Anchor cover | (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)



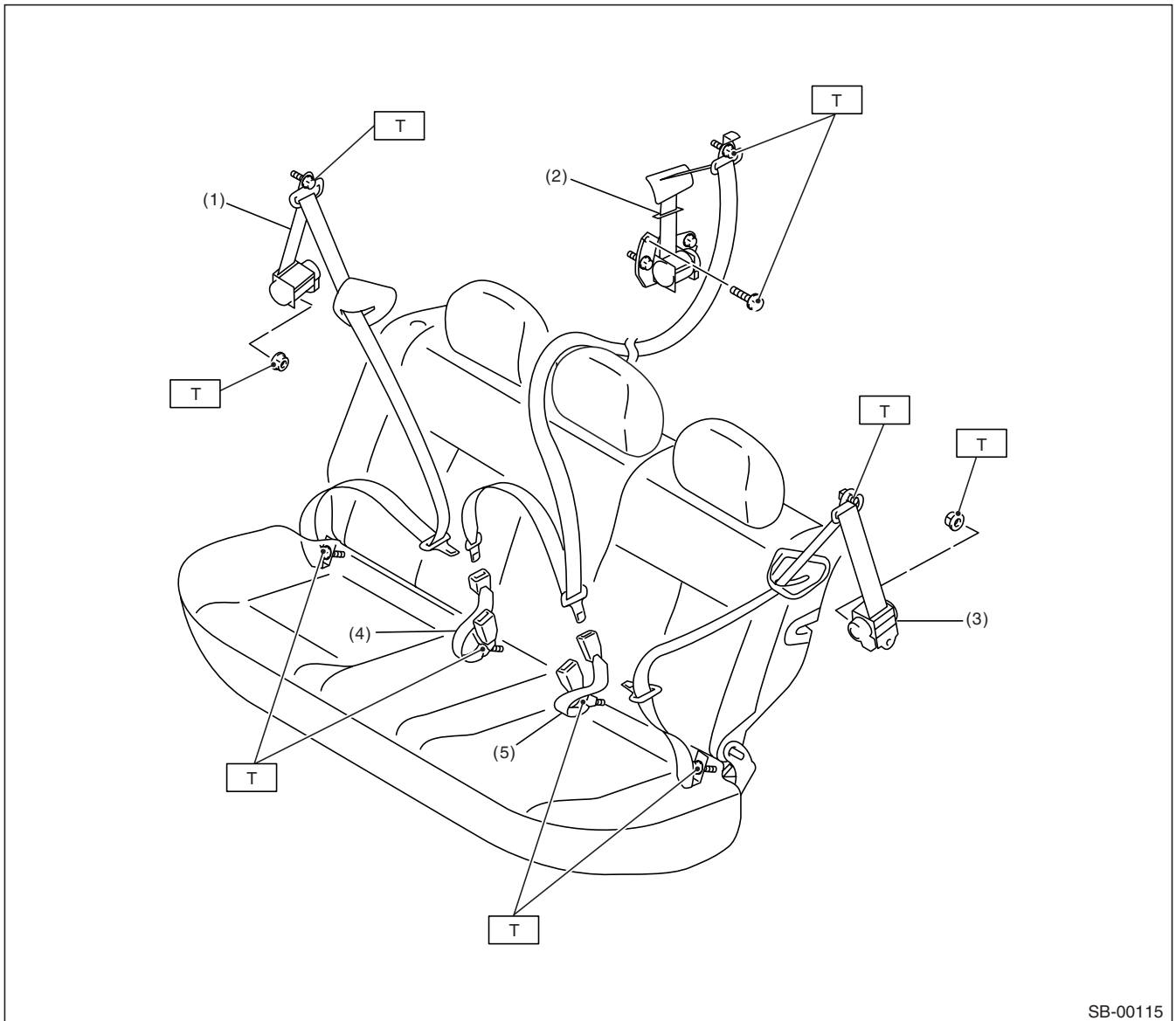
- | | |
|---------------------------------|------------------------------|
| (1) Outer seat belt RH ASSY | (4) Center seat belt LH ASSY |
| (2) Shoulder seat belt CTR ASSY | (5) Case center ELR |
| (3) Outer seat belt LH ASSY | |

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-00115

- | | |
|---------------------------------|------------------------------|
| (1) Outer seat belt RH ASSY | (4) Center seat belt RH ASSY |
| (2) Shoulder seat belt CTR ASSY | (5) Center seat belt LH ASSY |
| (3) Outer seat belt LH ASSY | |

Tightening torque: N·m (kgf-m, ft-lb)

T: 30 (3.1, 22)

General Description

SEAT BELT SYSTEM

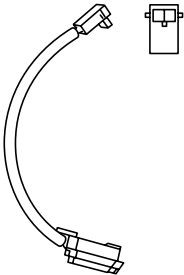
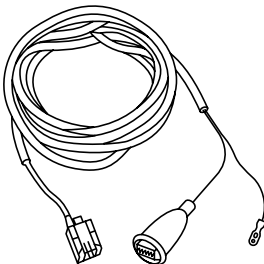
B: CAUTION

- 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.
- Be sure to deploy pretensioner before disposal. <Ref. to SB-17, PROCEDURE, Disposal of Pretensioner.>
- If the material gets in your eyes or on your skin during deployment, wash it away with clean water, and then consult a doctor.

C: PREPARATION TOOL

1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299SA010	98299SA010	ADAPTER D (DEPLOYMENT)	• Used for deploying the pretensioner. • Used with DEPLOYMENT TOOL (98299PA030).
 ST98299PA030	98299PA030	DEPLOYMENT TOOL	• Used for deploying the pretensioner. • Used with ADAPTER D (DEPLOYMENT) (98299SA010).

2. GENERAL PURPOSE TOOLS

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

Pretensioner Connector

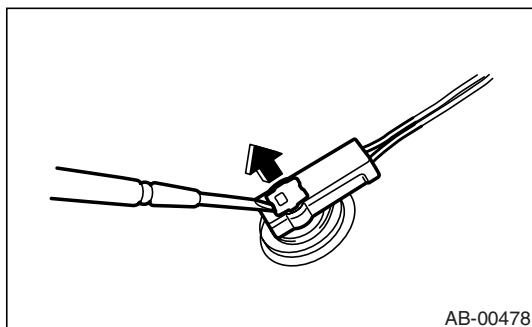
SEAT BELT SYSTEM

2. Pretensioner Connector

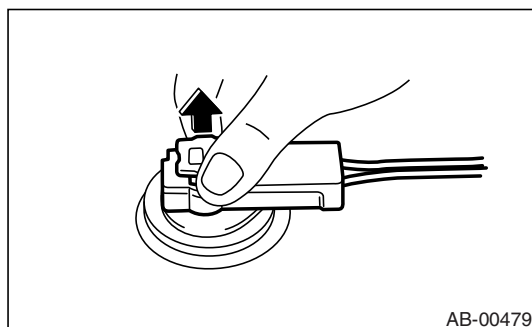
A: OPERATION

1) How to disconnect:

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



- (2) Pull the connector to disconnect from retractor assembly.

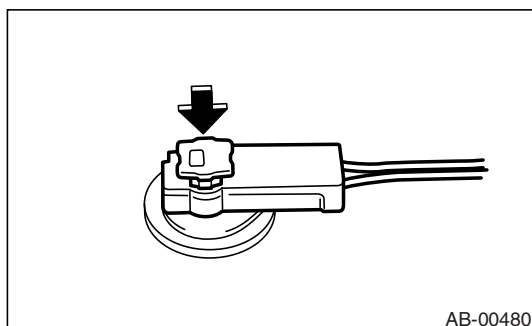


2) How to connect:

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.
- At this time, be sure to insert the push lock in.



3. Seat Belt Warning System

A: WIRING DIAGRAM

1. LHD MODEL

<Ref. to WI-186, LHD FOR EUROPE MODEL, WIRING DIAGRAM, Seat Belt Warning System.>

2. RHD MODEL

<Ref. to WI-187, RHD FOR EUROPE MODEL, WIRING DIAGRAM, Seat Belt Warning System.>

B: INSPECTION

TROUBLE SYMPTOM:

- Seat belt warning light does not come on or go off.
- Buzzer does not beep.

Step	Check	Yes	No
1 CHECK HARNESS BETWEEN SEAT BELT TIMER MODULE AND CHASSIS GROUND. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from seat belt timer module. 3) Measure the resistance between seat belt timer module harness connector and chassis ground. <i>Connector & terminal</i> <i>(B44) No. 3 — Chassis ground:</i>	Is the resistance less than 1 Ω ?	Go to step 2.	Repair the open circuit of harness between seat belt timer module and chassis ground.
2 CHECK POWER SUPPLY OF SEAT BELT TIMER MODULE. 1) Turn the ignition switch to ON. 2) Measure the voltage between seat belt timer module connector and chassis ground. <i>Connector & terminal</i> <i>(B44) No. 9 (+) — Chassis ground (-):</i>	Is the voltage more than 10 V?	Go to step 3.	Repair the open harness, short circuit and poor contact of connector between seat belt timer module and battery.
3 CHECK HARNESS AND SEAT BELT SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from seat belt timer module. 3) Hold the tang plate disconnected from seat belt buckle. 4) Measure the resistance between seat belt timer module harness connector and chassis ground. <i>Connector & terminal</i> <i>(B44) No. 6 — Chassis ground:</i>	Is the resistance less than 1 Ω ?	Go to step 4.	Go to step 5.
4 CHECK SEAT BELT SWITCH AND HARNESS. 1) Turn the ignition switch to OFF. 2) Insert the tang plate into seat belt buckle. 3) Measure the resistance between seat belt timer module connector and chassis ground. <i>Connector & terminal</i> <i>(B44) No. 6 — Chassis ground:</i>	Is the resistance more than 1 M Ω ?	Go to step 9.	Go to step 5.

Seat Belt Warning System

SEAT BELT SYSTEM

Step	Check	Yes	No
5 CHECK HARNESS BETWEEN SEAT BELT TIMER MODULE AND SEAT BELT SWITCH. Measure the resistance of harness between seat belt timer module connector and seat belt switch. <i>Connector & terminal</i> <i>LHD model:</i> <i>(B44) No. 6 — (R8) No. 2:</i> <i>RHD model:</i> <i>(B44) No. 6 — (R8) No. 1:</i>	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit of harness and poor contact of connector between seat belt timer module connector and seat belt switch.
6 CHECK HARNESS BETWEEN SEAT BELT SWITCH AND CHASSIS GROUND. Measure the resistance of harness between seat belt switch and chassis ground. <i>Connector & terminal</i> <i>LHD model:</i> <i>(R8) No. 1 — Chassis ground:</i> <i>RHD model:</i> <i>(R8) No. 2 — Chassis ground:</i>	Is the resistance less than 1 Ω ?	Go to step 7.	Repair the open circuit of harness between seat belt switch and chassis ground.
7 CHECK SEAT BELT SWITCH. 1) Hold the tang plate disconnected from seat belt buckle. 2) Measure the resistance between seat belt switch terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance less than 1 Ω ?	Go to step 8.	Replace the inner seat belt assembly.
8 CHECK SEAT BELT SWITCH. 1) Insert the tang plate into seat belt buckle. 2) Measure the resistance between seat belt switch terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance more than 1 $M\Omega$?	Go to step 9.	Replace the inner seat belt assembly.
9 CHECK OPERATION OF SPEEDOMETER IN COMBINATION METER. Check the speedometer indicates vehicle speed correctly.	Does the speedometer operate correctly?	Go to step 10.	Check the speedometer circuit.
10 CHECK VEHICLE MODEL. Check the model of vehicle.	Is the vehicle MT model?	Go to step 11.	Go to step 13.
11 CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND SEAT BELT TIMER MODULE. 1) Turn the ignition switch to OFF. 2) Disconnect the connector of vehicle speed sensor. 3) Measure the resistance between vehicle speed sensor harness connector and seat belt timer module connector. <i>Connector & terminal</i> <i>(B17) No. 1 — (B44) No. 7:</i>	Is the resistance less than 10 Ω ?	Go to step 12.	Repair the open harness between vehicle speed sensor and seat belt timer module.
12 CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND SEAT BELT TIMER MODULE. Measure the resistance between seat belt timer module harness connector and chassis ground. <i>Connector & terminal</i> <i>(B44) No. 7 — Chassis ground:</i>	Is the resistance more than 1 $M\Omega$?	Go to step 15.	Repair the short of harness.

Seat Belt Warning System

SEAT BELT SYSTEM

Step	Check	Yes	No
13 CHECK HARNESS BETWEEN TCU AND SEAT BELT TIMER MODULE. 1) Turn the ignition switch to OFF. 2) Disconnect the connector of TCU. 3) Measure the resistance of harness between TCU harness connector and seat belt timer module harness connector Connector & terminal (B56) No. 17 — (B44) No. 7:	Is the resistance less than 10 Ω ?	Go to step 14.	Repair the open harness between TCU and seat belt timer module.
14 CHECK HARNESS BETWEEN TCU AND SEAT BELT TIMER MODULE. Measure the resistance between seat belt timer module harness connector and chassis ground. Connector & terminal (B44) No. 7 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 15.	Repair the short of harness.
15 CHECK SEAT BELT TIMER MODULE OUTPUT SIGNAL. 1) Turn the ignition switch to ON. 2) Measure the voltage between seat belt timer module harness connector and chassis ground. Connector & terminal (B44) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 16.	Check the wiring harness and combination meter, and then repair or replace them.
16 CHECK POOR CONTACT. Check the poor contact of seat belt warning light circuit.	Is there any poor contact occurs?	Repair the poor contact.	Go to step 17.
17 CHECK SEAT BELT TIMER MODULE. 1) Connect all connectors. 2) Lift-up the vehicle and place rigid racks. NOTE: Raise all wheels off floor. 3) Hold the tang plate disconnected from seat belt buckle. 4) Start the engine, and set the vehicle speed less than 19 km/h (12 MPH). NOTE: The speed difference between front and rear wheels may light the ABS warning light, but this indicates no malfunction. After diagnosis is finished, perform the clear memory mode of ABS system. <Ref. to ABS(diag)-27, Clear Memory Mode.> Check seat belt warning light comes on.	Does the seat belt warning light come on?	Go to step 18.	Replace the seat belt timer module.

Seat Belt Warning System

SEAT BELT SYSTEM

	Step	Check	Yes	No
18	CHECK SEAT BELT TIMER MODULE. 1) Connect all connectors. 2) Lift-up the vehicle and place rigid racks. NOTE: Raise all wheels off floor. 3) Hold the tang plate disconnected from seat belt buckle. 4) Start the engine, and set the vehicle speed more than 25 km/h (16 MPH). NOTE: The speed difference between front and rear wheels may light the ABS warning light, but this indicates no malfunction. After diagnosis is finished, perform the clear memory mode of ABS system. <Ref. to ABS(diag)-27, Clear Memory Mode.> Check seat belt warning light comes on and buzzer beeps.	Does the seat belt warning light come on and buzzer beep?	Temporary poor contact of connector or harness may be the cause. Check the poor contact.	Replace the seat belt timer module.

4. 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.

Front Seat Belt

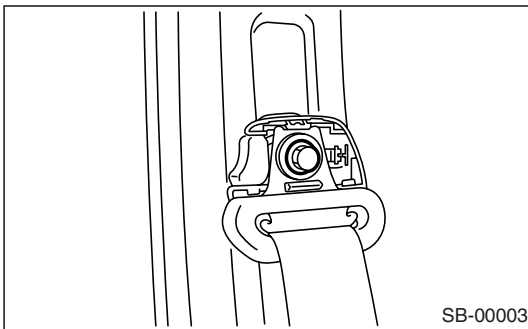
SEAT BELT SYSTEM

5. Front Seat Belt

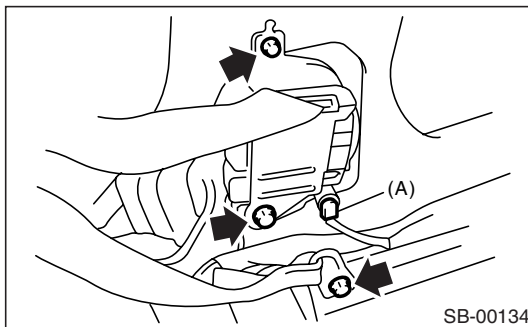
A: REMOVAL

1. OUTER SEAT BELT ASSEMBLY

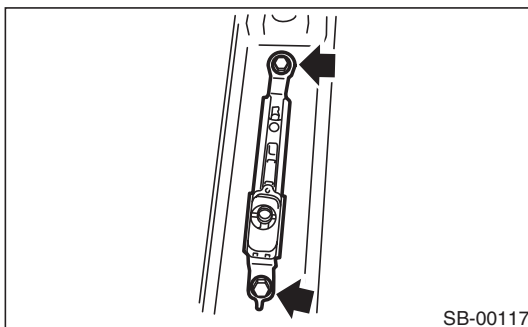
- 1) Turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for more than 20 seconds before starting work.
- 2) Fold backrest all the way forward, and then move front seat all the way forward.
- 3) Remove the center pillar lower trim. <Ref. to EI-50, REMOVAL, Lower Inner 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-49, REMOVAL, Upper Inner Trim.>
- 7) Remove the two bolts and adjustable anchor assembly.

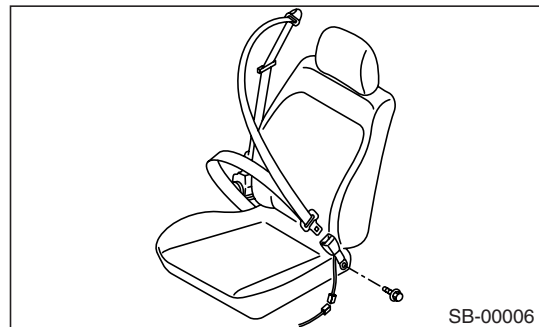


CAUTION:

- 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-45, 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 on right and left 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 belt is deformed or damaged.
- Seat belt buckle is engaged improperly.

Rear Seat Belt

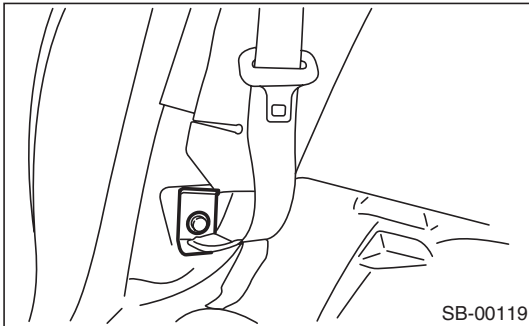
SEAT BELT SYSTEM

6. Rear Seat Belt

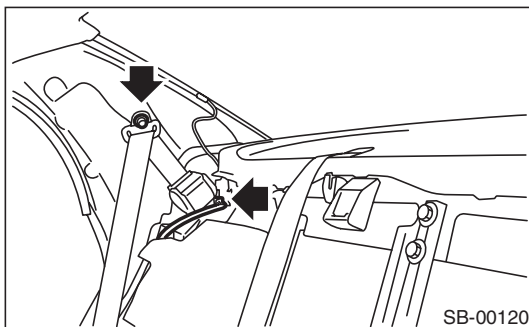
A: REMOVAL

1. OUTER SEAT BELT RH ASSEMBLY AND LH ASSEMBLY (SEDAN MODEL)

- 1) Remove the rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the side sill rear lower cover. <Ref. to EI-50, REMOVAL, Lower Inner Trim.>
- 3) Remove the seat belt lower anchor bolt.

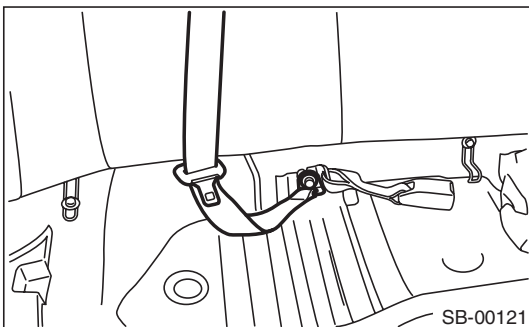


- 4) Remove the quarter pillar trim. <Ref. to EI-51, REMOVAL, Rear Quarter Trim.>
- 5) Remove the bolts, and then detach the outer seat belt assembly.



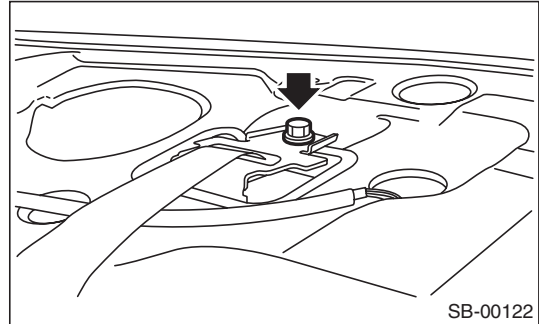
2. SHOULDER SEAT BELT CTR ASSEMBLY (SEDAN MODEL)

- 1) Remove the rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the seat belt lower anchor bolt.



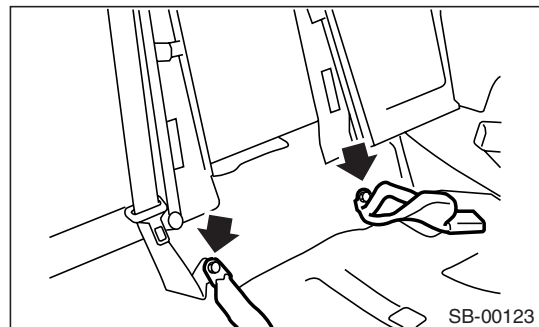
- 3) Remove the quarter pillar trim. <Ref. to EI-51, REMOVAL, Rear Quarter Trim.>

- 4) Remove the rear shelf trim. <Ref. to EI-56, REMOVAL, Rear Shelf Trim.>
- 5) Remove the bolts, and then detach the shoulder seat belt assembly.



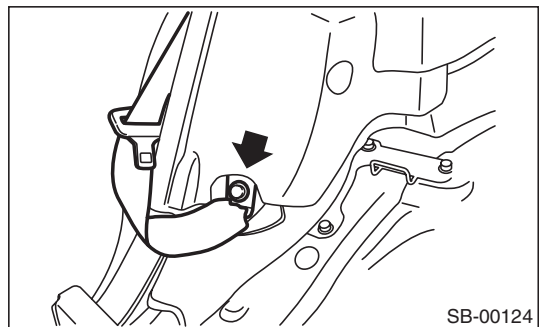
3. CENTER SEAT BELT ASSEMBLY (SEDAN MODEL)

- 1) Remove the rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the bolts, and then detach the center seat belt assembly.



4. OUTER SEAT BELT RH ASSEMBLY AND LH ASSEMBLY (WAGON MODEL)

- 1) Remove the luggage floor mat. <Ref. to EI-59, REMOVAL, Luggage Floor Mat.>
- 2) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 3) Remove the side sill rear lower cover. <Ref. to EI-50, REMOVAL, Lower Inner Trim.>
- 4) Remove the seat belt lower anchor bolt.

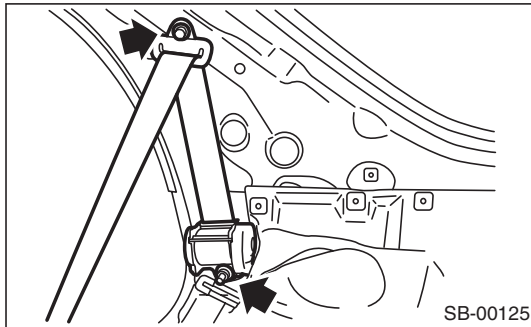


- 5) Remove the rear quarter trim. <Ref. to EI-51, REMOVAL, Rear Quarter Trim.>

Rear Seat Belt

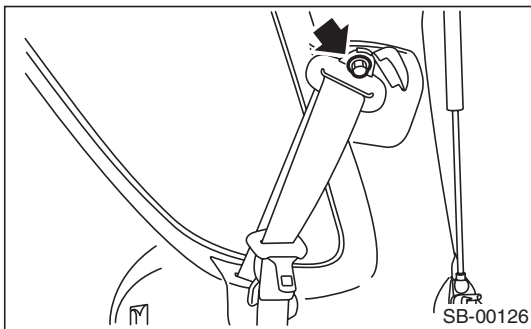
SEAT BELT SYSTEM

6) Remove the bolts, and then detach the outer seat belt assembly.



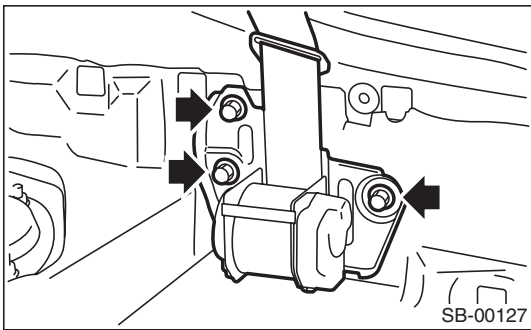
5. SHOULDER SEAT BELT CTR ASSEMBLY (WAGON MODEL)

1) Remove the shoulder anchor bolt, and then detach the shoulder anchor from quarter pillar.



2) Remove the quarter trim. <Ref. to EI-51, REMOVAL, Rear Quarter Trim.>

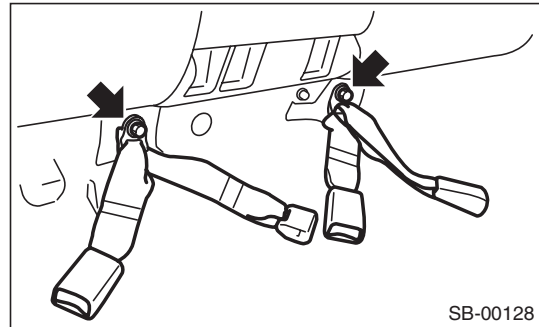
3) Remove the three bolts, and then detach the shoulder seat belt CTR assembly.



6. CENTER SEAT BELT 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 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.

Rear Seat Belt

SEAT BELT SYSTEM

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 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 ASSEMBLY (SEDAN MODEL)

Check for the following, and replace with new parts if necessary.

- Inner seat 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 ASSEMBLY (WAGON MODEL)

Check for the following, and replace with new parts if necessary.

- Inner seat belt is deformed or damaged.
- Seat belt buckle is engaged improperly.

7. Disposal of Pretensioner

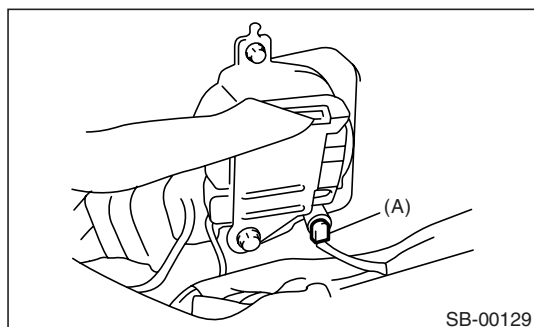
A: CAUTION

- Do not discard undeployed pretensioners, because they may cause serious personal injury when accidentally deployed.
- Deployment of the pretensioners should be done on a flat place free from any possible danger. Avoid deploying outdoors during heavy rainy or strong windy weather.
- Do not drop or damage the pretensioner.
- Because deploying the pretensioners causes a high-explosive noise, be sure to warn people in the area, and do not allow anyone within a 5 m (16 ft) radius of the disposal site.
- Some smoke will be emitted after deployment of the pretensioners. Therefore, it must be deployed in a well-ventilated area with no smoke alarms nearby.
- Wear gloves, goggles, and earplugs during this operation. Wash your hands afterwards.
- After deployment, the pretensioner is especially hot. Leave it unattended for 40 minutes or longer, and then discard it.
- Do not let water get on the deployed pretensioner.
- Wrap the deployed pretensioner in an airtight vinyl bag, and then discard it.
- If circumstances do not permit pretensioner deployment, contact a SUBARU dealer.

B: PROCEDURE

1. DEPLOYING OF PRETENSIONER WHILE INSTALLED IN VEHICLE

- 1) Fold backrest all the way forward, and then move front seat all the way forward.
- 2) Turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for more than 20 seconds before starting work.
- 3) Remove the center pillar lower trim. <Ref. to EI-50, REMOVAL, Lower Inner Trim.>
- 4) Disconnect the connector (A) of pretensioner.

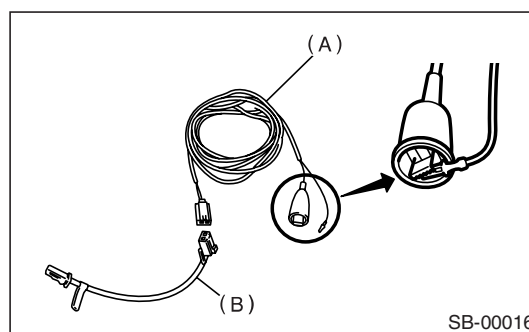


- 5) Short the terminal to alligator clip furnished as deployment tool (A).

- 6) Connect the deployment tool and adapter D (deployment) (B).

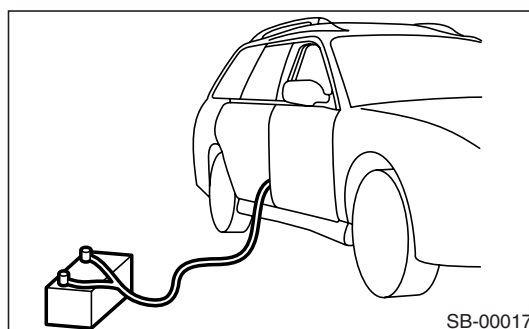
CAUTION:

Deployment tool terminals should be kept shorted until just before deployment of the pretensioner.



- (A) Deployment tool: (Tool No. 98299PA030)
 (B) Adapter D (deployment): (Tool No. 98299SA010)

- 7) Connect the adapter D (deployment) connector and pretensioner connector.
- 8) Extend the deployment tool to the limit, and make sure the vehicle is empty. Close all windows, sunroof, and rear gate completely.

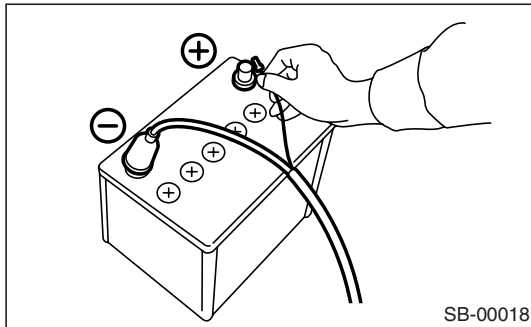


- 9) Move the battery at least 5 m (16 ft) from the vehicle, and secure the nearby area. Connect the deployment tool alligator clip to the battery negative (-) terminal.

Disposal of Pretensioner

SEAT BELT SYSTEM

10) Connect the other cable of deployment tool to the battery positive (+) terminal. Then deploy the pretensioner.

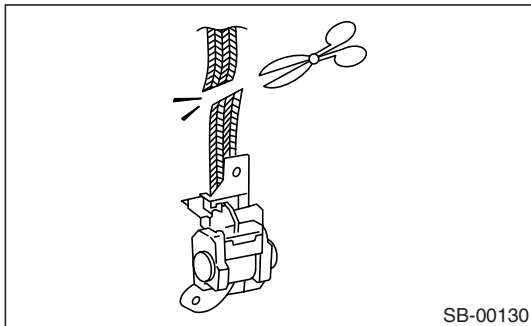


CAUTION:

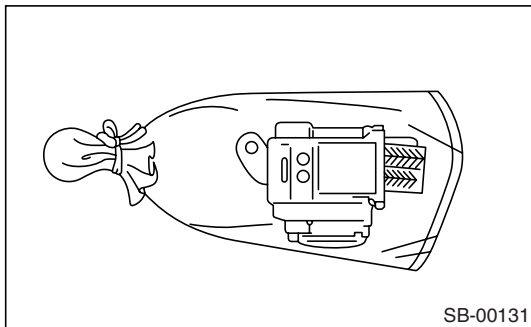
- After deployment, pretensioner is especially hot. Leave it unattended for 40 minutes or longer.
- Do not let water get on the deployed pretensioner.

11) Remove the front outer seat belt assembly. <Ref. to SB-12, REMOVAL, Front Seat Belt.>

12) Cut off the seat belt as close to retractor as possible.

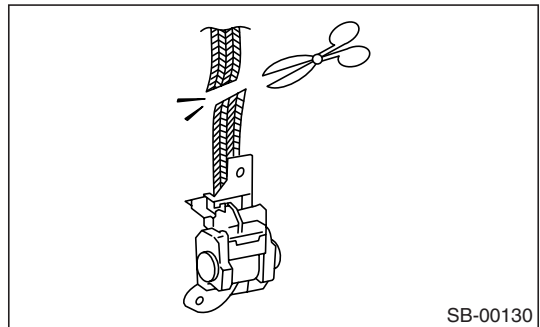


13) Wrap the deployed pretensioner in an airtight vinyl bag, and discard it.



2. DEPLOYING OF PRETENSIONER AFTER REMOVAL FROM VEHICLE

- 1) Fold the backrest all the way forward, and then move the front seat all the way forward.
- 2) Turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for more than 20 seconds before starting work.
- 3) Remove the front outer seat belt assembly. <Ref. to SB-12, REMOVAL, Front Seat Belt.>
- 4) Cut off the seat belt as close to retractor as possible.

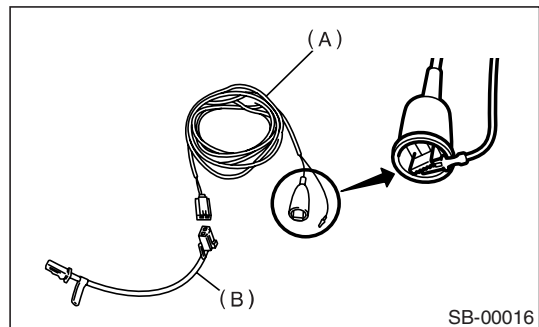


5) Short the terminal to alligator clip furnished as a deployment tool.

6) Connect the deployment tool (A) and adapter D (deployment) (B).

CAUTION:

Deployment tool terminals should be kept shorted until just before deployment of the pretensioner.



(A) Deployment tool: (Tool No. 98299PA030)

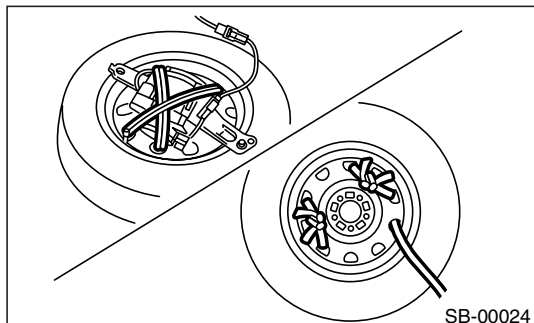
(B) Adapter D (deployment): (Tool No. 98299SA010)

7) Connect the adapter D (deployment) connector and pretensioner connector.

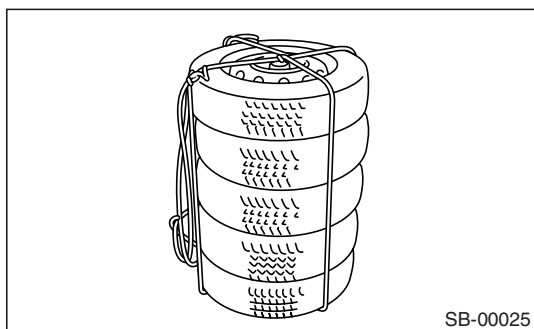
Disposal of Pretensioner

SEAT BELT SYSTEM

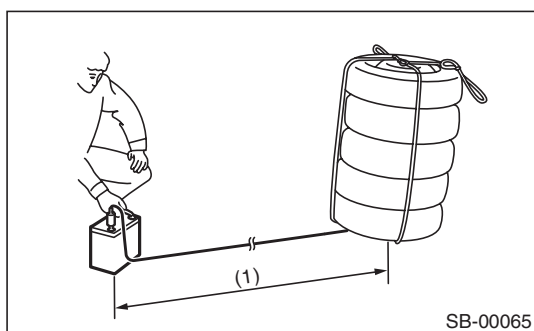
8) Install the pretensioner on a wheel with tire. Then, bundle three wire automotive harness [each with a sectional area of 1.25 mm^2 (0.00194 sq in) or more], and bind them twofold around the pretensioner bracket and wheel.



9) Put three tires without a wheel on the tire installed with pretensioner. Put on an additional tire with a wheel on top, and then fasten them tight with a rope.

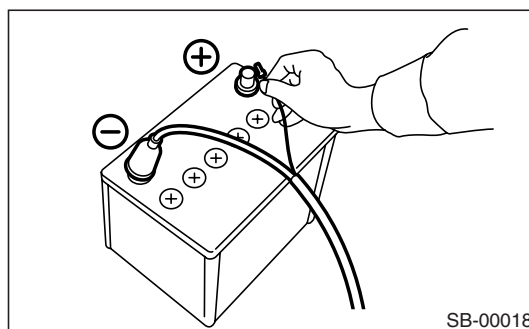


10) Move the battery at least 5 m (16 ft) from the tires, and secure the nearby area. Connect the deployment tool alligator clip to the battery negative (–) terminal.



(1) 5 m (16 ft) or more

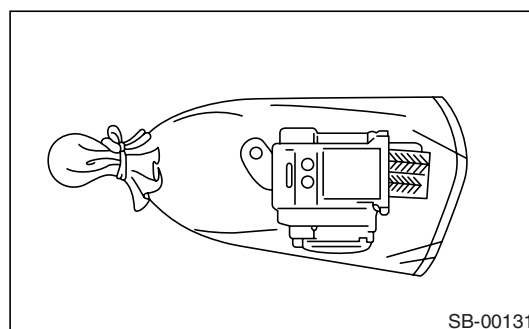
11) Connect the other cable of deployment tool to the battery positive (+) terminal. Then deploy the pretensioner.



CAUTION:

- After deployment, pretensioner is especially hot. Leave it unattended for 40 minutes or longer.
- Do not let water get on the deployed pretensioner.

12) Wrap the deployed pretensioner in an airtight vinyl bag, and discard it.



LIGHTING SYSTEM

LI

	Page
1. General Description	2
2. Headlight and Tail Light System	3
3. Front Fog Light System	4
4. Rear Fog Light System	5
5. Turn Signal Light and Hazard Light System.....	6
6. Back-up Light System	7
7. Stop Light System	8
8. Room Light System	9
9. Headlight Beam Leveler System	10
10. Combination Switch (Light)	11
11. Combination Switch Base	13
12. Headlight Assembly	14
13. Headlight Bulb	16
14. Front Turn Signal Light Bulb	17
15. Clearance/Parking Light Bulb.....	18
16. Front Fog Light Assembly	19
17. Front Fog Light Bulb.....	20
18. Rear Combination Light Assembly	21
19. Tail/Stop Light Bulb	22
20. Back-up Light Bulb	23
21. Rear Turn Signal Light Bulb	24
22. Rear Fog Light Bulb	25
23. License Plate Light.....	26
24. High-mounted Stop Light	27
25. Side Turn Signal Light Assembly	28
26. Spot Map Light	29
27. Room Light.....	30
28. Luggage Room Light.....	31
29. Trunk Room Light.....	32
30. Glove Box Light.....	33

General Description

LIGHTING SYSTEM

1. General Description

A: SPECIFICATION

Headlight		Low beam	12 V — 55 W (Halogen)
		High beam	12 V — 60 W (Halogen)
Front turn signal light			12 V — 21 W
Side turn signal light			12 V — 5 W
Clearance/Parking light			12 V — 5 W
Front fog light			12 V — 55 W
Rear fog light			12 V — 21 W
Rear combination light	Sedan	Tail light	12 V — 5/21 W
		Stop light	12 V — 21 W
	Wagon	Tail/Stop light	12 V — 5/21 W
	Turn signal light		12 V — 21 W
	Back-up light		12 V — 21 W
License plate light			12 V — 5 W
High-mounted stop light	Sedan	Standard type	12 V — 21 W
		Rear spoiler built-in type	12 V — 1.2 W (LED)
	Wagon		12 V — 10 W
Room light			12 V — 8 W
Spot 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 securely during reassembly.
- After reassembly, make sure functional parts operate smoothly.

WARNING:

- **Airbag system wiring harness is routed near electrical parts and switches. All airbag system wiring harnesses and connectors are yellow. Do not use electric test equipment on these circuits.**
- **Be careful not to damage the airbag system wiring harness when servicing electrical parts and switches.**

C: PREPARATION TOOL

1. GENERAL TOOLS

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

2. Headlight and Tail Light System

A: WIRING DIAGRAM

1. HEADLIGHT LHD MODEL

<Ref. to WI-189, LHD MODEL, WIRING DIAGRAM, Headlight System.>

2. HEADLIGHT RHD MODEL

<Ref. to WI-190, RHD MODEL, WIRING DIAGRAM, Headlight System.>

3. CLEARANCE LIGHT AND ILLUMINATION LIGHT LHD MODEL

<Ref. to WI-199, LHD MODEL, WIRING DIAGRAM, Clearance Light and Illumination Light System.>

4. CLEARANCE LIGHT AND ILLUMINATION LIGHT RHD WITHOUT ILLUMINATION CONTROL MODEL

<Ref. to WI-202, RHD WITHOUT ILLUMINATION CONTROL MODEL, WIRING DIAGRAM, Clearance Light and Illumination Light System.>

5. CLEARANCE LIGHT AND ILLUMINATION LIGHT RHD WITH ILLUMINATION CONTROL MODEL

<Ref. to WI-205, RHD WITH ILLUMINATION CONTROL EXCEPT FOR AUSTRALIA STi MODEL, WIRING DIAGRAM, Clearance Light and Illumination Light System.>

6. CLEARANCE LIGHT AND ILLUMINATION LIGHT STi MODEL FOR AUSTRALIA

<Ref. to WI-208, RHD FOR AUSTRALIA STi MODEL, WIRING DIAGRAM, Clearance Light and Illumination Light System.>

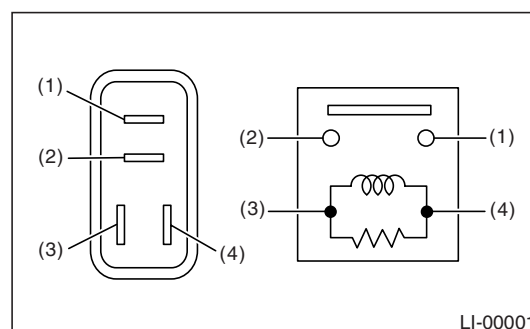
B: INSPECTION

1. HEADLIGHT SWITCH

<Ref. to LI-11, INSPECTION, Combination Switch (Light).>

2. HEADLIGHT RELAY

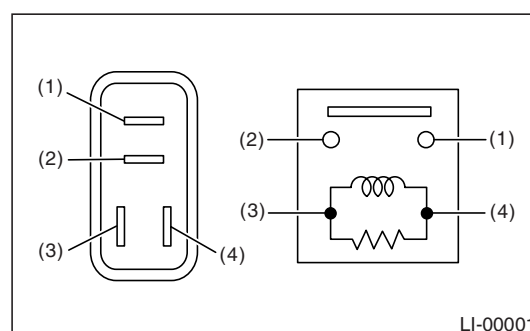
Measure the headlight relay resistance between terminals when connecting terminal No. 4 to battery positive terminal and terminal No. 3 to battery ground terminal.



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

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 MΩ

Front Fog Light System

LIGHTING SYSTEM

3. Front Fog Light System

A: WIRING DIAGRAM

1. FRONT FOG LIGHT LHD MODEL

<Ref. to WI-192, LHD MODEL, WIRING DIAGRAM, Front Fog Light System.>

2. FRONT FOG LIGHT RHD FOR EUROPE MODEL

<Ref. to WI-193, RHD FOR EUROPE MODEL, WIRING DIAGRAM, Front Fog Light System.>

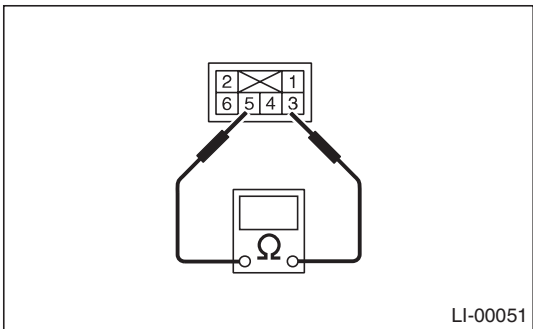
3. FRONT FOG LIGHT RHD EXCEPT FOR EUROPE MODEL

<Ref. to WI-194, RHD EXCEPT FOR EUROPE MODEL, WIRING DIAGRAM, Front Fog Light System.>

B: INSPECTION

1. FRONT FOG LIGHT SWITCH

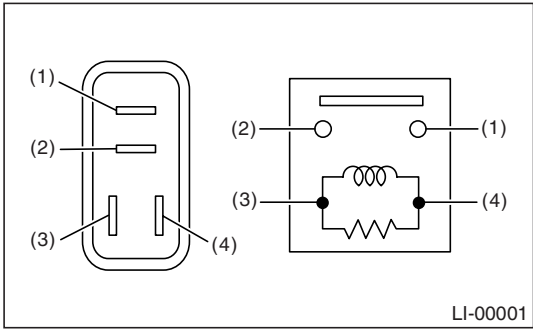
Measure the front fog light switch resistance.



Switch position	Terminal No.	Standard
OFF	3 and 5	More than 1 MΩ
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 MΩ

4. Rear Fog Light System

A: WIRING DIAGRAM

1. REAR FOG LIGHT LHD MODEL

<Ref. to WI-195, LHD MODEL, WIRING DIAGRAM, Rear Fog Light System.>

2. REAR FOG LIGHT RHD MODEL

<Ref. to WI-196, RHD MODEL, WIRING DIAGRAM, Rear Fog Light System.>

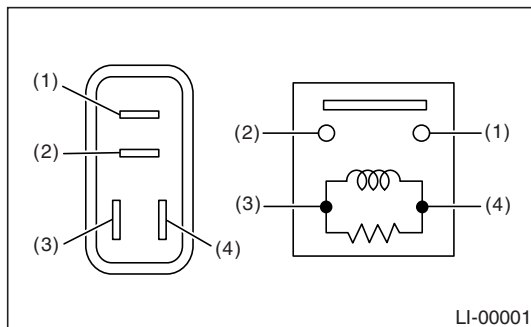
B: INSPECTION

1. REAR FOG LIGHT SWITCH

- 1) Turn the ignition switch to ON.
- 2) Turn on the headlight or front fog light.
- 3) Push the rear fog light switch and check if the rear fog light turns on.

2. REAR FOG LIGHT RELAY

Measure the rear 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

Turn Signal Light and Hazard Light System

LIGHTING SYSTEM

5. Turn Signal Light and Hazard Light System

A: WIRING DIAGRAM

1. TURN SIGNAL LIGHT AND HAZARD LIGHT LHD MODEL

<Ref. to WI-211, LHD MODEL, WIRING DIAGRAM, Turn Signal Light and Hazard Light System.>

2. TURN SIGNAL LIGHT AND HAZARD LIGHT RHD MODEL

<Ref. to WI-213, RHD MODEL, WIRING DIAGRAM, Turn Signal Light and Hazard Light System.>

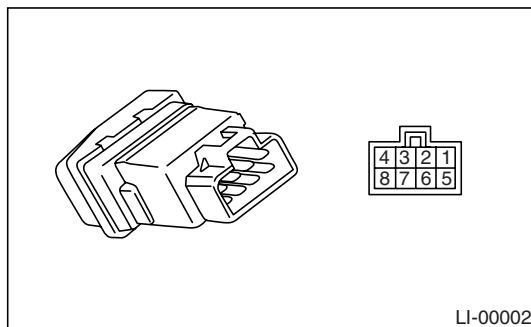
B: INSPECTION

1. TURN SIGNAL SWITCH

<Ref. to LI-11, INSPECTION, Combination Switch (Light).>

2. HAZARD SWITCH

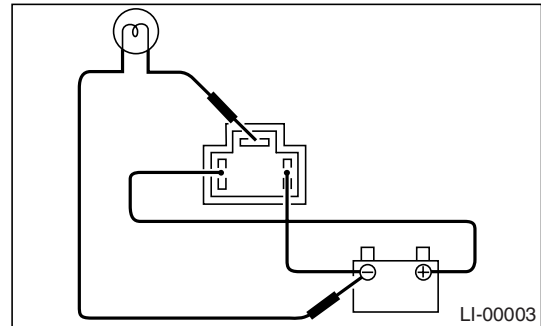
Measure the hazard switch resistance.



Switch position	Terminal No.	Standard
OFF	6 and 7	Less than 1 Ω
ON	1, 3 and 4	Less than 1 Ω
	7 and 8	Less than 1 Ω

3. TURN SIGNAL AND HAZARD MODULE

Connect the battery and 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.



6. Back-up Light System

A: WIRING DIAGRAM

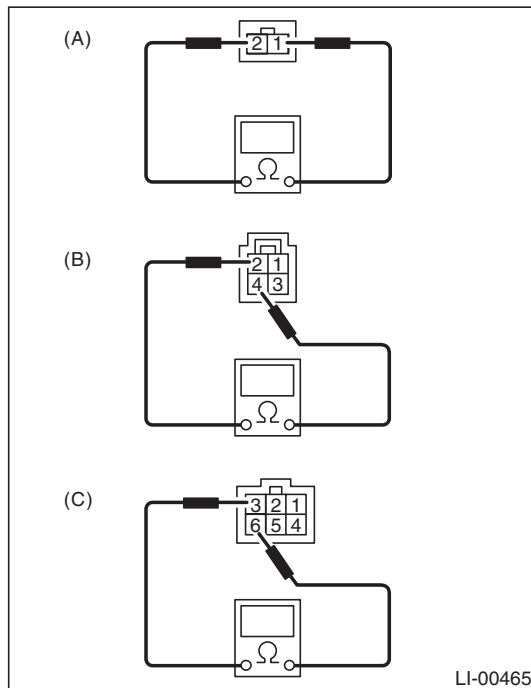
1. BACK-UP LIGHT

<Ref. to WI-197, WIRING DIAGRAM, Back-up Light System.>

B: INSPECTION

1. BACK-UP LIGHT SWITCH (M/T)

Measure the back-up light switch resistance.

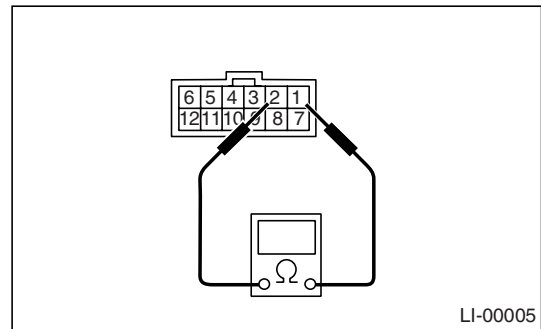


- (A) Non-turbo model
- (B) Turbo model (Without driver's control center differential)
- (C) Turbo model (With driver's control center differential)

Switch position	Terminal No.	Standard
When shift lever is set in reverse position	Turbo model (Without driver's control center differential): 2 and 4	Less than 1 Ω
Other positions	Turbo model (With driver's control center differential): 3 and 6 Non-turbo model: 1 and 2	More than 1 M Ω

2. INHIBITOR SWITCH (A/T)

Measure the inhibitor switch resistance.



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

Stop Light System

LIGHTING SYSTEM

7. Stop Light System

A: WIRING DIAGRAM

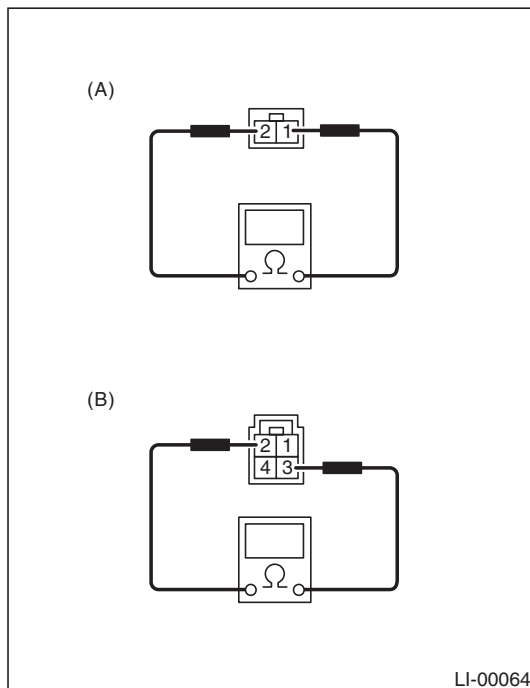
1. STOP LIGHT

<Ref. to WI-198, WIRING DIAGRAM, Stop Light System.>

B: INSPECTION

1. STOP LIGHT SWITCH

Measure the stop light switch resistance.



(A) Without cruise control

(B) With cruise control

Switch position	Terminal No.	Standard
When brake pedal is depressed	1 and 2: Without cruise control	Less than 1 Ω
When brake pedal is released	2 and 3: With cruise control	More than 1 M Ω

8. Room Light System

A: WIRING DIAGRAM

1. INTERIOR LIGHT LHD MODEL

<Ref. to WI-215, LHD MODEL, WIRING DIAGRAM, Interior Light System.>

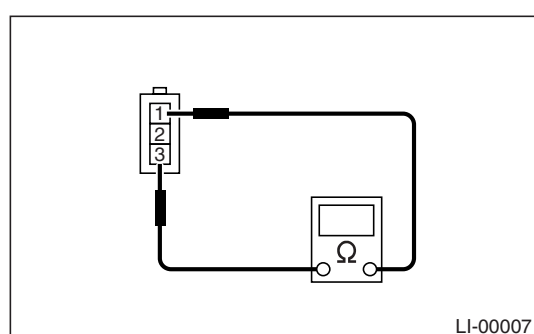
2. INTERIOR LIGHT RHD MODEL

<Ref. to WI-217, RHD MODEL, WIRING DIAGRAM, Interior Light System.>

B: INSPECTION

1. DOOR SWITCH

Measure the door switch resistance.



Switch position	Terminal No.	Standard
When door is opened	1 and 3	Less than 1 Ω
When door is closed		More than 1 M Ω

2. REAR GATE LATCH SWITCH

Measure the rear gate latch switch resistance.

Switch position	Terminal No.	Standard
When rear gate is opened	1 and 2	Less than 1 Ω
When rear gate is closed		More than 1 M Ω

3. TRUNK ROOM LIGHT SWITCH

Measure the trunk room light switch resistance.

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

Headlight Beam Leveler System

LIGHTING SYSTEM

9. Headlight Beam Leveler System

A: WIRING DIAGRAM

1. HEADLIGHT BEAM LEVELER

<Ref. to WI-191, WIRING DIAGRAM, Headlight Beam Leveler System.>

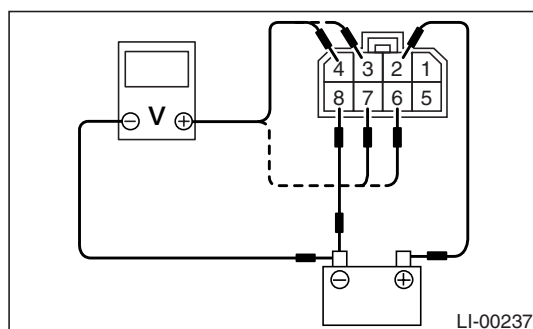
B: INSPECTION

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.

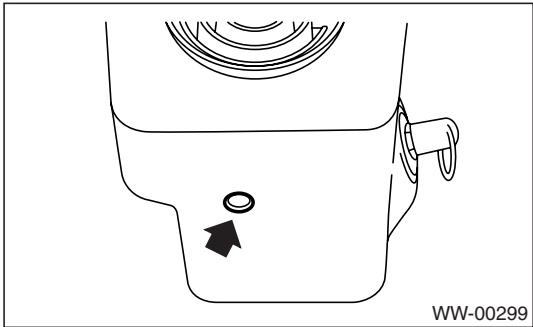


Switch position	Terminal No.	Standard
0	7 (+) and battery (-)	Battery voltage
1	6 (+) and battery (-)	Battery voltage
2	3 (+) and battery (-)	Battery voltage
3	4 (+) and battery (-)	Battery voltage

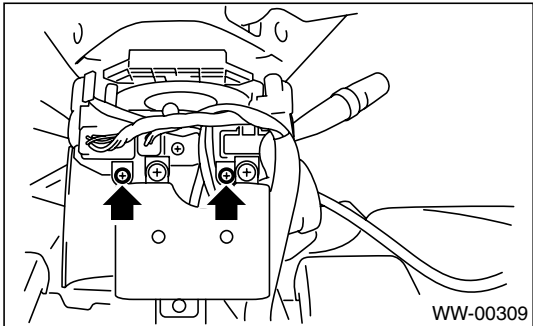
10. Combination Switch (Light)

A: REMOVAL

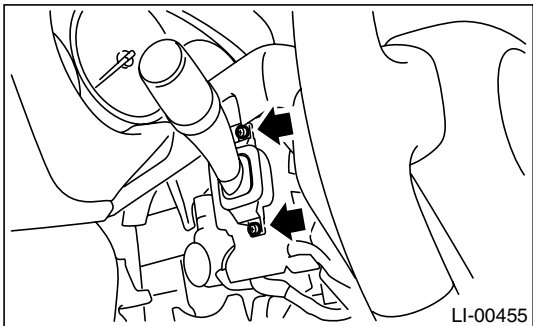
- 1) Disconnect the ground cable from battery.
- 2) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Assembly.>
- 3) Remove the screws which secure the upper column cover to lower column cover.



- 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.

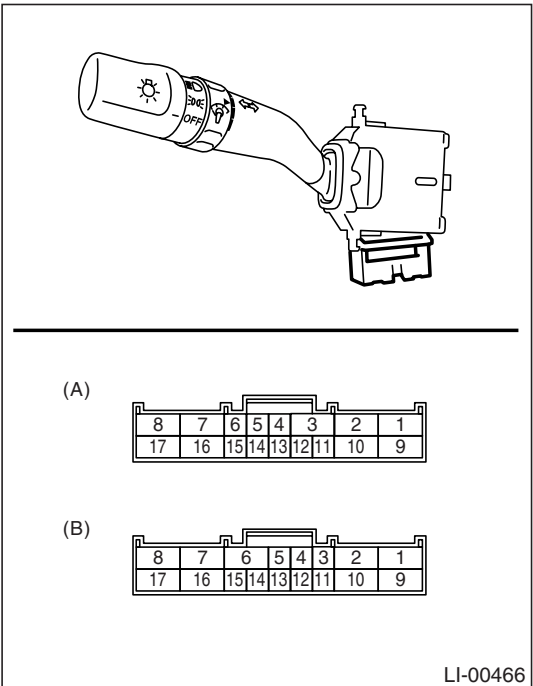


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the combination switch resistance.



- (A) LHD model/RHD model (for Europe)
- (B) RHD model (Except for Europe)

1. LIGHTING SWITCH

LHD model and RHD for Europe model:

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

RHD except for Europe model:

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
Tail	9 and 15	Less than 1 Ω
Head	9, 14 and 15	Less than 1 Ω

Combination Switch (Light)

LIGHTING SYSTEM

2. DIMMER AND PASSING SWITCH

LHD model and RHD for Europe model:

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

RHD except for Europe model:

Switch position	Terminal No.	Standard
Passing	1, 2 and 9	Less than 1 Ω
Low beam	9 and 10	Less than 1 Ω
High beam	2 and 9	Less than 1 Ω

3. TURN SIGNAL SWITCH

LHD model and RHD for Europe model:

Switch position	Terminal No.	Standard
Left	1 and 2	Less than 1 Ω
Neutral	—	More than 1 M Ω
Right	2 and 3	Less than 1 Ω

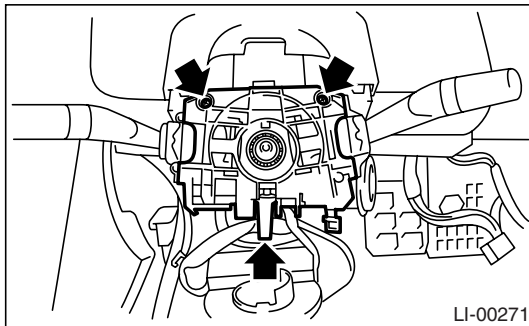
RHD except for Europe model:

Switch position	Terminal No.	Standard
Left	6 and 7	Less than 1 Ω
Neutral	—	More than 1 M Ω
Right	7 and 8	Less than 1 Ω

11. Combination Switch Base

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-28, REMOVAL, Steering Wheel.>
- 3) Remove the steering column cover.
- 4) Remove the combination switch. <Ref. to LI-11, REMOVAL, Combination Switch (Light).> <Ref. to WW-6, 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 switch base.

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

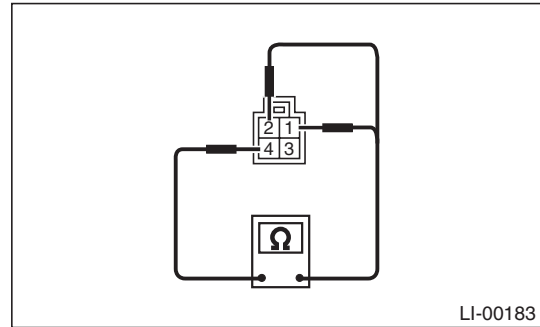
1. COMBINATION SWITCH BASE

Perform the inspection for the following items and replace with a new one, if any damage is found.

- Crack or deformation of combination switch base or roll connector

2. PARKING SWITCH

Measure the parking switch resistance.



Switch position	Terminal No.	Standard
OFF	2 and 4	Less than 1 Ω
ON	1 and 4	Less than 1 Ω

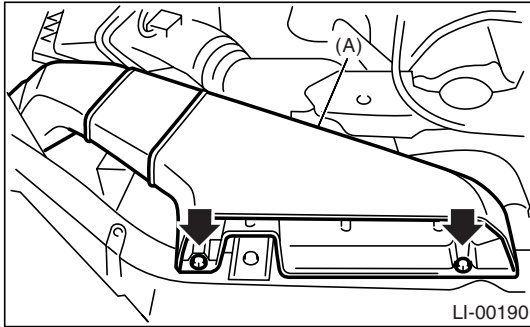
Headlight Assembly

LIGHTING SYSTEM

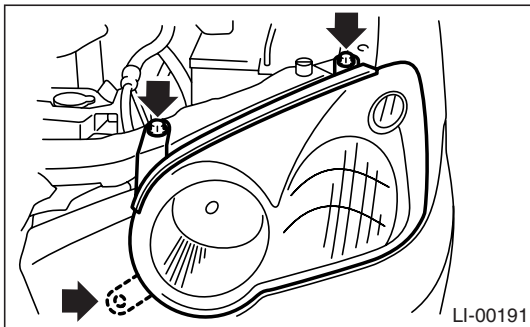
12. Headlight Assembly

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-19, 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.

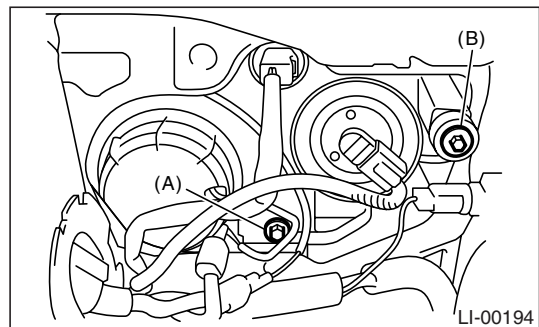
- 1) Before checking the headlight aiming, be sure of the following:

- 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.

- 2) Turn the headlights on and then adjust the low beam pattern to the following positions on the screen.

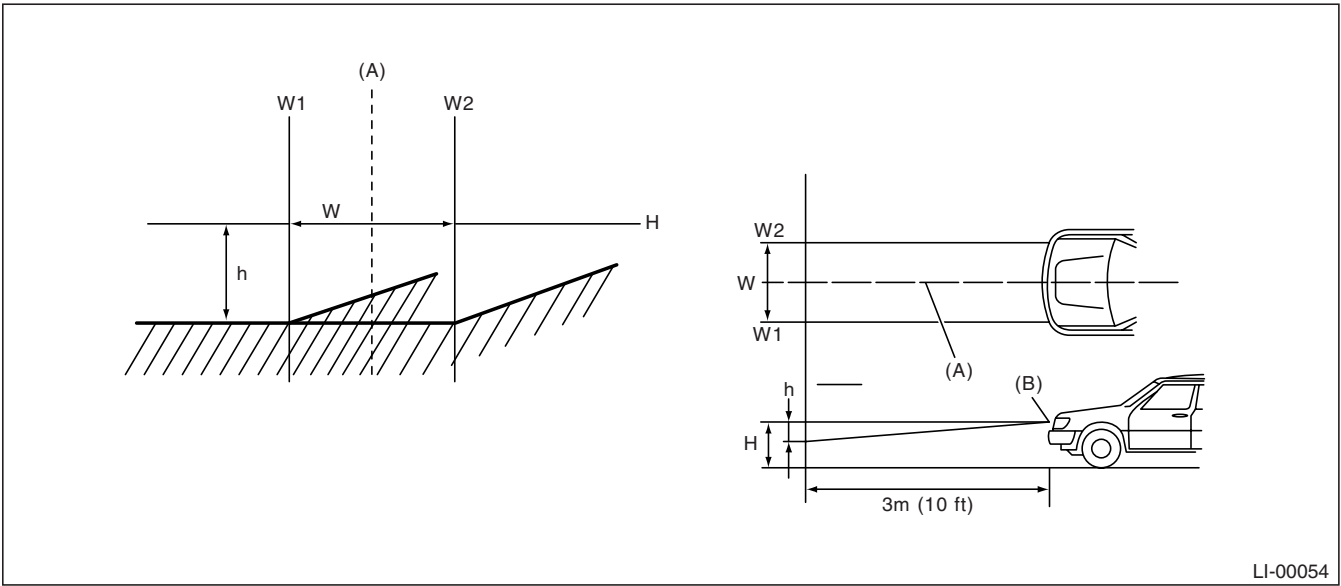
NOTE:

- Set the headlight leveler switch to "0" position.
- Adjust the vertical aim (A) first, then horizontal aim (B).



Headlight Assembly

LIGHTING SYSTEM



LI-00054

(A) Vehicle center (B) Bulb center making

This illustration is for LHD model.
The pattern for RHD model is symmetrically opposite.

W mm (in)	H mm (in)					h mm (in) at 3 m (10 ft)
	Sedan		Wagon			
	TS	GX, RS, WRX STi	TS	GX, WRX	OUTBACK	
1,279 (50.35)	644 (25.35)	639 (25.16)	644 (25.35)	639 (25.16)	649 (25.55)	30 (1.18)

Headlight Bulb

LIGHTING SYSTEM

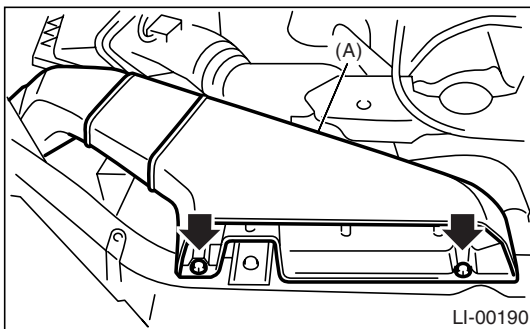
13.Headlight Bulb

A: REMOVAL

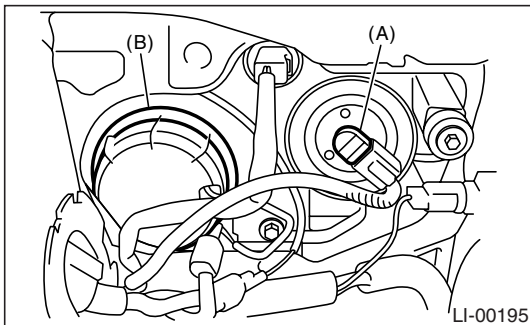
CAUTION:

- Because the halogen bulb operates at a high temperature, dirt and oil on the bulb surface reduces the bulb's service life. Hold the flange portion when replacing the bulb. Never touch the glass portion.
- Do not leave the headlight without a bulb for a long time. Dust, moisture, etc. entering the headlight may affect its performance.

- 1) Disconnect the ground cable from battery.
- 2) Remove the air intake duct (A) (when right side headlight bulb is removed).

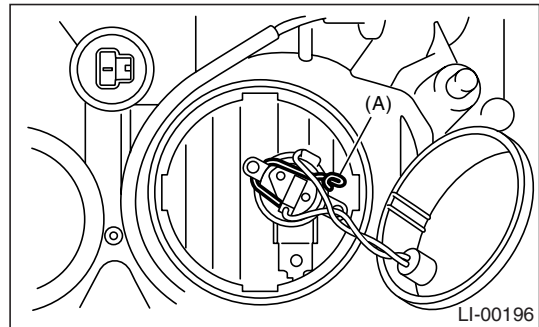


- 3) Disconnect the harness connector.
- 4) Remove the bulb ASSY (A). To remove the low beam, remove the back cover, and then go to Step 5.



- (A) High beam
(B) Low beam

- 5) Remove the light bulb retaining spring (A) to remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

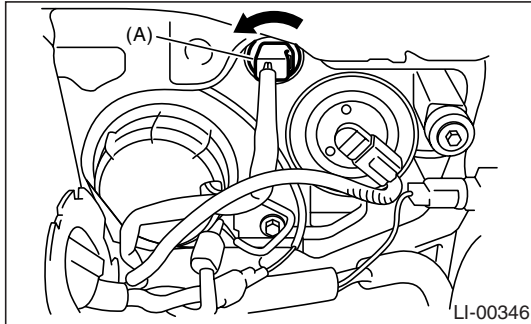
C: INSPECTION

- 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. Front Turn Signal Light Bulb

A: REMOVAL

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.

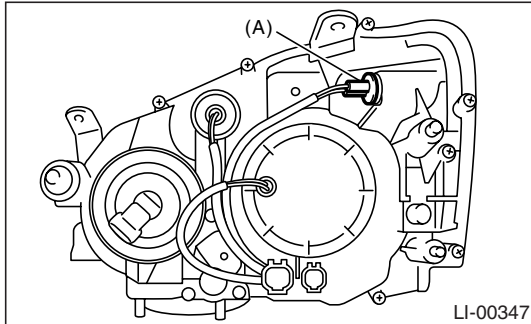
Clearance/Parking Light Bulb

LIGHTING SYSTEM

15. Clearance/Parking Light Bulb

A: REMOVAL

- 1) Remove the headlight assembly. <Ref. to LI-14, REMOVAL, Headlight Assembly.>
- 2) Turn the socket (A) and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

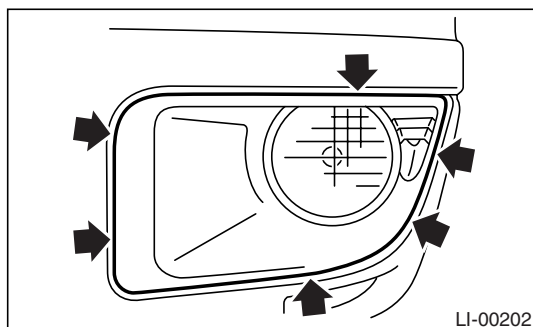
C: INSPECTION

- 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.

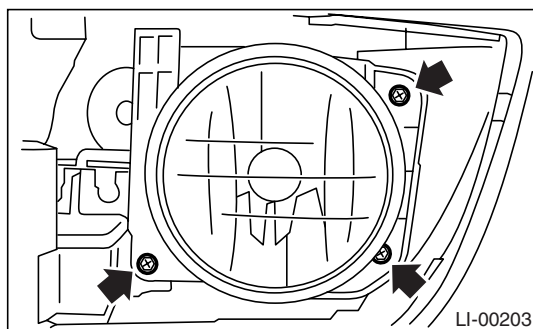
16. Front Fog Light Assembly

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Disengage the hooks (six places), and then remove the fog light cover.



- 3) Remove the mounting bolts, and then detach the fog light assembly by disconnecting the harness connector.



B: INSTALLATION

Install in the reverse order of removal.

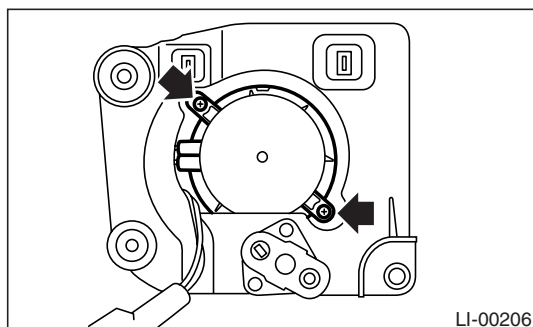
Front Fog Light Bulb

LIGHTING SYSTEM

17.Front Fog Light Bulb

A: REMOVAL

- 1) Remove the front fog light assembly. <Ref. to LI-19, REMOVAL, Front Fog Light Assembly.>
- 2) Remove the two screws, and then remove the back cover.



- 3) Remove the spring retainer, and then detach the fog light bulb.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

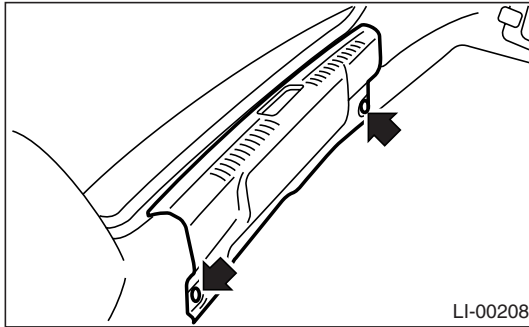
- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

18. Rear Combination Light Assembly

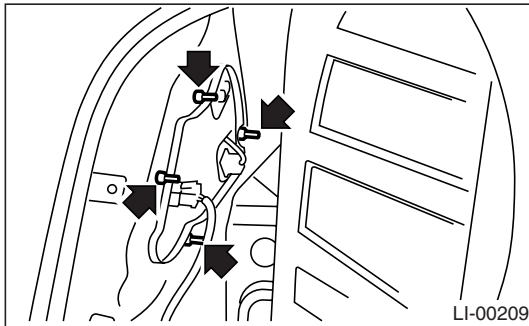
A: REMOVAL

1. SEDAN MODEL

- 1) Disconnect the ground cable from battery.
- 2) Remove the clips, and then detach the trunk rear trim.

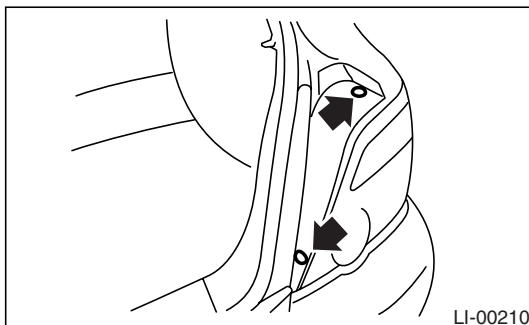


- 3) Remove the trunk side trim of rear portion.
- 4) Remove the four nuts, and then detach the rear combination light while disconnecting connector.

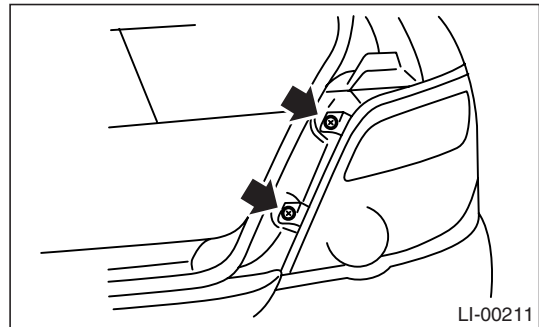


2. WAGON MODEL

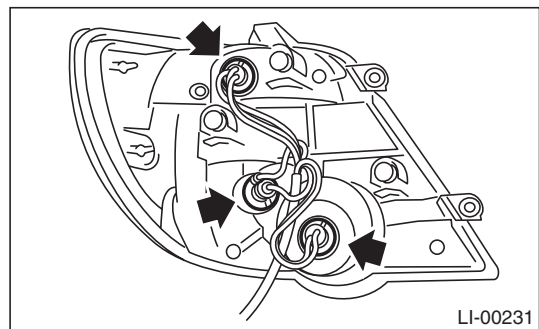
- 1) Disconnect the ground cable from battery.
- 2) Remove the clips, and then detach the rear combination light covers.



- 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

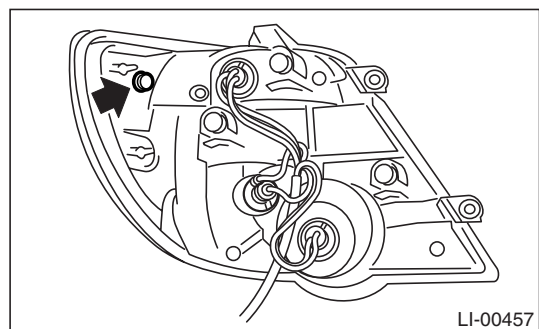
Install in the reverse order of removal.

2. WAGON MODEL

Install in the reverse order of removal.

NOTE:

Install the rear combination light by aligning the clip with body side.

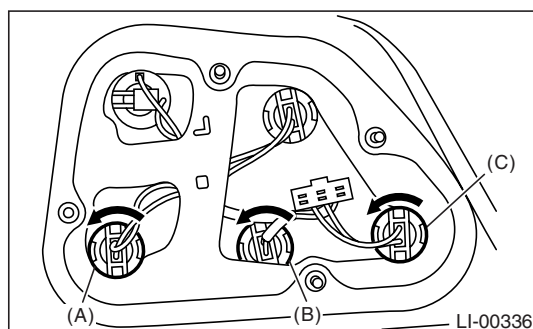


19. Tail/Stop Light Bulb

A: REMOVAL

1. SEDAN MODEL

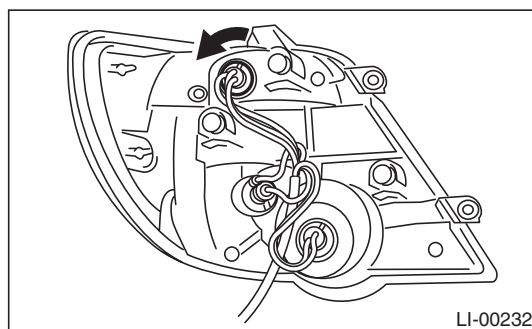
- 1) Remove the trunk side trim of rear portion.
- 2) Turn the socket and remove the bulb.



- (A) Model without rear fog light: Stop light
- (B) Model with rear fog light: Tail light
- (C) Model with rear fog light: Stop light
Model without rear fog light: Tail light

2. WAGON MODEL

- 1) Remove the rear combination light assembly.
<Ref. to LI-21, 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

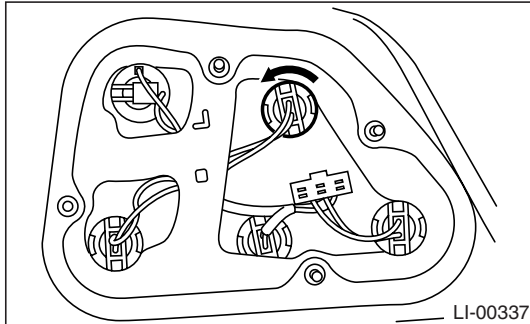
- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

20.Back-up Light Bulb

A: REMOVAL

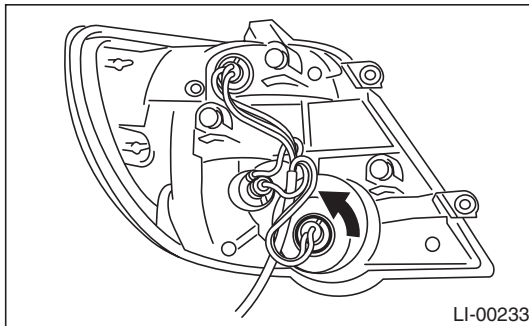
1. SEDAN MODEL

- 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-21, 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.

Rear Turn Signal Light Bulb

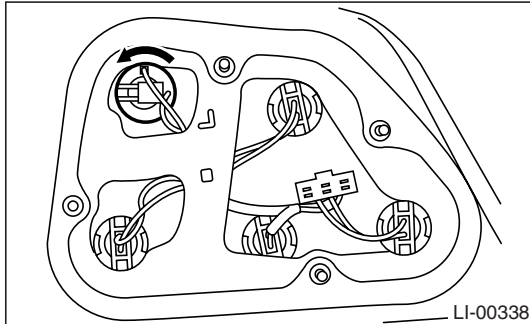
LIGHTING SYSTEM

21. Rear Turn Signal Light Bulb

A: REMOVAL

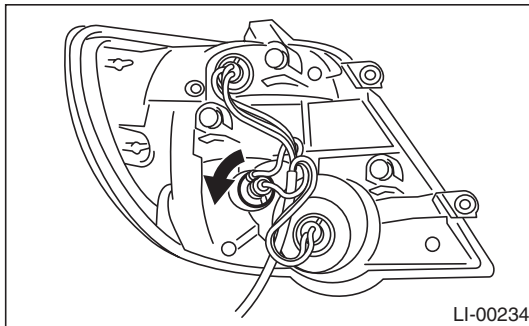
1. SEDAN MODEL

- 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-21, 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

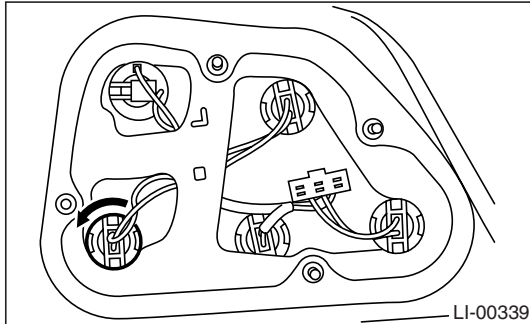
- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

22.Rear Fog Light Bulb

A: REMOVAL

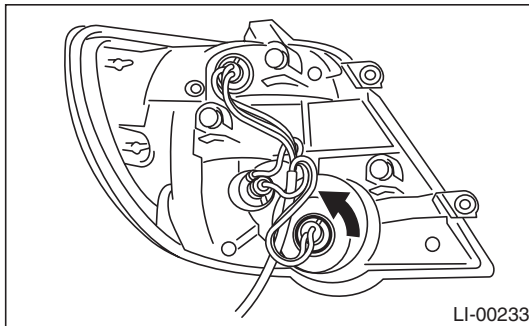
1. SEDAN MODEL

- 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-21, 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.

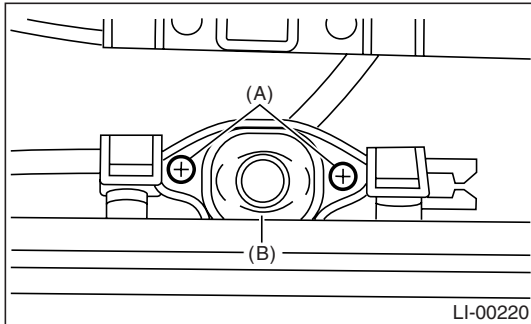
License Plate Light

LIGHTING SYSTEM

23. License Plate Light

A: REMOVAL

- 1) Remove the license plate light mounting screw (A), and then remove the lens (B).



- 2) Remove the bulb.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

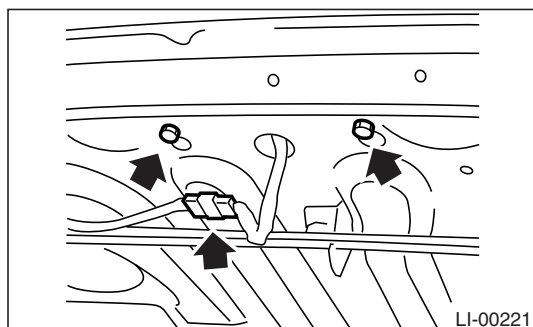
- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

24.High-mounted Stop Light

A: REMOVAL

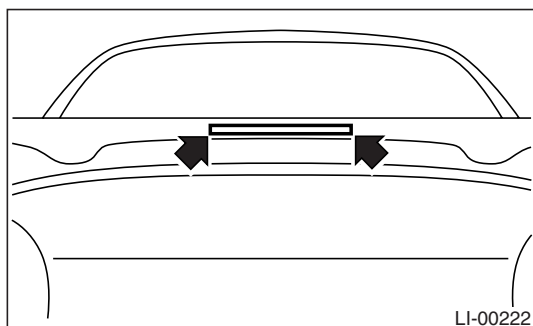
1. SEDAN MODEL (STANDARD TYPE)

- 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.



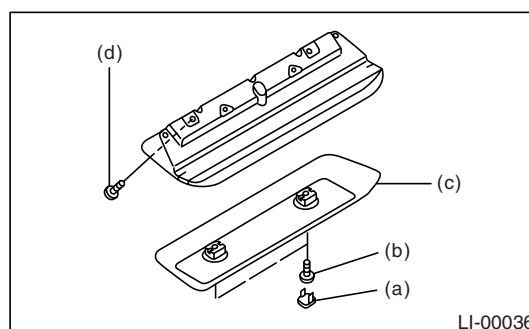
2. SEDAN MODEL (REAR SPOILER BUILT-IN TYPE)

- 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) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

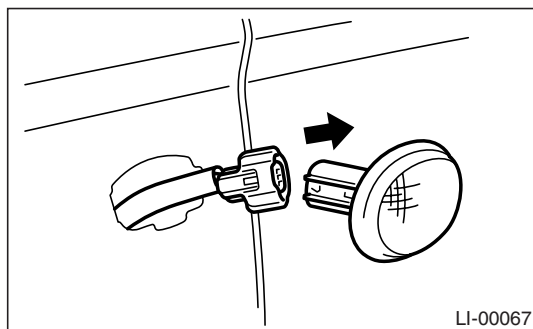
Side Turn Signal Light Assembly

LIGHTING SYSTEM

25.Side Turn Signal Light Assembly

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Pull out the light from body while pushing it in direction of vehicle front.
- 3) Disconnect the harness connector and remove the light.



B: INSTALLATION

Install in the reverse order of removal.

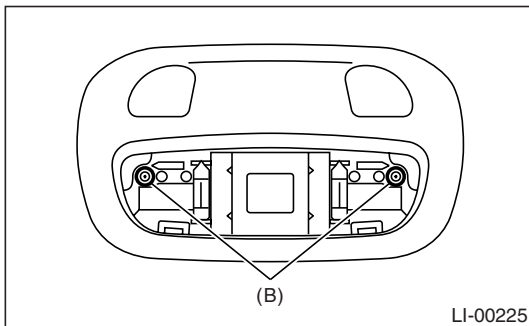
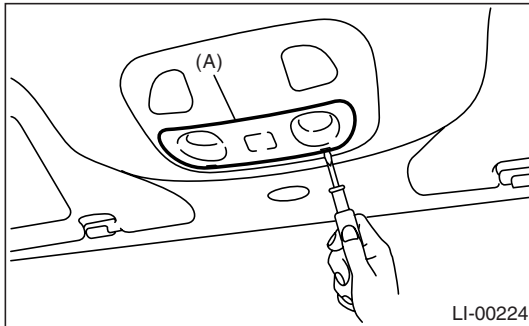
C: INSPECTION

- 1) Check the bulb for blow out using a tester.
- 2) If NG, replace the side turn signal light assembly with a new one.

26. 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

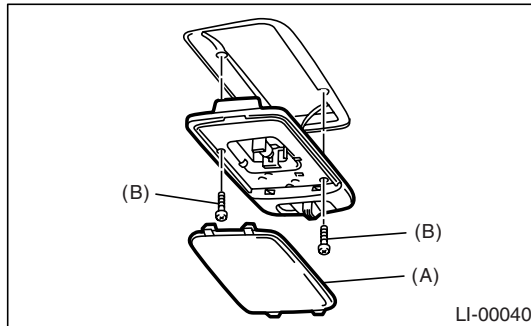
Measure the spot map light resistance.

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	1 and 2	18±5.4 Ω

27.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.

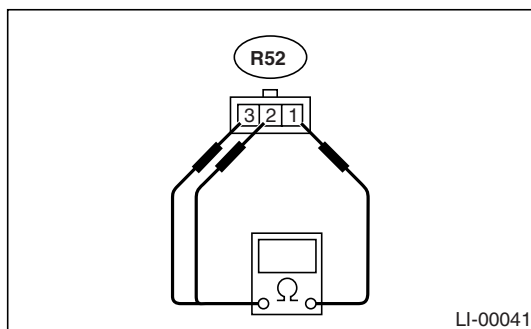
C: INSPECTION

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 room light resistance.

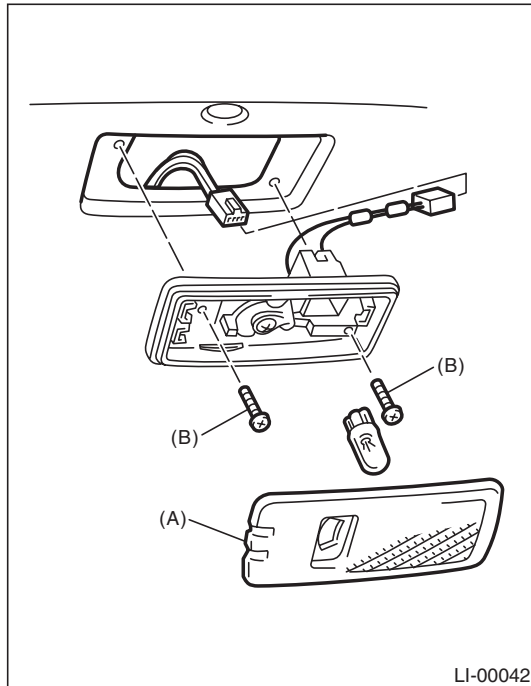


Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	1 and 3	1.5±0.5 Ω
DOOR	1 and 2	1.5±0.5 Ω

28.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.

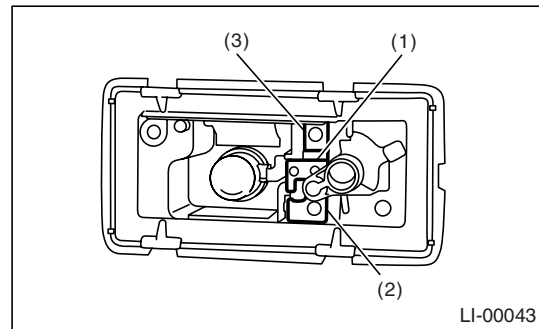
C: INSPECTION

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 luggage room light resistance.

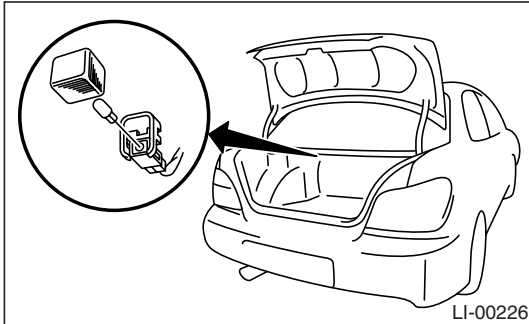


Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	1 and 3	1.5±0.5 Ω
DOOR	1 and 2	1.5±0.5 Ω

29. 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.

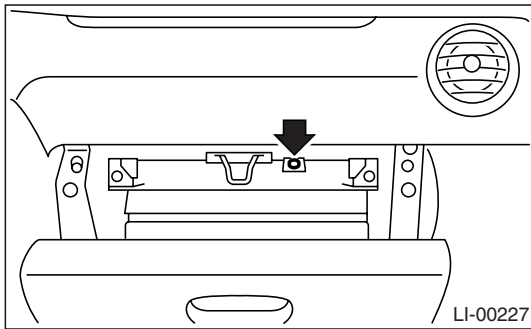
C: INSPECTION

- 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.

30. Glove Box Light

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the glove box. <Ref. to EI-42, 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.

Glove Box Light

WIPER AND WASHER SYSTEMS



	Page
1. General Description	2
2. Wiper and Washer System	5
3. Combination Switch (Wiper).....	6
4. Wiper Blade.....	8
5. Washer Tank and Motor.....	10
6. Front Wiper Arm.....	11
7. Front Wiper Motor and Link.....	12
8. Front Washer Nozzle	14
9. Rear Wiper Arm	15
10. Rear Wiper Motor.....	16
11. Rear Washer	17
12. Wiper Control Relay (Wagon Model)	18

General Description

WIPER AND WASHER SYSTEMS

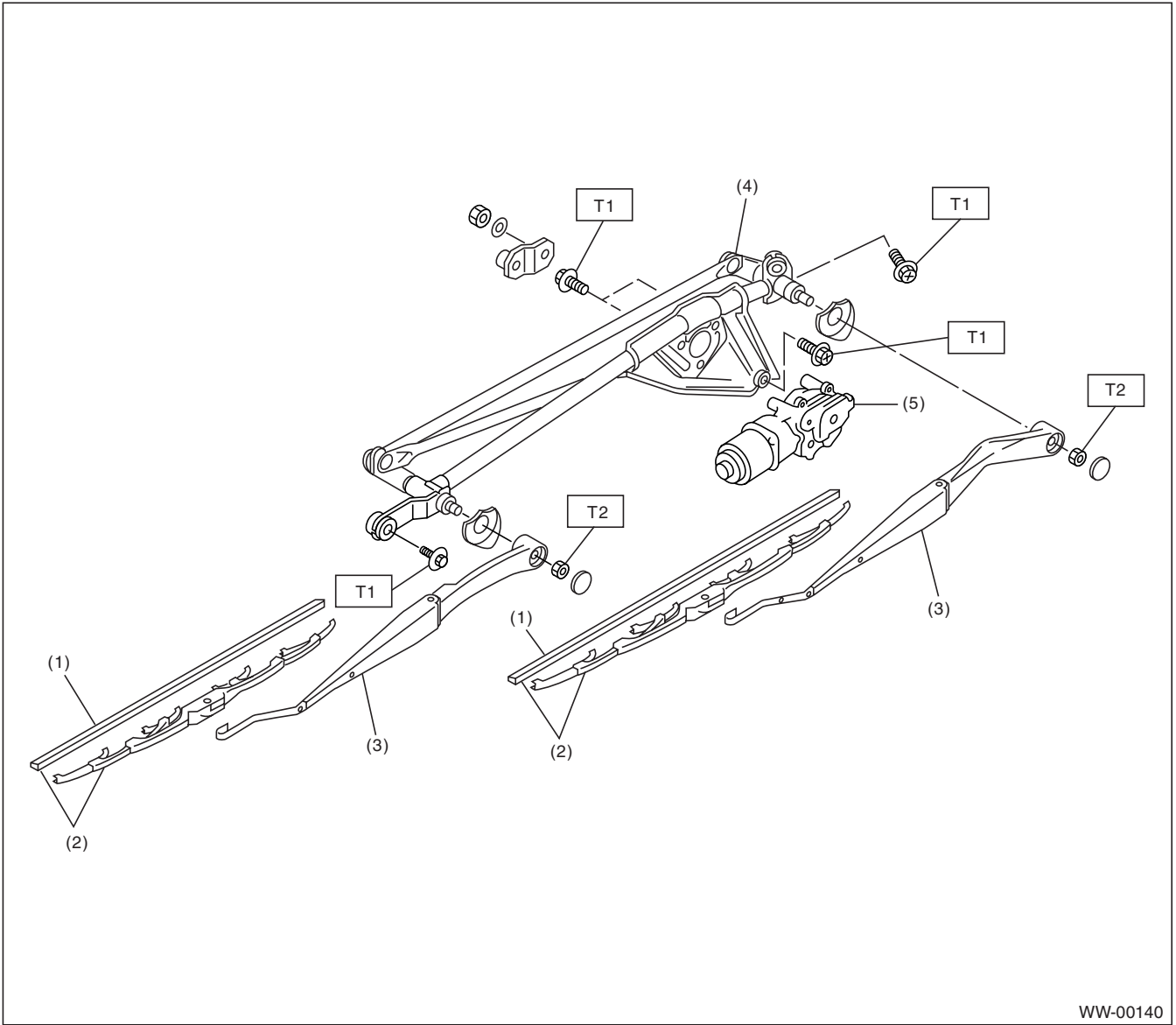
1. General Description

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

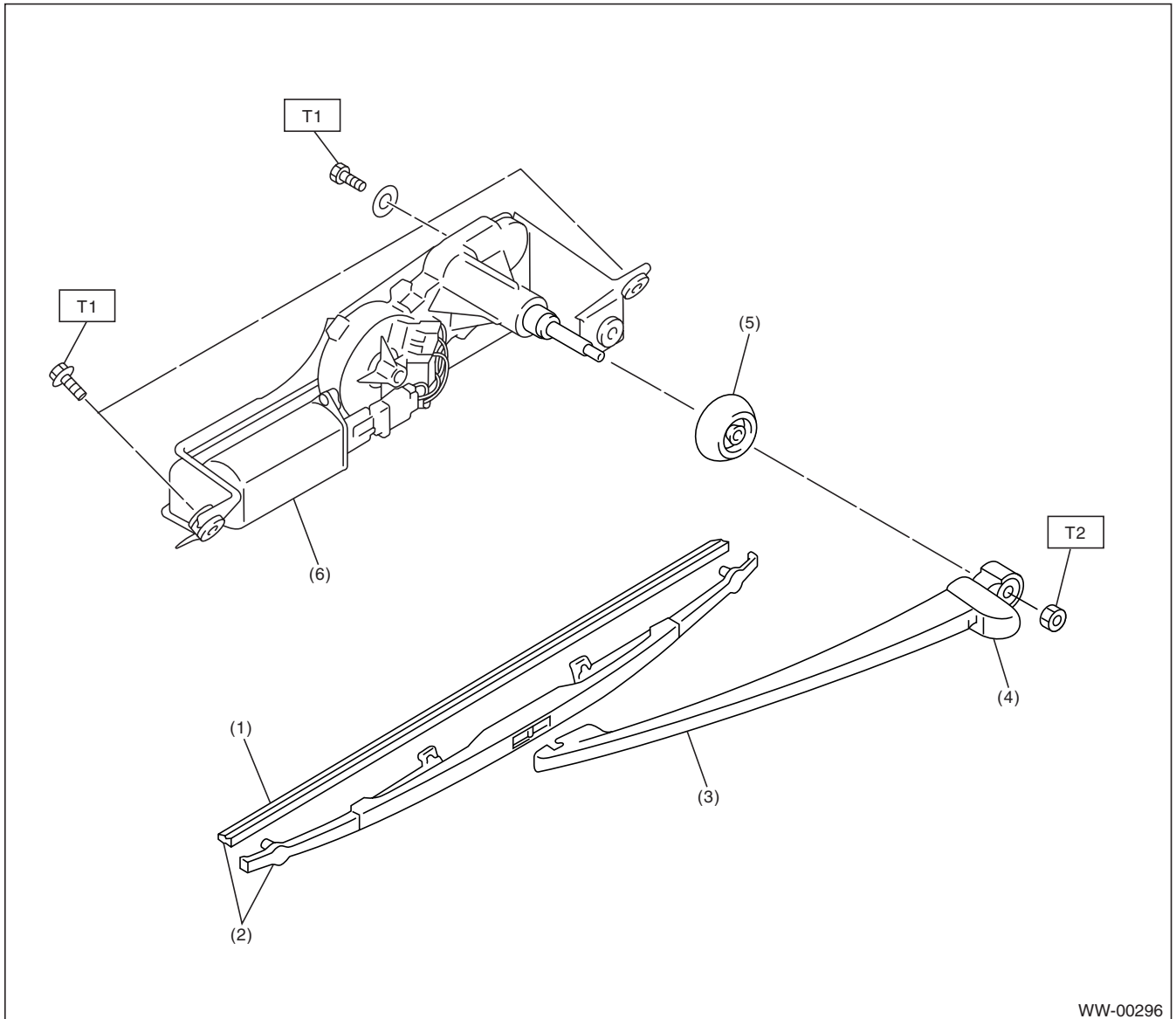


- (1) Wiper rubber
- (2) Wiper blade ASSY
- (3) Wiper arm

- (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) Pivot cap |
| (3) Wiper arm | (6) Wiper moter |

Tightening torque: N·m (kgf-m, ft-lb)

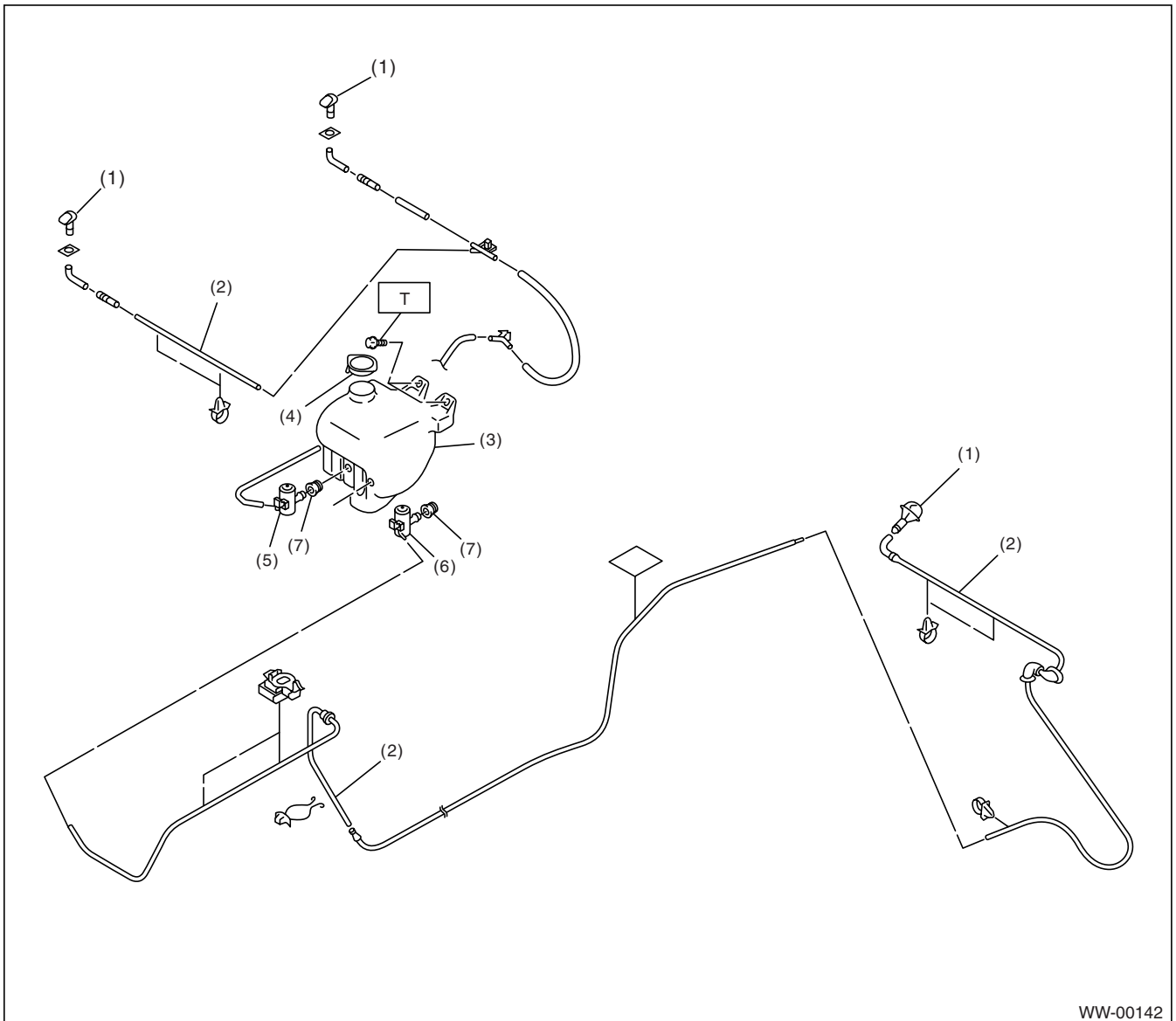
T1: 6.0 (0.61, 4.4)

T2: 8.0 (0.82, 5.9)

General Description

WIPER AND WASHER SYSTEMS

3. WASHER TANK



WW-00142

- | | |
|---------------------|------------------------|
| (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

- Reconnect the connectors and hoses securely.
- After reconnecting, confirm that each function operates normally.
- 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 installing the piping hose so that no bending, jamming, etc. are caused.
 - If even a little oil or grease such as silicon oil gets in the tank and washer passages, an oil film easily forms on the glass, causing the wiper to chatter and judder. Therefore, be careful not to let this happen.

2. Wiper and Washer System

A: WIRING DIAGRAM

1. WIPER AND WASHER (FRONT) LHD MODEL

<Ref. to WI-219, LHD MODEL, WIRING DIAGRAM, Front Wiper and Washer System.>

2. WIPER AND WASHER (FRONT) RHD MODEL

<Ref. to WI-220, RHD MODEL, WIRING DIAGRAM, Front Wiper and Washer System.>

3. WIPER AND WASHER (REAR) LHD MODEL

<Ref. to WI-221, LHD MODEL, WIRING DIAGRAM, Rear Wiper and Washer System.>

4. WIPER AND WASHER (REAR) R HD MODEL

<Ref. to WI-222, RHD MODEL, 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

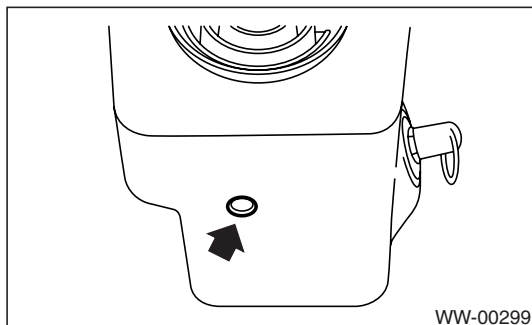
Combination Switch (Wiper)

WIPER AND WASHER SYSTEMS

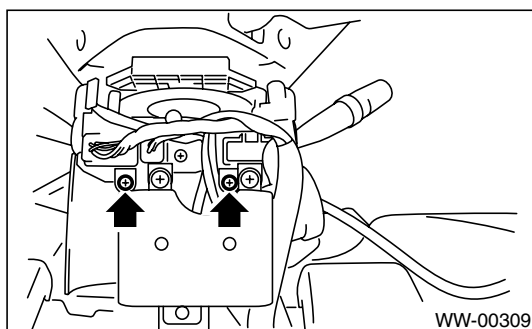
3. Combination Switch (Wiper)

A: REMOVAL

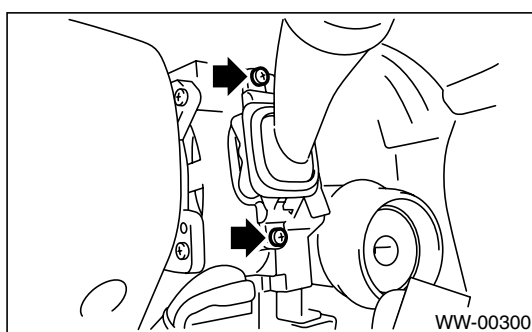
- 1) Disconnect the ground cable from battery.
- 2) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Assembly.>
- 3) Loosen the screw to remove steering column cover lower.



- 4) Remove the screw to steering column cover upper.



- 5) Disconnect the connectors from combination switches.
- 6) Loosen the screw to remove combination switch.

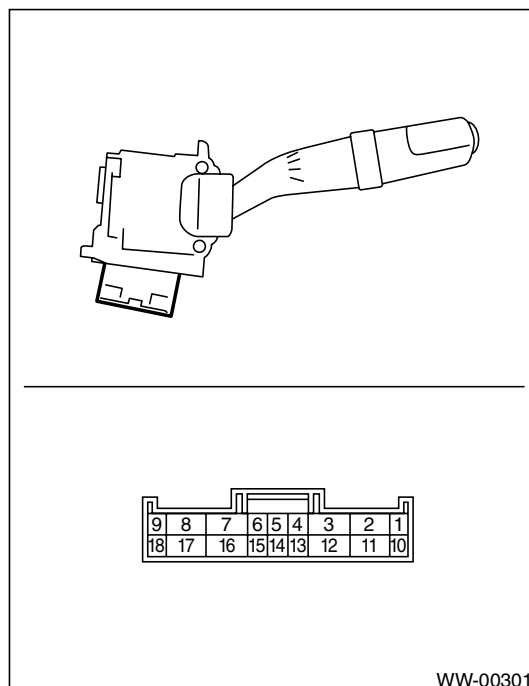


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

- Inspect the continuity between each connector terminal.



LHD model and RHD model (Europe model):

	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.

Combination Switch (Wiper)

WIPER AND WASHER SYSTEMS

RHD model (Except Europe model):

	Switch position	Terminal No.	Standard
FRONT	OFF	3 and 12	Less than 1 Ω
	INT	3 and 12	Less than 1 Ω
	LO	3 and 11	Less than 1 Ω
	HI	2 and 11	Less than 1 Ω
	Washer ON	8 and 17	Less than 1 Ω
REAR	Washer ON	8 and 16 16 and 18 8 and 18	Less than 1 Ω
	OFF	—	More than 1M Ω
	ON	8 and 18	Less than 1 Ω
	Washer ON	8 and 16 16 and 18 8 and 18	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

LHD model and RHD model (Europe model)

No. 7 — No. 2:

RHD model (Except for Europe model)

No. 3 — No. 8:

(A)	(B)
(C)	(F) (G) (H) (I)
(D)	(F) (G) (I) (J)
(E)	(F) (G) (J) (I)

WW-00053

(A) Switch position

(B) Voltage

(C) MIN.

(D) MAX.

(E) Non variable type

(F) 12 V

(G) 0 V

(H) Approx. 2 sec.

(I) 16±6 sec.

(J) 3±1 sec.

If operation is not as specified, replace the switch.

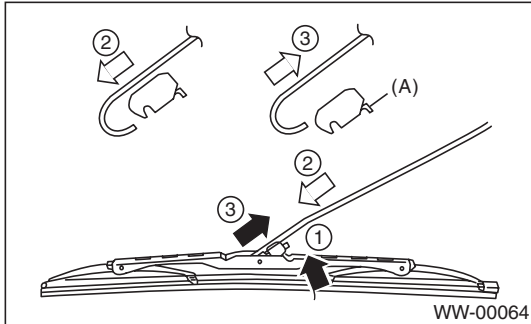
Wiper Blade

WIPER AND WASHER SYSTEMS

4. Wiper Blade

A: REMOVAL

While pushing the locking clip (A) up, pull out the blade from arm to arrow direction.



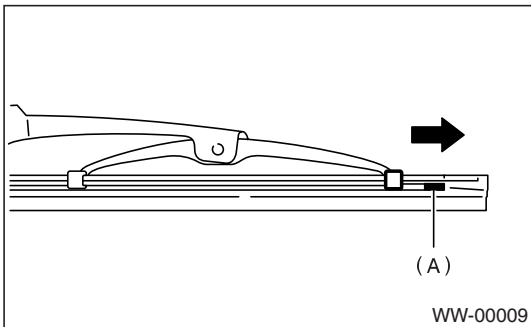
B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Confirm that the clip is locked securely.

C: DISASSEMBLY

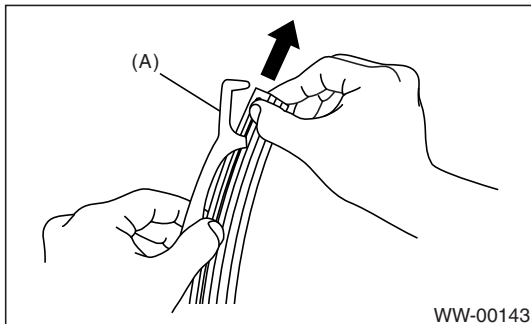
1. METAL TYPE

Pull on the side (A) of wiper rubber stopper, and then remove the rubber from blade assembly.



2. RESIN TYPE

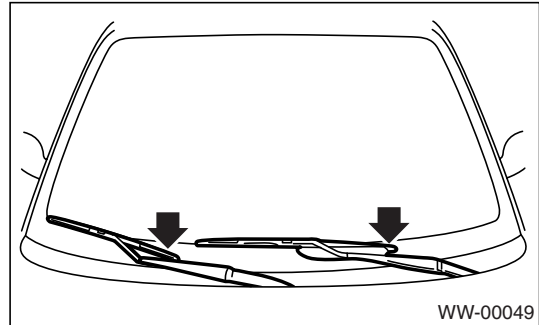
Pull the wiper rubber top slightly from the stopper (A) and pull it out fully.



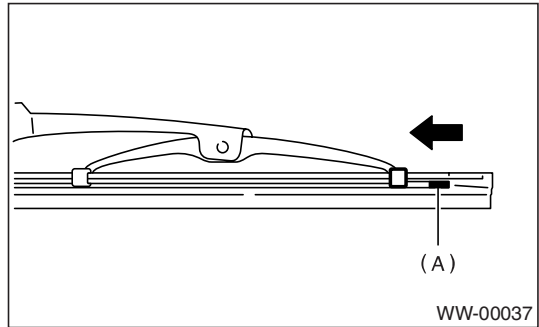
D: ASSEMBLY

1. METAL TYPE

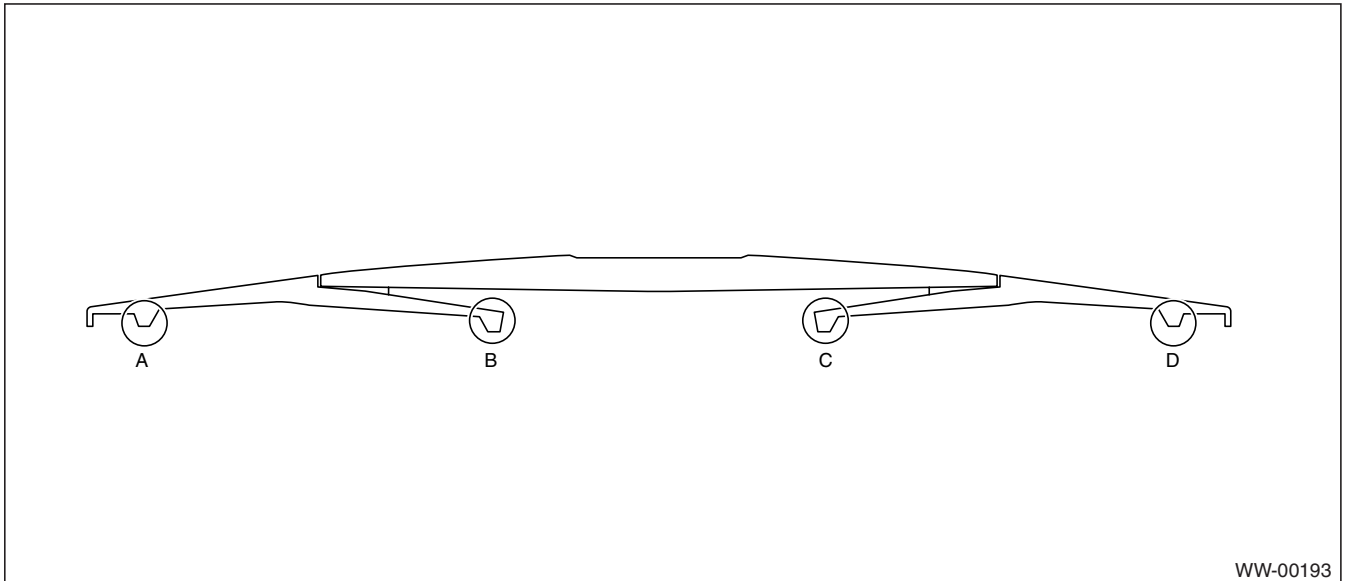
- 1) Insert the wiper rubber onto blade so that the stopper is in the position shown.



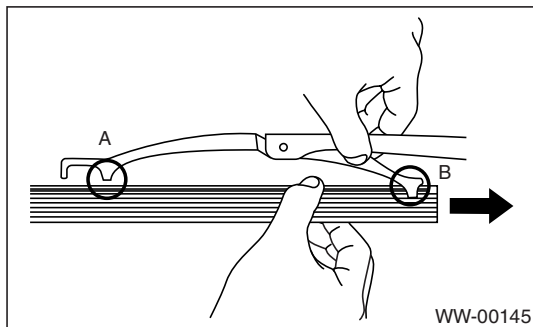
- 2) Make sure the wiper rubber is securely fastened to the pull stopper (A).



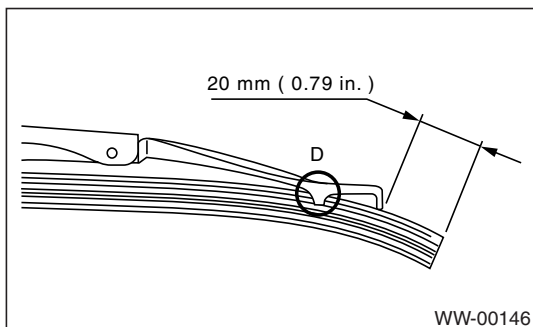
2. RESIN TYPE



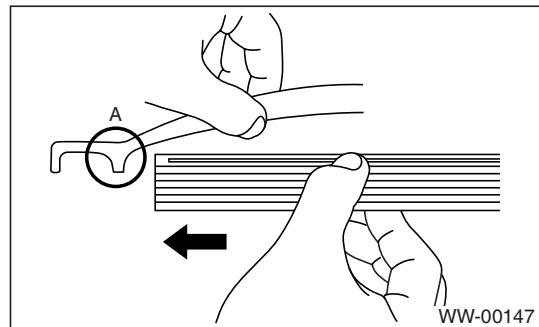
1) Insert the wiper rubber through the claw (B).



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.

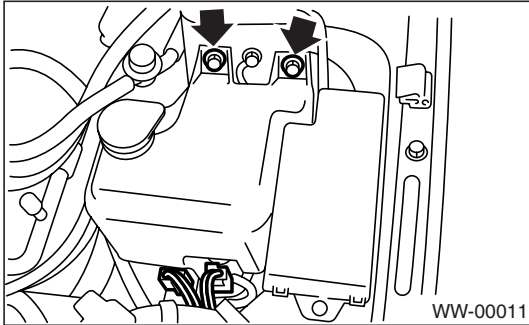
Washer Tank and Motor

WIPER AND WASHER SYSTEMS

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

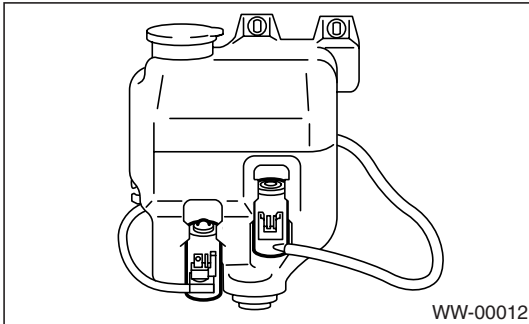
Install in the reverse order of removal.

Tightening torque:

6.0 N·m (0.61 kgf-m, 4.4 ft-lb)

C: DISASSEMBLY

Pull out the washer motor from tank.

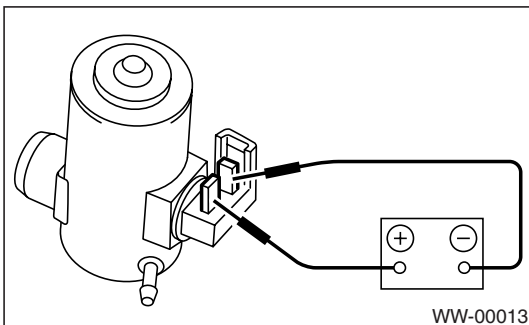


D: ASSEMBLY

- 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.



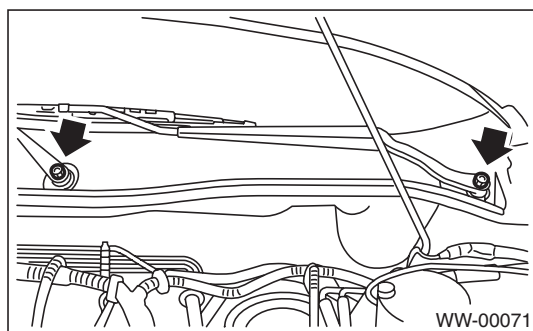
6. Front Wiper Arm

A: REMOVAL

NOTE:

The positions for RHD model are symmetrically opposite.

- 1) Open the hood.
- 2) Remove the cap.
- 3) Loosen the nut to remove arm.

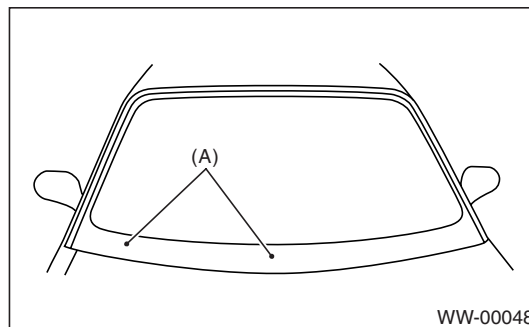


C: ADJUSTMENT

NOTE:

The positions for RHD model are symmetrically opposite.

Operate the wiper once. Align the wiper blade to the ceramic print point mark (A) of front window pane.

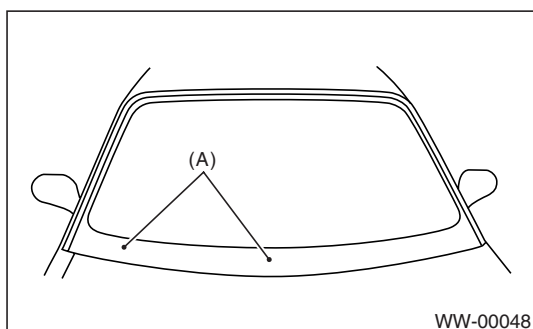


B: INSTALLATION

NOTE:

The positions for RHD model are symmetrically opposite.

- 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 pane.



Tightening torque:

Refer to COMPONENT in General Description.

<Ref. to WW-2, FRONT WIPER, COMPONENT, General Description.>

Front Wiper Motor and Link

WIPER AND WASHER SYSTEMS

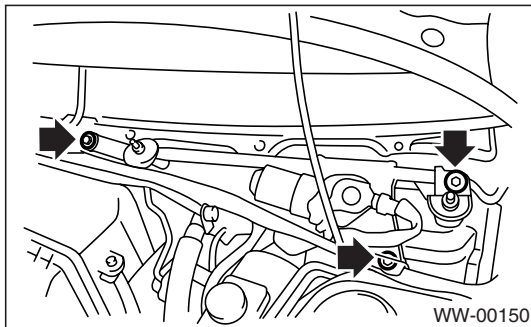
7. Front Wiper Motor and Link

A: REMOVAL

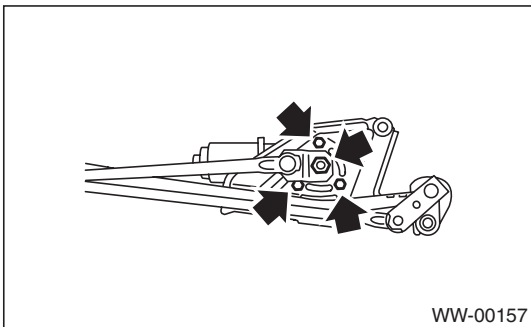
NOTE:

The positions for RHD model are symmetrically opposite.

- 1) Disconnect the ground cable from battery.
- 2) Remove the cowl panel. <Ref. to EI-34, REMOVAL, Cowl Panel.>
- 3) Disconnect the connector of motor.
- 4) Loosen the bolts to remove wiper link.

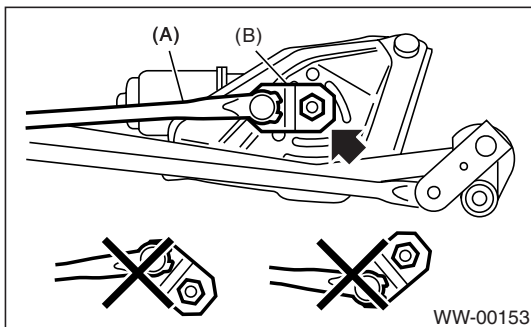


- 5) Loosen the bolts and nuts to remove motor.



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:

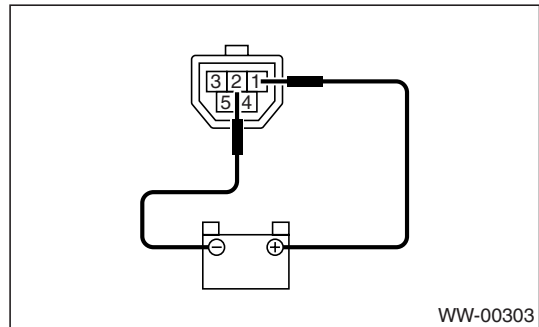
Refer to **COMPONENT** in *General Description*.

<Ref. to **WW-2, FRONT WIPER, COMPONENT, General Description.**>

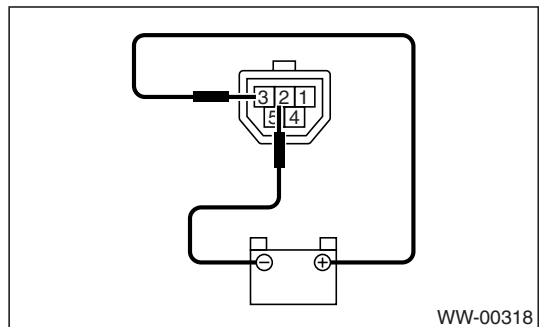
C: INSPECTION

- 1) When the battery is connected to the terminal of connectors, confirm that the motor operates at low speed.

LHD model:



RHD model:

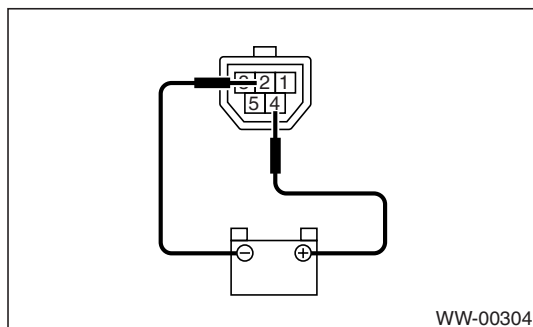


Front Wiper Motor and Link

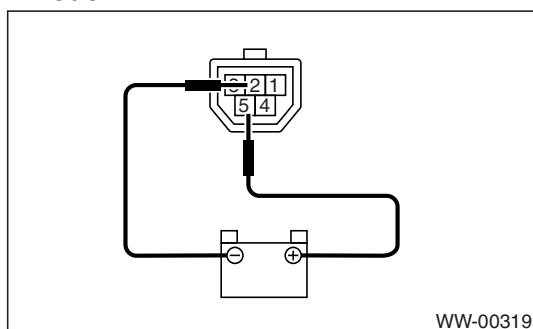
WIPER AND WASHER SYSTEMS

2) When the battery is connected to the terminal of connectors, confirm that the motor operates at high speed.

LHD model:

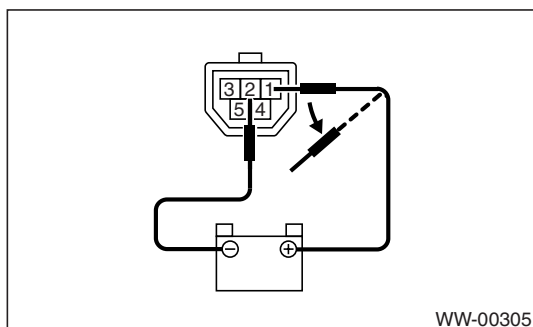


RHD model:

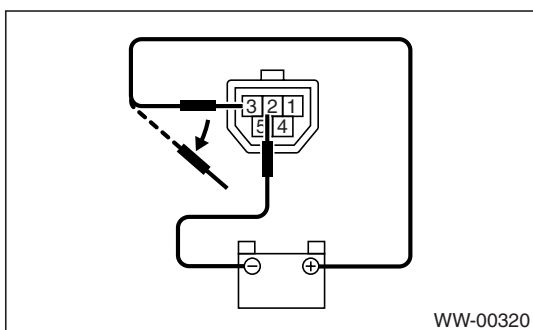


3) Connect the battery to terminals of connector, and then remove the terminal connection with motor rotated at low speed, and stop the wiper motor through operation.

LHD model:

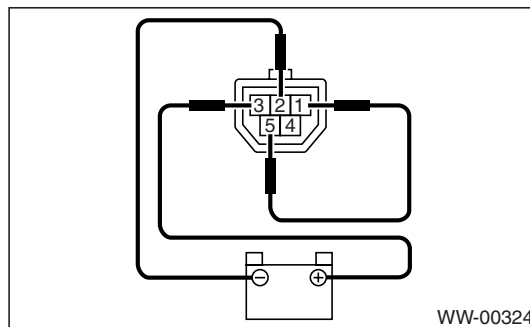


RHD model:

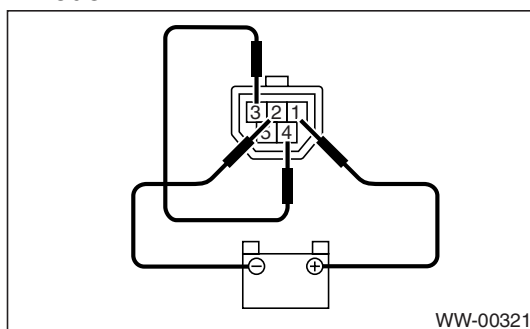


4) Connect the battery and confirm that the motor stops at automatic stop position after the motor operates at low speed again.

LHD model:



RHD model:



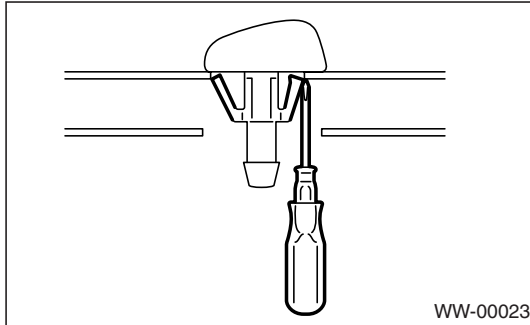
Front Washer Nozzle

WIPER AND WASHER SYSTEMS

8. Front Washer Nozzle

A: REMOVAL

- 1) Remove the washer hose from washer nozzle.
- 2) 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-14, ADJUSTMENT, Front Washer Nozzle.>

C: INSPECTION

- Make sure the nozzle and hose are not clogged.
- Make sure the hose is not bent.

D: ADJUSTMENT

NOTE:

This adjustment position is for left-handed vehicle. Carry out left-right symmetry for adjustment positions for right-handed vehicle.

- 1) Turn the wiper switch to OFF position.
- 2) When the vehicle stops, adjust the washer injection position as shown in the figure.

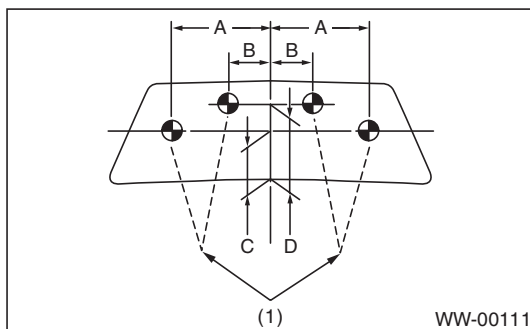
Injection position:

A: 350 mm (13.78 in)

B: 162 mm (6.38 in)

C: 300 mm (11.81 in)

D: 500 mm (19.69 in)

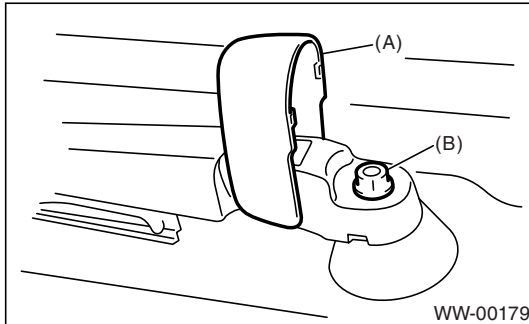


(1) Nozzle

9. Rear Wiper Arm

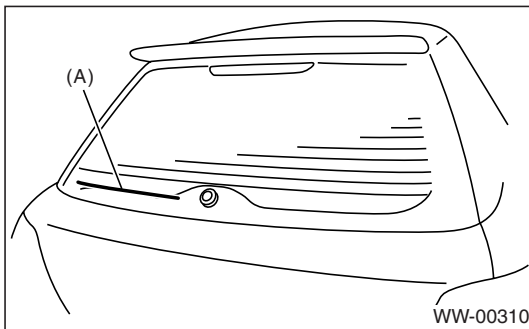
A: REMOVAL

- 1) Raise the wiper arm cover (A).
- 2) Remove the nut (B) 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).



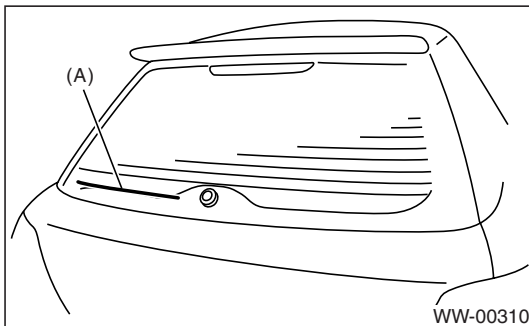
Tightening torque:

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).



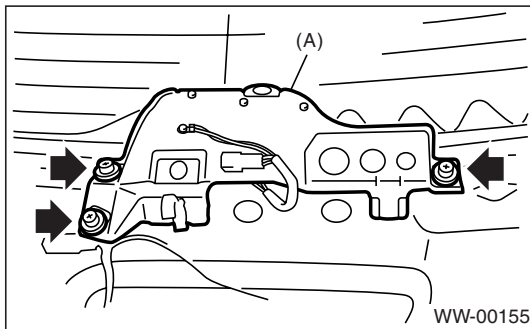
Rear Wiper Motor

WIPER AND WASHER SYSTEMS

10.Rear Wiper Motor

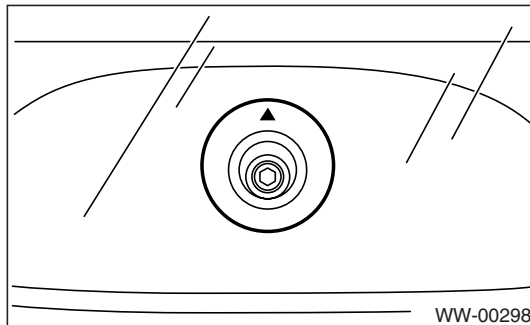
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear wiper arm. <Ref. to WW-15, REMOVAL, Rear Wiper Arm.>
- 3) Remove the rear gate lower trim. <Ref. to EI-55, 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).



B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Install the pivot cap with the arrow mark facing up, as shown in the figure.



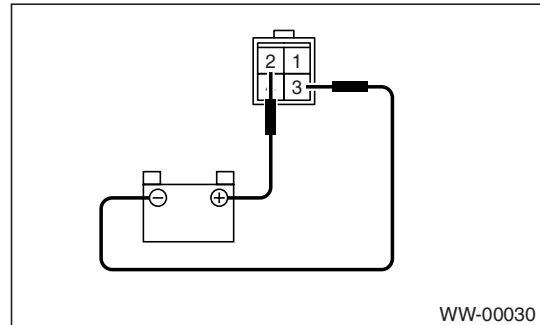
Tightening torque:

Refer to **COMPONENT** in **General Description**.

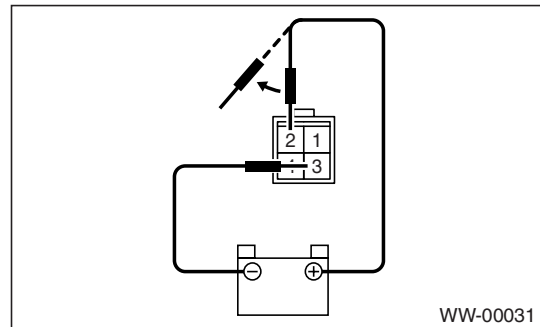
<Ref. to WW-3, REAR WIPER, COMPONENT, General Description.>

C: INSPECTION

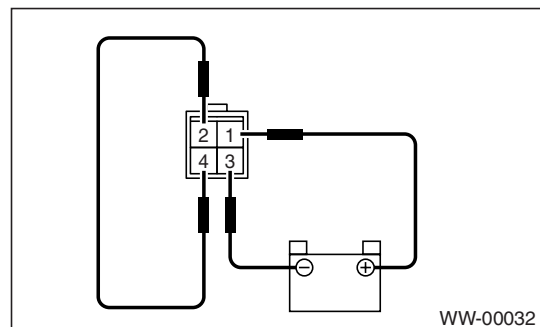
- 1) Connect the battery to wiper motor connector and confirm that the wiper motor operates.



- 2) Connect the battery to terminal of connector, and then remove the terminal connections with motor rotated, and stop the wiper motor through operation.



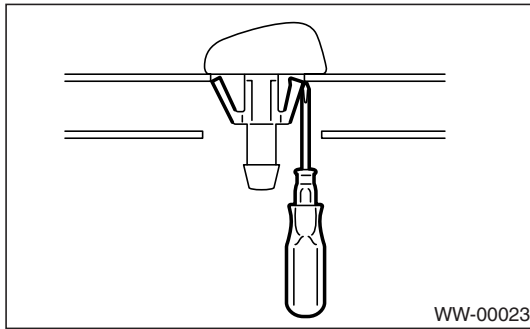
- 3) Connect the battery and confirm that the motor stops at automatic stop position after the motor operates at low speed again.



11.Rear Washer

A: REMOVAL

- 1) Remove the high-mount stop light. <Ref. to LI-27, 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-17, ADJUSTMENT, Rear Washer.>

C: INSPECTION

- Make sure the nozzle and hose are not clogged.
- Make sure the hose is not bent.

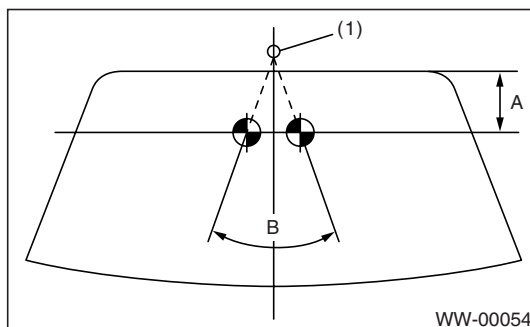
D: ADJUSTMENT

- 1) Turn the wiper switch to OFF position.
- 2) When the vehicle stops, adjust the washer injection position as shown in the figure.

Injection position:

A: 39 mm (1.54 in)

B: 72°



(1) Nozzle

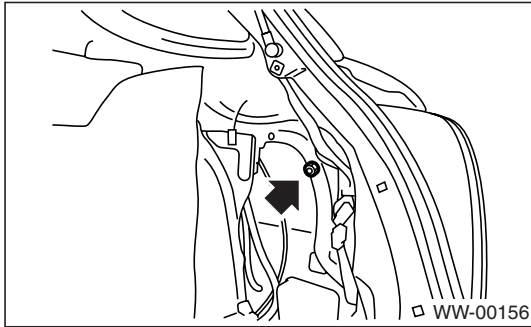
Wiper Control Relay (Wagon Model)

WIPER AND WASHER SYSTEMS

12. Wiper Control Relay (Wagon Model)

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the right quarter lower trim. <Ref. to EI-51, REMOVAL, Rear Quarter Trim.>
- 3) Loosen the nut to remove control unit.

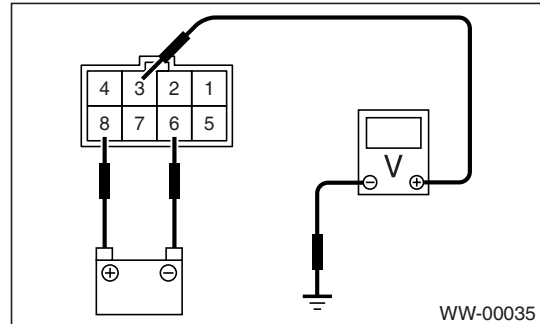


B: INSTALLATION

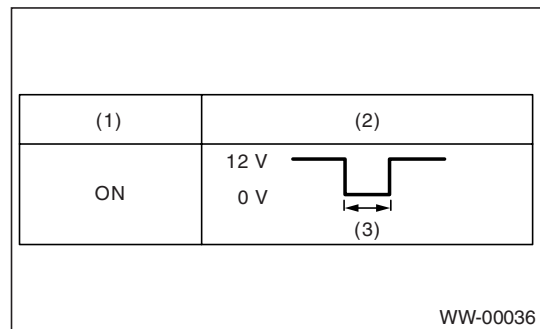
Install in the reverse order of removal.

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) Switch position
- (2) Voltage
- (3) 9 ± 2 sec.

If operation is not as specified, replace the switch.

ENTERTAINMENT

ET

	Page
1. General Description	2
2. Audio System	3
3. Front Accessory Power Supply Socket System	4
4. Audio	5
5. Front Speaker	6
6. Tweeter	7
7. Rear Speaker	8
8. Antenna	9
9. Antenna Amplifier	10
10. Noise Suppressor	11
11. Front Accessory Power Supply Socket	12

1. General Description

A: CAUTION

- Before disassembling or reassembling parts, always disconnect the battery ground cable. When replacing radio, control module, and other parts provided with memory functions, record memory contents before disconnecting the battery ground cable. Otherwise, the memory will be erased.
- Reassemble in reverse order of disassembly, unless otherwise 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.
Conductive Silver Composition (DUPONT No. 4817 or equivalent)	Used for repairing antenna wire.

2. Audio System

A: WIRING DIAGRAM

1. AUDIO LHD MODEL

<Ref. to WI-223, LHD MODEL, WIRING DIAGRAM, Audio System.>

2. AUDIO RHD MODEL

<Ref. to WI-225, RHD MODEL, 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.

Front Accessory Power Supply Socket System

ENTERTAINMENT

3. Front Accessory Power Supply Socket System

A: WIRING DIAGRAM

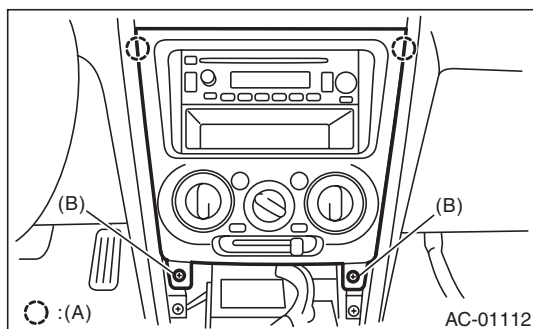
1. FRONT ACCESSORY POWER SUPPLY SOCKET

<Ref. to WI-227, WIRING DIAGRAM, Front Accessory Power Supply Socket System.>

4. Audio

A: REMOVAL

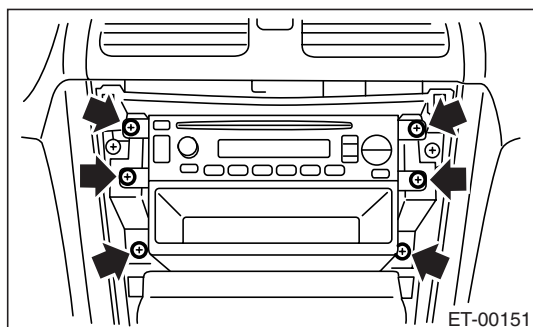
- 1) Disconnect the ground cable from battery.
- 2) Remove the console front panel. <Ref. to EI-45, REMOVAL, Console Box.>
- 3) Remove the fitting screws and hook pawls, and remove the center panel while disconnecting connector.



(A) Hook pawl

(B) Screw

- 4) Remove the fitting screws, and slightly pull out the audio from center console.



- 5) Disconnect the harness connectors and antenna feeder cord.

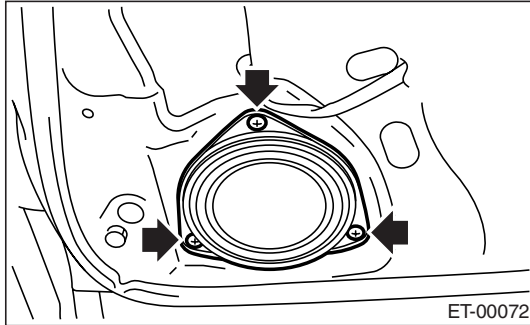
B: INSTALLATION

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-40, REMOVAL, Front Door Trim.>
- 3) Remove the front speaker mounting screws.



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

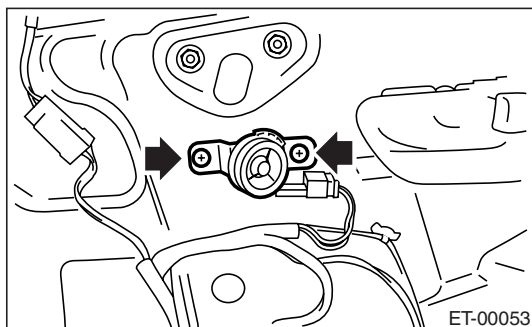
B: INSTALLATION

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-40, REMOVAL, Front Door Trim.>
- 3) Remove the tweeter mounting screws.



- 4) Disconnect the harness connector and remove tweeter.

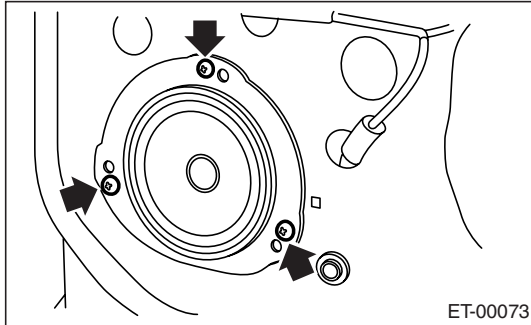
B: INSTALLATION

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-41, 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

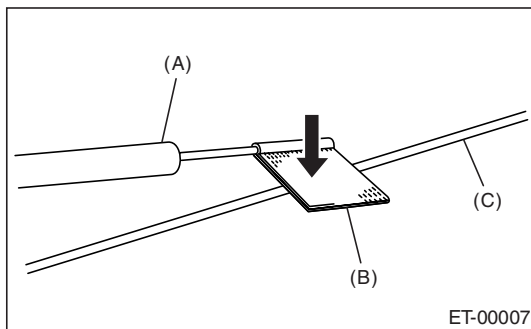
A: INSPECTION

Measure the resistance between antenna terminal and each antenna wire.

If an antenna wire is OK, resistance will be less than $1\ \Omega$. If an antenna wire is broken, the resistance will be more than $1\ \text{M}\Omega$.

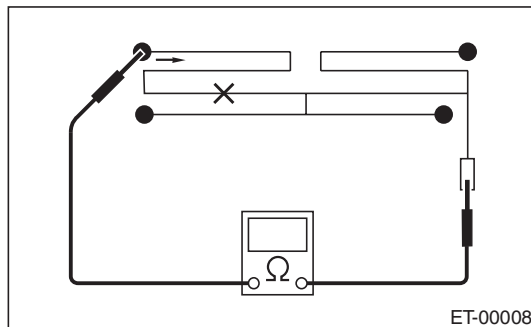
NOTE:

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.



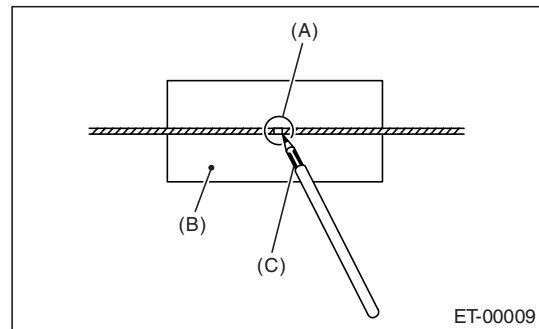
- (A) Tester probe
- (B) Aluminum foil
- (C) Antenna wire

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.

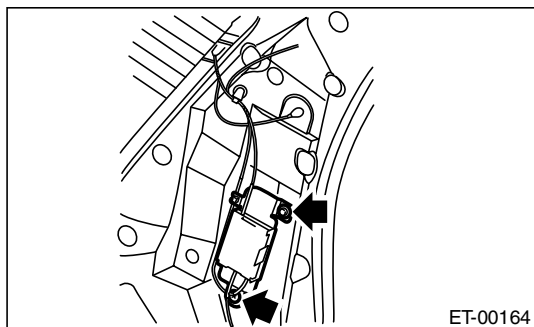
Antenna Amplifier

9. Antenna Amplifier

A: REMOVAL

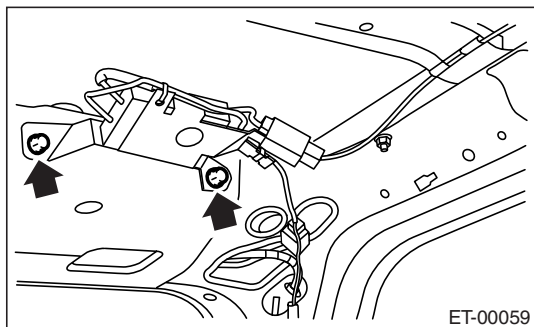
1. SEDAN MODEL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear pillar upper trim. <Ref. to EI-51, SEDAN MODEL, REMOVAL, Rear Quarter Trim.>
- 3) Disconnect the harness connector and terminal.
- 4) Remove the mounting screws and detach antenna amplifier.



2. WAGON MODEL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear quarter upper trim and roof trim. <Ref. to EI-53, WAGON MODEL, REMOVAL, Roof Trim.>
- 3) Disconnect the harness connector and terminal.
- 4) Remove the mounting screws and detach the antenna amplifier.



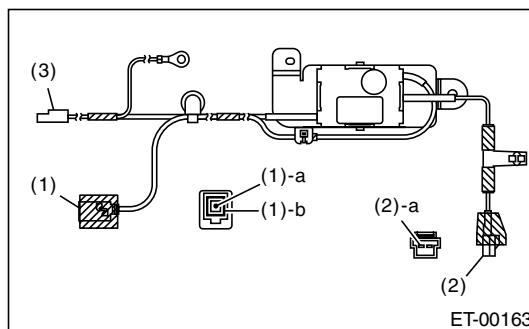
B: INSTALLATION

Install in the reverse order of removal.

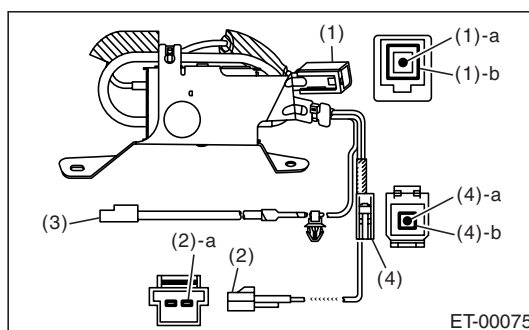
C: INSPECTION

Measure the antenna amplifier resistance.

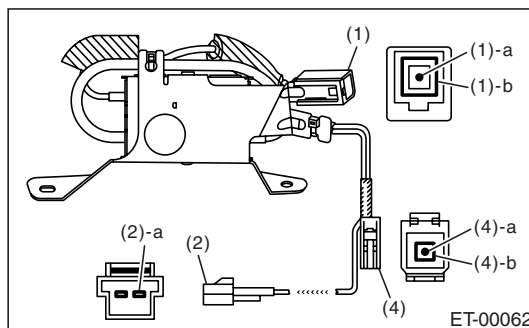
• SEDAN MODEL



• WAGON MODEL (Europe model)



• WAGON MODEL (Except Europe model)



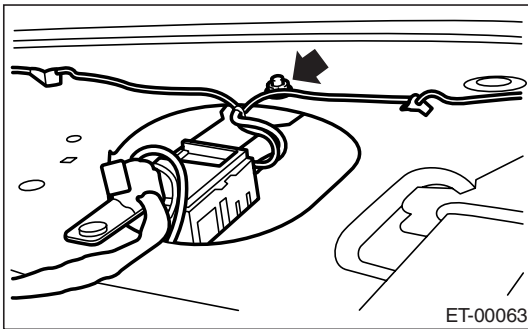
Terminal No.	Standard
1-a and Amplifier body	More than 100 kΩ
1-b and Amplifier body	Less than 1 Ω
2-a and Amplifier body	More than 100 Ω
3 and Amplifier body	More than 100 kΩ
4-a and Amplifier body	More than 100 kΩ
4-b and Amplifier body	Less than 1 Ω

10.Noise Suppressor

A: REMOVAL

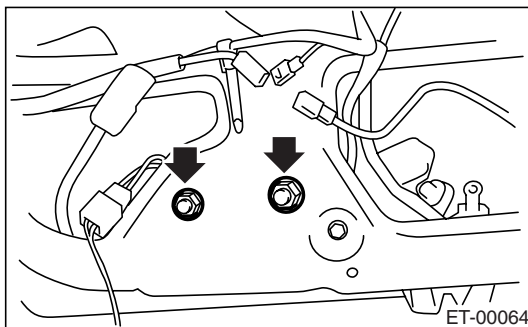
1. SEDAN MODEL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear pillar upper trim. <Ref. to EI-51, SEDAN MODEL, REMOVAL, Rear Quarter Trim.>
- 3) Remove the rear shelf trim. <Ref. to EI-56, 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 MODEL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear gate trim. <Ref. to EI-55, 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.

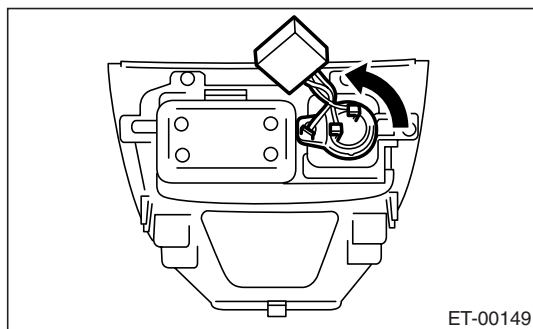
Front Accessory Power Supply Socket

ENTERTAINMENT

11. Front Accessory Power Supply Socket

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the console front panel. <Ref. to EI-45, REMOVAL, Console Box.>
- 3) Disconnect the harness connectors and remove front accessory power supply socket.



B: INSTALLATION

Install in the reverse order of removal.

COMMUNICATION SYSTEM

COM

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



1. General Description

A: 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.

B: PREPARATION TOOL

1. GENERAL TOOLS

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

2. Horn System

A: WIRING DIAGRAM

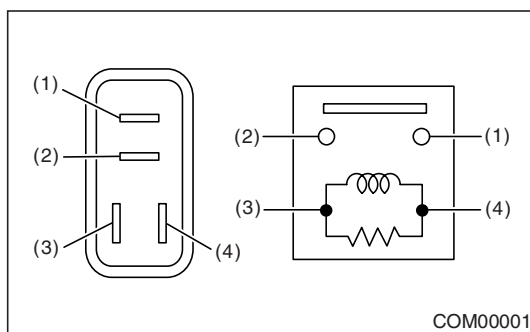
1. HORN

<Ref. to WI-228, 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

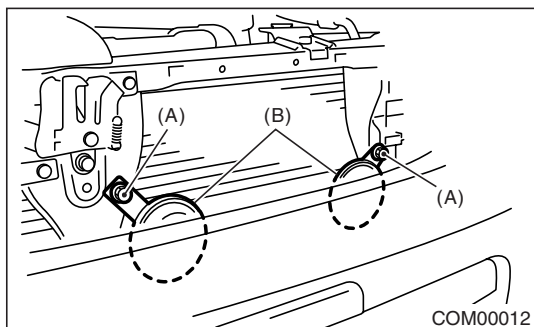
Horn

COMMUNICATION SYSTEM

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).

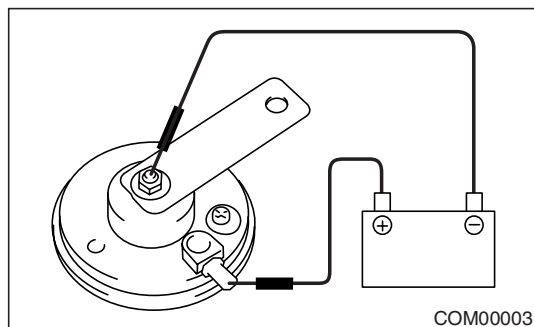


B: INSTALLATION

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.

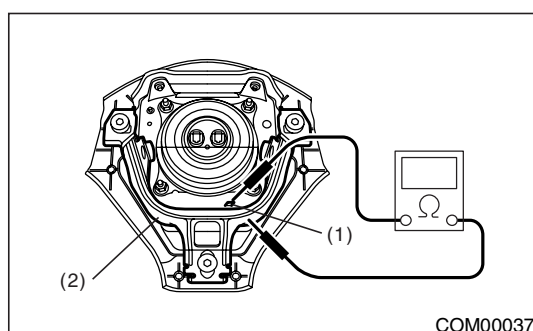
- 1) Disconnect the ground cable from battery.
- 2) Remove the driver's airbag module. <Ref. to AB-12, REMOVAL, Driver's Airbag Module.>

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

GLASS/WINDOWS/MIRRORS

GW

	Page
1. General Description	2
2. Power Window System	8
3. Power Window Control Switch	9
4. Front Door Glass	13
5. Front Regulator and Motor Assembly	18
6. Remote Control Mirror System	19
7. Scalp Cap	20
8. Outer Mirror Assembly	21
9. Outer Mirror	23
10. Remote Control Mirror Switch	24
11. Rear Door Glass	25
12. Rear Regulator and Motor Assembly	27
13. Windshield Glass	28
14. Rear Gate Glass	31
15. Rear Window Glass	32
16. Rear Window Defogger System	33
17. Rear Window Defogger	34
18. Rear Quarter Glass	35
19. Sunroof Glass	37
20. Rearview Mirror	38

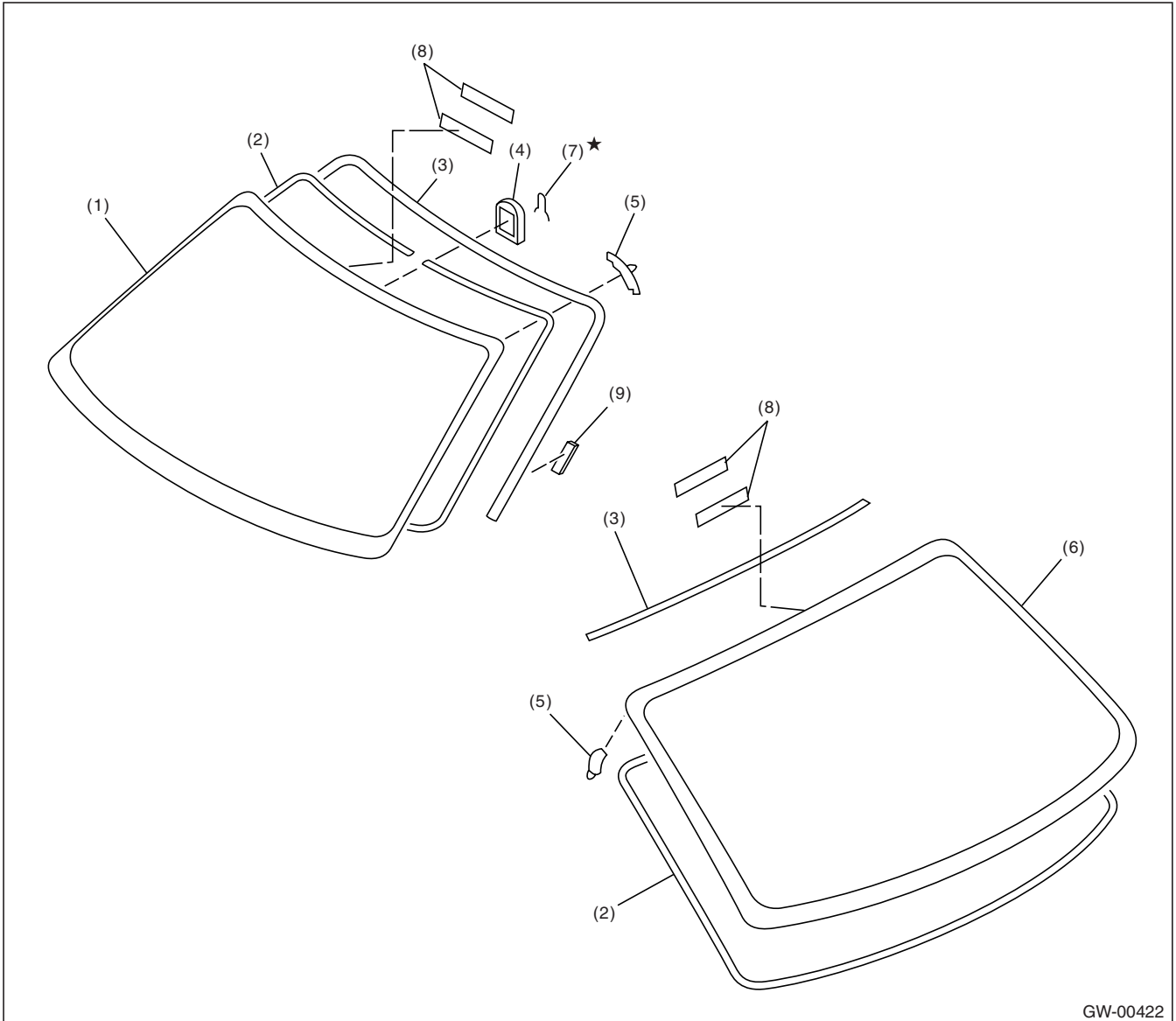
General Description

GLASS/WINDOWS/MIRRORS

1. General Description

A: COMPONENT

1. FIXED GLASS (SEDAN MODEL)



GW-00422

- (1) Windshield glass
- (2) Dam rubber
- (3) Molding

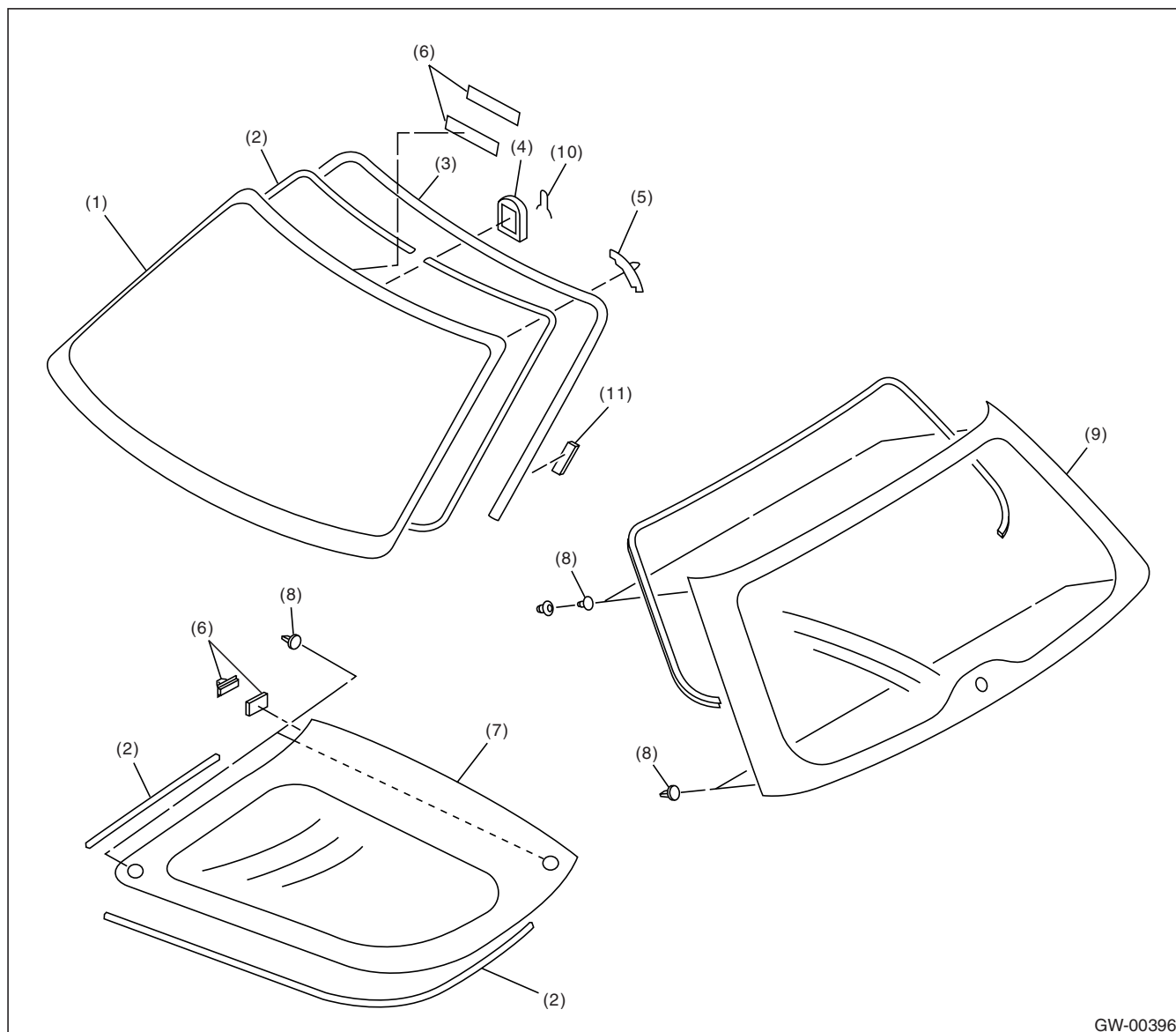
- (4) Rearview mirror mount
- (5) Locating pin
- (6) Rear window glass

- (7) Spring
- (8) Fastener
- (9) Seal

General Description

GLASS/WINDOWS/MIRRORS

2. FIXED GLASS (WAGON MODEL)

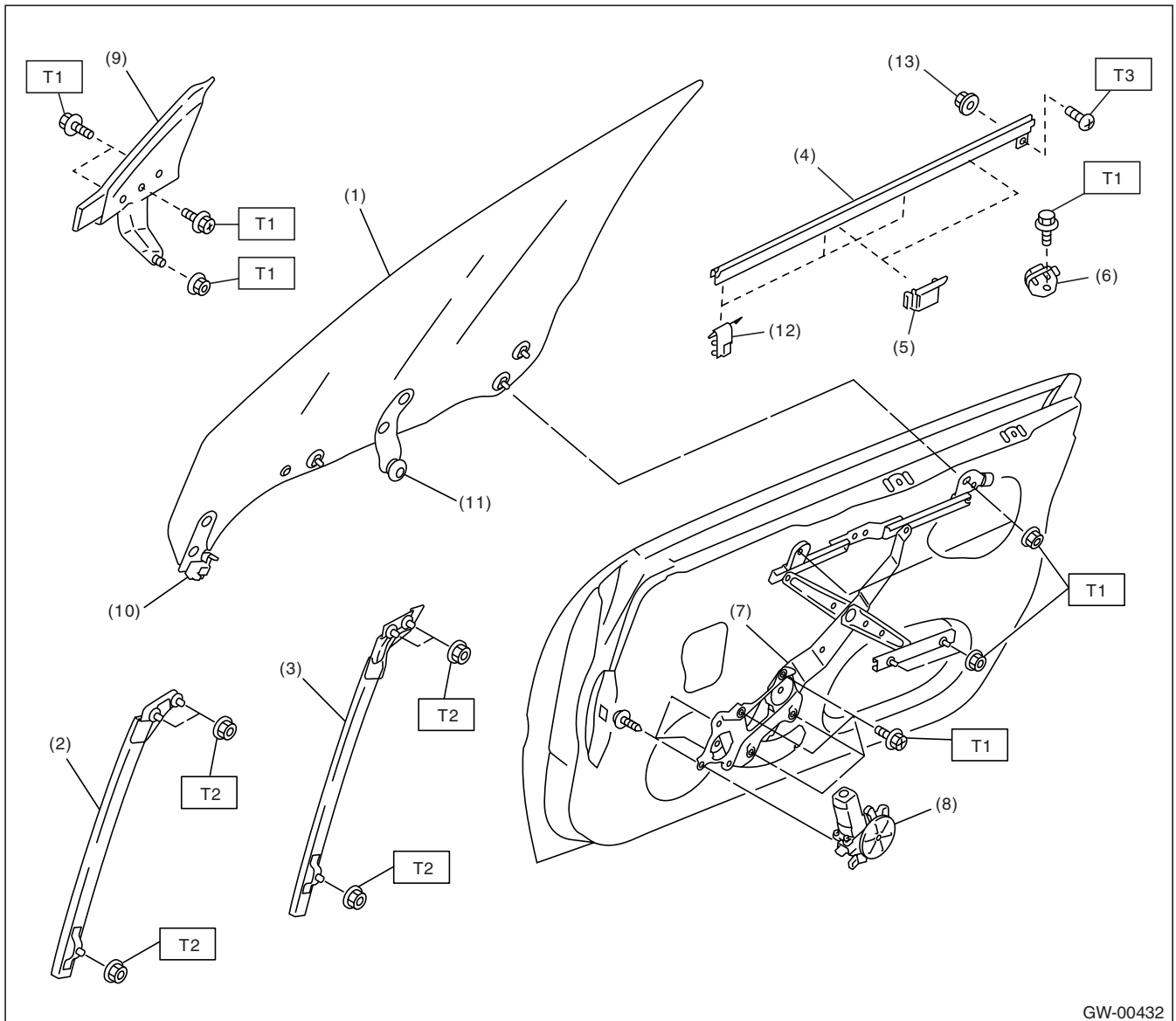


GW-00396

- | | | |
|---------------------------|------------------------|-------------|
| (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

3. FRONT DOOR GLASS



- | | |
|------------------------|---------------------------|
| (1) Glass | (8) Motor ASSY |
| (2) Door sash (Front) | (9) Mirror gusset |
| (3) Door sash (Rear) | (10) Slider |
| (4) Weather strip | (11) Roller |
| (5) Stabilizer (Outer) | (12) Clip (Weather strip) |
| (6) Stabilizer (Inner) | (13) Screw gromet |
| (7) Regulator ASSY | |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 7.4 (0.75, 5.5)

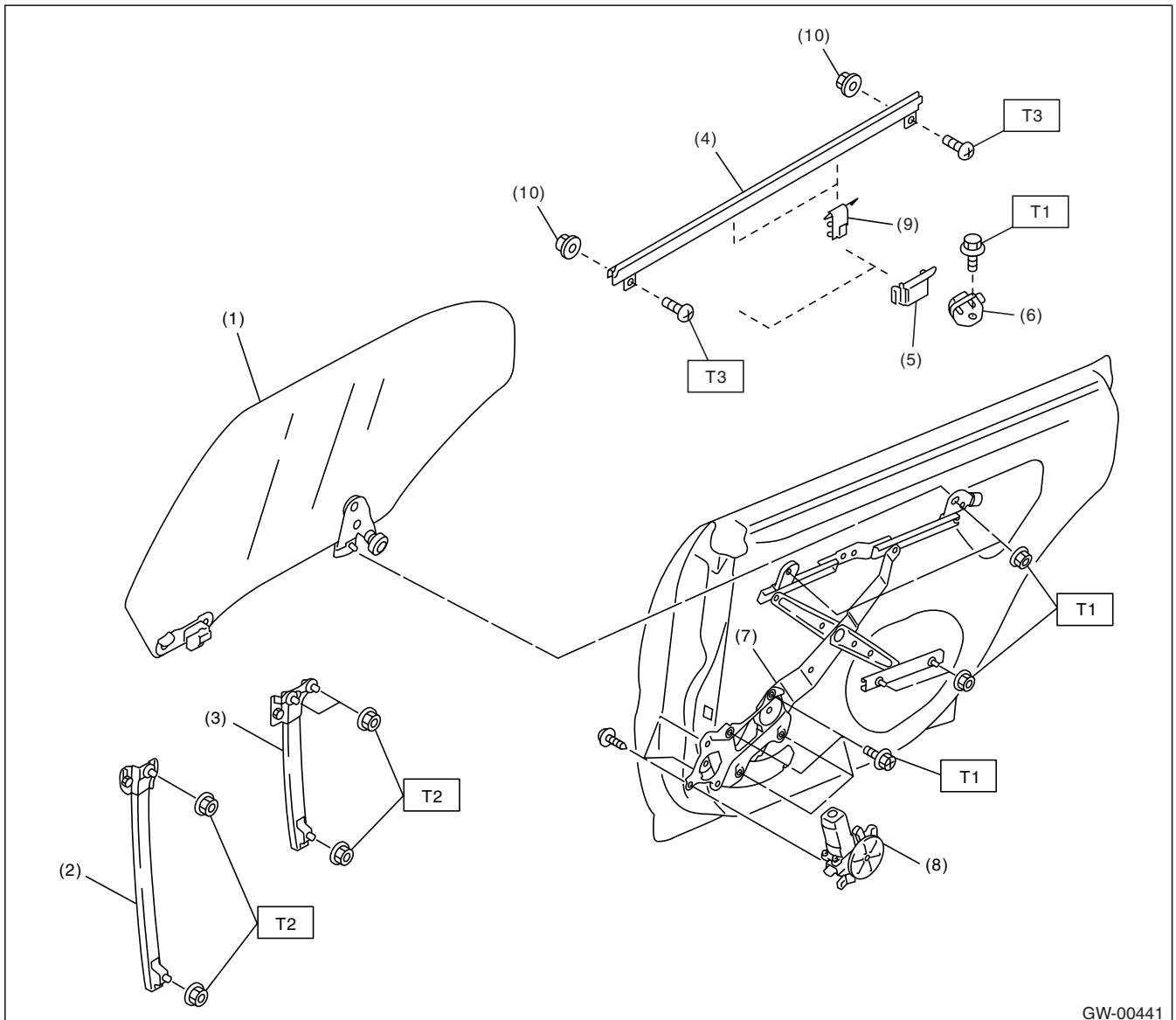
T2: 13.7 (1.4, 10.1)

T3: 1.5 (0.15, 1.1)

General Description

GLASS/WINDOWS/MIRRORS

4. REAR DOOR GLASS



GW-00441

- | | |
|------------------------|--------------------------|
| (1) Glass | (6) Stabilizer (Inner) |
| (2) Door sash (Front) | (7) Regulator ASSY |
| (3) Door sash (Rear) | (8) Motor ASSY |
| (4) Weather strip | (9) Clip (Weather strip) |
| (5) Stabilizer (Outer) | (10) Screw gromet |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 7.4 (0.75, 5.5)

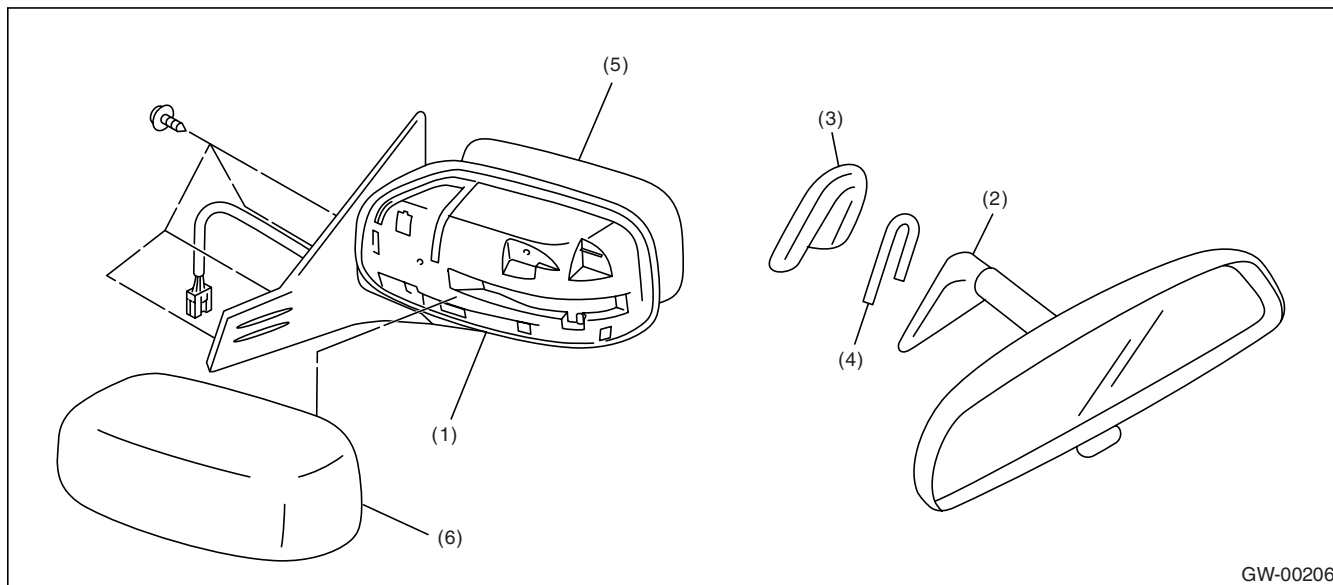
T2: 13.7 (1.4, 10.1)

T3: 1.5 (0.15, 1.1)

General Description

GLASS/WINDOWS/MIRRORS

5. MIRROR



GW-00206

- (1) Outer mirror
- (2) Inner rearview mirror

- (3) Mount
- (4) Spring

- (5) Mirror
- (6) Scalp cap

B: CAUTION

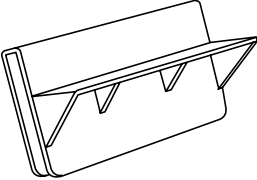
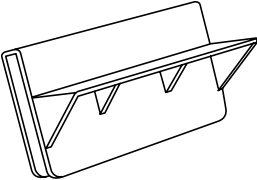
- When the electrical connectors are disconnected, always conduct an operational check after connecting them again.
- Avoid impact and damage to glass.

General Description

GLASS/WINDOWS/MIRRORS

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))

2. GENERAL TOOL

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

Power Window System

GLASS/WINDOWS/MIRRORS

2. Power Window System

A: WIRING DIAGRAM

1. POWER WINDOW LHD MODEL

<Ref. to WI-229, LHD MODEL, WIRING DIAGRAM, Power Window System.>

2. POWER WINDOW RHD MODEL

<Ref. to WI-233, RHD MODEL, WIRING DIAGRAM, Power Window System.>

B: INSPECTION

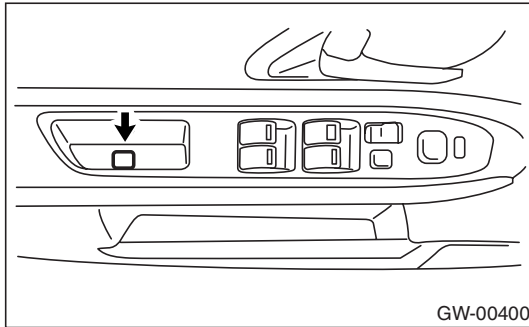
Symptom	Repair order
All power windows do not operate.	(1) Fuse (SBF-6) (F/B No. 18: RHD model) (2) Power window circuit breaker (3) Power window relay (4) Wiring harness
One window does not operate.	(1) Power window main switch (2) Power window sub switch (3) Power window motor (4) Wiring harness
"Window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

3. Power Window Control Switch

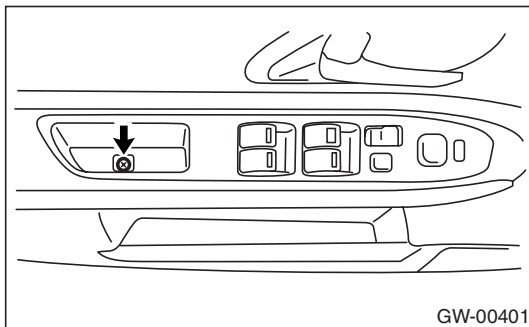
A: REMOVAL

1. MAIN SWITCH

- 1) Disconnect the ground cable from battery.
- 2) Using a flat tip screwdriver, remove the screw cover.



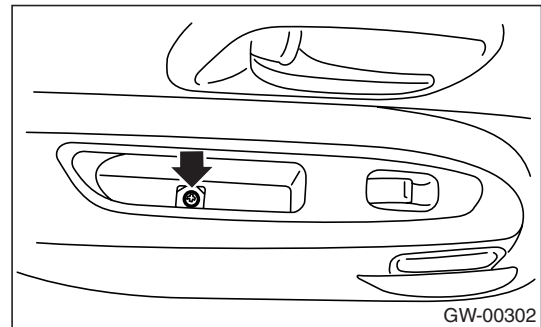
- 3) Loosen the screw to remove the power window main switch.



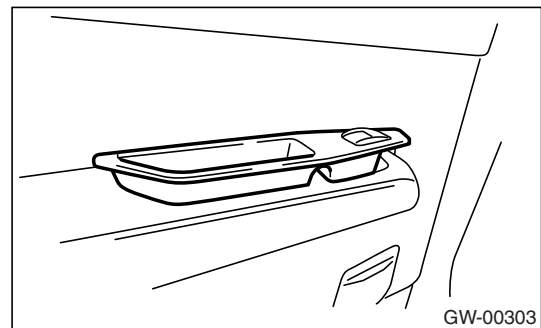
- 4) Disconnect the connector.

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

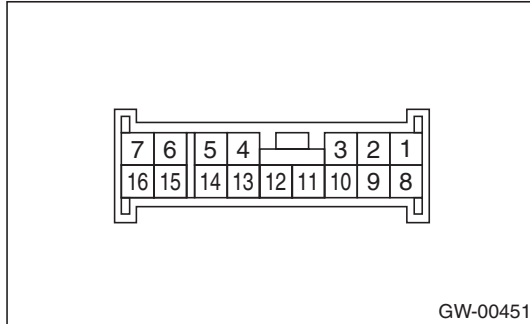
GLASS/WINDOWS/MIRRORS

C: INSPECTION

1. MAIN SWITCH

• LHD MODEL

Measure the switch resistance.



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

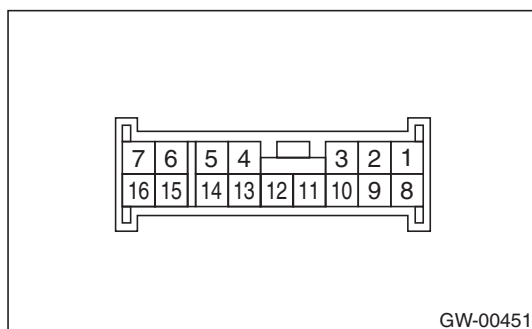
If NG, replace the main switch.

Power Window Control Switch

GLASS/WINDOWS/MIRRORS

• RHD MODEL

Measure the switch resistance.



	Switch position	Terminal No.	Standard
Driver's side	AUTO UP	12 and 6, 7 and 1	Less than 1 Ω
	UP	12 and 6, 7 and 1	Less than 1 Ω
	OFF	1 and 6 1 and 7 6 and 7	Less than 1 Ω
	DOWN	12 and 7, 6 and 1	Less than 1 Ω
	AUTO DOWN	12 and 7, 6 and 1	Less than 1 Ω
Front passenger's side	UP	12 and 2, 3 and 1	Less than 1 Ω
	OFF	1 and 2 1 and 3 2 and 3	Less than 1 Ω
	DOWN	12 and 3, 2 and 1	Less than 1 Ω
Rear LH	UP	12 and 9, 10 and 1	Less than 1 Ω
	OFF	1 and 9 1 and 10 9 and 10	Less than 1 Ω
	DOWN	12 and 10, 9 and 1	Less than 1 Ω
Rear RH	UP	12 and 13, 1 and 14	Less than 1 Ω
	OFF	1 and 13 1 and 14 13 and 14	Less than 1 Ω
	DOWN	12 and 14, 13 and 1	Less than 1 Ω

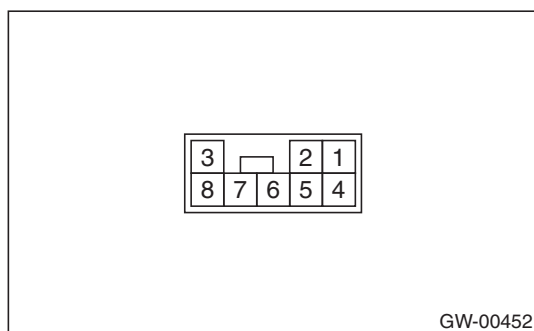
If NG, replace the main switch.

Power Window Control Switch

GLASS/WINDOWS/MIRRORS

2. SUB-SWITCH

Measure the switch resistance.



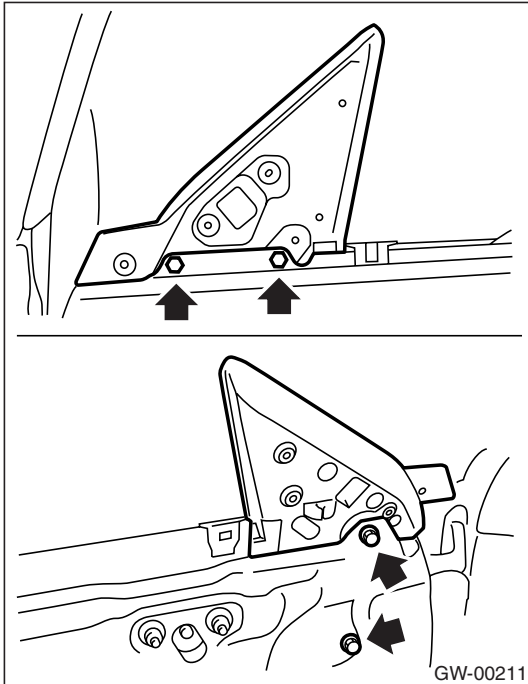
	Switch position	Terminal No.	Standard
Front passenger's side & rear	UP	3 or 8 and 5, 6 and 7	Less than 1 Ω
	OFF	4 and 5, 6 and 7	Less than 1 Ω
	DOWN	3 or 8 and 7, 4 and 5	Less than 1 Ω

If NG, replace the sub-switch.

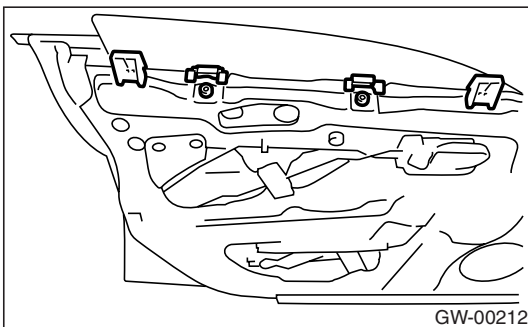
4. Front Door Glass

A: REMOVAL

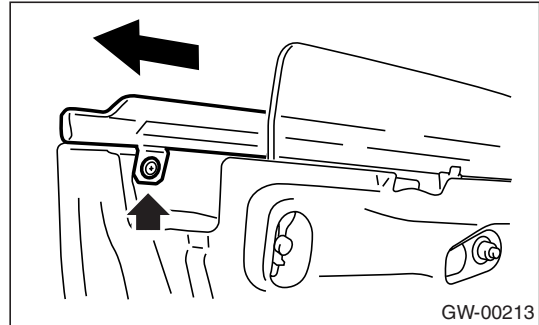
- 1) Remove the front door trim. <Ref. to EI-40, REMOVAL, Front Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-17, REMOVAL, Front Sealing Cover.>
- 3) Remove the outer mirror assembly. <Ref. to GW-21, REMOVAL, Outer Mirror Assembly.>
- 4) Remove the gusset.



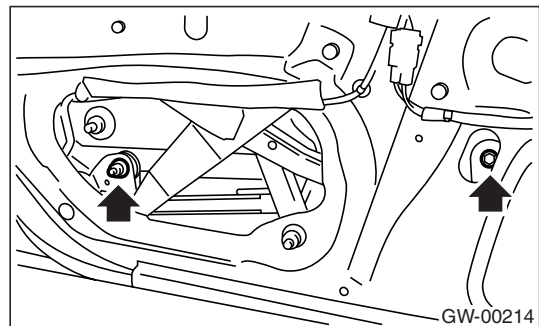
- 5) Remove the stabilizers and trim hooks.



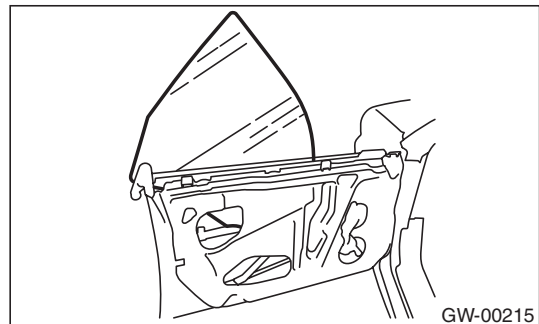
- 6) Remove the rear end of door weather strip and weather strip outer.



- 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-14, 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:

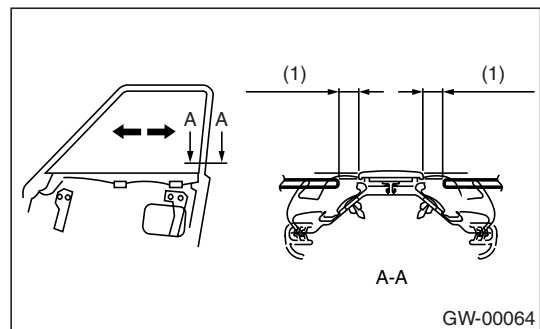
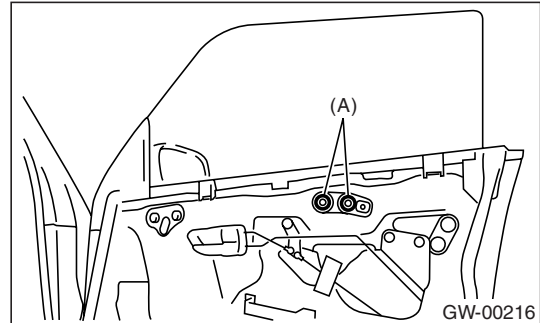
Before adjustment, ensure that all adjusting bolts of stabilizer (inner), upper stopper, and sash are loosened and door glass is raised so that it is in contact with weather strip.

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

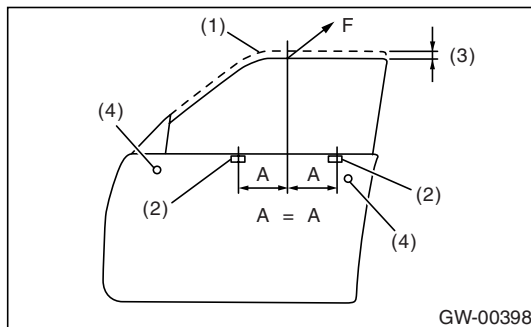
2) Temporarily tighten the regulator B-channel in a position at the top of slotted hole.

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 lbf) (F) to upper edge of glass above midpoint of two stabilizers (outer), press the stabilizer (inner) at pressure of 30 ± 5 N (3.0 ± 0.5 kgf, 6.6 ± 1.1 lbf) to the glass, then secure it.

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)

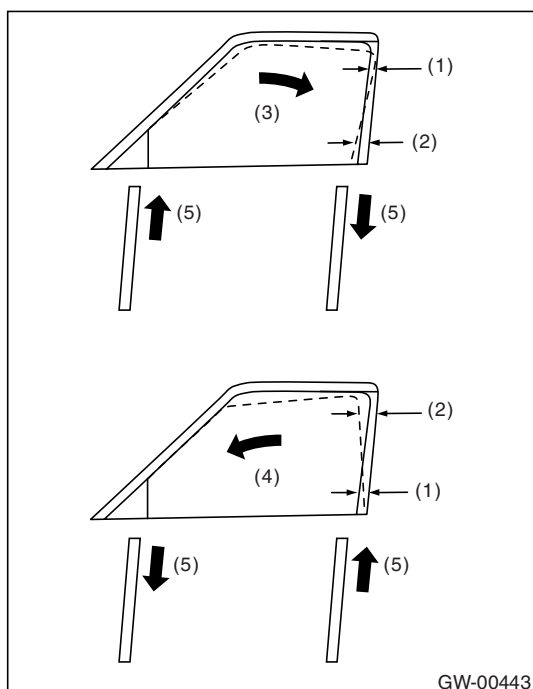
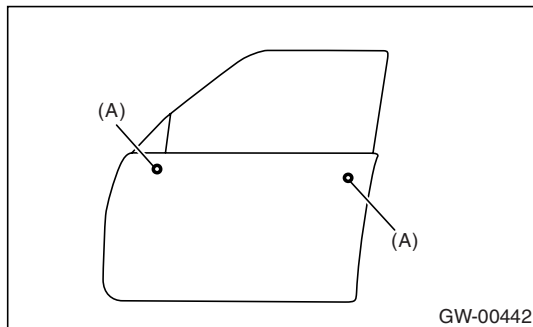


- (1) Full close position
- (2) Stabilizer (outer)
- (3) 10 — 15 mm (0.39 — 0.59 in)
- (4) Upper stopper

Front Door Glass

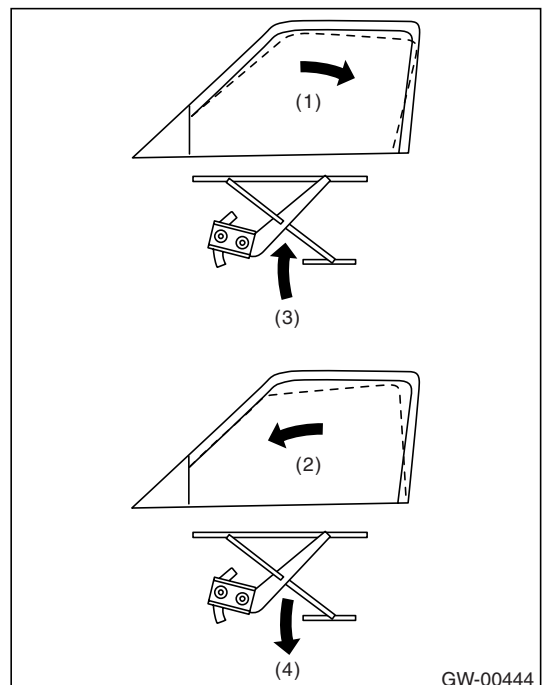
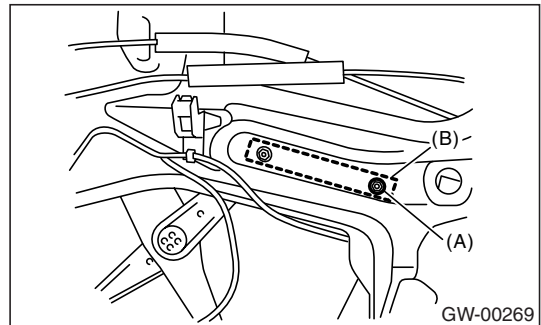
GLASS/WINDOWS/MIRRORS

5) Adjust so that the upper and lower ends of center pillar are the same size by moving the position of upper stopper (A).



- (1) Narrow
- (2) Wide
- (3) To tilt glass rearward
- (4) To tilt glass forward
- (5) Stopper adjusting direction

6) After adjusting the clearance between center pillar, up and down the glass several times to check glass contact to stopper when glass is fully closed. Adjust it so that the front and rear stoppers contact simultaneously by loosening the adjusting nut (A) of B channel (B).



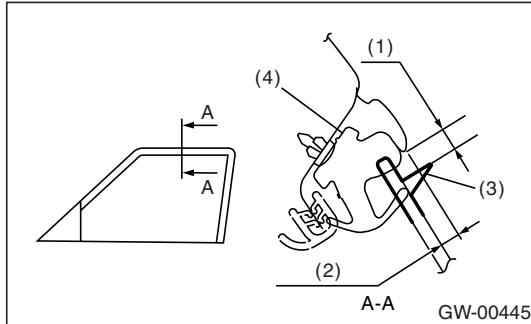
- (1) When the stopper of door sash (rear) contacts first
- (2) When the stopper of door sash (front) contacts first
- (3) Raise B channel
- (4) Lower B channel

Front Door Glass

GLASS/WINDOWS/MIRRORS

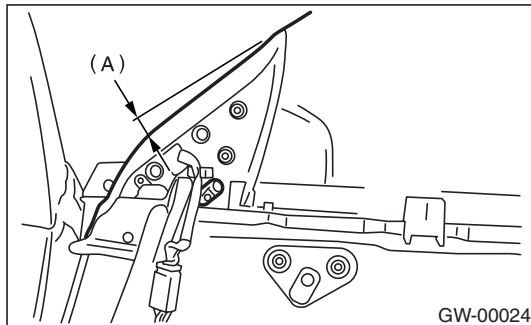
7) For glass stroke adjustment, set the ST on glass and close the door, raise glass until positional relationship between glass and weather strip becomes as shown. And secure the glass so that the upper stopper lightly touches the glass holder.

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) 4 — 6 mm (0.157 — 0.236 in) : when re-using weather strip
3 — 5 mm (0.118 — 0.197 in) : when replacing weather strip
- (3) ST
- (4) Weather strip

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)

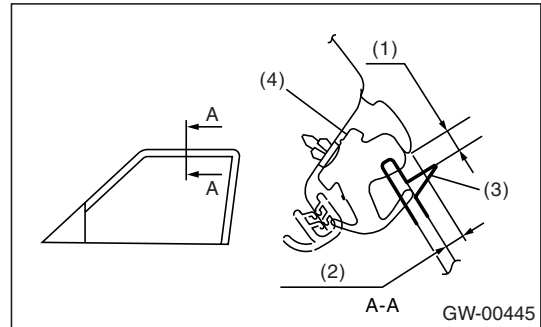
8) After stabilizer adjustment, carry out the glass crimp adjustment. First, visually ensure positional relationship between retainer & molding and glass of the roof side, and then begin with rear sash adjustment. Set the ST on glass, and then adjust two adjusting bolts alternately step by step to obtain 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.

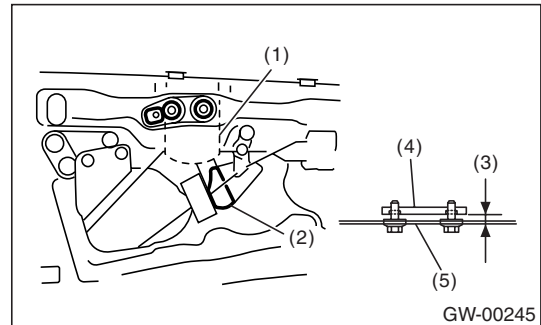
9) Make the same adjustment of two adjusting bolts of rear sash.



- (1) 2.7 — 4.3 mm (0.106 — 0.169 in)
- (2) 4 — 6 mm (0.157 — 0.236 in) : when re-using weather strip
3 — 5 mm (0.118 — 0.197 in) : when replacing weather strip
- (3) ST
- (4) Weather strip

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.

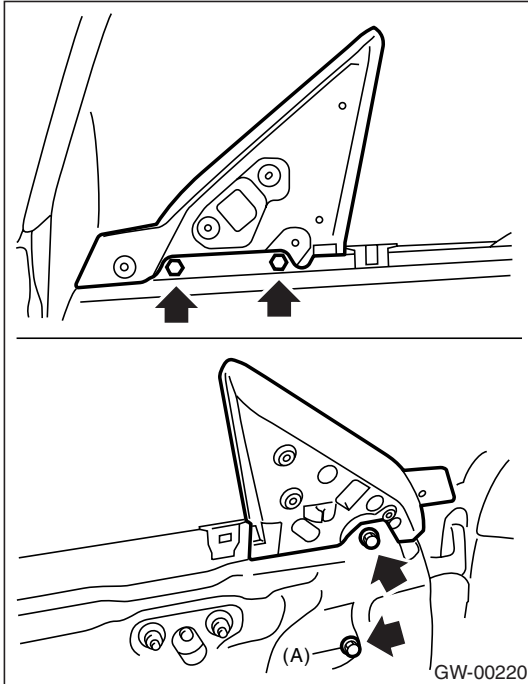
NOTE:

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.

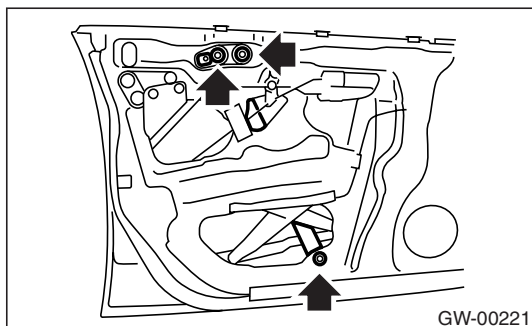
Front Regulator and Motor Assembly

GLASS/WINDOWS/MIRRORS

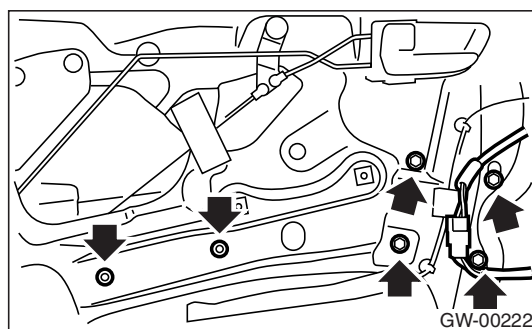
5. Front Regulator and Motor Assembly

A: REMOVAL

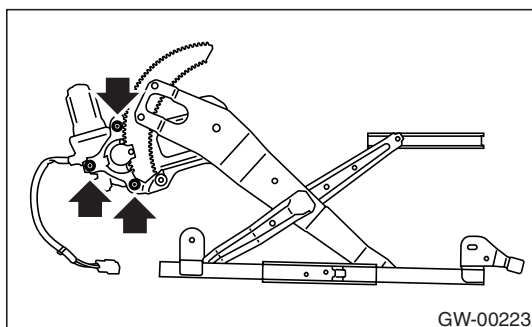
- 1) Remove the door glass. <Ref. to GW-13, REMOVAL, Front Door Glass.>
- 2) Remove the nuts to remove the rear sash.



- 3) Disconnect the motor connector.
- 4) Remove the four bolts and two nuts to remove the regulator assembly.



- 5) Remove 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-14, 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.

6. Remote Control Mirror System

A: WIRING DIAGRAM

1. REMOTE CONTROL MIRROR LHD MODEL

<Ref. to WI-239, LHD MODEL, WIRING DIAGRAM, Remote Control Mirror System.>

2. REMOTE CONTROL MIRROR RHD MODEL

<Ref. to WI-240, RHD MODEL, WIRING DIAGRAM, Remote Control Mirror System.>

B: INSPECTION

Symptom	Repair order
All functions do not operate.	(1) Fuse (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

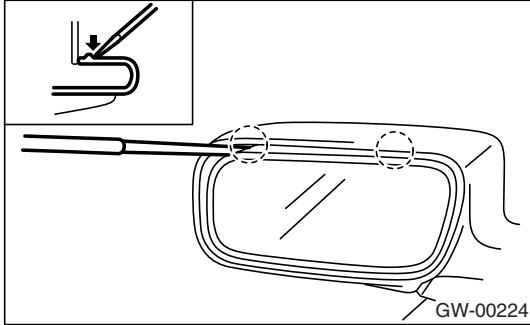
Scalp Cap

GLASS/WINDOWS/MIRRORS

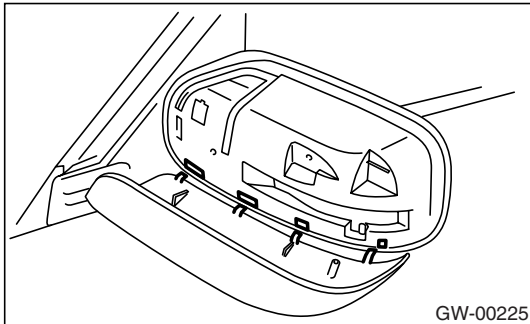
7. Scalp Cap

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.

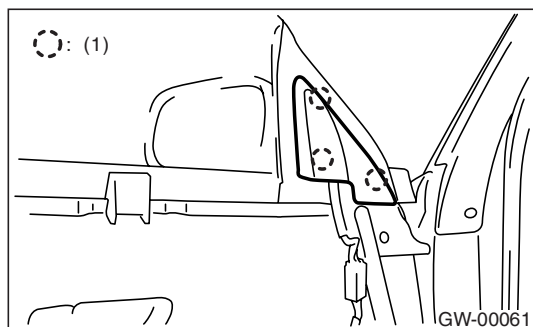


- 4) Install the scalp cap securely.

8. Outer Mirror Assembly

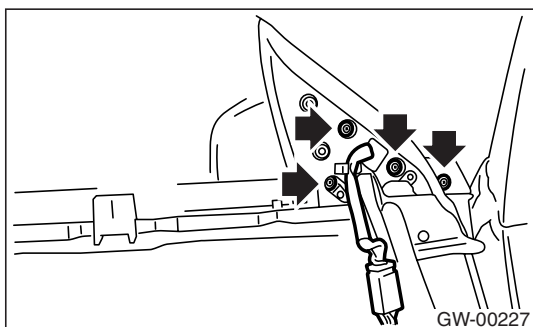
A: REMOVAL

- 1) Remove the door trim. <Ref. to EI-40, REMOVAL, Front Door Trim.>
- 2) Remove the mirror gusset cover.



(1) Hook

- 3) Disconnect the mirror connector.
- 4) Remove the screws to remove the mirror assembly.



B: INSTALLATION

Install in the reverse order of removal.

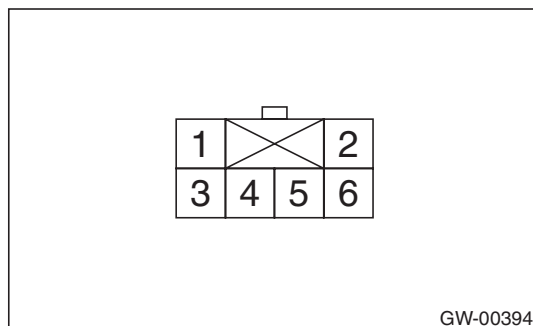
Outer Mirror Assembly

GLASS/WINDOWS/MIRRORS

C: INSPECTION

Check to ensure that the rearview mirror moves properly when battery voltage is applied to terminals.

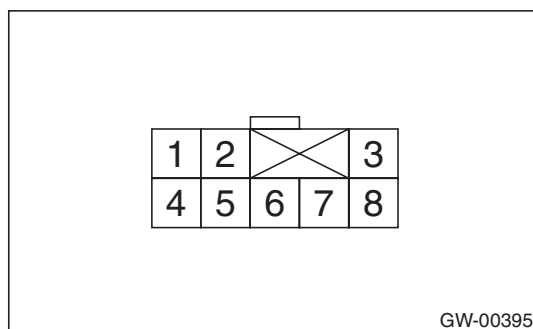
- Mirror heater not-equipped model:



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:



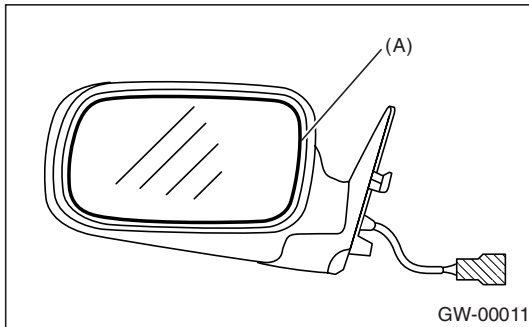
Switch position	Terminal No.
OFF	—
UP	6 (+) and 8 (–)
DOWN	8 (+) and 6 (–)
LEFT	7 (+) and 8 (–)
RIGHT	8 (+) and 7 (–)

If NG, replace the mirror.

9. Outer Mirror

A: REPLACEMENT

- 1) Remove the outer mirror assembly. <Ref. to GW-21, 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 from back of mirror. (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.

Remote Control Mirror Switch

GLASS/WINDOWS/MIRRORS

10.Remote Control Mirror Switch

A: REMOVAL

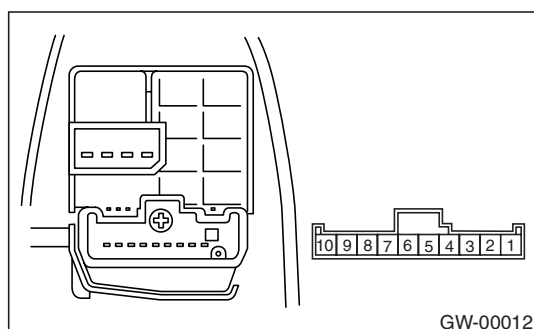
Refer to Power Window Control Switch for removal procedure, because the remote control mirror switch is installed in power window control switch panel. <Ref. to GW-9, REMOVAL, Power Window Control Switch.>

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 M Ω
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:

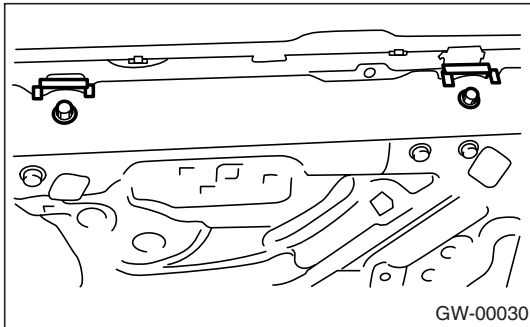
Switch position	Terminal No.	Standard
OFF	—	More than 1 M Ω
UP	8 and 4, 6 and 7	Less than 1 Ω
DOWN	8 and 6, 4 and 7	Less than 1 Ω
LEFT	8 and 5, 6 and 7	Less than 1 Ω
RIGHT	8 and 6, 5 and 7	Less than 1 Ω

If NG, replace the switch.

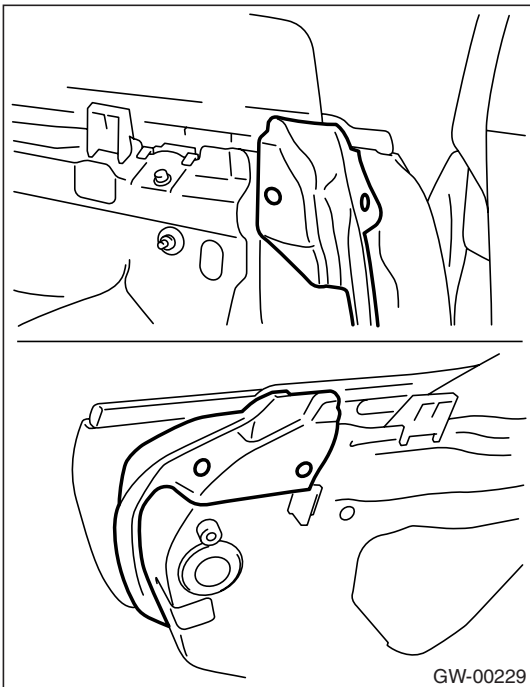
11.Rear Door Glass

A: REMOVAL

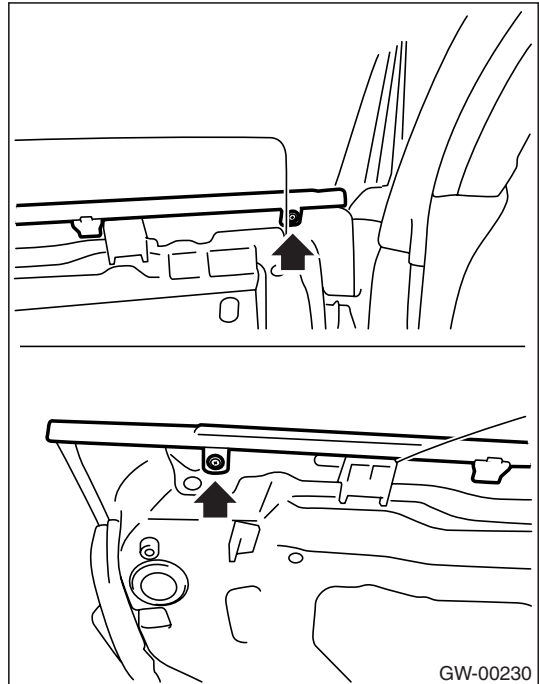
- 1) Remove the rear door trim. <Ref. to EI-41, REMOVAL, Rear Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-20, REMOVAL, Rear Sealing Cover.>
- 3) Remove the stabilizer and trim hook.



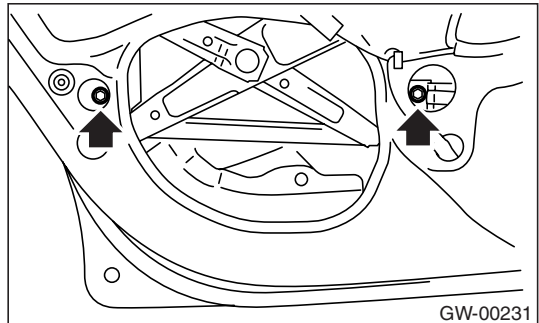
- 4) Remove the front end and rear end of door weather strip.



- 5) Loosen 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.

Rear Door Glass

GLASS/WINDOWS/MIRRORS

B: INSTALLATION

1) Install in the reverse order of removal.

NOTE:

Make sure the glass stay is placed securely in sash.

2) Adjust the rear door glass. <Ref. to GW-26, ADJUSTMENT, Rear Door Glass.>

Tightening torque:

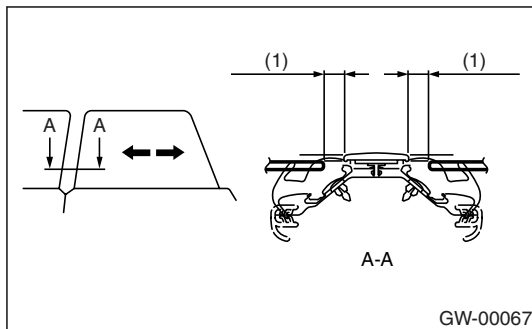
Refer to COMPONENT in General Description. <Ref. to GW-5, REAR DOOR GLASS, COMPONENT, General Description.>

C: ADJUSTMENT

NOTE:

The rear door glass, as a rule, should be adjusted in the same manner as front 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.



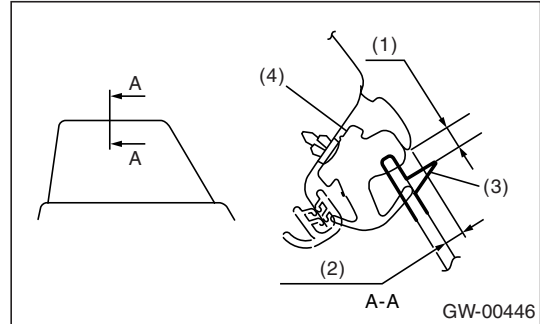
(1) 12 mm (0.472 in)

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) 4 — 6 mm (0.157 — 0.236 in) : when re-using weather strip
3 — 5 mm (0.118 — 0.197 in) : when replacing weather strip
- (3) ST
- (4) Weather strip

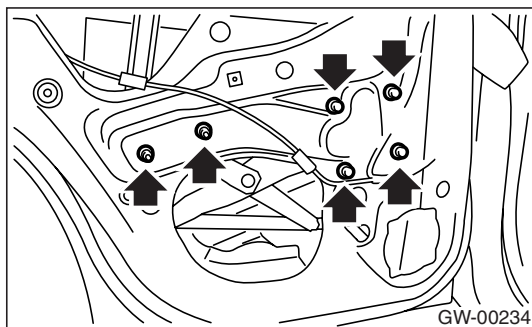
NOTE:

- 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.
- After adjustment, move the glass up and down to check whether it is caught.

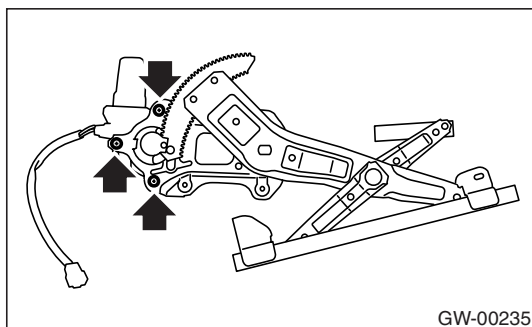
12. Rear Regulator and Motor Assembly

A: REMOVAL

- 1) Remove the rear door glass. <Ref. to GW-25, 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-26, 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.

Windshield Glass

GLASS/WINDOWS/MIRRORS

13. Windshield Glass

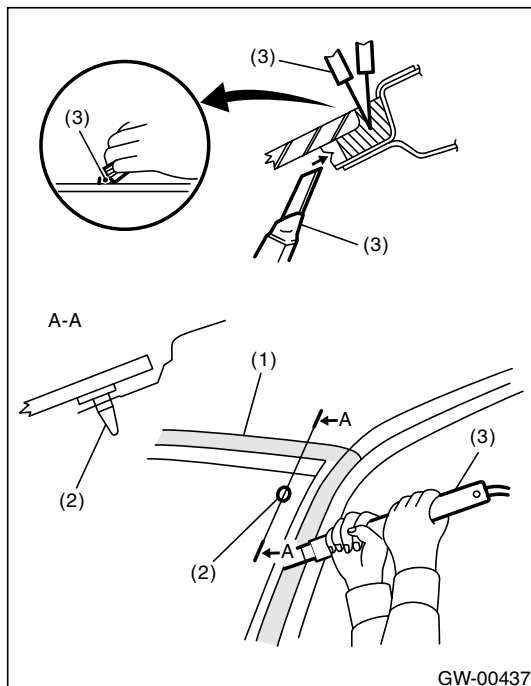
A: REMOVAL

1. USING WINDSHIELD KNIFE

- 1) Remove the cowl panel. <Ref. to EI-34, REMOVAL, Cowl Panel.>
- 2) Remove the glass molding.
- 3) Tape the body side of the circumference of windshield glass for protection.
- 4) Apply sufficient amount of soapy water to the adhesive layer.
- 5) Insert the windshield knife into the adhesive layer.
- 6) 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.

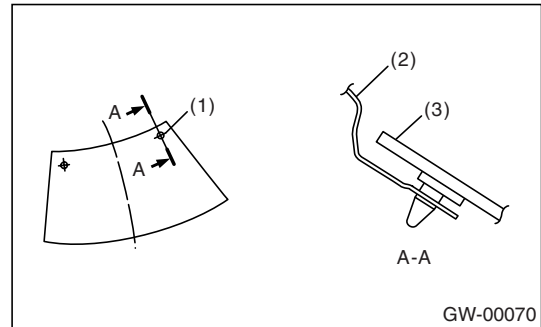
NOTE:

- 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

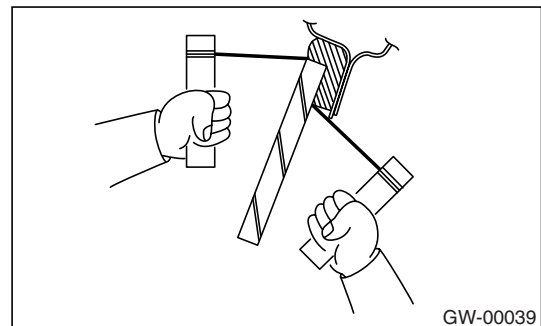
- Because the locating pins are bonded to corners of glass, use piano wire to cut the pin.



- (1) Locating pin
- (2) Body panel
- (3) Front glass

2. USING PIANO WIRE

- 1) Remove the cowl panel. <Ref. to EI-34, REMOVAL, Cowl Panel.>
- 2) Remove the glass 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:

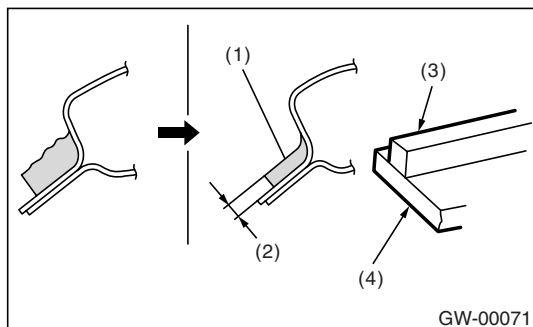
- Do not tightly pull the piano wire against the windshield glass edge.
- Be careful not to damage the interior and exterior parts.
- When removal is made with area close to instrument panel, place a protection plate over it. Pay particular attention to the removal.
- Do not cross piano wires. Otherwise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

B: INSTALLATION

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

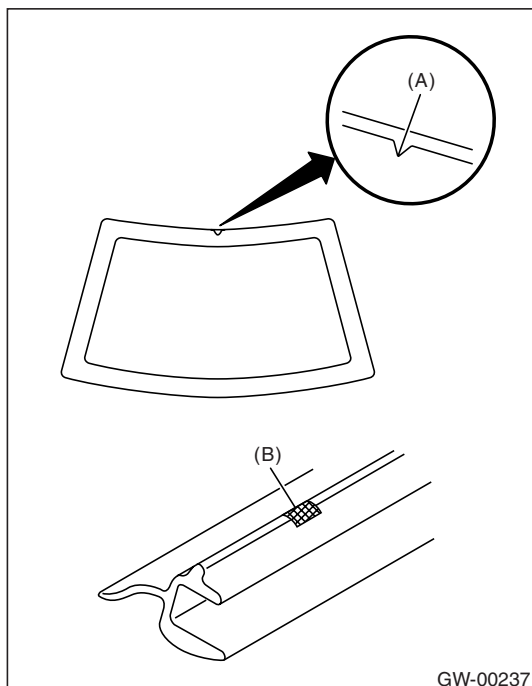
CAUTION:

Be careful not to damage the body and paint surface.



- (1) Adhesive
- (2) 2 mm (0.08 in)
- (3) Dam rubber
- (4) Glass

- 3) Clean the body with alcohol or white gasoline to remove thoroughly chips, dusts, and dirt from body face.
- 4) Fit the molding mark (B) to notch (A) and install it.



- 5) Apply primer to the adhesive layer of glass using sponge.

Glass primer:

Betawipe VP 04604 or Betaprime 5001 or equivalent

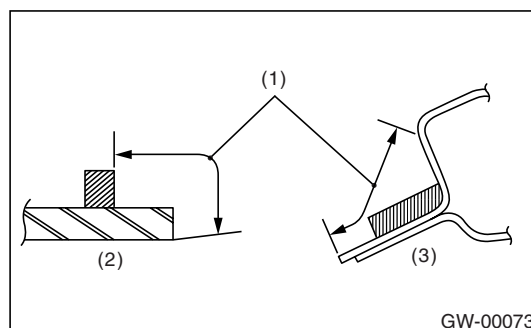
- 6) Apply primer to adhesive layer of body.

Painted surface primer:

Betaprime 5402 or equivalent

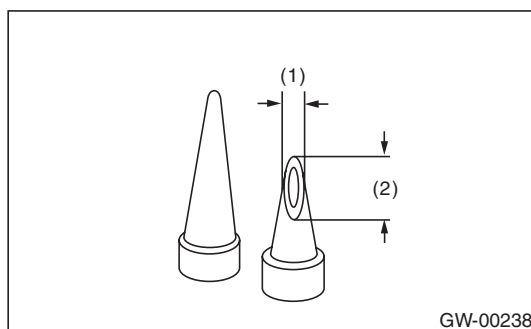
NOTE:

- 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

- 7) 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)

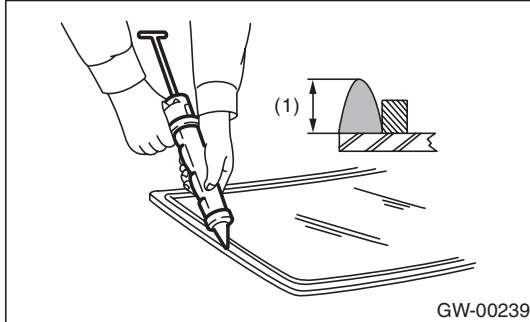
Windshield Glass

GLASS/WINDOWS/MIRRORS

8) Apply adhesive to the glass end surface as shown.

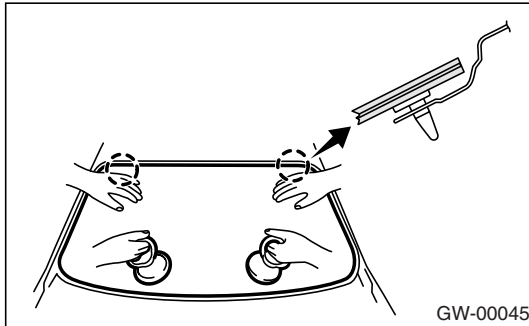
Adhesive:

Gurit-ESSEX Betaseal 1502 or equivalent



(1) 12 — 15 mm (0.47 — 0.59 in)

9) Fit the locating pins to vehicle body using suction rubber cup to install the windshield glass.



10) Lightly press the windshield glass for tight fit.

11) Make flush the adhesive surface juttred out using spatula.

12) 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.

13) 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.

14) Install the cowl panel. <Ref. to EI-34, INSTALLATION, Cowl Panel.>

14.Rear Gate Glass

A: REMOVAL

- 1) Remove the rear wiper motor. <Ref. to WW-16, 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-28, REMOVAL, Windshield Glass.>

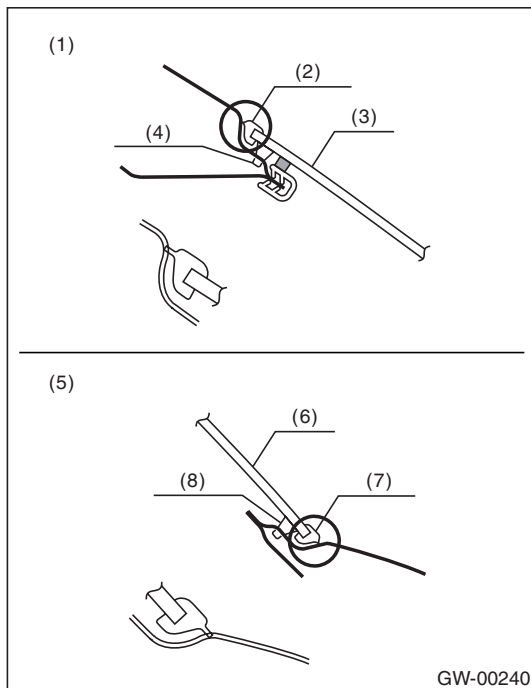
B: INSTALLATION

- 1) Apply adhesive in the same procedure as for windshield glass. <Ref. to GW-29, 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.

- 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 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-16, INSTALLATION, Rear Wiper Motor.>



- (1) Upper side
- (2) Molding
- (3) Glass
- (4) Adhesive
- (5) Lower side
- (6) Glass
- (7) Molding
- (8) Adhesive

Rear Window Glass

GLASS/WINDOWS/MIRRORS

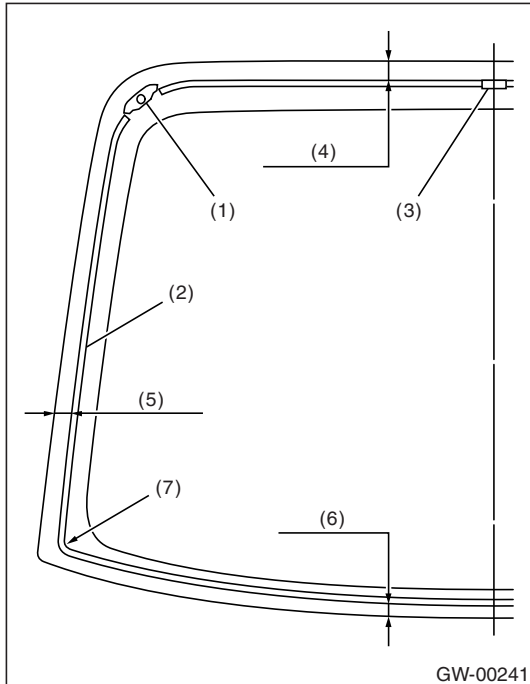
15.Rear Window Glass

A: REMOVAL

- 1) Disconnect the electrical connectors from rear defogger terminals and antenna terminals.
- 2) Remove the glass in the same procedure as for windshield glass. <Ref. to GW-28, REMOVAL, Windshield Glass.>

B: INSTALLATION

- 1) Bond 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-29, INSTALLATION, Windshield Glass.>
- 3) Connect the rear defogger terminals and antenna 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.

16.Rear Window Defogger System

A: WIRING DIAGRAM

1. REAR WINDOW DEFOGGER LHD MODEL

<Ref. to WI-237, LHD MODEL, WIRING DIAGRAM, Rear Defogger System.>

2. REAR WINDOW DEFOGGER RHD MODEL

<Ref. to WI-238, RHD MODEL, WIRING DIAGRAM, Rear Defogger System.>

B: INSPECTION

Symptom	Repair order
Rear window defogger does not operate.	(1) Fuse (M/B No. 1) (F/B No. 17: LHD model) (F/B No. 18: RHD model) (2) Rear defogger relay (3) Rear defogger timer (4) Defogger switch (5) Rear defogger condenser (6) Defogger wire (7) Wiring harness

Rear Window Defogger

GLASS/WINDOWS/MIRRORS

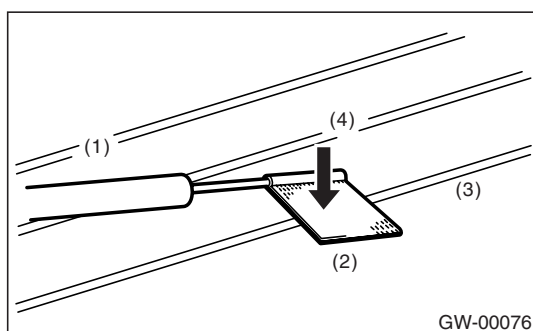
17. Rear Window Defogger

A: INSPECTION

CAUTION:

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

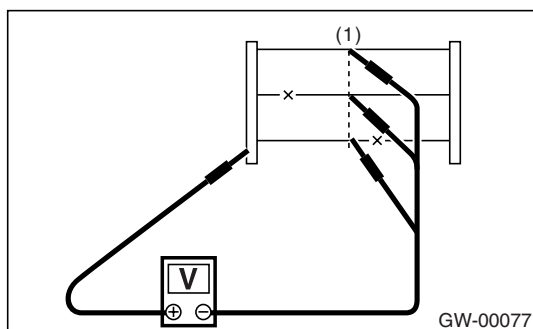


- (1) Tester probe
- (2) Aluminum foil
- (3) Heat wire
- (4) Press

- 4) Measure the voltage at wire center (1) with DC voltmeter.

Standard voltage:

Approx. 6 V



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

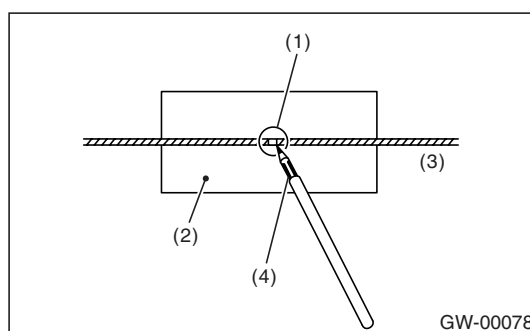
NOTE:

- 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.



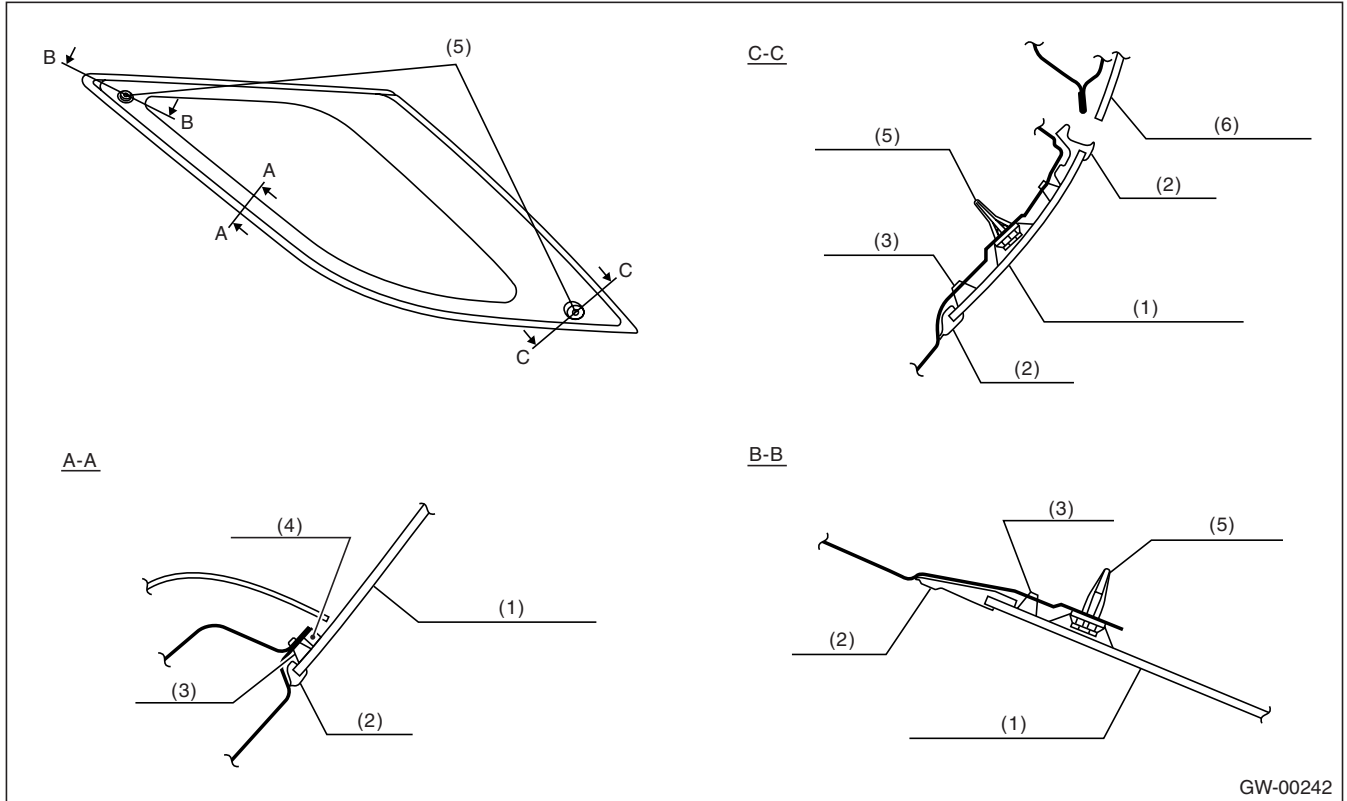
- (1) Broken portion
- (2) Masking thin film
- (3) Broken wire
- (4) Conductive silver composition (DUPONT No. 4817)

- 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-28, REMOVAL, Windshield Glass.>



GW-00242

- (1) Rear quarter glass
- (2) Molding

- (3) Adhesive
- (4) Dam rubber

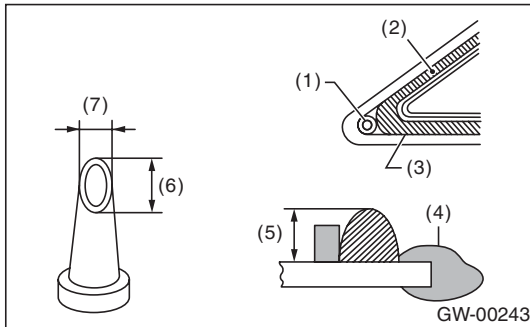
- (5) Locating pin
- (6) Rear gate glass

Rear Quarter Glass

GLASS/WINDOWS/MIRRORS

B: INSTALLATION

1) Cut off the nozzle tip as shown in the figure.



- (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-29, 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.Sunroof 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.>

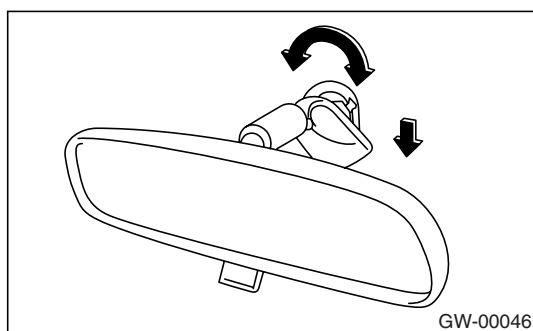
20.Rearview Mirror

A: REMOVAL

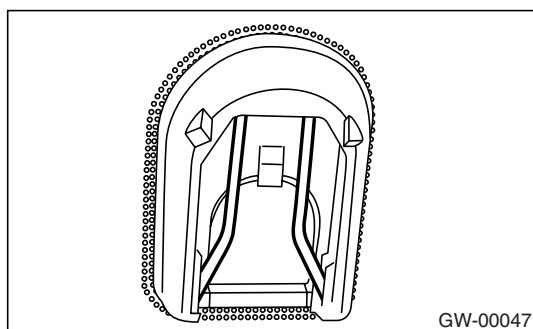
NOTE:

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.

BODY STRUCTURE

BS

	Page
1. General Description	2
2. Datum Points.....	3
3. Datum Dimensions.....	11

General Description

BODY STRUCTURE

1. General Description

A: PREPARATION TOOL

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

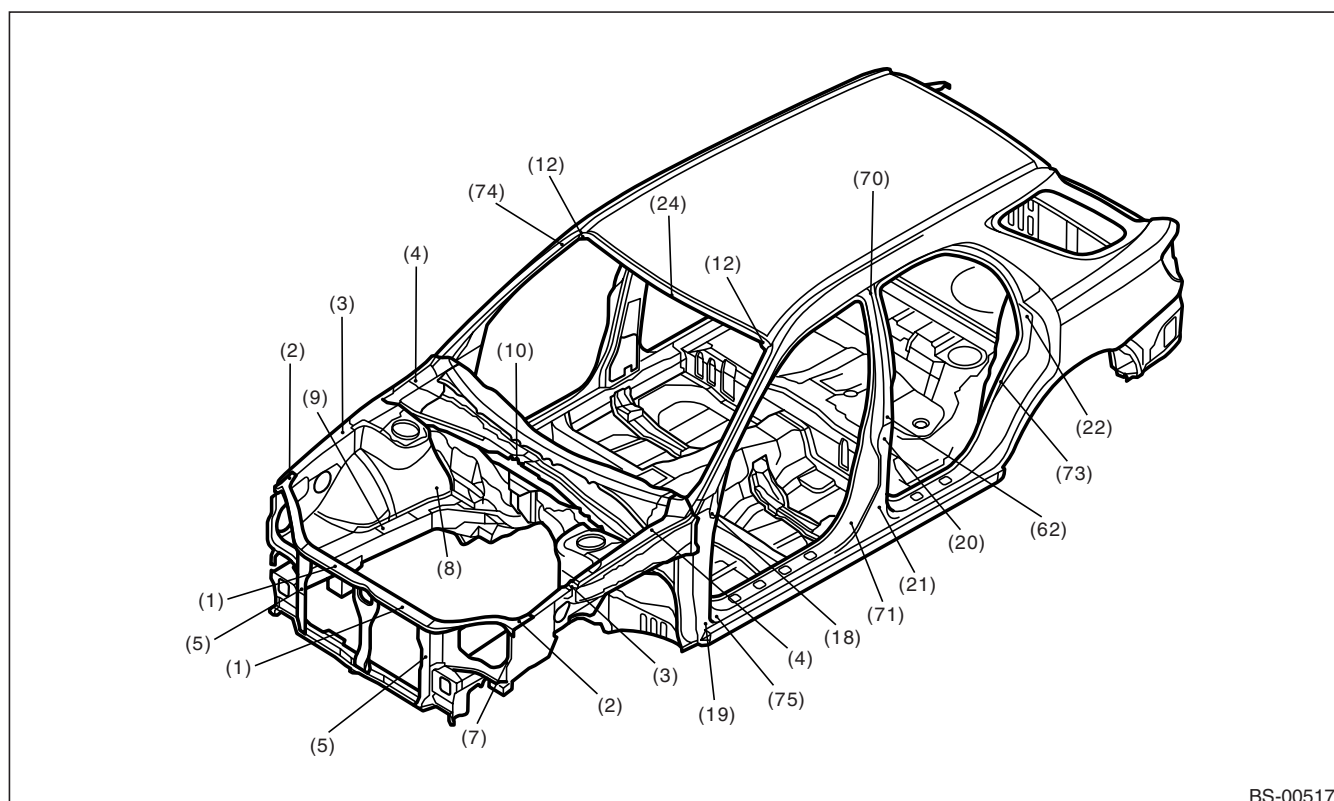
2. Datum Points

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



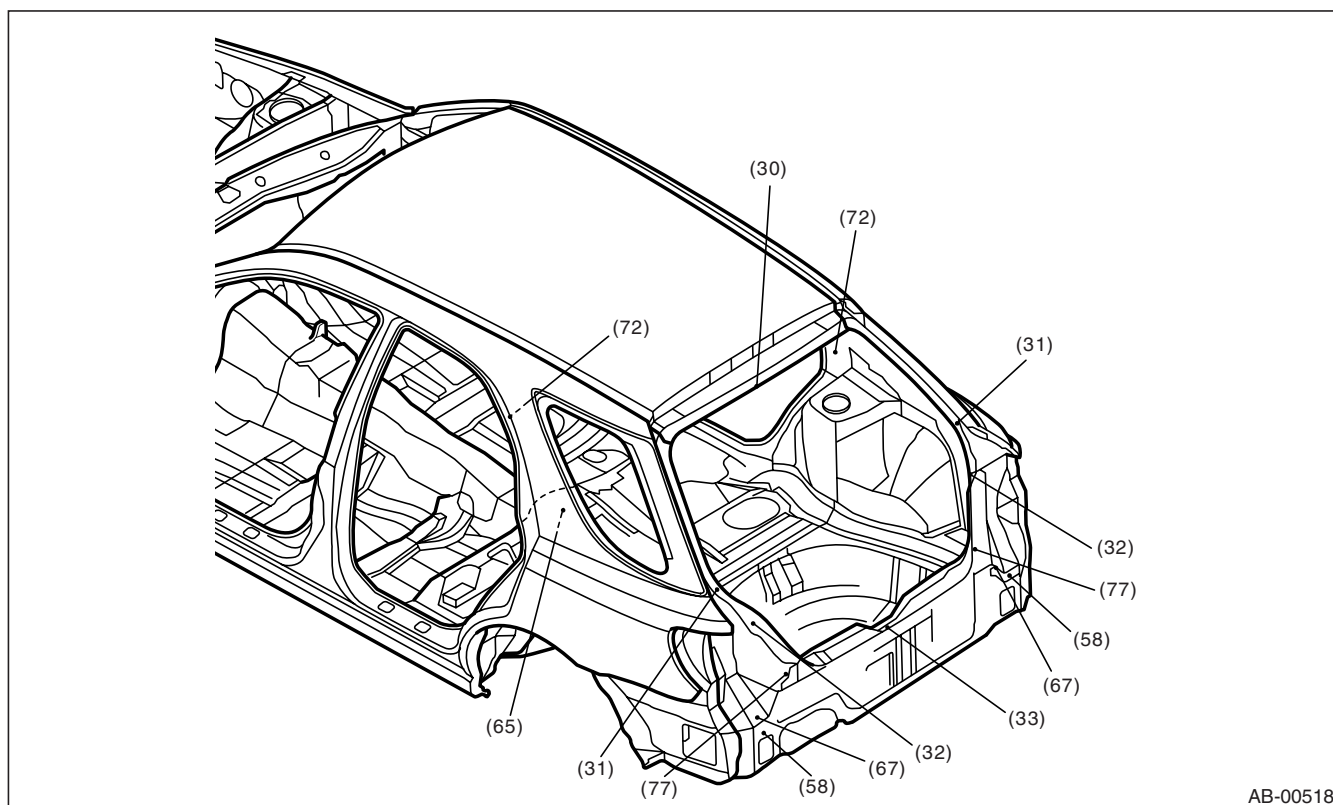
BS-00517

- | | | |
|---|---|--|
| (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) |

Datum Points

BODY STRUCTURE

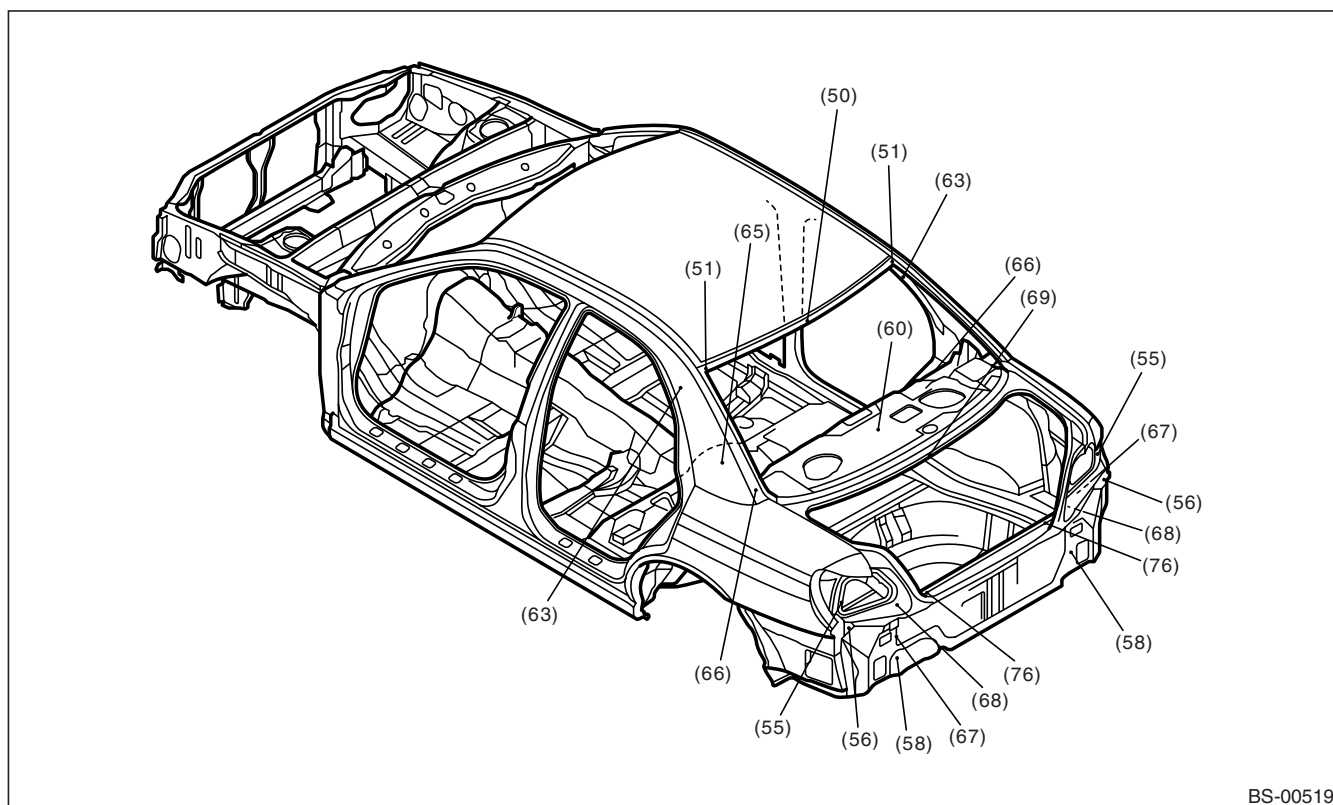
2. WAGON MODEL (REAR)



AB-00518

- | | | |
|---|--|--|
| (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)



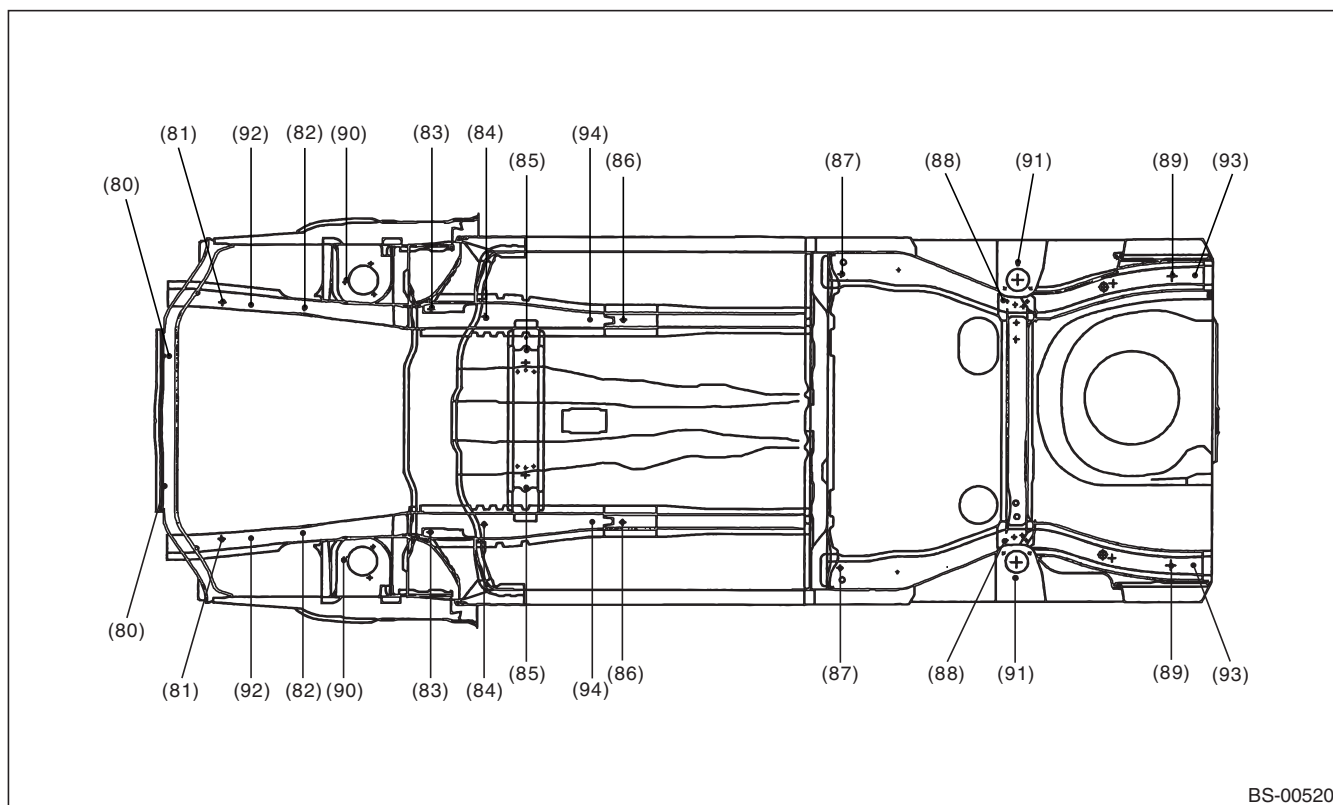
BS-00519

- | | | |
|---|--|--|
| (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

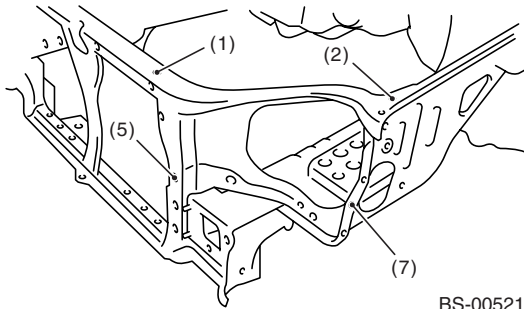


BS-00520

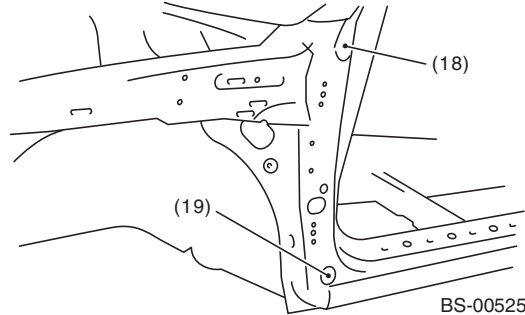
- | | | |
|---|--|---|
| (80) Radiator lower frame gauge hole 12 mm (0.47 in) dia. (Symmetrical) | (85) Transmission mount attaching hole 14 mm (0.55 in) dia. | (90) Strut mount attaching hole 9.5 mm (0.374 in) dia. (Symmetrical) |
| (81) Side frame gauge hole 20 mm (0.79 in) dia. (Symmetrical) | (86) 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) |

Datum Points

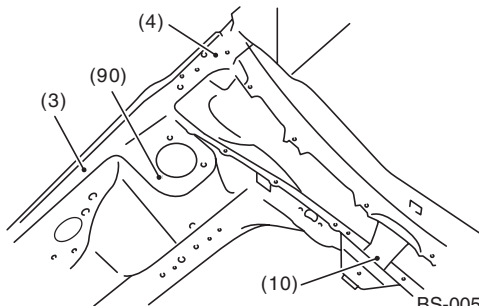
BODY STRUCTURE



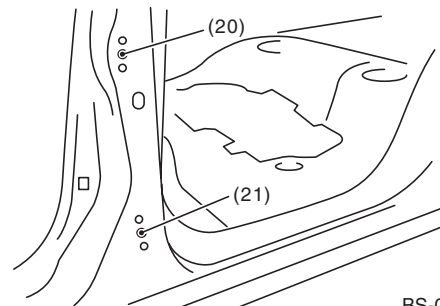
BS-00521



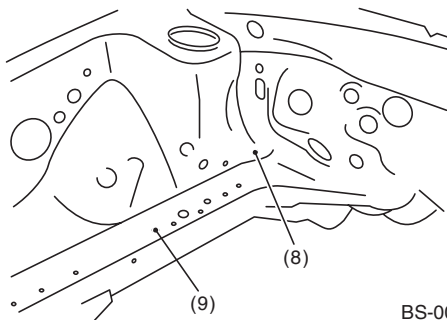
BS-00525



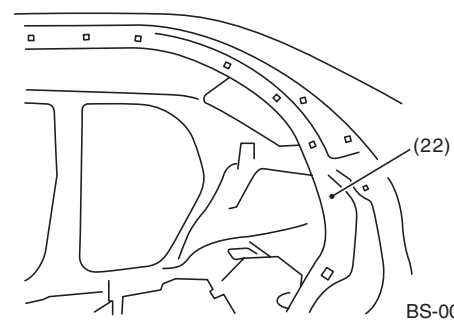
BS-00522



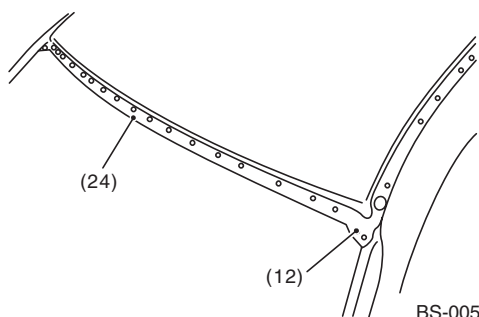
BS-00526



BS-00523

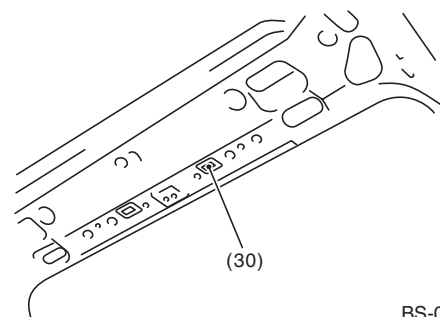


BS-00556



BS-00524

Wagon model



BS-00527

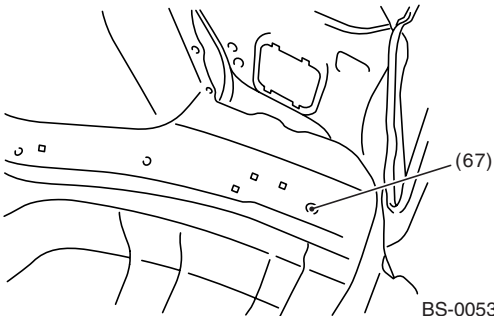
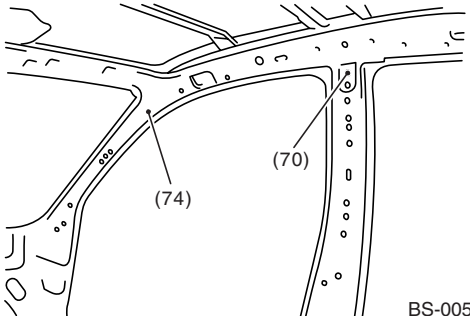
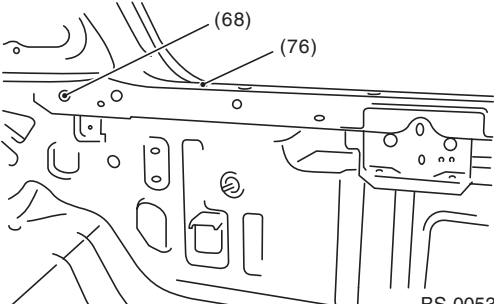
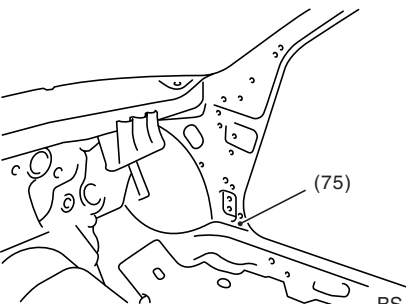
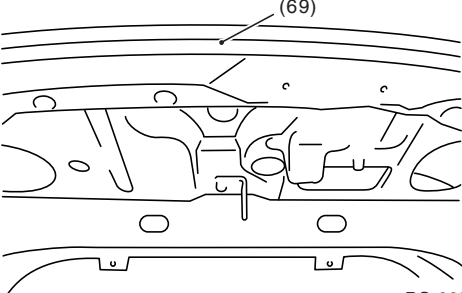
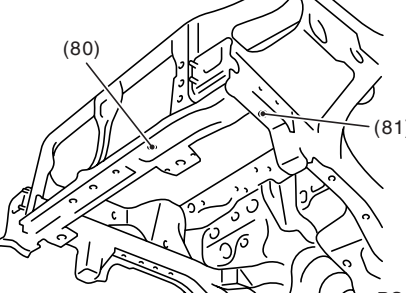
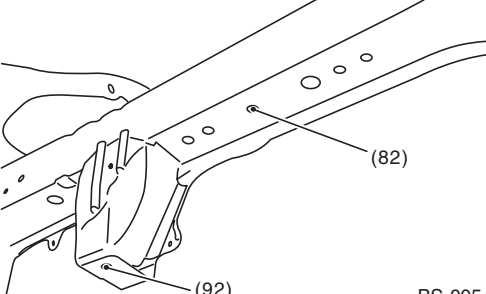
Datum Points

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

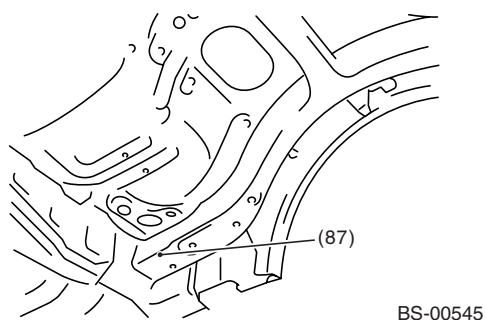
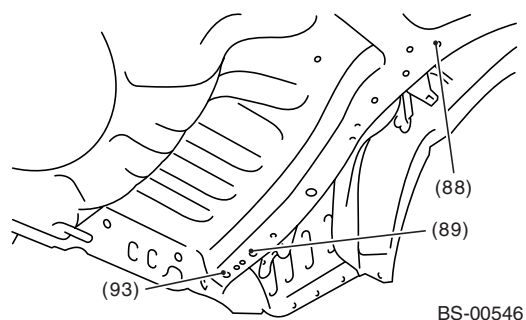
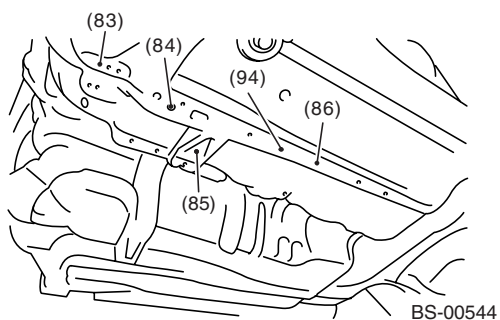
Datum Points

BODY STRUCTURE

 BS-00536	 BS-00540
Sedan model  BS-00537	 BS-00541
Sedan model  BS-00538	 BS-00542
 BS-00539	 BS-00543

Datum Points

BODY STRUCTURE



SUBARU.

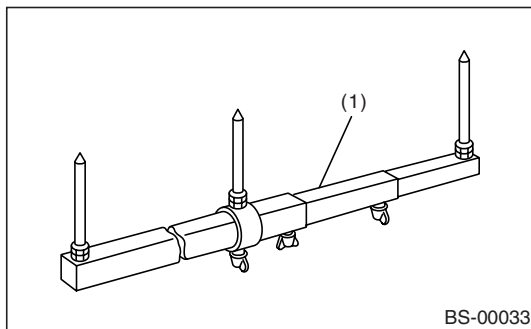
3. Datum Dimensions

A: MEASUREMENT

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

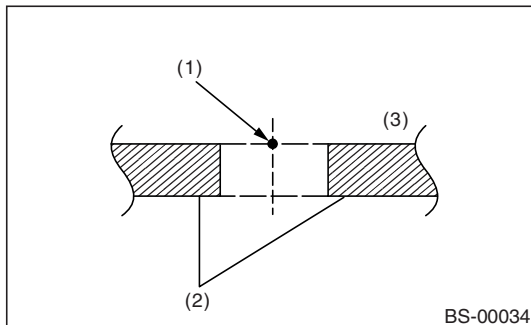
NOTE:

- 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.

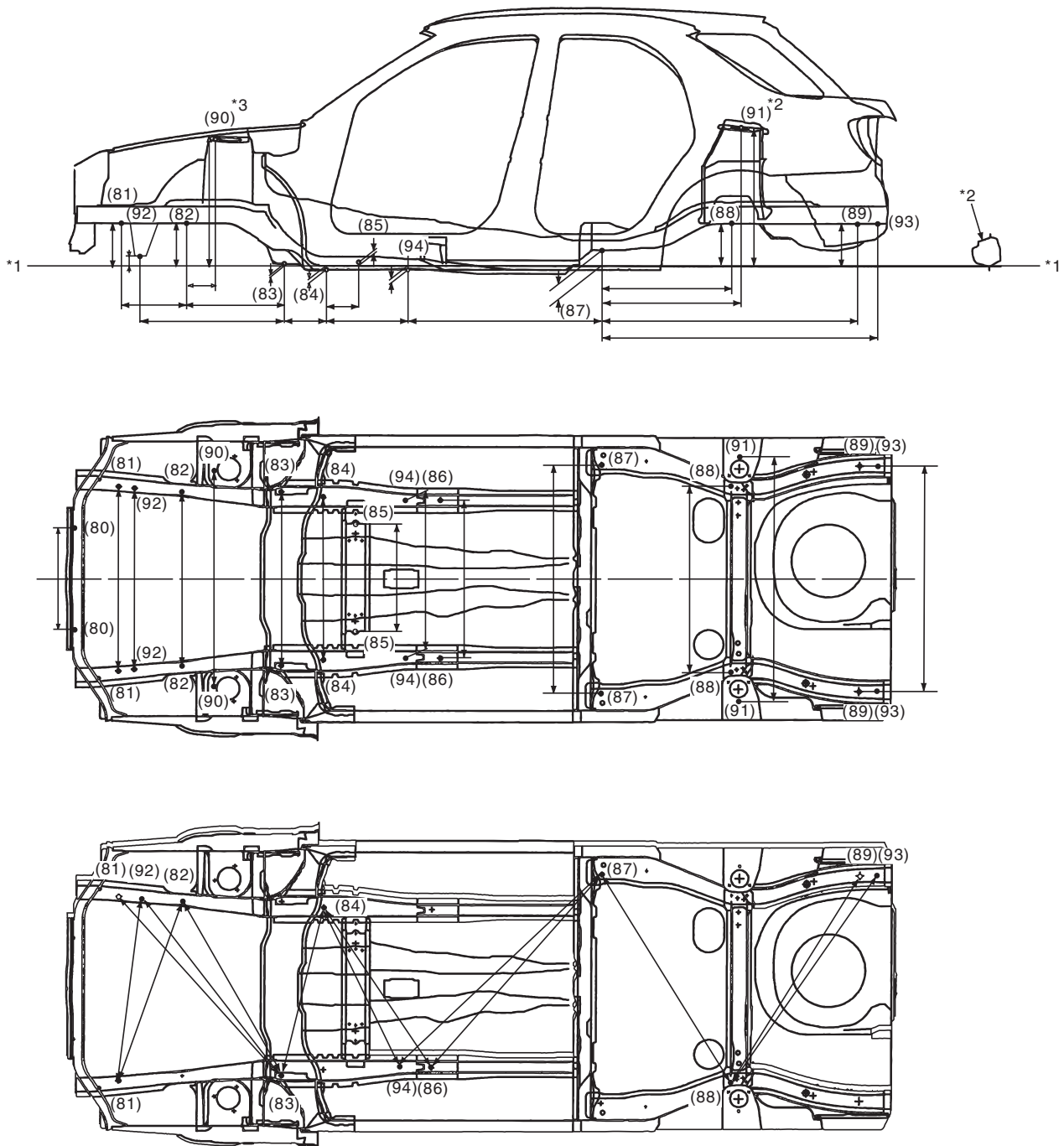


- (1) Datum point
(2) Body panel
(3) Outside

Datum Dimensions

BODY STRUCTURE

1. CENTER STRUCTURE



BS-00633

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

Datum Dimensions

BODY STRUCTURE

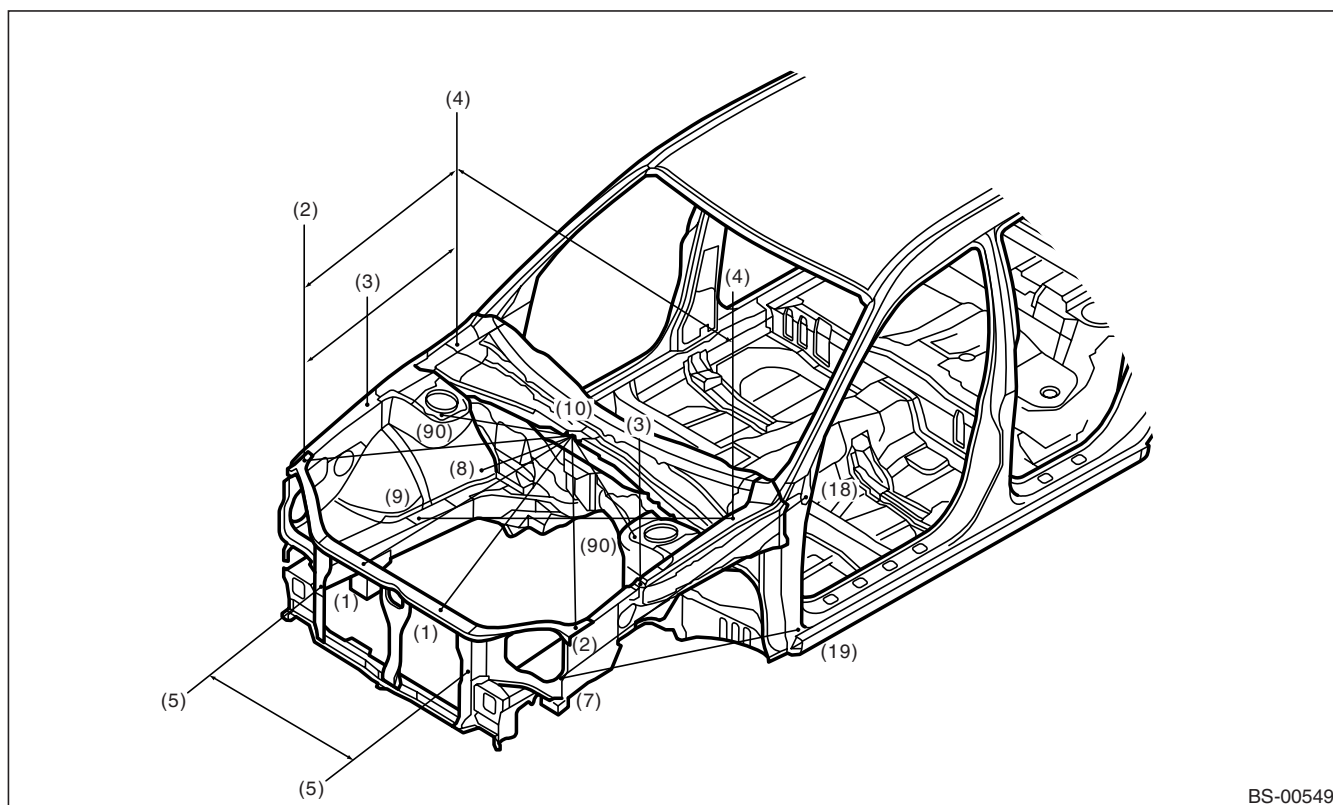
Point to point	Dimension mm (in)
(81) from standard line	206 (8.11)
(92) from standard line	77 (3.03)
(82) from standard line	206 (8.11)
(90) from standard line	620 (24.41)
(83) from standard line	8 (0.31)
(84) from standard line	20 (0.79)
(85) from standard line	13 (0.51)
(94) from standard line	12 (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)



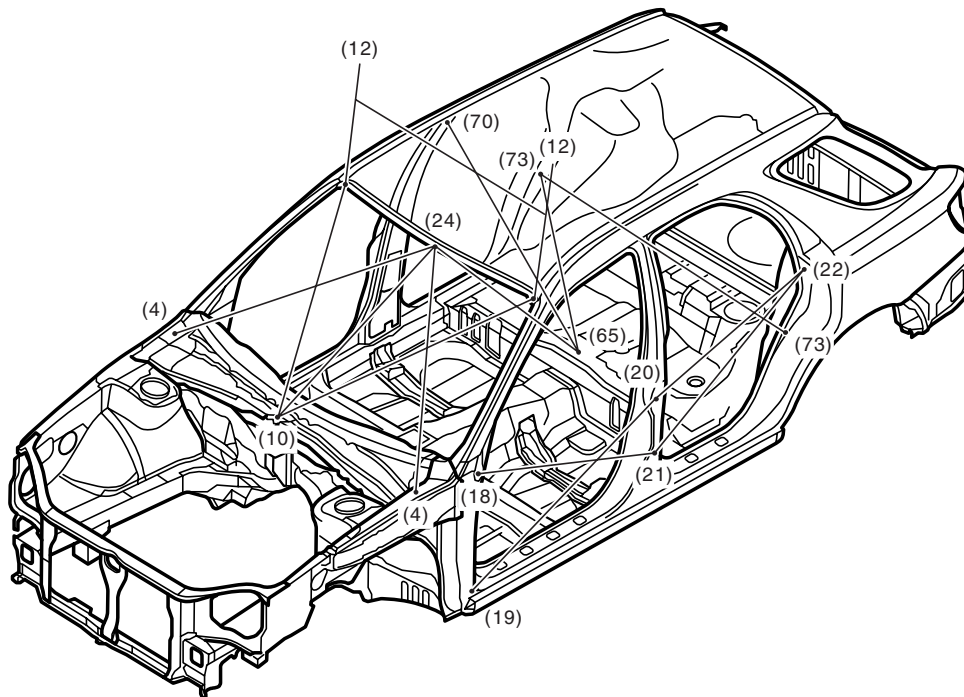
BS-00549

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)

Datum Dimensions

BODY STRUCTURE



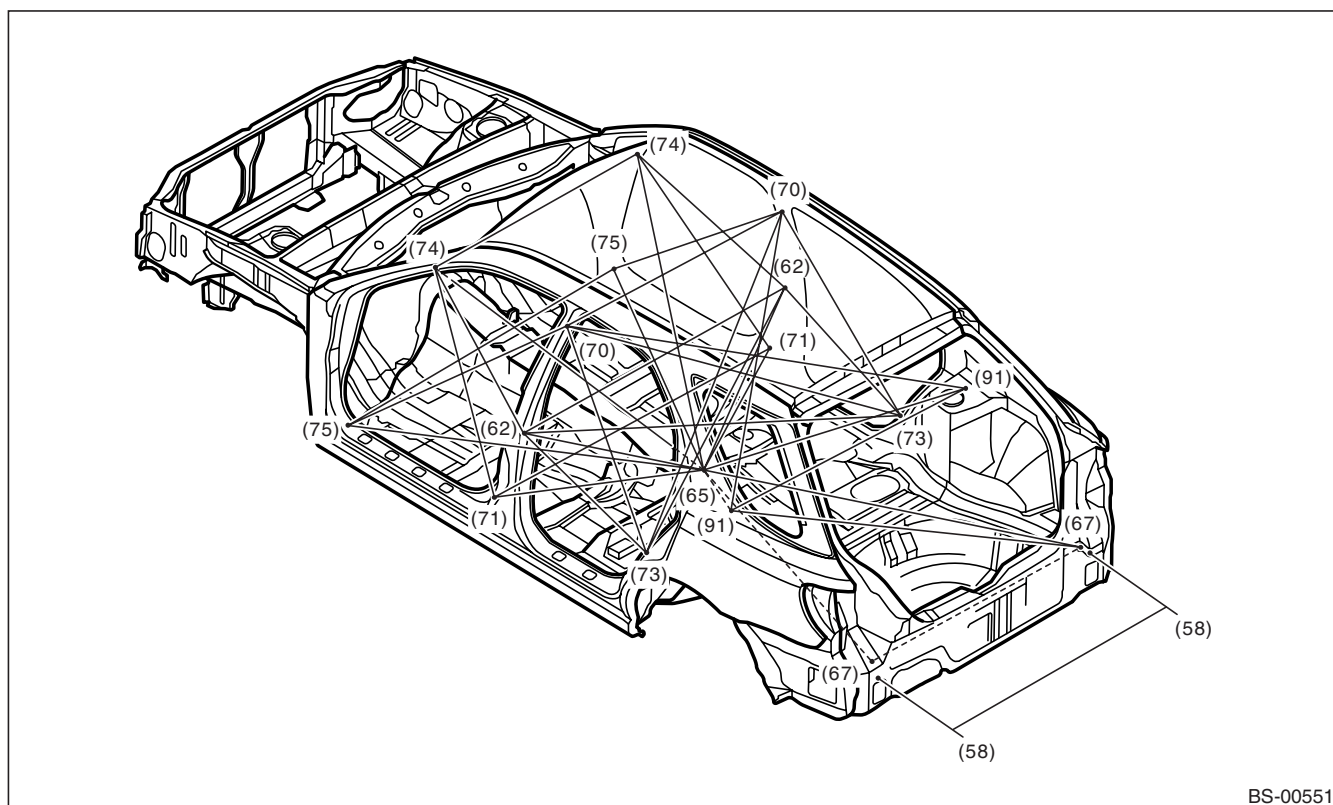
BS-00550

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 (43.54) 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)

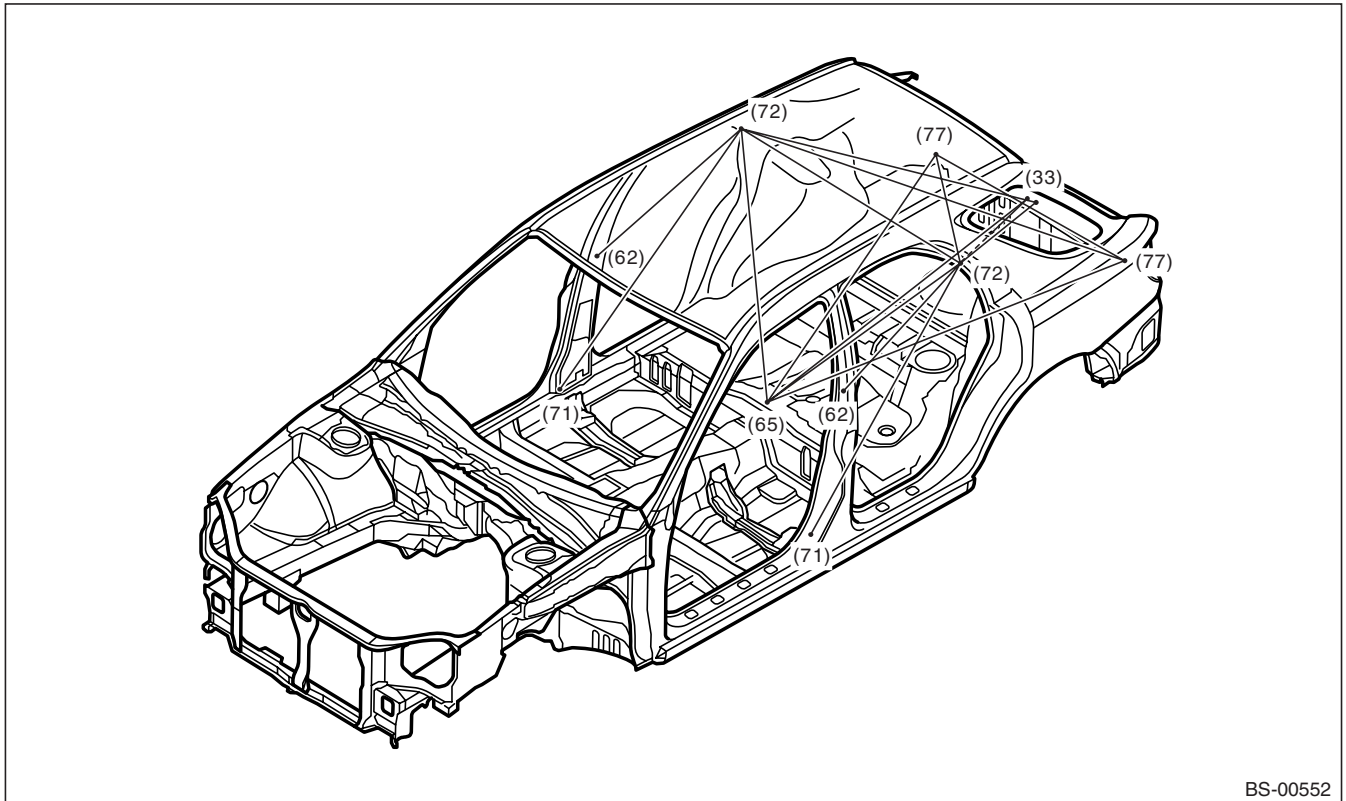


BS-00551

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)



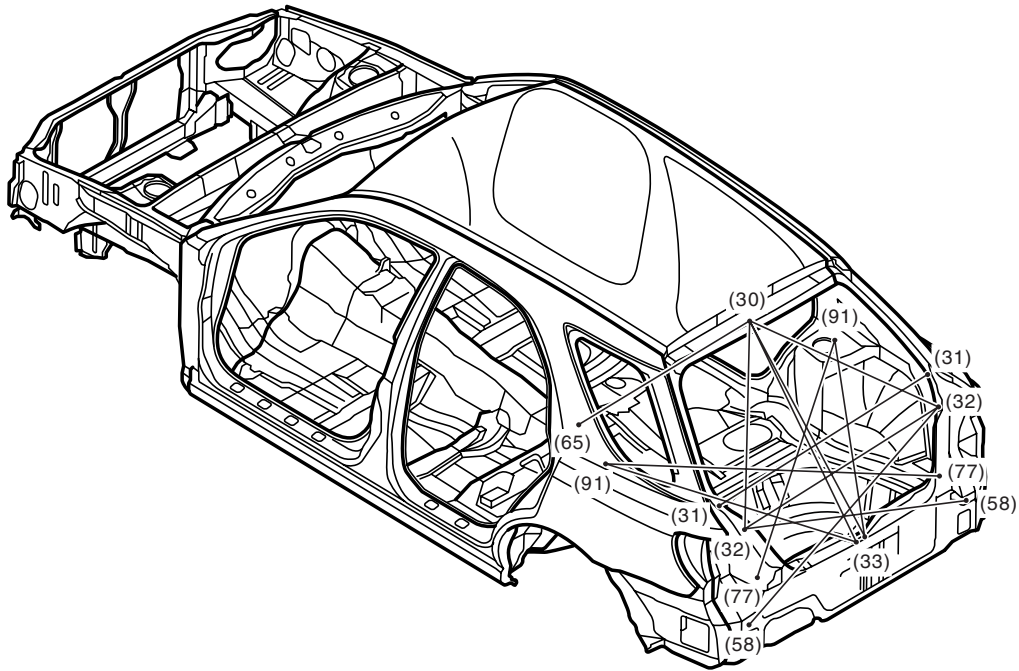
BS-00552

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

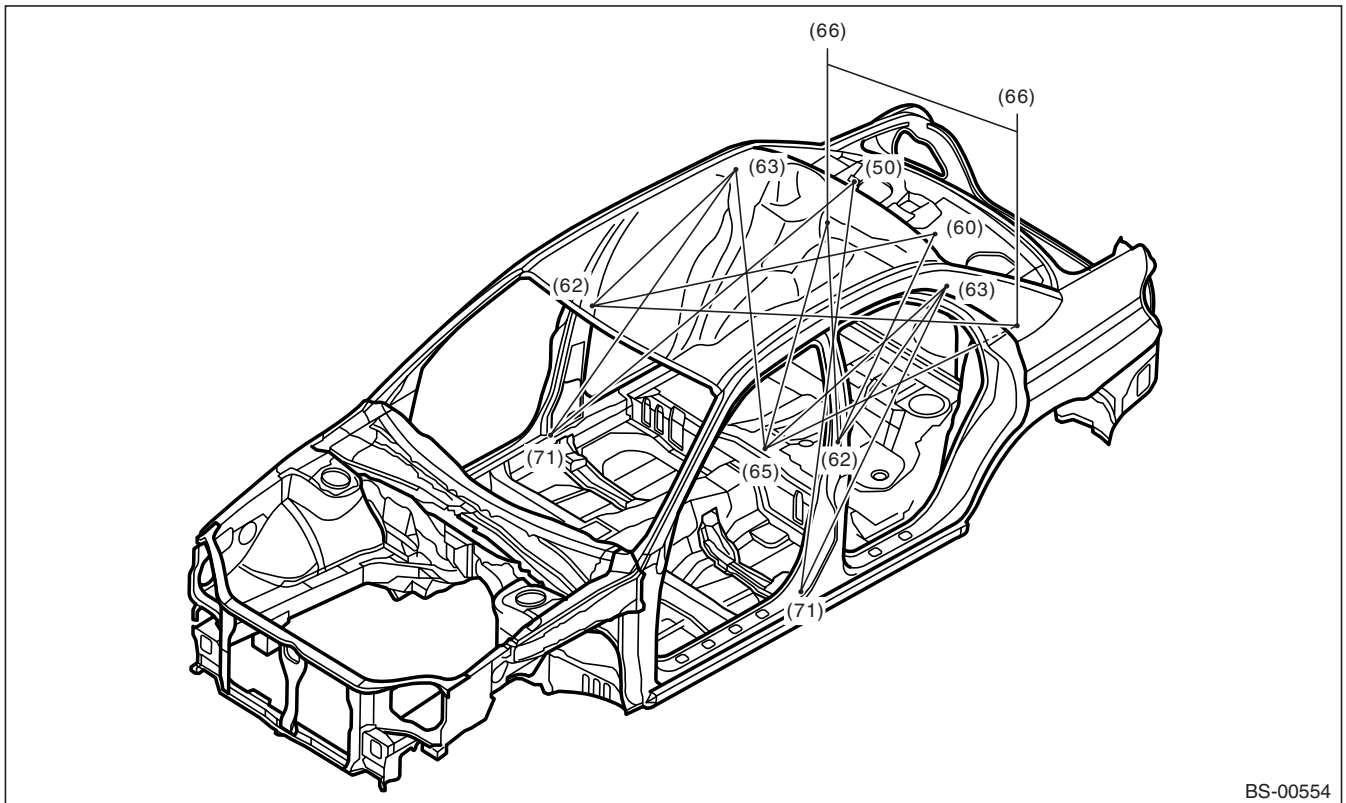
5. WAGON MODEL (REAR STRUCTURE)



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)



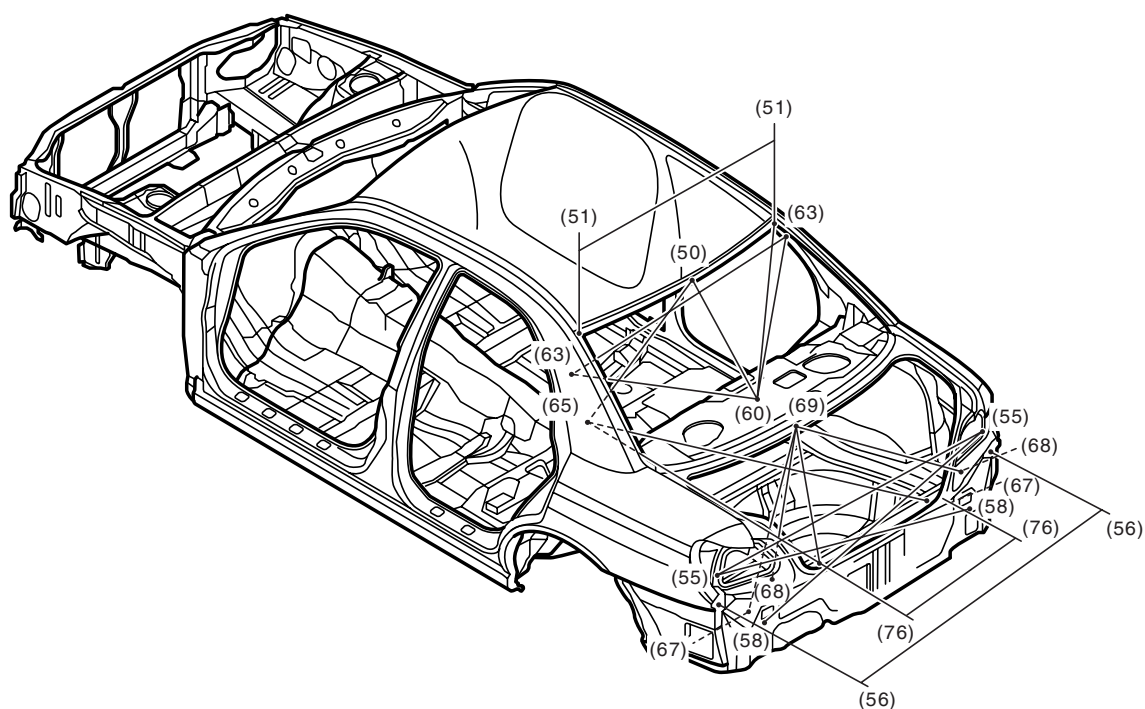
BS-00554

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

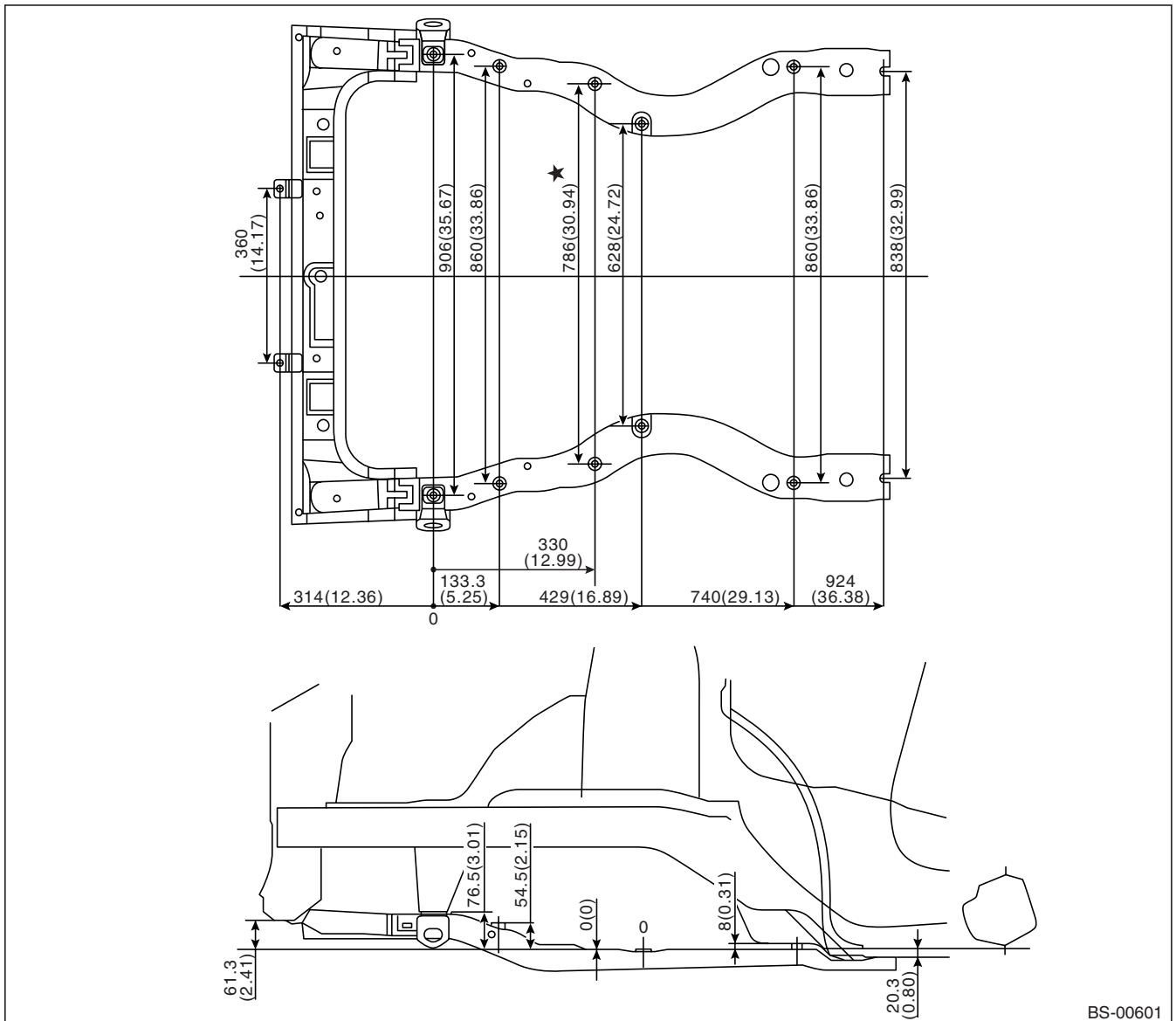
7. SEDAN MODEL (REAR STRUCTURE)



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

INSTRUMENTATION/DRIVER INFO



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



General Description

INSTRUMENTATION/DRIVER INFO

1. General Description

A: SPECIFICATION

Combination meter	Type	Normal meter	Red luminescent meter
	Speedometer	Electric pulse type	Stepping motor type
	Engine coolant 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 indicator light	LED	
	ABS warning light	LED	
	Malfunction indicator light	LED	
	HI-beam indicator light	14 V — 1.4 W	LED
	Rear fog light indicator light	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	—
	LO indicator light	LED	—
	HOLD indicator light	LED	—
	Immobilizer indicator light	LED	
	POWER indicator light	14 V — 2 W	—
	Low fuel warning light	LED	
	AT select lever position indicator light	14 V — 100 mA	—
	Intercooler water spray warning light	LED	
	REV indicator light	LED	
	Rear differential oil temperature warning light	LED	
	Driver's control center differential indicator light	14 V — 100 mA	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 TOOLS

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

2. Combination Meter System

A: WIRING DIAGRAM

1. COMBINATION METER

<Ref. to WI-241, WIRING DIAGRAM, Combination Meter System.>

2. OUTSIDE TEMPERATURE INDICATOR

<Ref. to WI-255, 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-5, CHECK VEHICLE SPEED SENSOR, INSPECTION, Combination Meter System.>
		AT model: <Ref. to IDI-6, 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-7, CHECK FUEL LEVEL SENSOR, INSPECTION, Combination Meter System.>
Engine coolant temperature gauge does not operate.	(1) Engine coolant temperature sensor (2) Harness (3) Engine coolant temperature gauge	<Ref. to IDI-9, 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 module	<Ref. to IDI-9, 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-12, 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 ?	Normal meter: Replace the combination meter printed circuit. Red luminescent meter: Replace the meter main assembly.	Repair the wiring harness.

Combination Meter System

INSTRUMENTATION/DRIVER INFO

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 ←→ more than 5 V?	Normal meter: Check the speedometer. <Ref. to IDI-16, REMOVAL, Speedometer.> Red luminescent meter: 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.
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.

Combination Meter System

INSTRUMENTATION/DRIVER INFO

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 (B56) No. 17 (+) — Chassis ground (-):	Is the voltage less than 1 V ←→ more than 5 V?	Go to step 2.	Check the TCM. <Ref. to 4AT(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 (B56) No. 17 — (i11) No. 2:	Is the resistance less than 10 Ω?	Check the speed meter. <Ref. to IDI-16, REMOVAL, Speedometer.>	Repair the wiring harness.

5. CHECK ENGINE CONTROL MODULE (ECM)

Step	Check	Yes	No
1 CHECK ECM SIGNAL. 1) Start the engine. 2) Measure the voltage between ECM connector and engine ground. Connector & terminal Turbo model: (B137) No. 9 (+) — Chassis ground (-): Non-turbo model without OBD: (B134) No. 30 (+) — Chassis ground (-): Non-turbo model with OBD: (B134) No. 10 (+) — Chassis ground (-):	Is the voltage 0 ←→ 14 V or more?	Go to step 2.	Check the ECM. <Ref. to EN(H4SO)(diag)-2, Basic Diagnostic Procedure.> or <Ref. to EN(H4SOw/oOBD)(diag)-2, Basic Diagnostic Procedure.> or <Ref. to EN(H4DOTC)(diag)-2, Basic Diagnostic Procedure.>
2 CHECK HARNESS BETWEEN COMBINATION METER AND ECM. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and combination meter. 3) Measure the resistance between ECM harness connector and combination meter harness connector. Connector & terminal Turbo model: (B137) No. 9 — (i11) No. 5: Non-turbo model without OBD: (B134) No. 30 — (i11) No. 5: Non-turbo model with OBD: (B134) No. 10 — (i11) No. 5:	Is the resistance less than 10 Ω?	Normal meter: Check the tachometer. <Ref. to IDI-17, REMOVAL, Tachometer.> Red luminescent meter: Replace the meter main assembly.	Repair the wiring harness.

Combination Meter System

INSTRUMENTATION/DRIVER INFO

6. CHECK FUEL LEVEL SENSOR

Step	Check	Yes	No
1 CHECK ENGINE TYPE.	Is the displacement 2.5 L or is the engine equipped with turbocharger?	Go to step 2.	Go to step 7.
2 CHECK FUEL LEVEL SENSOR. 1) Remove the fuel level sensor. <Ref. to FU(H4DOTC)-63, REMOVAL, Fuel Level Sensor.> 2) Measure the resistance between fuel level sensor terminals when setting the float to FULL and EMPTY position. Terminals No. 3 — No. 5:	Is the resistance 0.5 — 2.5 Ω (FULL) and 50 — 52 Ω (EMPTY)?	Go to step 3.	Replace the fuel level sensor.
3 CHECK FUEL SUB LEVEL SENSOR. 1) Remove the fuel sub level sensor. <Ref. to FU(H4DOTC)-64, REMOVAL, Fuel Sub Level Sensor.> 2) Measure the resistance between fuel sub level sensor terminals when setting the float to FULL and EMPTY position. Terminals No. 1 — No. 2:	Is the resistance 0.5 — 2.5 Ω (FULL) and 42 — 44 Ω (EMPTY)?	Go to step 4.	Replace the fuel sub level sensor.
4 CHECK HARNESS BETWEEN FUEL SUB LEVEL SENSOR AND COMBINATION METER. 1) Disconnect the connector from combination meter. 2) Measure the resistance between fuel sub level sensor harness connector terminal and combination meter harness connector terminal. Connector & terminal Red luminescent meter (R59) No. 1 — (i12) No. 3: Normal meter (R59) No. 1 — (i12) No. 2:	Is the resistance less than 10 Ω ?	Go to step 5.	Repair the wiring harness.
5 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 6.	Repair the wiring harness.
6 CHECK FUEL LEVEL SENSOR GROUND CIRCUIT. Measure the resistance between fuel level sensor harness connector terminal and chassis ground. Connector & terminal (R58) No. 5 — Chassis ground:	Is the resistance less than 10 Ω ?	Normal meter: Check the fuel gauge. <Ref. to IDI-18, REMOVAL, Fuel Gauge.> Red luminescent meter: Replace the meter main assembly.	Repair the wiring harness.

Combination Meter System

INSTRUMENTATION/DRIVER INFO

	Step	Check	Yes	No
7	CHECK FUEL LEVEL SENSOR. 1) Remove the fuel level sensor. <Ref. to FU(H4SO)-59, REMOVAL, Fuel Level Sensor.> or <Ref. to FU(H4SOw/oOBD)-56, REMOVAL, Fuel Level Sensor.> 2) Measure the resistance between fuel level sensor terminals when setting the float to FULL and EMPTY position. Terminals No. 3 — No. 5:	Is the resistance 2 — 5 Ω (FULL) and 92 — 95 Ω (EMPTY)?	Go to step 8.	Replace the fuel level sensor.
8	CHECK HARNESS BETWEEN FUEL LEVEL SENSOR AND COMBINATION METER. 1) Disconnect the connector from combination meter. 2) Measure the resistance between fuel level sensor harness connector terminal and combination meter harness connector terminal. Connector & terminal (R58) No. 3 — (i12) No. 2:	Is the resistance less than 10 Ω ?	Go to step 9.	Repair the wiring harness.
9	CHECK FUEL LEVEL SENSOR GROUND CIRCUIT. Measure the resistance between fuel level sensor harness connector terminal and chassis ground. Connector & terminal (R58) No. 5 — Chassis ground:	Is the resistance less than 10 Ω ?	Check the fuel gauge. <Ref. to IDI-18, REMOVAL, Fuel Gauge.>	Repair the wiring harness.

Combination Meter System

INSTRUMENTATION/DRIVER INFO

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(H4SOw/oOBD)(diag)-2, Basic Diagnostic Procedure.> or <Ref. to EN(H4DOTC)(diag)-2, Basic Diagnostic Procedure.>	Is the engine coolant temperature sensor OK?	Go to step 2.	Replace the engine coolant temperature sensor.
2 CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND COMBINATION METER. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from 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 Red luminescent meter (E8) No. 3 — (i12) No. 11: Normal meter (E8) No. 3 — (i12) No. 9:	Is the resistance less than 10 Ω ?	Normal meter: Check the engine coolant temperature gauge. <Ref. to IDI-19, REMOVAL, Engine Coolant Temperature Gauge.> Red luminescent meter: Replace the meter main assembly.	Repair the wiring harness.

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.	Replace the combination meter printed circuit.
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 LHD model: (F78) No. 1 — (i10) No. 11: (F78) No. 2 — (i10) No. 8: RHD model: (F78) No. 2 — (i10) No. 11: (F78) No. 1 — (i10) No. 8:	Is the resistance less than 10 Ω ?	Go to step 4.	Repair the wiring harness.

Combination Meter System

INSTRUMENTATION/DRIVER INFO

	Step	Check	Yes	No
4	CHECK AMBIENT SENSOR. 1) Remove the ambient sensor. 2) Check the ambient sensor. <Ref. to IDI-20, 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.	Replace the combination meter printed circuit.
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.
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 LHD model: (F78) No. 1 — (i10) No. 11: (F78) No. 1 — (B283) No. 9: (F78) No. 2 — (i10) No. 8: RHD model: (F78) No. 2 — (i10) No. 11: (F78) No. 2 — (B283) No. 9: (F78) No. 1 — (i10) No. 8:	Is the resistance less than 10 Ω ?	Go to step 10.	Repair the wiring harness.

Combination Meter System

INSTRUMENTATION/DRIVER INFO

	Step	Check	Yes	No
10	CHECK AMBIENT SENSOR. 1) Remove the ambient sensor. 2) Check the ambient sensor. <Ref. to IDI-20, 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.	Normal meter: Replace the combination meter printed circuit. Red luminescent meter: Replace the meter main assembly.

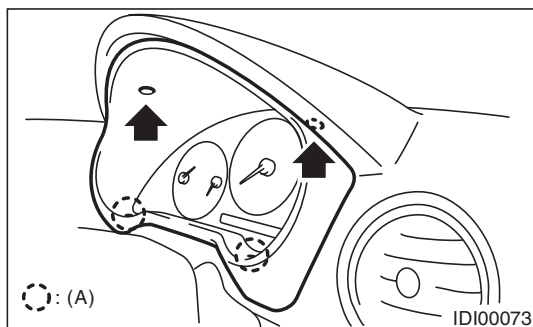
Combination Meter

INSTRUMENTATION/DRIVER INFO

3. Combination Meter

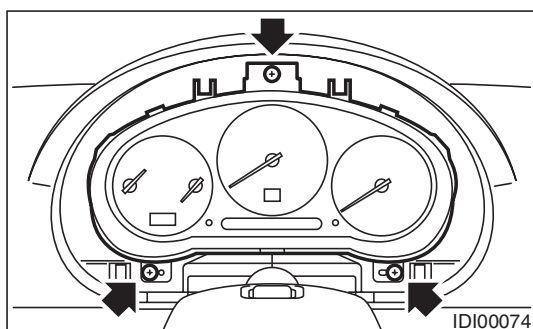
A: REMOVAL

- 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.

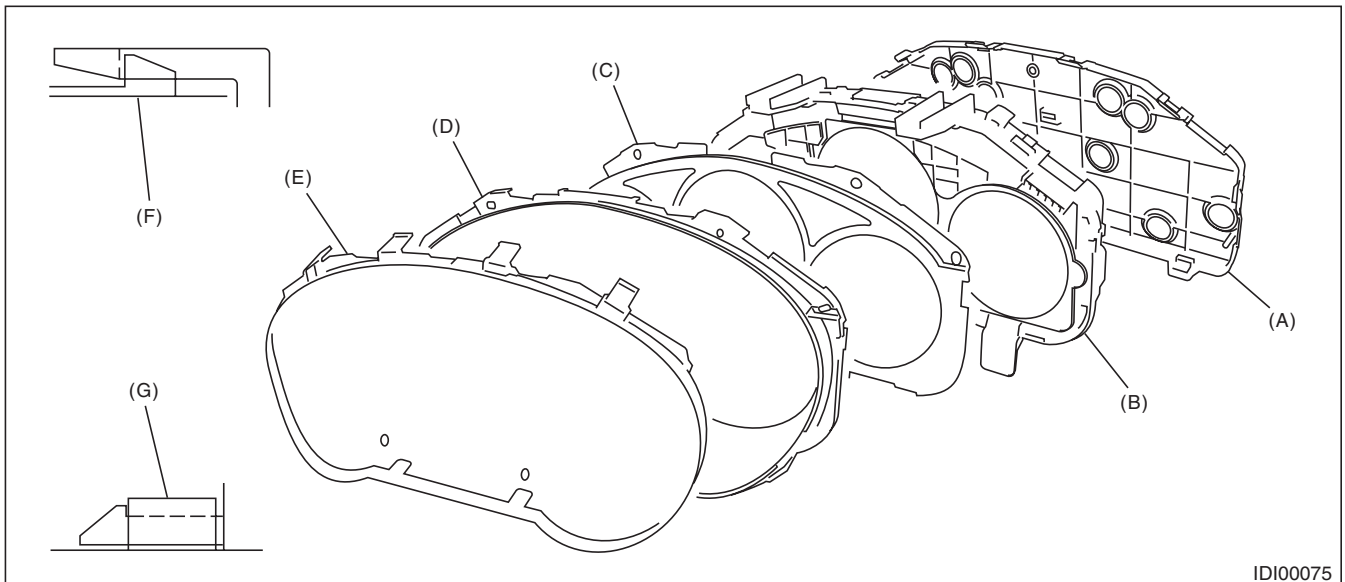
C: DISASSEMBLY

1. NORMAL METER

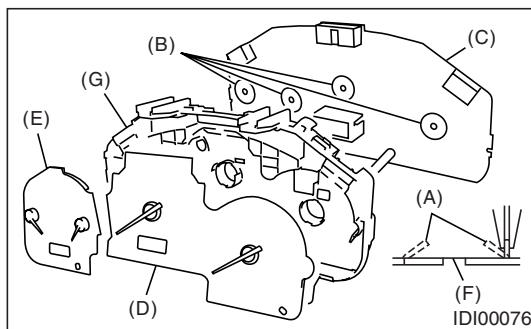
CAUTION:

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 engine coolant 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

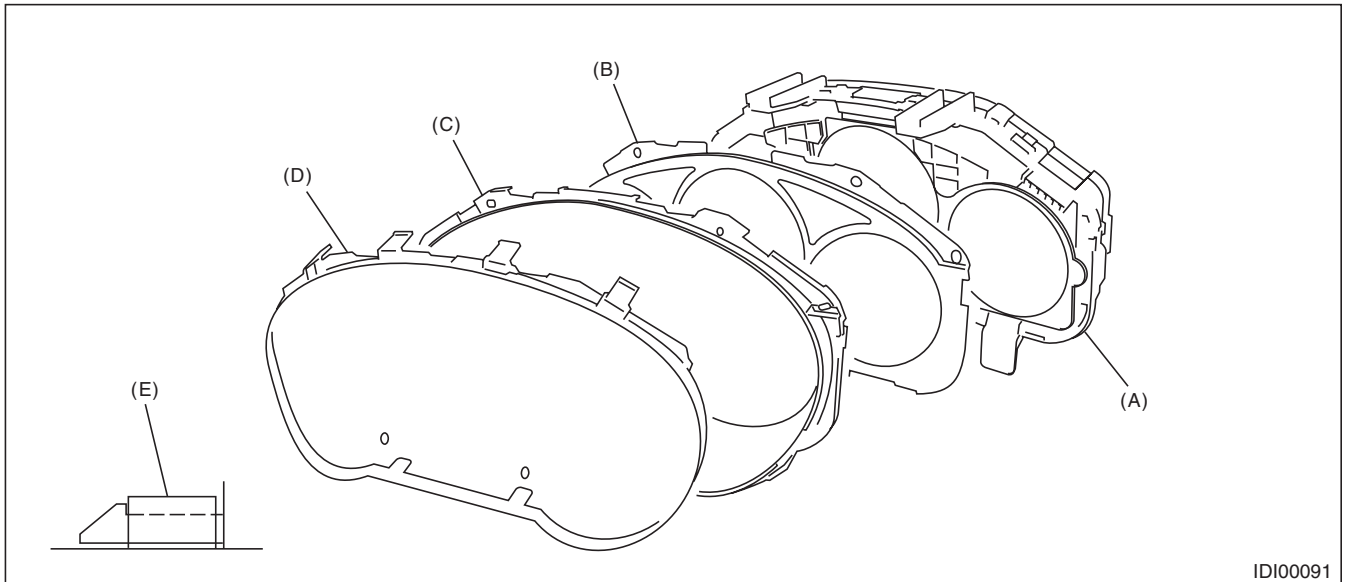
INSTRUMENTATION/DRIVER INFO

2. RED LUMINESCENT METER

CAUTION:

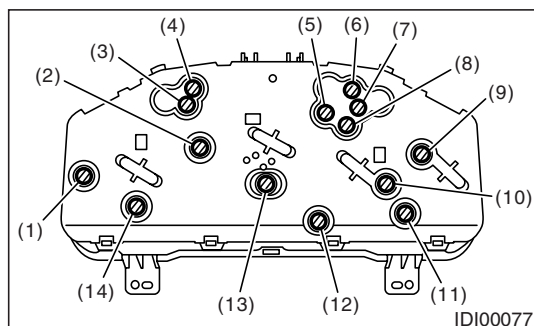
- Use gloves to avoid damage and getting fingerprints on the glass surface and meter surfaces.
- Do not disassemble the meter main assembly of red luminescent meter.

Disengage the claw (E) to remove the meter glass (D), reflector (C), and window plate (B) from meter main assembly (A).



ID100091

3. BULB REPLACEMENT



- (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) POWER indicator light
- (7) Turn signal indicator light (LH)
- (8) Brake fluid and parking brake warning light
- (9) Fuel gauge
- (10) Engine coolant temperature gauge
- (11) LCD (Outside temperature indicator)
- (12) Charge warning light
- (13) LCD (Odometer and tripmeter: non-turbo model)
- (14) LCD (Odometer and tripmeter: turbo model)

NOTE:

Replace the meter main assembly of red luminescent meter 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:

Since the meter main assembly of red luminescent meter cannot be disassembled, do not remove or inspect the speedometer alone.

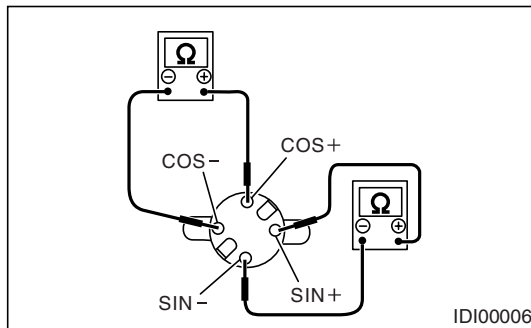
Disassemble the combination meter, and then remove the speedometer and tachometer assembly.
<Ref. to IDI-13, DISASSEMBLY, Combination Meter.>

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:

Since the meter main assembly of red luminescent meter cannot be disassembled, do not remove or inspect the tachometer alone.

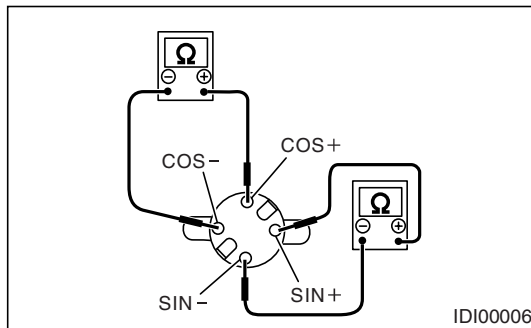
Disassemble the combination meter, and then remove the speedometer and tachometer assembly.
<Ref. to IDI-13, DISASSEMBLY, Combination Meter.>

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:

Since the meter main assembly of red luminescent meter cannot be disassembled, do not remove or inspect the fuel gauge alone.

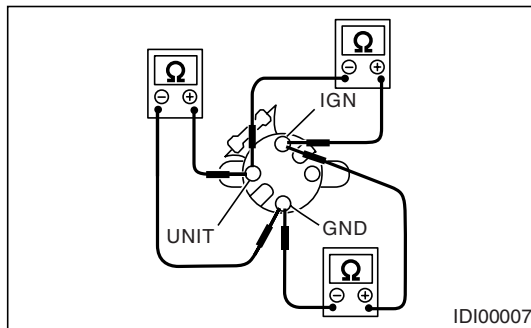
Disassemble the combination meter, and then remove the water temperature gauge and fuel gauge assembly. <Ref. to IDI-13, DISASSEMBLY, Combination Meter.>

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 engine coolant temperature gauge and fuel gauge assembly.

If OK, replace the combination meter printed circuit.

7. Engine Coolant Temperature Gauge

A: REMOVAL

NOTE:

Since the meter main assembly of red luminescent meter cannot be disassembled, do not remove or inspect the engine coolant temperature gauge alone.

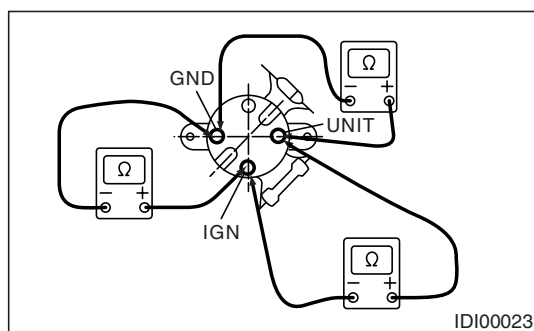
Disassemble the combination meter, and then remove the tachometer and engine coolant temperature gauge and fuel gauge assembly. <Ref. to IDI-13, DISASSEMBLY, Combination Meter.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the engine coolant 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 engine coolant temperature gauge and fuel gauge assembly.

If OK, replace the combination meter printed circuit.

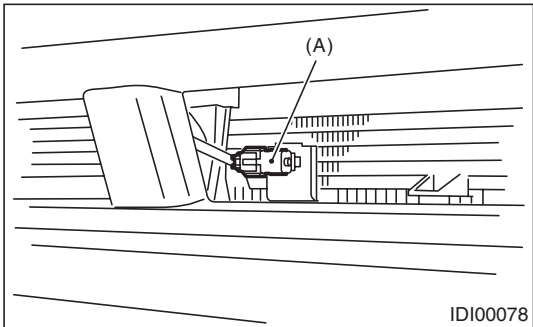
Ambient Sensor

INSTRUMENTATION/DRIVER INFO

8. Ambient Sensor

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Disconnect the ambient sensor connector.
- 3) Remove the ambient sensor (A) from radiator lower panel.

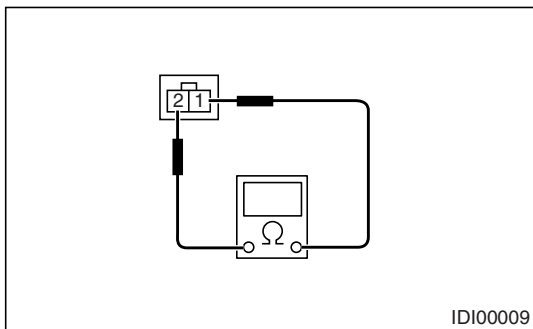


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the ambient sensor resistance.



Terminal	Resistance
1 and 2	2.2 k Ω /25°C (77°F)

If NG, replace the ambient sensor.

SEATS

SE

	Page
1. General Description	2
2. Front Seat	6
3. Rear Seat	12

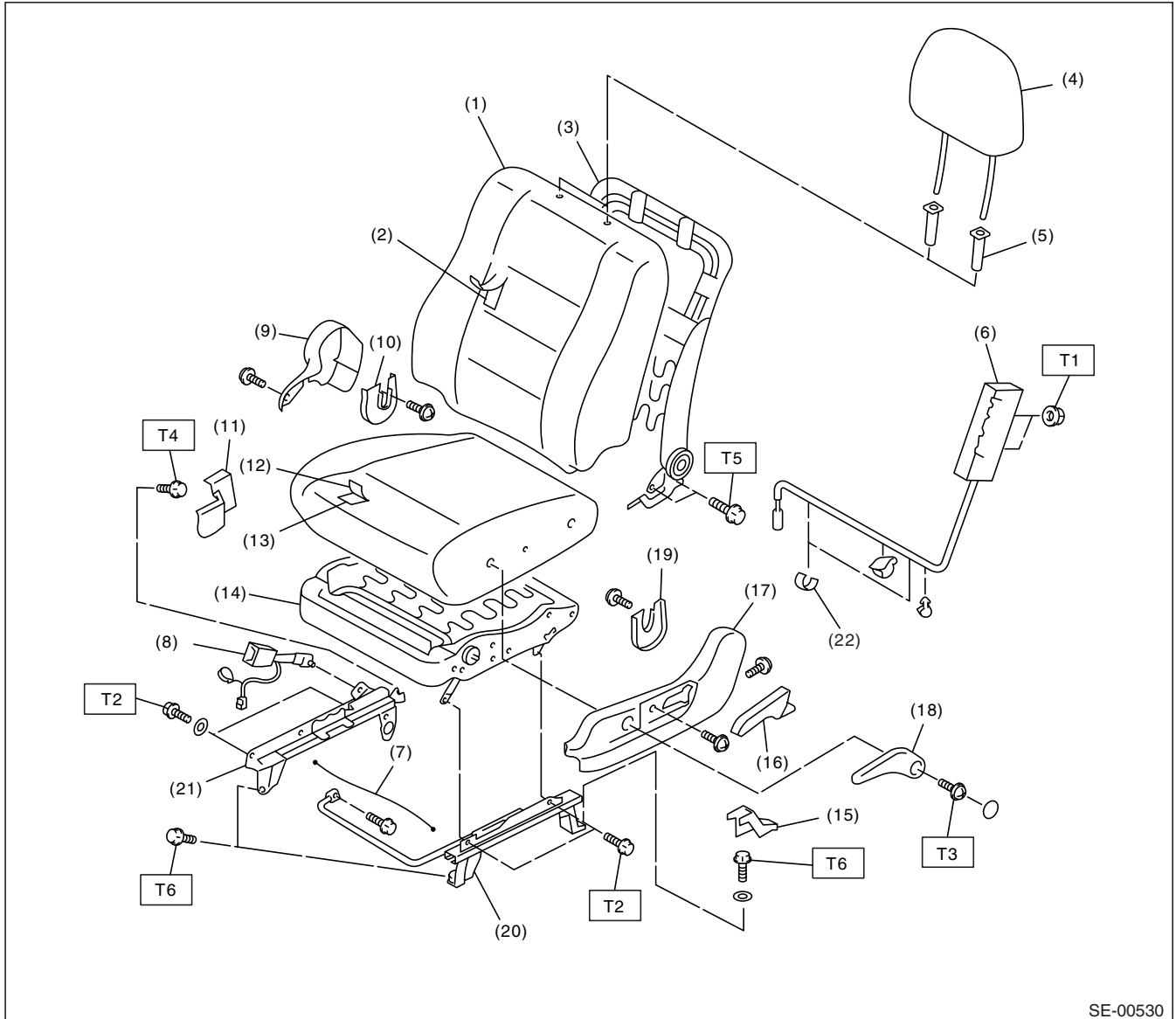
General Description

SEATS

1. General Description

A: COMPONENT

1. FRONT SEAT



SE-00530

- | | |
|--------------------------------|--------------------------------|
| (1) Backrest cover | (11) Bolt cover inner |
| (2) Backrest pad | (12) Seat cushion cover |
| (3) Backrest frame ASSY | (13) Seat cushion pad |
| (4) Headrest ASSY | (14) Seat cushion frame ASSY |
| (5) Headrest lock bush | (15) Bolt cover outer |
| (6) Side airbag module | (16) Reclining lever |
| (7) Connecting cable | (17) Seat hinge outer cover |
| (8) Inner belt | (18) Lifter lever |
| (9) Seat hinge inner cover | (19) Seat hinge inner cover RH |
| (10) Seat hinge inner cover LH | (20) Outer slide rail |
| | (21) Inner slide rail |
| | (22) Tape |

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

T1: 6 (0.61, 4.43)

T2: 10 (1.02, 7.38)

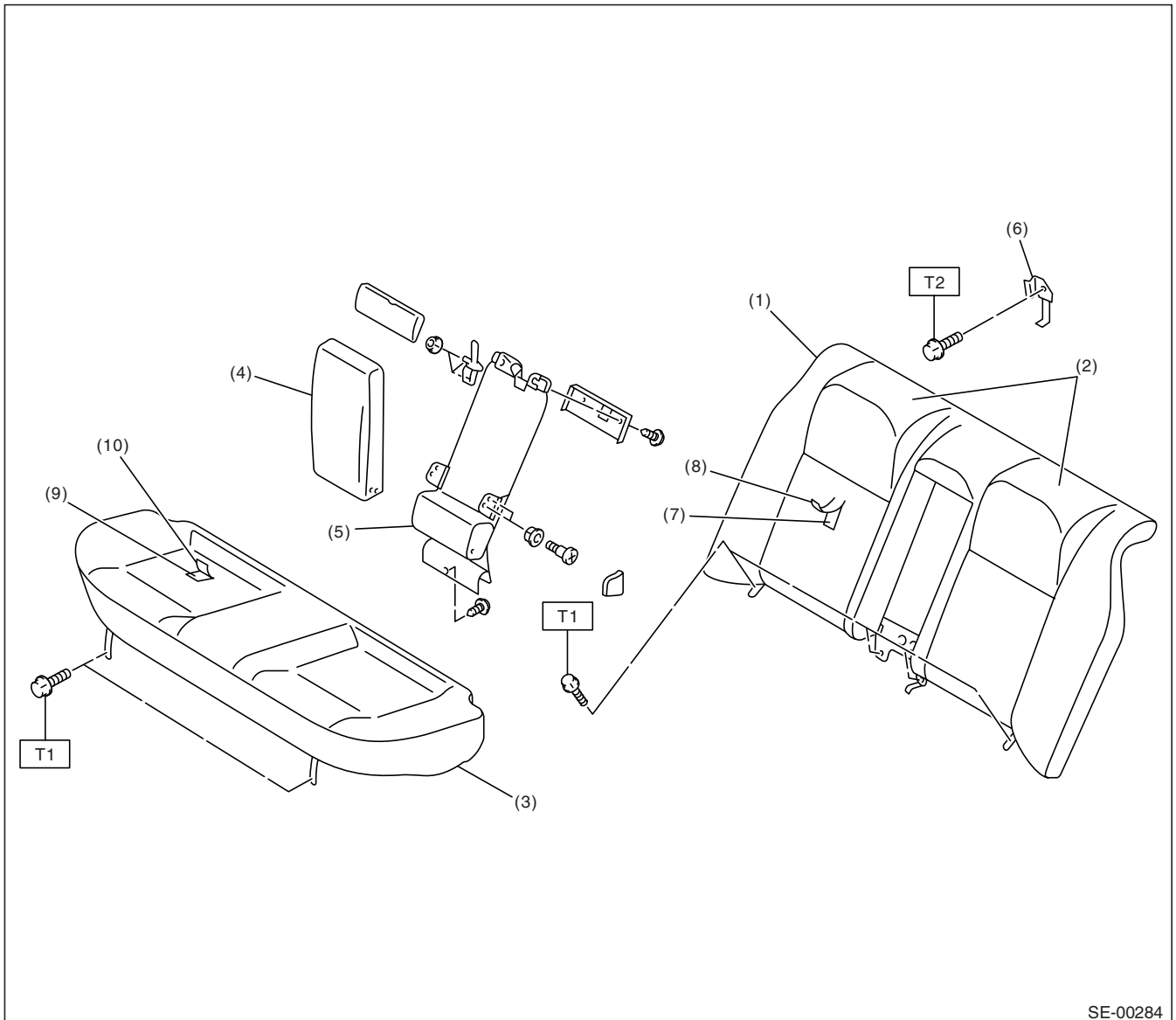
T3: 22 (2.24, 16.2)

T4: 30 (3.06, 22.1)

T5: 52 (5.30, 38.4)

T6: 53 (5.40, 39.1)

2. REAR SEAT (SEDAN MODEL)



SE-00284

- | | |
|--------------------------|-----------------------------------|
| (1) Backrest | (6) Hook |
| (2) Headrest | (7) Backrest pad ASSY |
| (3) Cushion | (8) Backrest cover ASSY |
| (4) Arm rest | (9) Rear pad & cushion frame ASSY |
| (5) Center through frame | (10) Rear cushion cover |

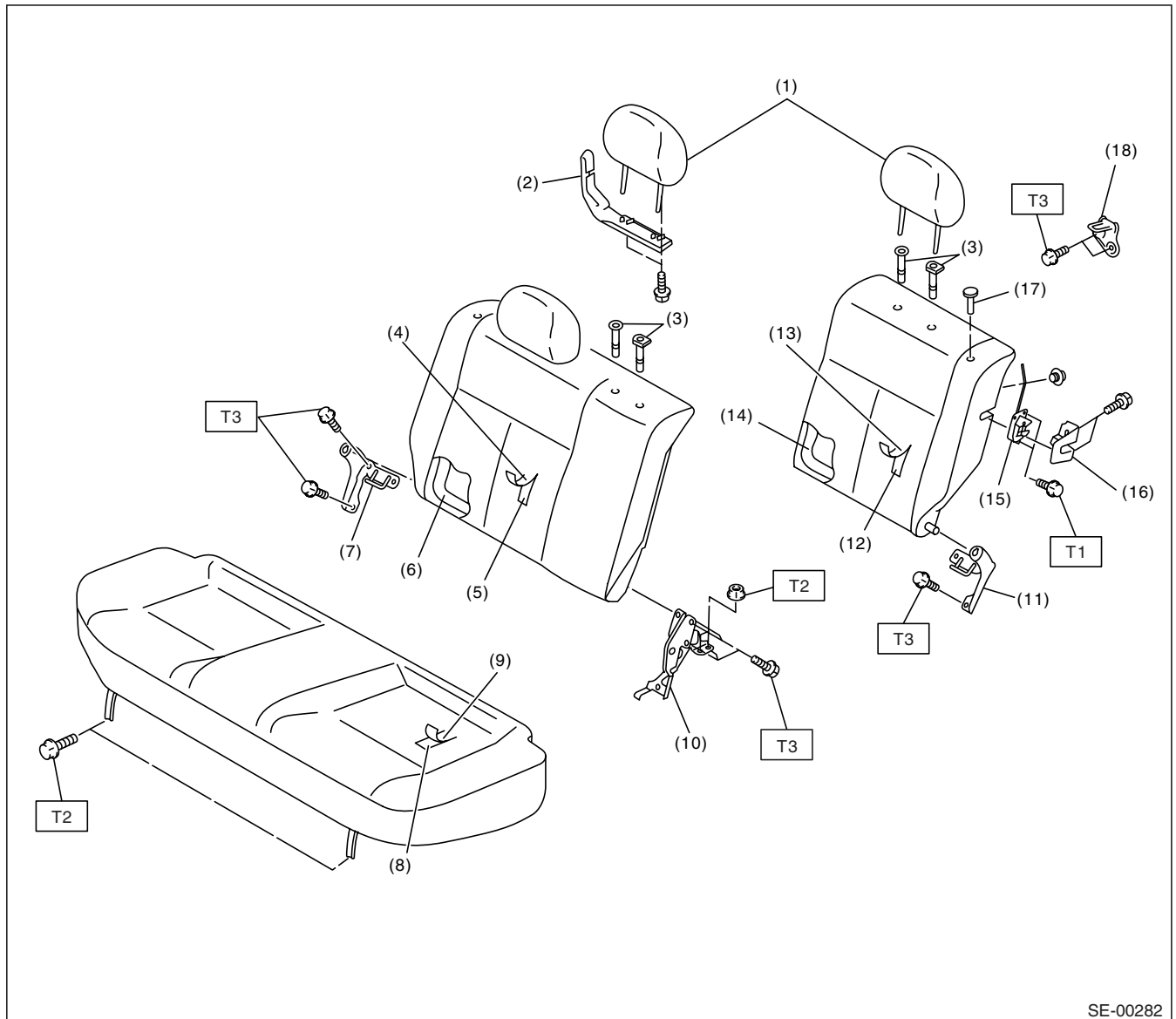
Tightening torque: N·m (kgf-m, ft-lb)

T1: 10 (1.02, 7.38)

T2: 24.5 (2.5, 18.1)

SEATS

3. REAR SEAT (WAGON MODEL)



- | | |
|------------------------|----------------------------|
| (1) Headrest | (9) Seat cushion pad |
| (2) Seat belt guide | (10) Hinge ASSY CTR |
| (3) Headrest bush | (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: 17.3 (1.76, 12.8)

T2: 24.5 (2.5, 18.1)

T3: 33 (3.3, 24.6)

General Description

SEATS

B: CAUTION

When removing the front seat from a side airbag loaded vehicle, follow cautions given in the airbag section.

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.

Front Seat

2. Front Seat

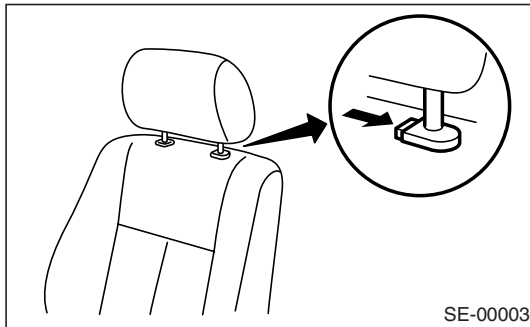
A: REMOVAL

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.

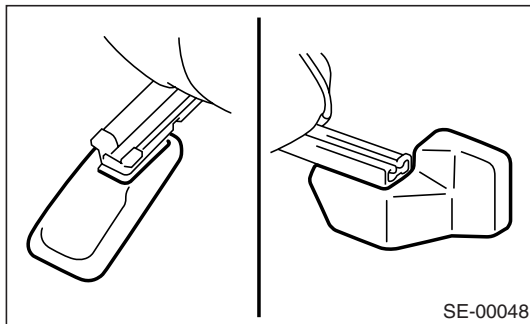
2) While pressing the headrest lock button, remove the headrest.



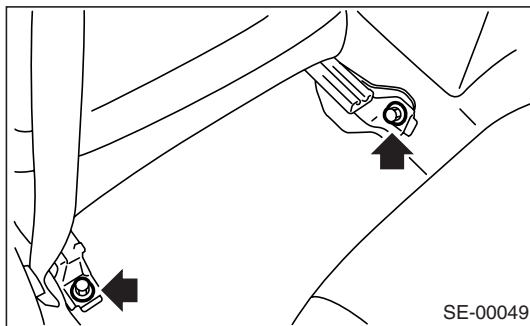
3) Tilt forward the backrest.

4) Move the seat to full front end.

5) Remove the bolt cover at rear end of slide rail.

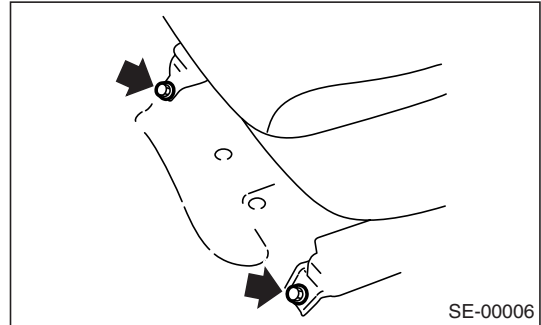


6) Remove the two bolts at rear side of seat rail.



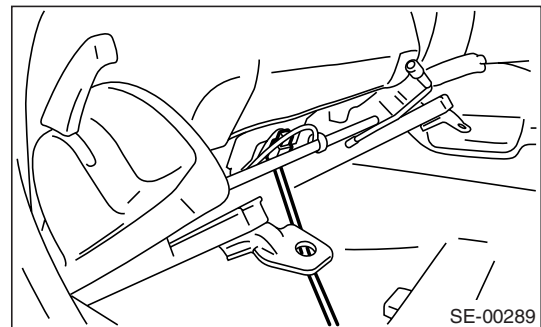
7) Move the seat to full rear end.

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)



10) Remove the front seat from vehicle.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

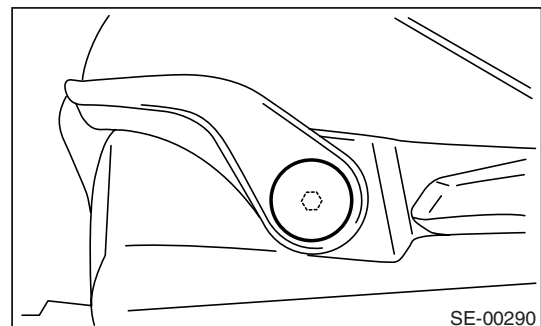
Refer to **COMPONENT** in *General Description*. <Ref. to SE-2, FRONT SEAT, COMPONENT, General Description.>

C: DISASSEMBLY

1. STANDARD SEAT

1) Remove the seat from vehicle. <Ref. to SE-6, REMOVAL, Front Seat.>

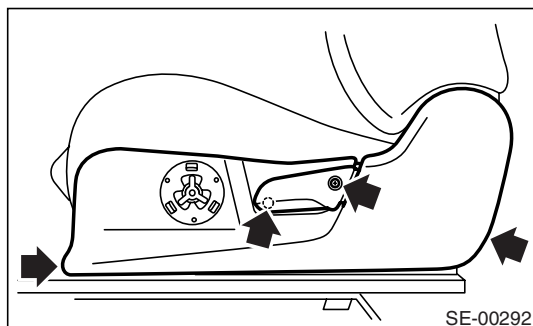
2) Remove the seat lifter cover using a flat tip screwdriver or equivalent, and then loosen the inside bolt to remove seat lifter lever.



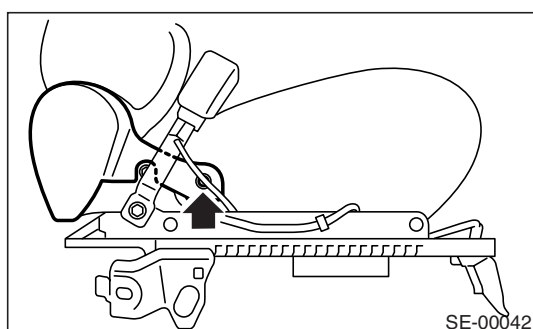
Front Seat

SEATS

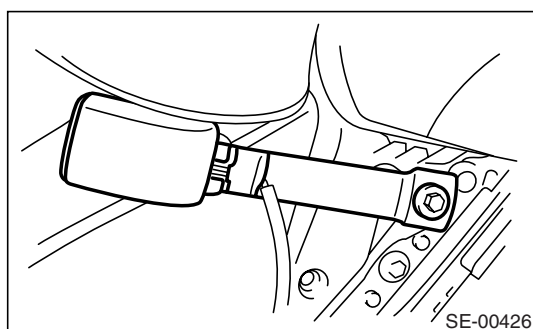
3) Remove the reclining lever and seat hinge outer cover.



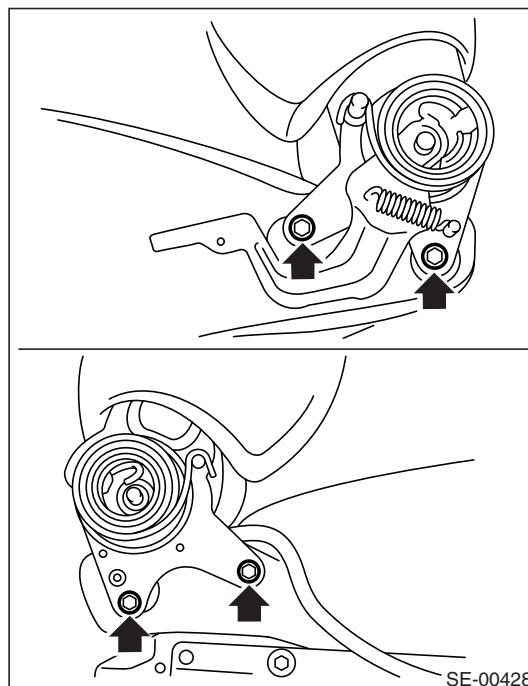
4) Remove the seat hinge inner cover.



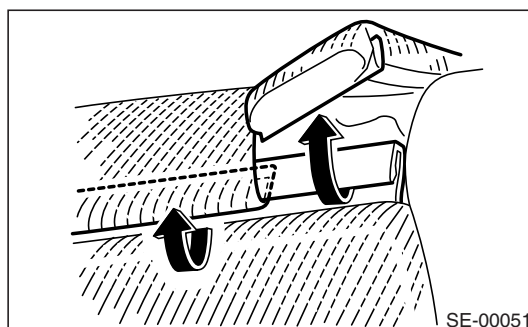
5) Remove the inner belt.



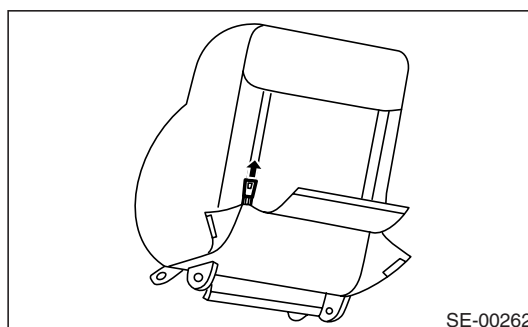
6) Remove two bolts from reclining hinge on each side.



7) Remove the hook at the bottom-back side of backrest.



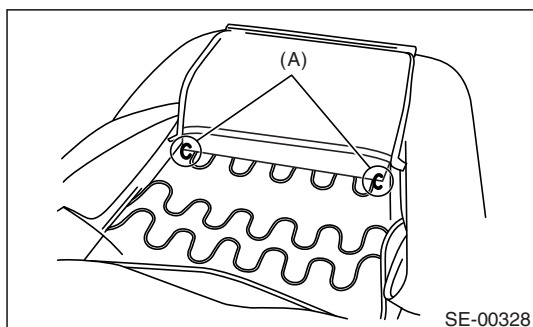
8) Open the zipper behind of backrest.



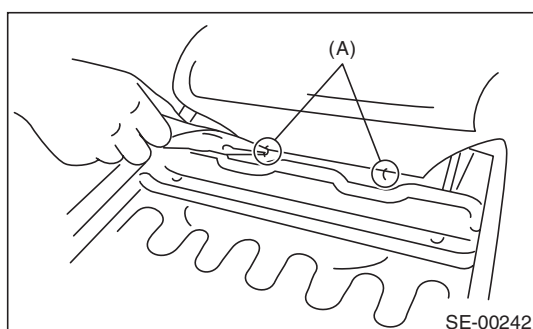
Front Seat

SEATS

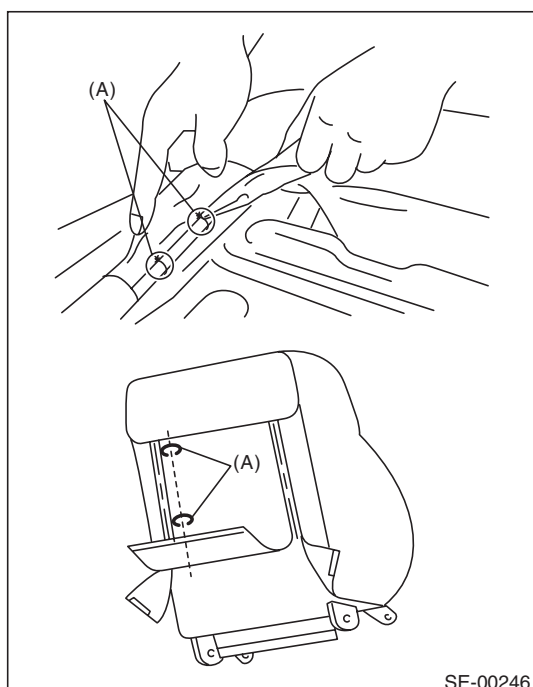
9) Remove the hog rings (A) of backrest cover.



10) Remove the hog rings (A) which secure the backrest cover and backrest pad.



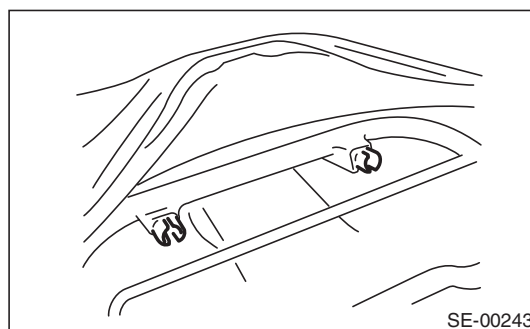
11) Open the zipper behind of backrest cover, and then remove the hog rings (A) at the side-inner part of backrest from backrest frame. (Side airbag equipped seat)



12) Remove the headrest bushes.

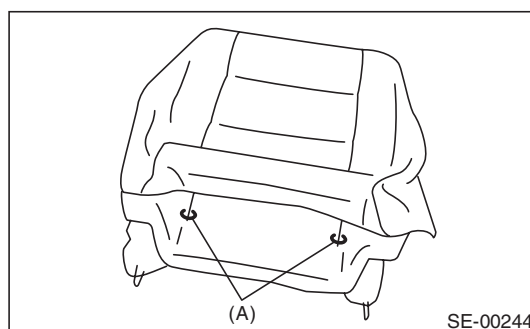
NOTE:

Push the headrest bushes to outside of seat from inside, and then remove them.

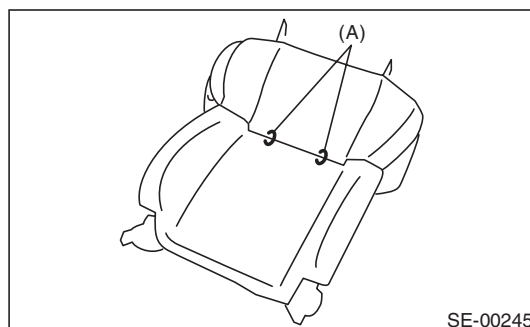


13) Pull out the backrest frame.

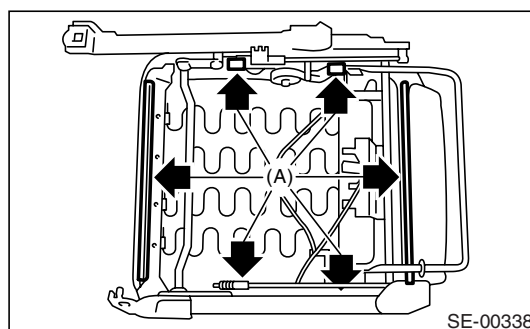
14) Remove the hog rings (A) at bottom of seat back. (Side airbag equipped seat)



15) Remove the hog rings (A) at front of seat back, and then remove the seat back cover from seat back.



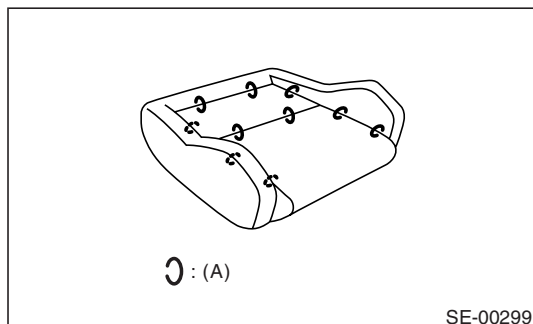
16) Remove the hooks (A), and then remove the seat cushion frame assembly.



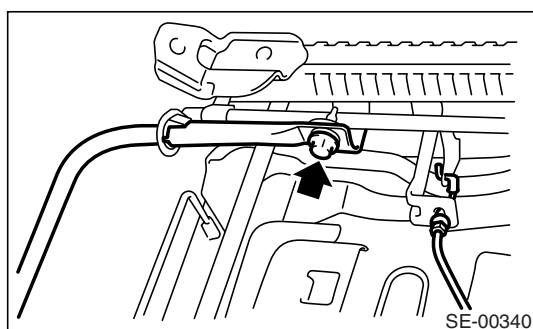
Front Seat

SEATS

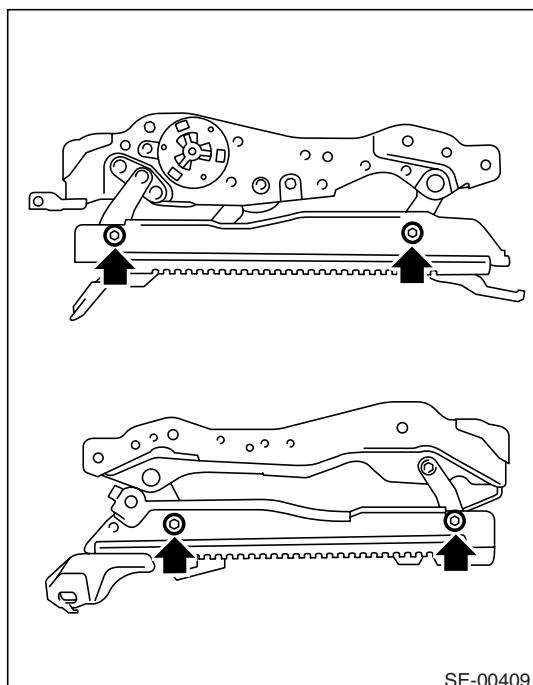
17) Remove the hog rings (A), and then remove the seat cushion cover from seat cushion pad.



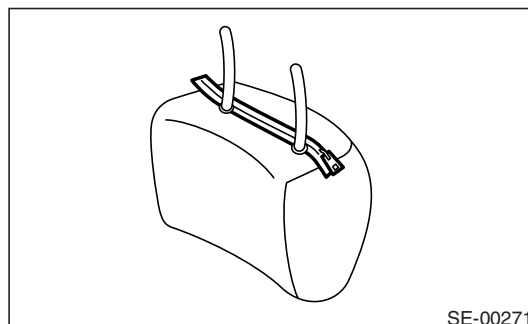
18) Remove the bolt of sliding adjustment bar and connecting cable.



19) Remove the bolts, and then remove the slide rail.



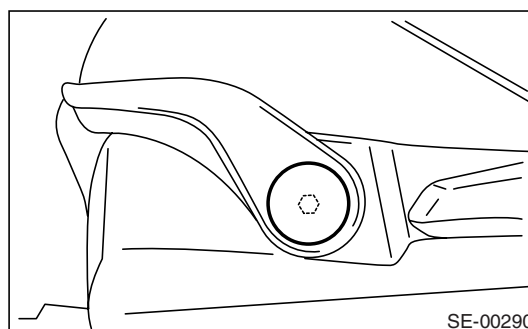
20) Open the zipper at bottom of headrest, and then remove the headrest cover from headrest.



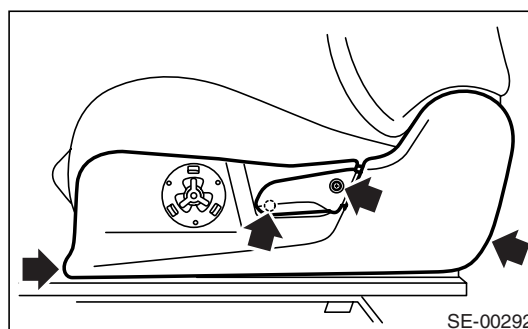
2. BUCKET TYPE SEAT

1) Remove the seat from vehicle. <Ref. to SE-6, REMOVAL, Front Seat.>

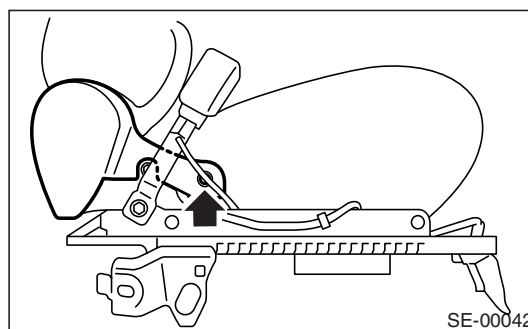
2) Remove the seat lifter cover using a flat tip screwdriver or equivalent, and then loosen inside bolt to remove seat lifter lever.



3) Remove the reclining lever and seat hinge outer cover.



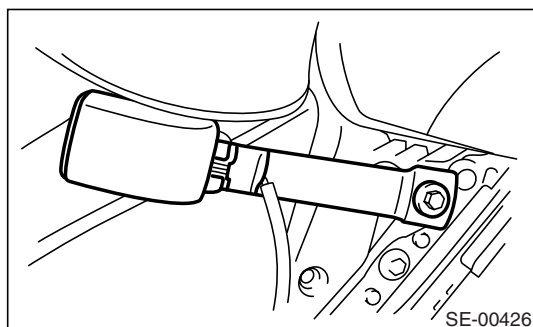
4) Remove the seat hinge inner cover.



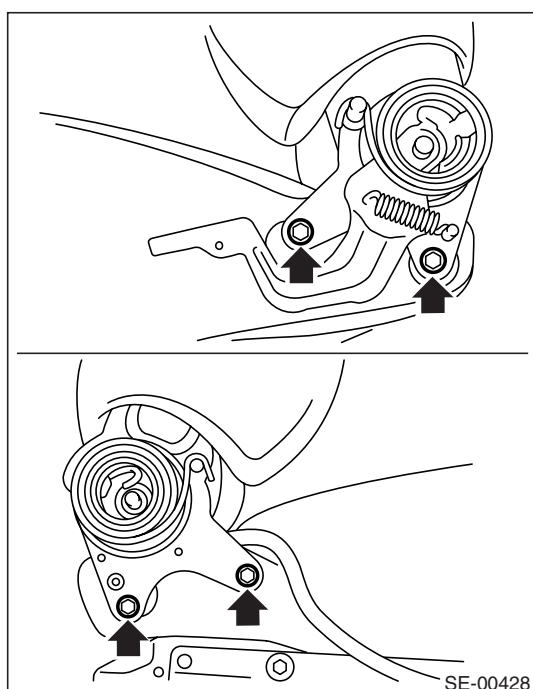
Front Seat

SEATS

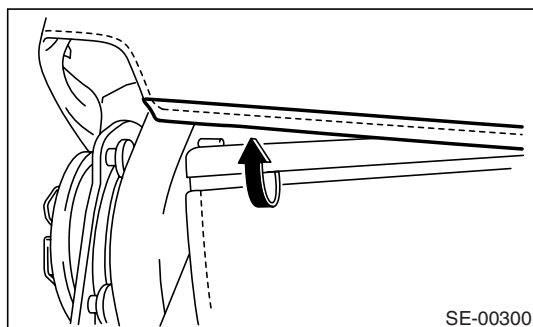
5) Remove the inner belt.



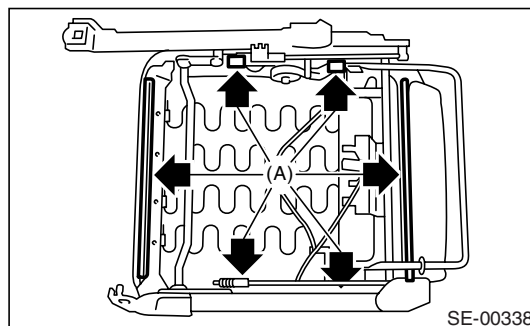
6) Remove two bolts from reclining hinge on each side.



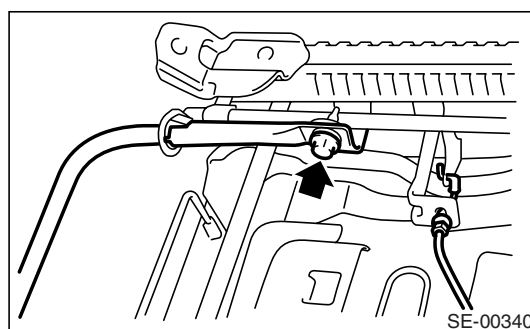
7) Remove the hook at bottom of backrest.



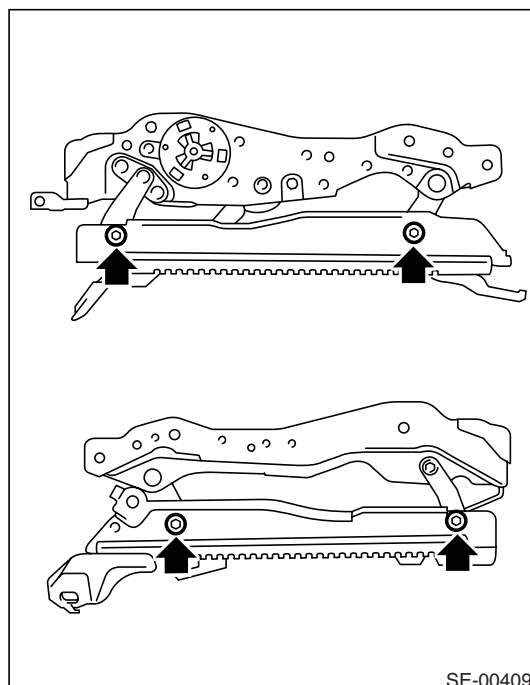
8) Remove the hooks (A), and then remove the seat cushion frame assembly.



9) Remove the bolt of sliding adjustment bar and connecting cable.



10) Remove the bolts, and then remove the slide rail.



D: ASSEMBLY

1. STANDARD SEAT

Assemble in the reverse order of disassembly.

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 dirty 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*.>

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*.>

Rear Seat

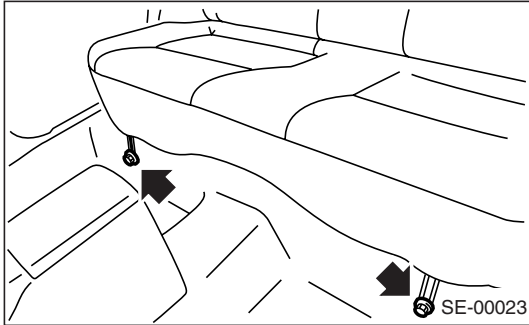
SEATS

3. Rear Seat

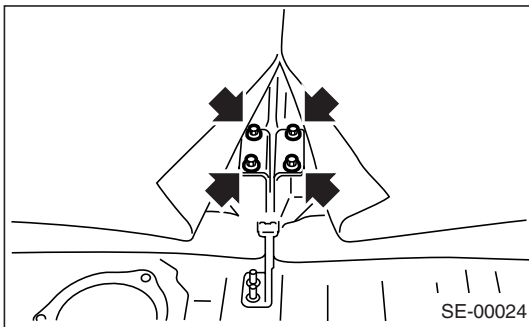
A: REMOVAL

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-59, REMOVAL, Luggage Floor Mat.>
- 4) Turn over the mat to remove the bolts.

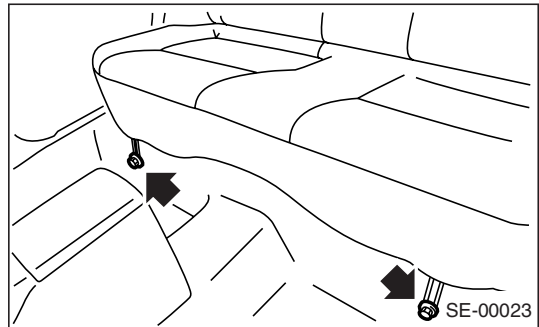


- 5) Remove the rear seat backrest.

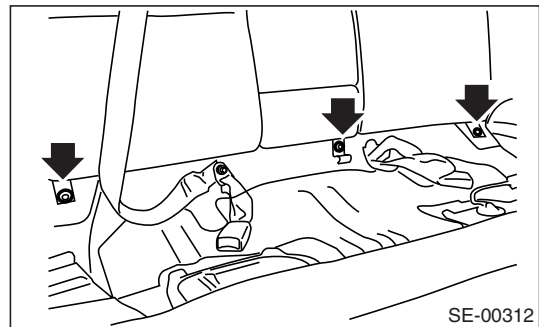


2. SEDAN MODEL

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

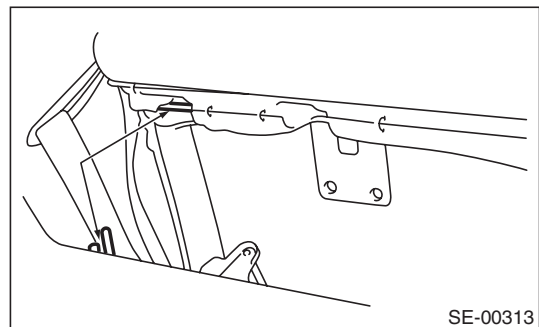
Install in the reverse order of removal.

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to SE-4, REAR SEAT (WAGON MODEL), COMPONENT, General Description.>

2. SEDAN MODEL

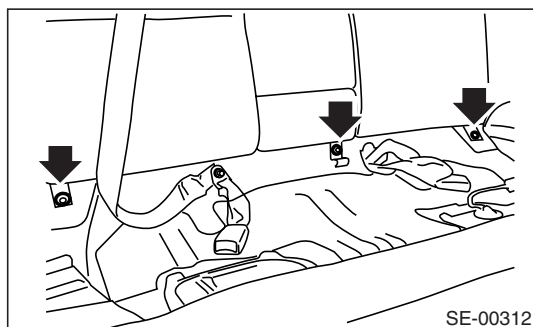
1) Hook and fasten the upper-back side of the rear seat backrest to the body hook.



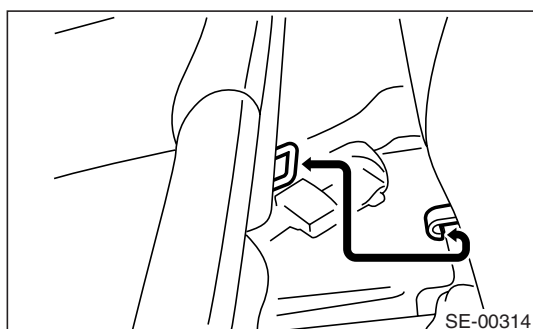
Rear Seat

SEATS

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:

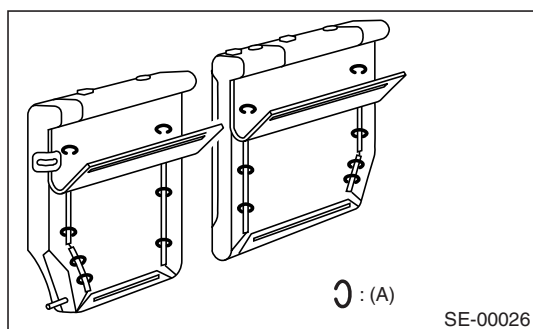
Refer to **COMPONENT** in *General Description*. <Ref. to SE-4, **REAR SEAT (WAGON MODEL)**, **COMPONENT**, *General Description*.>

C: DISASSEMBLY

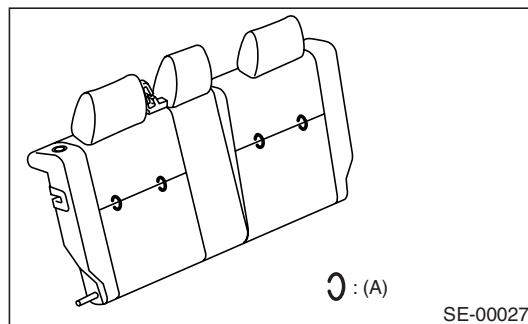
1. WAGON MODEL

1) Remove the rear seat. <Ref. to SE-12, **WAGON MODEL**, **REMOVAL**, Rear Seat.>

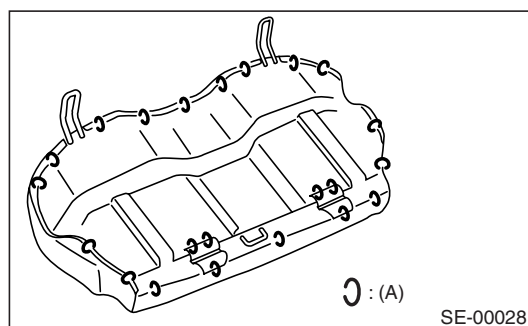
2) Remove the hog rings (A) behind of seat backrest.



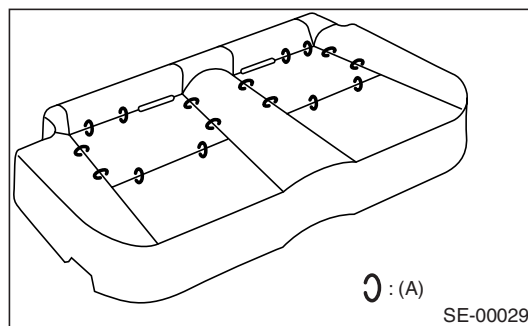
3) Remove the hog rings (A) on front side of cushion pad, and remove the cover.



4) Remove the hog rings (A) behind of seat cushion.



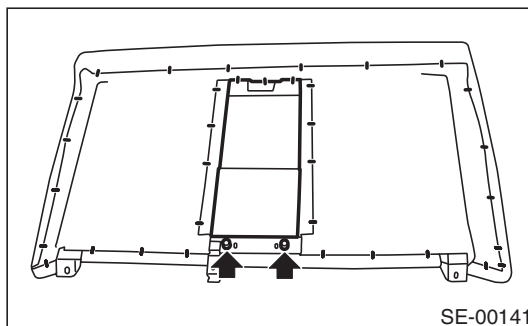
5) Remove the hog rings (A), and then remove the cover.



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.

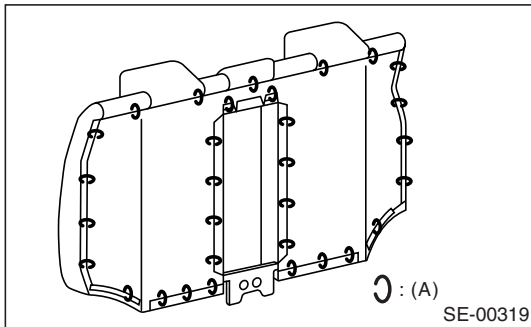


Rear Seat

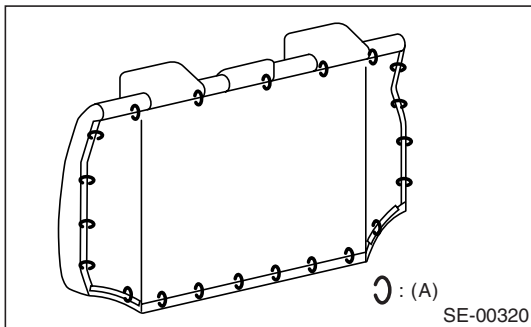
SEATS

3) Remove the hog rings (A) behind of seat backrest.

- Armrest through type model

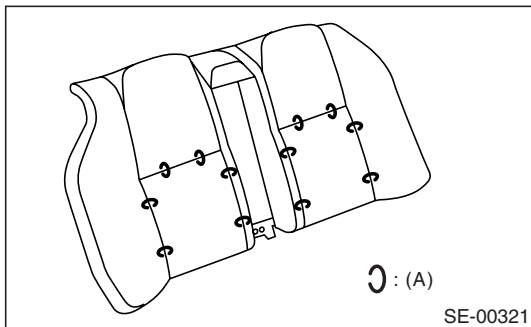


- Unified type model

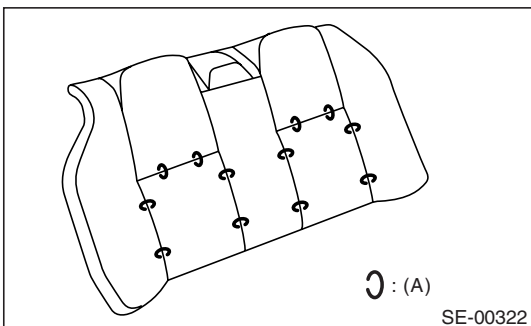


4) Remove the hog rings (A), and then remove the seat cover.

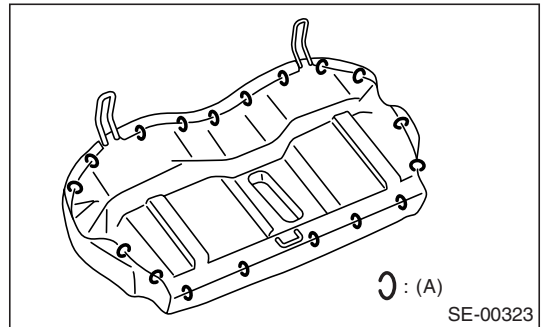
- Armrest through type model



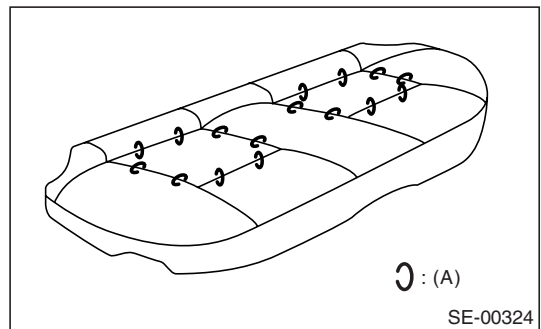
- Unified type model



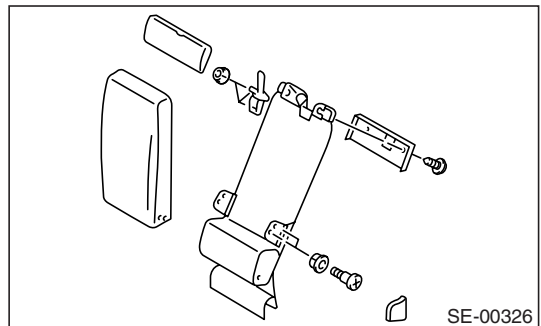
5) Remove the hog rings (A) behind of seat cushion.



6) Remove the hog rings (A), and then remove the seat 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.

SECURITY AND LOCKS

SL

	Page
1. General Description	2
2. Door Lock Control System	10
3. Keyless Entry System	15
4. Front Inner Remote	23
5. Front Outer Handle	24
6. Front Door Latch and Door Lock Actuator Assembly	25
7. Front Door Lock Actuator	26
8. Rear Inner Remote	27
9. Rear Outer Handle	28
10. Rear Door Latch and Door Lock Actuator Assembly	29
11. Rear Door Lock Actuator	30
12. Rear Gate Outer Handle	31
13. Rear Gate Latch Assembly	32
14. Rear Gate Latch Lock Actuator	33
15. Trunk Lid Lock Assembly	34
16. Front Hood Lock Assembly	35
17. Remote Openers	36
18. Ignition Key Lock	38
19. Key Lock Cylinders	39
20. Immobilizer Control Module	40
21. Immobilizer Antenna	41
22. Keyless Entry Control Module	42
23. Double Lock Module	43
24. Keyless Transmitter	44

General Description

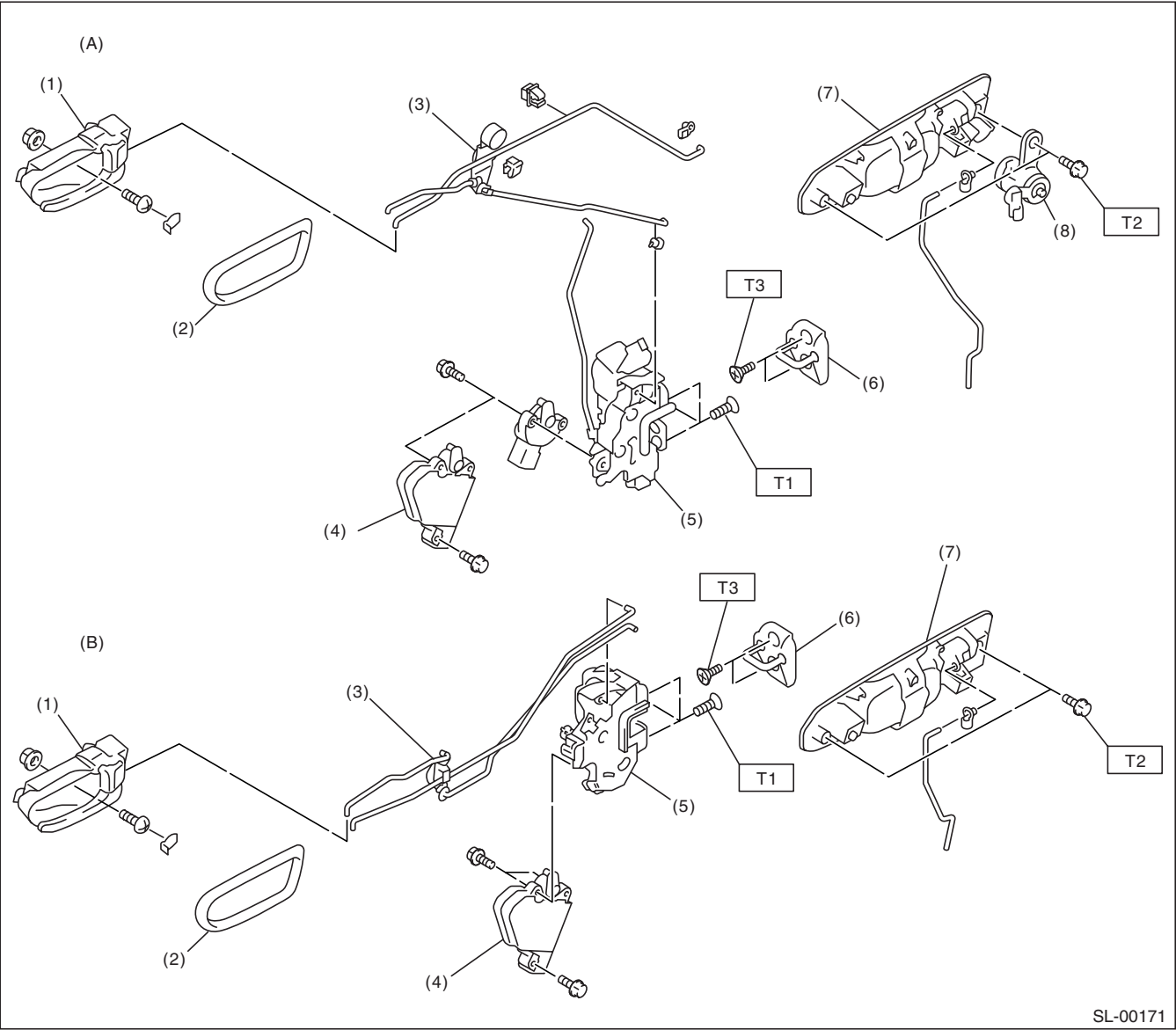
SECURITY AND LOCKS

1. General Description

A: COMPONENT

1. DOOR LOCK ASSEMBLY

- Without double lock



(A) Front

(B) Rear

- (1) Inner remote ASSY
- (2) Inner remote cover
- (3) Bell crank
- (4) Auto-door lock actuator

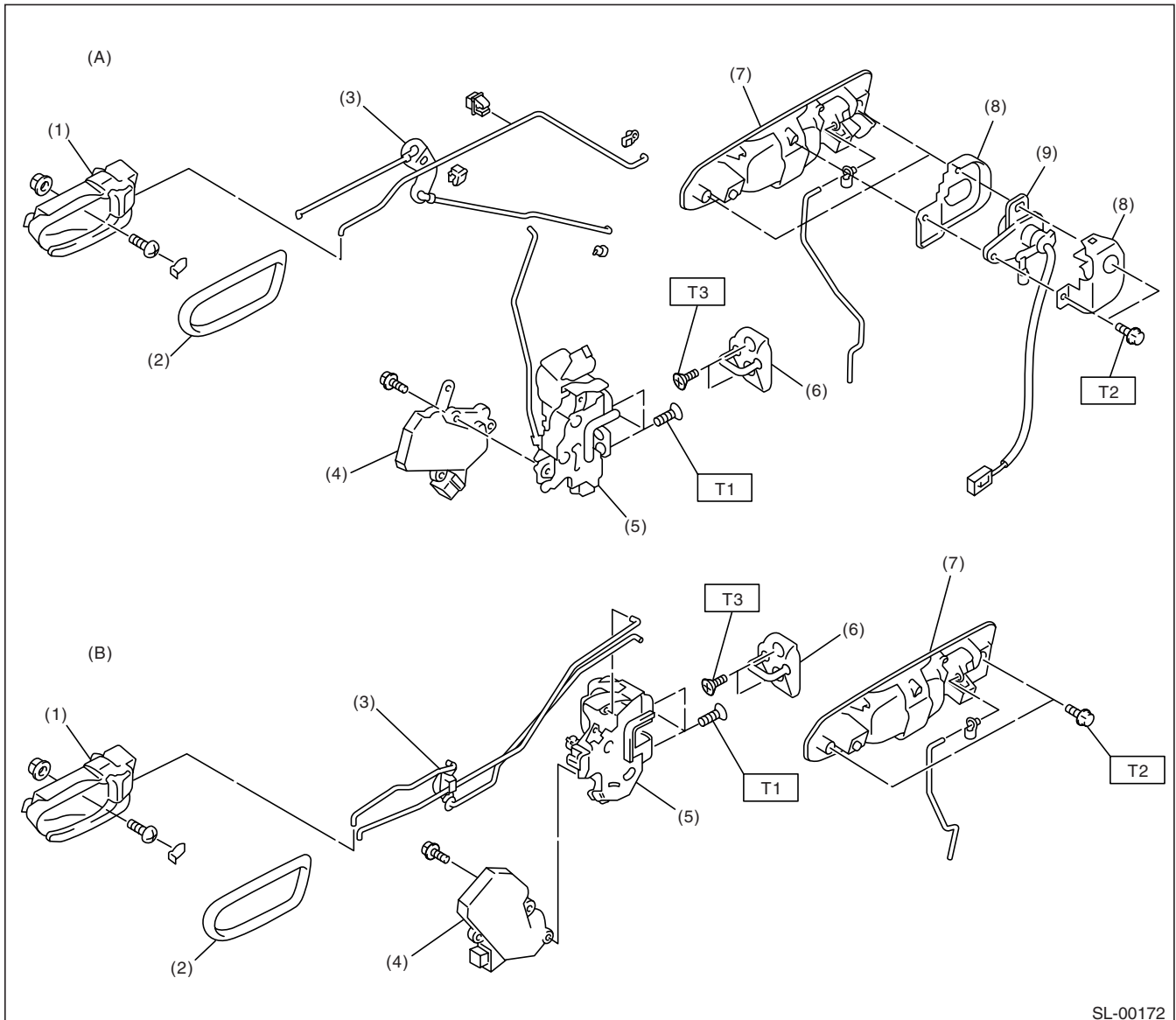
- (5) Door latch
- (6) Striker
- (7) Door outer handle
- (8) Key cylinder

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)

General Description

SECURITY AND LOCKS

• With double lock



SL-00172

(A) Front

(B) Rear

- | | |
|-----------------------------|---------------------------|
| (1) Inner remote ASSY | (6) Striker |
| (2) Inner remote cover | (7) Door outer handle |
| (3) Bell crank | (8) Outer handle cover |
| (4) Auto-door lock actuator | (9) Key cylinder (switch) |
| (5) Door latch | |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 6.4 (0.65, 4.7)

T2: 7.4 (0.75, 5.5)

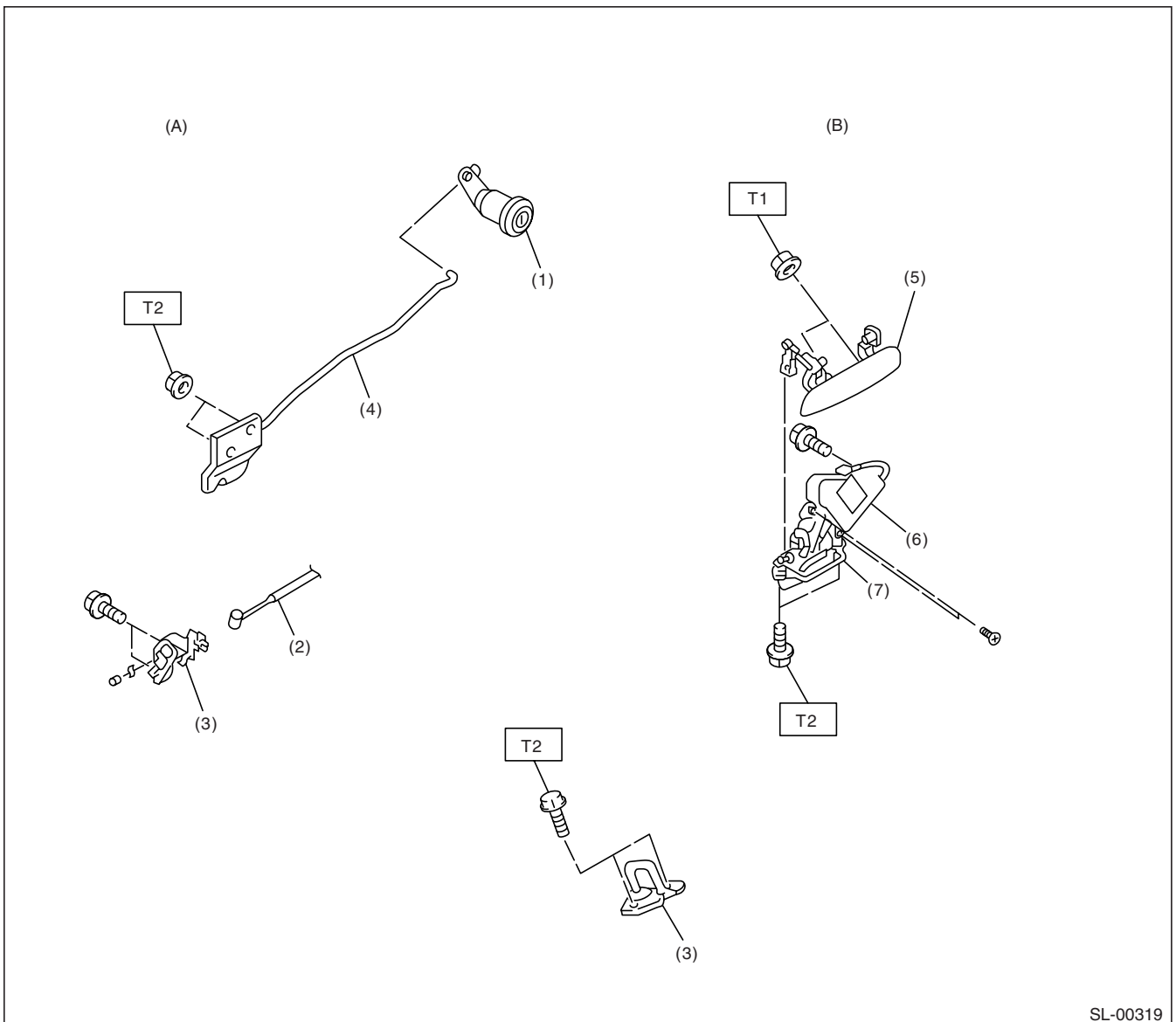
T3: 17.6 (1.8, 13.0)

General Description

SECURITY AND LOCKS

2. TRUNK LID AND REAR GATE LOCK

• Without double lock



SL-00319

(A) Trunk

(B) Rear gate

- (1) Key cylinder
- (2) Cable
- (3) Striker
- (4) Trunk lid lock ASSY

- (5) Rear gate outer handle
- (6) Rear gate actuator
- (7) Rear gate latch

Tightening torque: N·m (kgf-m, ft-lb)

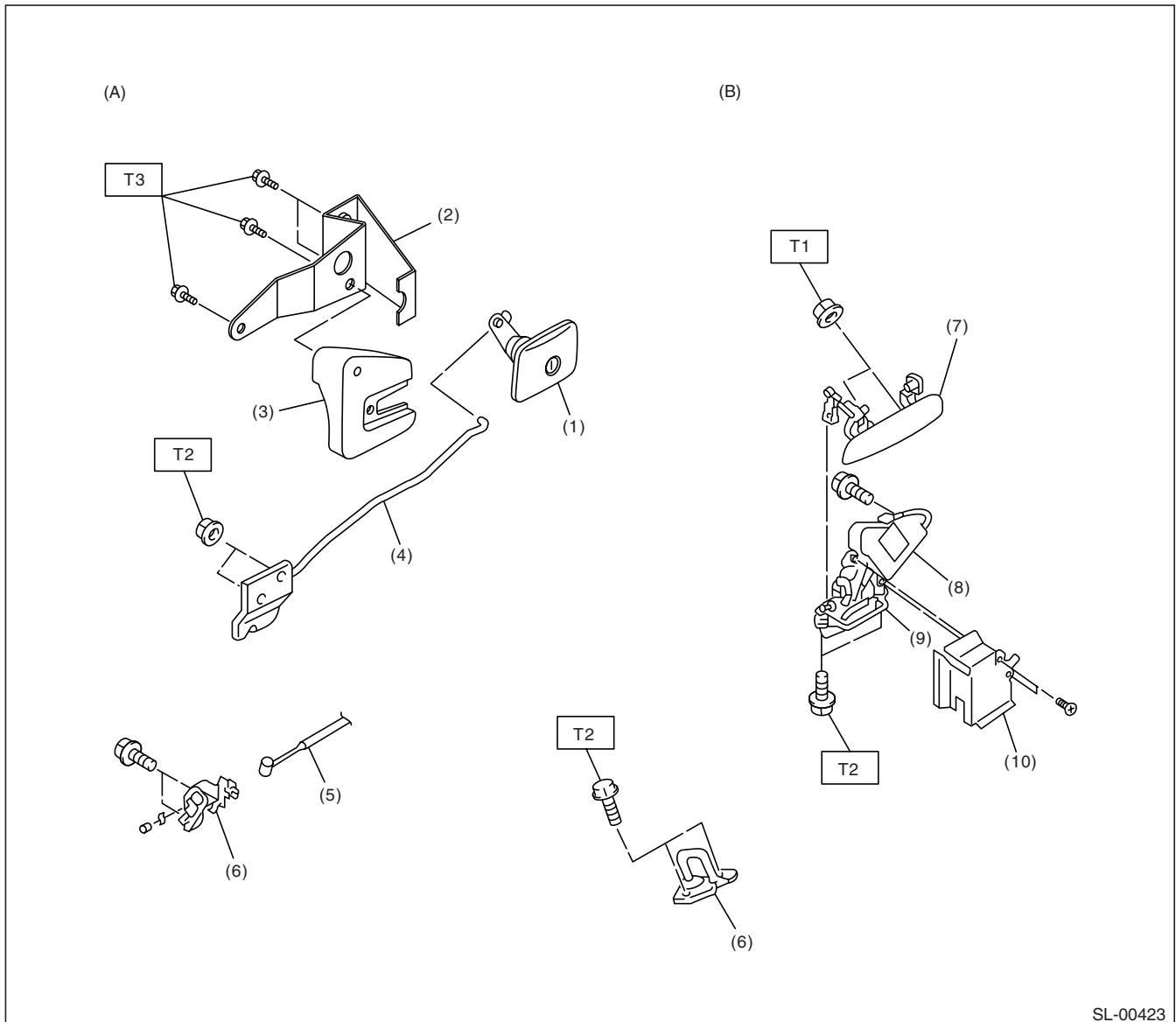
T1: 4.5 (0.45, 3.3)

T2: 25 (2.5, 18.4)

General Description

SECURITY AND LOCKS

• With double lock



SL-00423

(A) Trunk

(B) Rear gate

- (1) Key cylinder
- (2) Bracket
- (3) Key cylinder stopper
- (4) Trunk lid lock ASSY
- (5) Cable

- (6) Striker
- (7) Rear gate outer handle
- (8) Rear gate actuator
- (9) Rear gate latch
- (10) Rear gate latch cover

Tightening torque: N·m (kgf-m, ft-lb)

T1: 4.5 (0.45, 3.3)

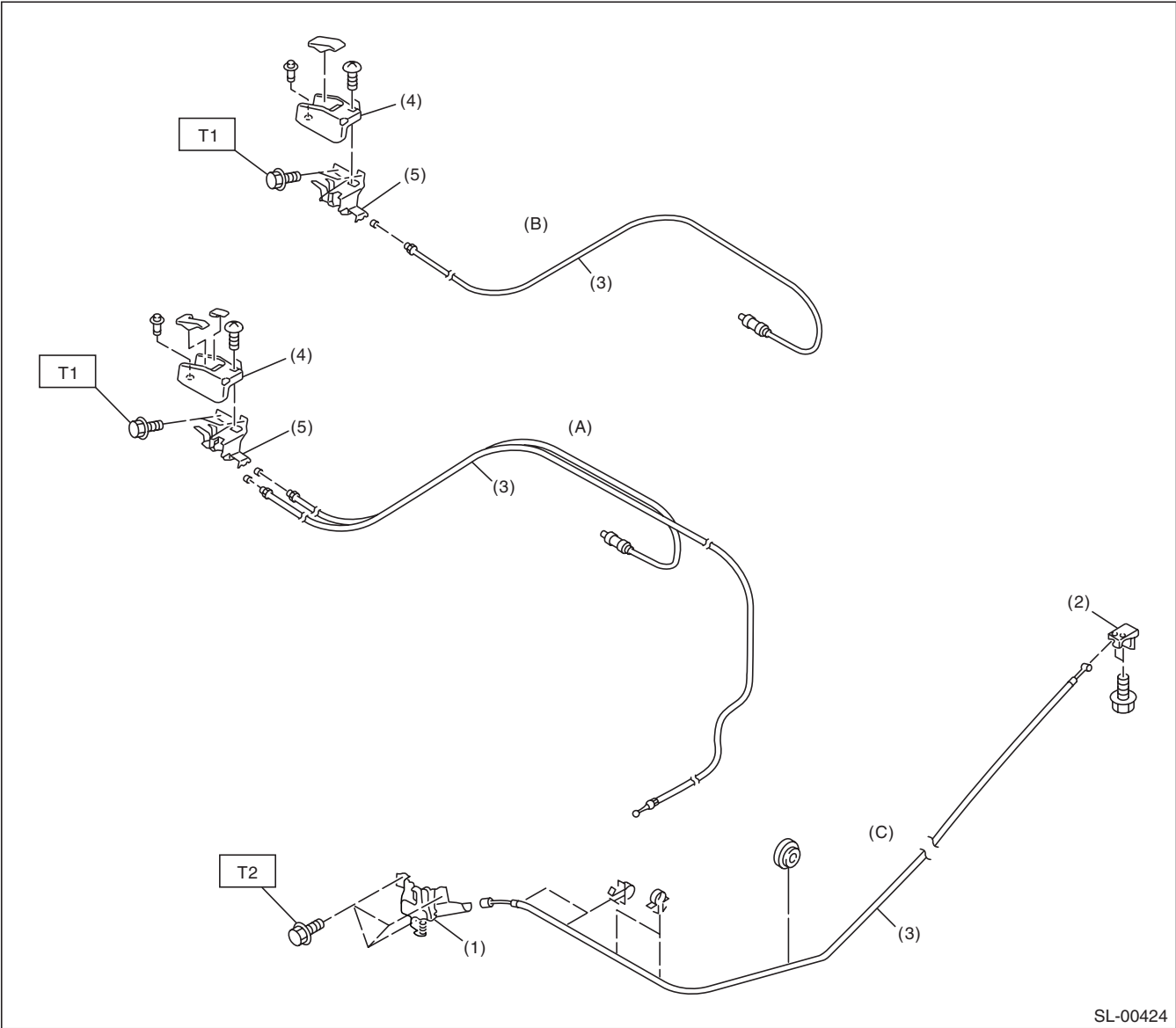
T2: 25 (2.5, 18.4)

T3: 7.5 (0.76, 5.5)

General Description

SECURITY AND LOCKS

3. HOOD LOCK AND REMOTE OPENERS



(A) Sedan

(B) Wagon

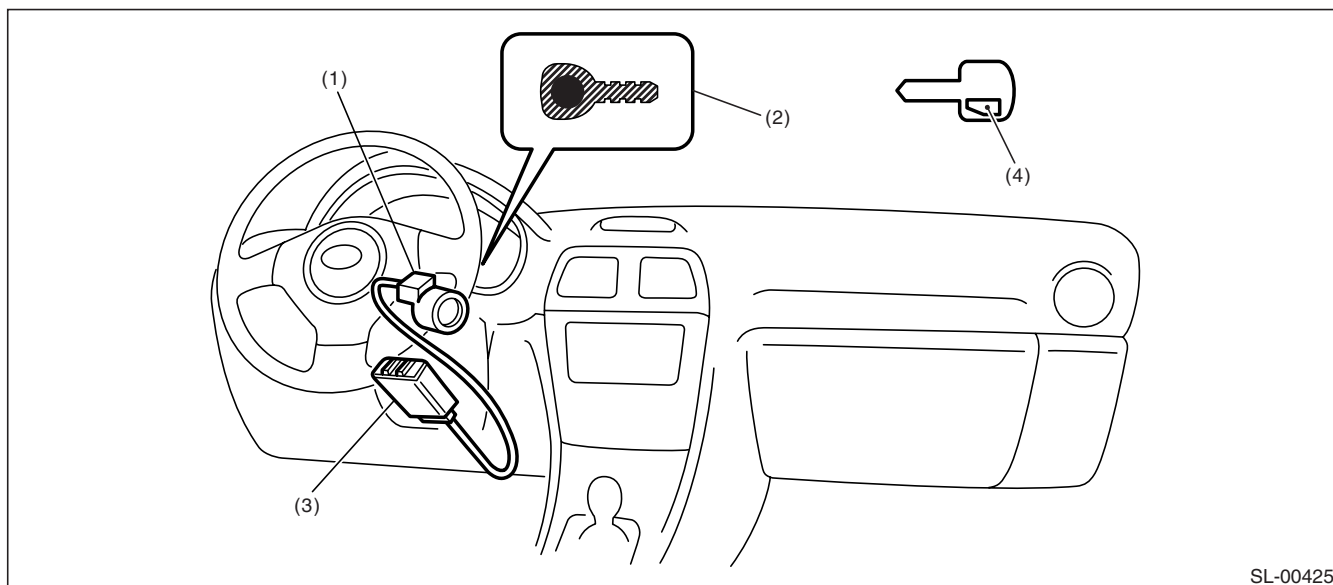
(C) Hood

- (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, 4.8)
T2: 32 (3.3, 23.9)

4. IMMOBILIZER SYSTEM



- | | | |
|--|--|-----------------|
| (1) Antenna | (3) Immobilizer control module (IMM ECM) | (4) Transponder |
| (2) Immobilizer indicator light (LED bulb) | | |

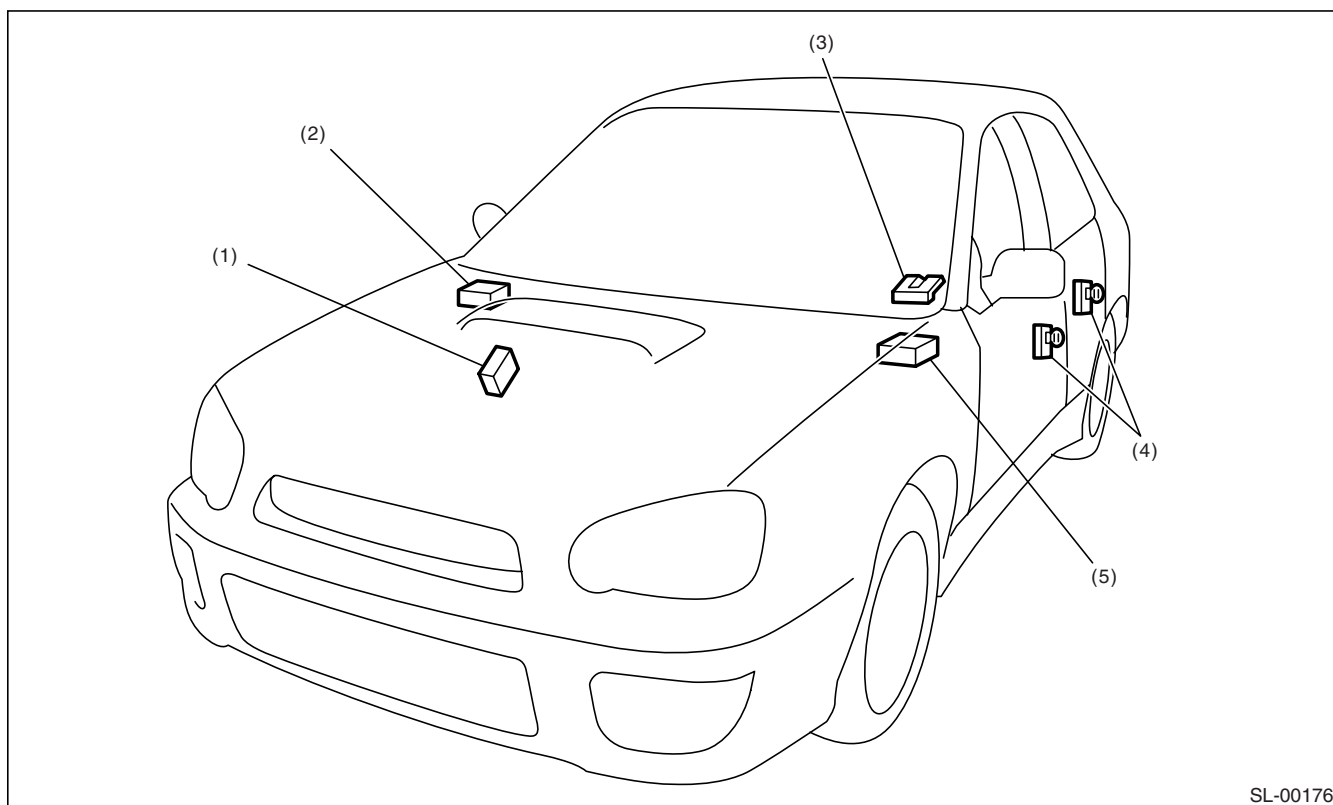
NOTE:

IMM ECM location for RHD model is symmetrically opposite.

General Description

SECURITY AND LOCKS

5. KEYLESS ENTRY SYSTEM



- (1) Double lock module (with double lock)
- (2) Keyless entry control module (RHD model)

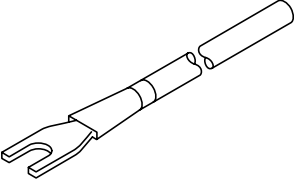
- (3) Rear gate latch
- (4) Door switch

- (5) Keyless entry control module (LHD model)

B: CAUTION

- Before disassembling or reassembling parts, always disconnect the ground cable from battery. When repairing radio, control module, etc. which are provided with memory functions, record the memory contents before disconnecting the ground cable from battery. Otherwise, these contents are cancelled upon disconnection.
- Reassemble parts in the reverse order of disassembly procedure unless otherwise indicated.
- Adjust parts to 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 TOOLS**

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-925580000	925580000	PULLER	Used for removing trim clip

2. GENERAL TOOLS

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.
Drill	Used for replacing ignition key lock.

Door Lock Control System

SECURITY AND LOCKS

2. Door Lock Control System

A: WIRING DIAGRAM

1. DOOR LOCK CONTROL

<Ref. to WI-260, 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-11, CHECK FUSE, INSPECTION, Door Lock Control System.>
	2. Check the power supply and ground circuit for keyless entry control module (without double lock) or double lock module (with double lock).	<Ref. to SL-11, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Door Lock Control System.>
	3. Check the door lock switch and the circuit.	<Ref. to SL-12, CHECK DOOR LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
	4. Check the door lock actuator and the circuit.	<Ref. to SL-13, 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-12, 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-13, CHECK DOOR LOCK ACTUATOR AND CIRCUIT, INSPECTION, Door Lock Control System.>
The key cylinder lock switch does not operate. (with double lock)	Check the key cylinder lock switch and circuit.	<Ref. to SL-14, CHECK KEY CYLINDER LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
The double lock does not operate. (with double lock)	Check the door lock actuator (double lock) and circuit.	<Ref. to SL-14, CHECK DOOR LOCK ACTUATOR (DOUBLE LOCK) AND CIRCUIT, INSPECTION, Door Lock Control System.>

Door Lock Control System

SECURITY AND LOCKS

2. CHECK FUSE

Step	Check	Yes	No
1 CHECK FUSE. Remove and visually check the fuse No. 2 (in the main fuse box) and No. 3 (in the fuse 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-11, 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 keyless entry control module or double lock module harness connector. 2) Measure the voltage between the harness connector terminal and chassis ground. Connector & terminal Without double lock: (B176) No. 5, 16 (+) — Chassis ground (-): With double lock: (B324) No. 7, 8 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open circuits or shorts between the keyless entry control module or double lock module and the fuse.
2 CHECK GROUND CIRCUIT. Measure the resistance between the harness connector terminal and chassis ground. Connector & terminal Without double lock: (B176) No. 6, 14 — Chassis ground: With double lock: (B324) No. 9 — Chassis ground:	Is the resistance less than 10 Ω ?	The power supply and ground circuit is OK.	Repair the harness.

Door Lock Control System

SECURITY AND LOCKS

4. CHECK DOOR LOCK SWITCH AND CIRCUIT

	Step	Check	Yes	No
1	CHECK DOOR LOCK SWITCH CIRCUIT. 1) Disconnect the keyless entry control module or double lock module harness connector. 2) Measure the resistance between the harness connector terminal and chassis ground when moving the door lock switch to LOCK. Connector & terminal Without double lock: (B176) No. 10 — Chassis ground: With double lock: (B325) No. 7 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 2.	Go to step 3.
2	CHECK DOOR LOCK SWITCH CIRCUIT. Measure the resistance between the harness connector terminal and chassis ground when the door lock switch is moved to UNLOCK. Connector & terminal Without double lock: (B176) No. 8 — Chassis ground: With double lock: (B325) No. 4 — Chassis ground:	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. Connector & terminal LHD model: (D7) No. 5 — No. 9: RHD model: (D7) No. 1 — No. 15:	Is the resistance less than 1 Ω ?	Go to step 4.	Replace the door lock switch.
4	CHECK DOOR LOCK SWITCH. Measure the resistance between the door lock switch terminals when moving the door lock switch to UNLOCK. Connector & terminal LHD model: (D7) No. 5 — No. 8: RHD model: (D7) No. 1 — No. 16:	Is the resistance less than 1 Ω ?	Check the harness for open circuits or shorts between the keyless entry control module or double lock module and the door lock switch.	Replace the door lock switch.

5. CHECK DOOR LOCK ACTUATOR AND CIRCUIT

Step	Check	Yes	No
1 CHECK OUTPUT SIGNAL. Measure the voltage between the harness connector terminal of keyless entry control module or double lock module and chassis ground when moving the door lock switch to LOCK. <i>Connector & terminal</i> <i>Without double lock:</i> <i>(B176) No. 18 (+) — Chassis ground (-):</i> <i>With double lock:</i> <i>(B324) No. 3 (+) — Chassis ground (-):</i>	Is the voltage more than 10 V?	Go to step 2.	Replace the keyless entry control module or double lock module.
2 CHECK OUTPUT SIGNAL. Measure the voltage between the harness connector terminal of keyless entry control module or double lock module and chassis ground when moving the door lock switch to UNLOCK. <i>Connector & terminal</i> <i>Without double lock:</i> <i>(B176) No. 17 (+) — Chassis ground (-):</i> <i>With double lock:</i> <i>(B324) No. 5 (+) — Chassis ground (-):</i>	Is the voltage more than 10 V?	Go to step 3.	Replace the keyless entry control module or double lock module.
3 CHECK DOOR LOCK ACTUATOR. Check the door lock actuator. Front door lock actuator: <Ref. to SL-26, Front Door Lock Actuator.> Rear door lock actuator: <Ref. to SL-30, Rear Door Lock Actuator.> Rear gate latch lock actuator: <Ref. to SL-33, Rear Gate Latch Lock Actuator.>	Is the door lock actuator OK?	Check the harness for open circuits or shorts between the keyless entry control module or double lock module and the door lock actuator.	Replace the door lock actuator.

Door Lock Control System

SECURITY AND LOCKS

6. CHECK KEY CYLINDER LOCK SWITCH AND CIRCUIT

Step	Check	Yes	No
1 CHECK KEY CYLINDER LOCK SWITCH CIRCUIT. 1) Disconnect the double lock module harness connector. 2) Measure the resistance between harness connector terminal and chassis ground when turning the key cylinder lock switch to lock position. Connector & terminal (B325) No. 3 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 2.	Go to step 3.
2 CHECK KEY CYLINDER LOCK SWITCH CIRCUIT. Measure the resistance between harness connector terminal and chassis ground when turning the key cylinder lock switch to unlock position. Connector & terminal (B325) No. 2 — Chassis ground:	Is the resistance less than 10 Ω ?	Key cylinder lock switch is OK.	Go to step 3.
3 CHECK KEY CYLINDER LOCK SWITCH. 1) Disconnect the key cylinder lock switch connector. 2) Measure the resistance between key cylinder lock switch terminals when turning the key cylinder lock switch to lock position. Terminals No. 3 — No. 2	Is the resistance less than 1 Ω ?	Go to step 4.	Replace the key cylinder lock switch.
4 CHECK KEY CYLINDER LOCK SWITCH. Measure the resistance between key cylinder lock switch terminals when turning the key cylinder lock switch to unlock position. Terminals No. 2 — No. 1	Is the resistance less than 1 Ω ?	Check the harness for open or short circuits between double lock module and key cylinder lock switch.	Replace the key cylinder lock switch.

7. CHECK DOOR LOCK ACTUATOR (DOUBLE LOCK) AND CIRCUIT

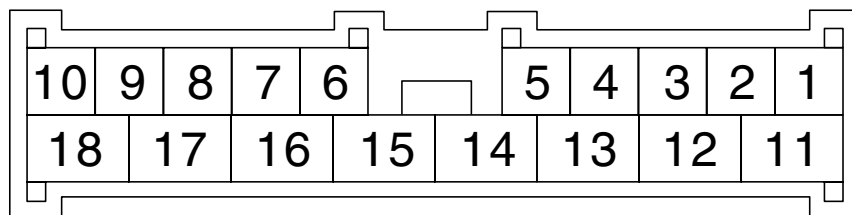
Step	Check	Yes	No
1 CHECK OUTPUT SIGNAL. Measure the resistance between double lock module harness connector terminal and chassis ground when turning the key cylinder lock switch to lock position. Connector & terminal (B324) No. 3 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Replace the double lock module.
2 CHECK OUTPUT SIGNAL. Measure the resistance between double lock module harness connector terminal and chassis ground when turning the key cylinder lock switch to unlock position. Connector & terminal (B324) No. 6 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Replace the double lock module.
3 CHECK DOOR LOCK ACTUATOR. Check door lock actuator. Front door lock actuator: <Ref. to SL-26, Front Door Lock Actuator.> Rear door lock actuator: <Ref. to SL-30, Rear Door Lock Actuator.>	Is the door lock actuator normal?	Check the harness for open or short circuits between double lock module and door lock actuator.	Replace the door lock actuator.

3. Keyless Entry System

A: WIRING DIAGRAM

<Ref. to WI-260, WIRING DIAGRAM, Keyless Entry System.>

B: ELECTRICAL SPECIFICATION



SL-00036

Content	Terminal No.	Measuring condition
Key warning switch	1 (INPUT)	Battery voltage is present when inserting the key into ignition switch.
Registration connector	2 (INPUT)	0 V is present when connecting the registration connector.
Door switch	3 (INPUT)	0 V is present when any door is open.
Power supply	5	Battery voltage is constantly present.
Ground	6	0 V is constantly present.
Empty	7	—
Door lock switch (Unlock)	8 (INPUT)	0 V is present when the door lock switch is turned to unlock position.
Empty	9	—
Door lock switch (Lock)	10 (INPUT)	0 V is present when the door lock switch is turned to lock position.
Room light/Ignition switch illumination	11 (OUTPUT)	0 V is present when pressing the transmitter OPEN button. 0 V is present when any door is open.
Turn signal light (Left)	12 (OUTPUT)	Battery voltage is present when pressing the transmitter OPEN or LOCK button.
Turn signal light (Right)	13 (OUTPUT)	Battery voltage is present when pressing the transmitter OPEN or LOCK button.
Ground	14	0 V is constantly present.
Power supply (Hazard light)	15	Battery voltage is constantly present.
Power supply	16	Battery voltage is constantly present.
Door, rear gate lock actuator (without double lock) or double lock module (with double lock)(unlock)	17 (OUTPUT)	Battery voltage is present when pressing the transmitter OPEN button.
Door, rear gate lock actuator (without double lock) or double lock module (with double lock)(lock)	18 (OUTPUT)	Battery voltage is present when pressing the transmitter LOCK button.

Keyless Entry System

SECURITY AND LOCKS

C: INSPECTION

1. SYMPTOM CHART

Symptom	Repair order	Reference
None of the functions of keyless entry system operate.	1. Check the transmitter battery.	<Ref. to SL-17, CHECK TRANSMITTER BATTERY, INSPECTION, Keyless Entry System.>
	2. Check the fuse.	<Ref. to SL-17, CHECK FUSE, INSPECTION, Keyless Entry System.>
	3. Check the keyless entry control module power supply and ground circuit.	<Ref. to SL-18, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Keyless Entry System.>
	4. Check the registration connector circuit.	<Ref. to SL-18, CHECK REGISTRATION CONNECTOR CIRCUIT, INSPECTION, Keyless Entry System.>
	5. Check the key warning switch.	<Ref. to SL-20, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	6. Check the door switch.	<Ref. to SL-19, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	7. Replace the keyless entry control module.	<Ref. to SL-42, Keyless Entry Control Module.>
The transmitter cannot be registered.	1. Check the transmitter battery.	<Ref. to SL-17, CHECK TRANSMITTER BATTERY, INSPECTION, Keyless Entry System.>
	2. Check the registration connector circuit.	<Ref. to SL-18, CHECK REGISTRATION CONNECTOR CIRCUIT, INSPECTION, Keyless Entry System.>
	3. Replace the keyless entry control module.	<Ref. to SL-42, Keyless Entry Control Module.>
The door lock or unlock does not operate. NOTE: If the door lock control system does not operate when using the door lock switch, check the door lock control system. <Ref. to SL-10, INSPECTION, Door Lock Control System.>	1. Check the transmitter battery.	<Ref. to SL-17, CHECK TRANSMITTER BATTERY, INSPECTION, Keyless Entry System.>
	2. Check the key warning switch.	<Ref. to SL-20, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	3. Check the door switch.	<Ref. to SL-19, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	4. Check output signal to double lock module. (with double lock)	<Ref. to SL-22, CHECK OUTPUT SIGNAL TO DOUBLE LOCK MODULE, INSPECTION, Keyless Entry System.>
	5. Replace the keyless entry control module.	<Ref. to SL-42, Keyless Entry Control Module.>
The hazard light does not operate.	1. Check the hazard light operation.	<Ref. to SL-21, CHECK HAZARD LIGHT OPERATION, INSPECTION, Keyless Entry System.>
	2. Replace the keyless entry control module.	<Ref. to SL-42, Keyless Entry Control Module.>

Keyless Entry System

SECURITY AND LOCKS

Symptom	Repair order	Reference
The room light and ignition switch illumination operation does not activate.	1. Check the room light operation.	<Ref. to SL-21, CHECK ROOM LIGHT OPERATION, INSPECTION, Keyless Entry System.>
	2. Check the ignition switch illumination circuit.	<Ref. to SL-22, CHECK IGNITION SWITCH ILLUMINATION CIRCUIT, INSPECTION, Keyless Entry System.>
	3. Replace the keyless entry control module. (without double lock)	<Ref. to SL-42, Keyless Entry Control Module.>
	4. Replace the double lock module. (with double lock)	<Ref. to SL-43, Double Lock Module.>

2. CHECK TRANSMITTER BATTERY

Step	Check	Yes	No
1 CHECK TRANSMITTER BATTERY. 1) Remove the battery from transmitter. <Ref. to SL-44, REMOVAL, Keyless Transmitter.> 2) Check the battery voltage. <Ref. to SL-44, INSPECTION, Keyless Transmitter.>	Is the voltage more than 2.5 V?	Further inspection is necessary, refer to "SYMPTOM CHART". <Ref. to SL-16, SYMPTOM CHART, INSPECTION, Keyless Entry System.>	Replace the transmitter battery.

3. CHECK FUSE

Step	Check	Yes	No
1 CHECK FUSE. Remove and visually check the fuse No. 2 (in the main fuse box), No. 3 (in the fuse and relay box) and SBF-6 (in the 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-18, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Keyless Entry System.>

Keyless Entry System

SECURITY AND LOCKS

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Step	Check	Yes	No
1 CHECK POWER SUPPLY. 1) Disconnect the keyless entry control module harness connector. 2) Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (B176) No. 5, No. 16 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open circuits or shorts between keyless entry control module and fuse.
2 CHECK GROUND CIRCUIT. Measure the resistance between harness connector terminal and chassis ground. Connector & terminal (B176) No. 6, No. 14 — Chassis ground:	Is the resistance less than 10 Ω ?	The power supply and ground circuit are OK.	Repair the harness.

5. CHECK REGISTRATION CONNECTOR CIRCUIT

Step	Check	Yes	No
1 REGISTRATION CONNECTOR INPUT VOLTAGE INSPECTION 1) Disconnect the registration connector. 2) Measure the voltage between keyless entry control module harness connector and chassis ground. Connector & terminal (B176) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Repair the harness, and/or connector.
2 REGISTRATION CONNECTOR INPUT VOLTAGE INSPECTION 1) Connect the registration connector. 2) Measure the voltage between keyless entry control module harness connector and chassis ground. Connector & terminal (B176) No. 2 (+) — Chassis ground (-):	Is the voltage 0 V?	Registration connector circuit is OK.	Repair the harness, and/or connector.

6. CHECK DOOR SWITCH

Step	Check	Yes	No
1 CHECK DOOR SWITCH CIRCUIT. Measure the voltage between keyless entry control module harness connector terminal and chassis ground. Connector & terminal Without double lock: <i>(B176) No. 3 (+) — Chassis ground (-):</i> With double lock: <i>(B176) No. 3 (+) — Chassis ground (-):</i> <i>(B325) No. 17 (+) — Chassis ground (-):</i>	Is the voltage 0 V when any one of doors or rear gate is opened?	Go to step 2.	Go to step 3.
2 CHECK DOOR SWITCH CIRCUIT. Measure the voltage between keyless entry control module harness connector terminal and chassis ground. Connector & terminal Without double lock: <i>(B176) No. 3 (+) — Chassis ground (-):</i> With double lock <i>(B176) No. 3 (+) — Chassis ground (-):</i> <i>(B325) No. 17 (+) — Chassis ground (-):</i>	Is the voltage more than 10 V when all doors and rear gate are closed?	The door switch is OK.	Go to step 3.
3 CHECK DOOR SWITCH. 1) Disconnect the door switch harness connector. 2) Measure the resistance between door switch terminals. Terminal <i>Door switch No. 1 — No. 3:</i> <i>Rear gate latch switch No. 1 — No. 2:</i>	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 door switch terminals. Terminal <i>Door switch No. 1 — No. 3:</i> <i>Rear gate latch switch No. 1 — No. 2:</i>	Is the resistance less than 1 Ω when door switch is released?	Check the following: • Without double lock: Check the harness for open circuits or shorts between keyless entry control module and door switch. • With double lock: Check the harness for open circuits or short between keyless entry control module and door switch, between double lock module and door switch, and between check connector and door switch.	Replace the door switch.

Keyless Entry System

SECURITY AND LOCKS

7. CHECK KEY WARNING SWITCH

	Step	Check	Yes	No
1	CHECK FUSE. Remove and visually check the fuse No. 6 (in the main fuse box).	Is the fuse blown out?	Replace the fuse with a new one.	Go to step 2.
2	CHECK KEY WARNING SWITCH CIRCUIT. 1) Disconnect the keyless entry control module harness connector. 2) Insert the key into ignition switch. (LOCK position) 3) Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (B176) No. 1 (+) — 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 ignition switch. 2) Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (B176) No. 1 (+) — Chassis ground (-):	Is the voltage 0 V?	The key warning switch is OK.	Go to step 4.
4	CHECK KEY WARNING SWITCH. 1) Disconnect the key warning switch harness connector. 2) Insert the key into ignition switch. (LOCK position) 3) Measure the resistance between key warning switch terminals. Terminal No. 1 — No. 2:	Is the resistance less than 1 Ω ?	Go to step 5.	Replace the key warning switch.
5	CHECK KEY WARNING SWITCH. 1) Remove the key from ignition switch. 2) Measure the resistance between key warning switch terminals. Terminal No. 1 — No. 2:	Is the resistance more than 1 M Ω ?	Check the following: • Harness for open circuits or shorts between the key warning switch and fuse • Harness for open circuits and shorts between the keyless entry control module and key warning switch	Replace the key warning switch.

8. CHECK HAZARD LIGHT OPERATION

Step	Check	Yes	No
1 CHECK HAZARD LIGHT OPERATION. Make sure the hazard light blinks when hazard switch is turned to ON.	Does the hazard light blink?	Go to step 2.	Check the hazard light circuit.
2 CHECK OUTPUT SIGNAL. 1) Remove the key from ignition switch. 2) Close all doors and rear gate. 3) Measure the voltage between keyless entry control module harness connector terminal and chassis ground when LOCK or OPEN button of transmitter is pressed. Connector & terminal (B176) No. 12, No. 13 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Check the harness for open or short between keyless entry control module and turn signal lights.	Replace the keyless entry control module.

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 to ON.	Does the room light illuminate?	Go to step 2.	Check the room light circuit.
2 CHECK HARNESS BETWEEN ROOM LIGHT AND KEYLESS ENTRY CONTROL MODULE (WITHOUT DOUBLE LOCK) OR DOUBLE LOCK MODULE (WITH DOUBLE LOCK). 1) Disconnect the keyless entry control module or double lock module harness connector and room light harness connector. 2) Measure the resistance between keyless entry control module or double lock module harness connector terminal and room light harness connector terminal. Connector & terminal Without double lock: (B176) No. 11 — (R52) No. 2: With double lock: (B325) No. 1 — (R52) No. 2: (B79) No. 13 — (R52) No. 2:	Is the resistance less than 10 Ω ?	The room light operation circuit is OK.	Check the following: - Without double lock: Check the harness for open circuit or short between keyless entry control module and room light. - With double lock: Check the harness for open circuit or short between double lock module and room light, and between check connector and room light.

Keyless Entry System

SECURITY AND LOCKS

10.CHECK IGNITION SWITCH ILLUMINATION CIRCUIT

Step	Check	Yes	No
1 CHECK IGNITION SWITCH ILLUMINATION POWER SUPPLY. 1) Disconnect the ignition switch illumination harness connector. 2) Measure the voltage between ignition switch illumination harness connector terminal and chassis ground. Connector & terminal (B370) No. 3 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open circuit or shorts between ignition switch illumination and fuse.
2 CHECK HARNESS BETWEEN IGNITION SWITCH ILLUMINATION AND KEYLESS ENTRY CONTROL MODULE (WITHOUT DOUBLE LOCK) OR DOUBLE LOCK MODULE (WITH DOUBLE LOCK). 1) Disconnect the keyless entry control module or double lock module harness connector. 2) Measure the resistance between keyless entry or double lock module harness connector terminal and ignition switch illumination harness connector. Connector & terminal Without double lock: (B176) No. 11 — (B370) No. 4: With double lock: (B325) No. 1 — (B370) No. 4: (B79) No. 13 — (B370) No. 4:	Is the resistance less than 10 Ω ?	Check the ignition switch illumination. If NG, replace the ignition switch illumination.	Check the following: - Without double lock: Check the harness for open circuit or short between keyless entry control module and ignition switch illumination. - With double lock: Check the harness for open circuit or short between double lock module and ignition switch illumination, and between check connector and ignition switch illumination.

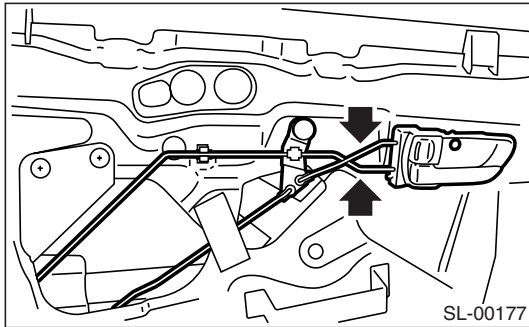
11.CHECK OUTPUT SIGNAL TO DOUBLE LOCK MODULE

Step	Check	Yes	No
1 CHECK OUTPUT SIGNAL. Measure the voltage between the keyless entry control module harness connector terminal and chassis ground when OPEN button of transmitter is pressed. Connector & terminal (B176) No. 17 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Replace the keyless entry control module.
2 CHECK OUTPUT SIGNAL. Measure the voltage between the keyless entry control module harness connector terminal and chassis ground when LOCK button of transmitter is pressed. Connector & terminal (B176) No. 18 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Replace the double lock module.	Check the harness for open circuit or shorts between the keyless entry control module and double lock module.

4. Front Inner Remote

A: REMOVAL

- 1) Remove the door trim. <Ref. to EI-40, 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

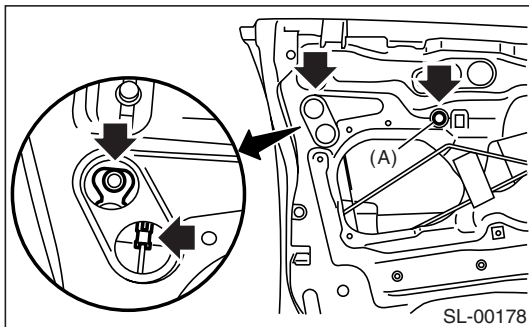
- 1) Make sure the rod is not deformed.
- 2) Make sure the lever and rod work smoothly.

5. Front Outer Handle

A: REMOVAL

1. MODEL WITHOUT DOUBLE LOCK

- 1) Remove the door trim. <Ref. to EI-40, 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.



2. MODEL WITH DOUBLE LOCK

- 1) Remove the door trim. <Ref. to EI-40, REMOVAL, Front Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-17, REMOVAL, Front Sealing Cover.>
- 3) Remove the front door glass. <Ref. to GW-13, REMOVAL, Front Door Glass.>
- 4) Remove the key cylinder. <Ref. to SL-39, FRONT DOOR, REPLACEMENT, Key Lock Cylinders.>
- 5) Remove the front side bolt, and then 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.

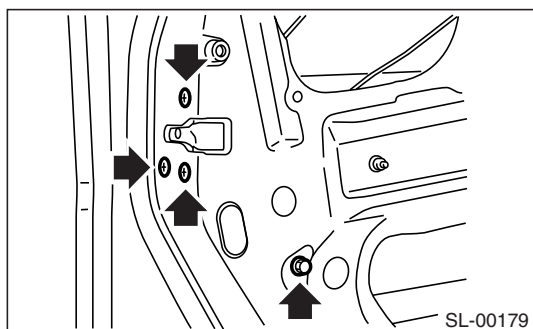
C: INSPECTION

- 1) Make sure the rod is not deformed.
- 2) Make sure the lever and rod work smoothly.

6. 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-40, 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-23, REMOVAL, Front Inner Remote.>
- 5) Remove three screws and a bolt.



- 6) Remove the front door latch and door lock actuator 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.

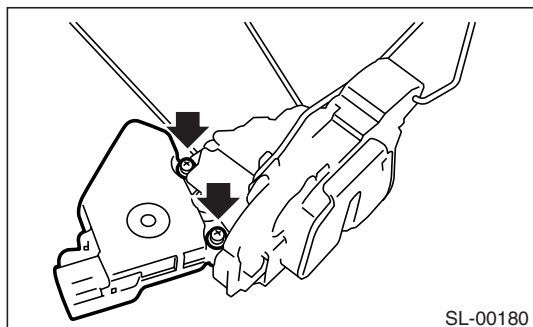
Front Door Lock Actuator

SECURITY AND LOCKS

7. Front Door Lock Actuator

A: REMOVAL

- 1) Remove the front door latch and door lock actuator assembly. <Ref. to SL-25, REMOVAL, Front Door Latch and Door Lock Actuator Assembly.>
- 2) Remove two screws to remove the front door lock actuator.



B: INSTALLATION

Install in the reverse order of removal.

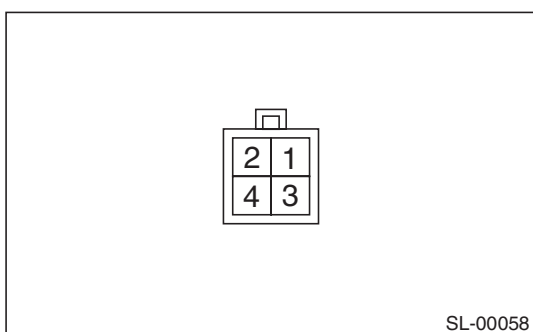
NOTE:

Make sure the lock works properly after installation.

C: INSPECTION

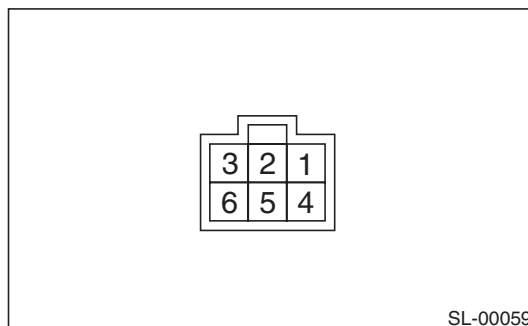
- 1) Disconnect the door lock actuator harness connector.
 - 2) Connect the battery to door lock actuator terminals.
- If NG, replace the door lock actuator.

1. WITHOUT DOUBLE LOCK



Terminal No.	Actuator operation
No. 3 (+) and No. 1 (-)	Unlocked → Locked
No. 1 (+) and No. 3 (-)	Locked → Unlocked

2. WITH DOUBLE LOCK



• DOOR ACTUATOR RH

Terminal No.	Actuator operation
No. 1 (+) and No. 4 (-)	Unlocked → Locked
No. 4 (+) and No. 1 (-)	Locked → Unlocked
No. 6 (+) and No. 3 (-)	Double lock released → Double lock set
No. 3 (+) and No. 6 (-)	Double lock set → Double lock released

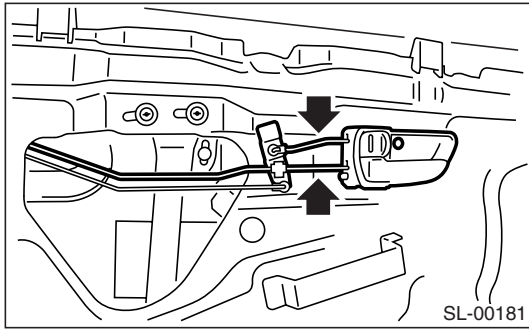
• DOOR ACTUATOR LH

Terminal No.	Actuator operation
No. 6 (+) and No. 3 (-)	Unlocked → Locked
No. 3 (+) and No. 6 (-)	Locked → Unlocked
No. 1 (+) and No. 4 (-)	Double lock released → Double lock set
No. 4 (+) and No. 1 (-)	Double lock set → Double lock released

8. Rear Inner Remote

A: REMOVAL

- 1) Remove the rear door trim. <Ref. to EI-41, 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.

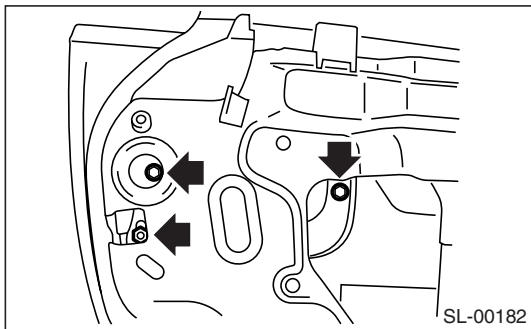
C: INSPECTION

- 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.

9. Rear Outer Handle

A: REMOVAL

- 1) Remove the rear door trim. <Ref. to EI-41, 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-27, REMOVAL, Rear Inner Remote.>
- 4) Remove the rear door latch assembly. <Ref. to SL-29, REMOVAL, Rear Door Latch and Door Lock Actuator Assembly.>
- 5) Remove 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.

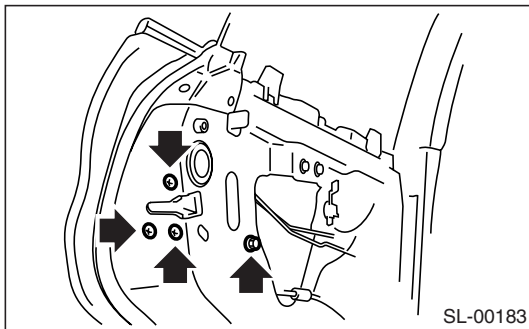
C: INSPECTION

- 1) Make sure the rod is not deformed.
- 2) Make sure the lever and rod work smoothly.

10. Rear Door Latch and Door Lock Actuator Assembly

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear door trim. <Ref. to EI-41, 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-27, REMOVAL, Rear Inner Remote.>
- 5) Remove three screws and a bolt.



- 6) Disconnect the connector, and then remove the rear door latch and door lock actuator 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.

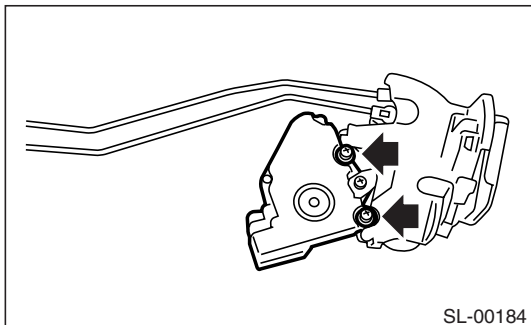
Rear Door Lock Actuator

SECURITY AND LOCKS

11. Rear Door Lock Actuator

A: REMOVAL

- 1) Remove the rear door latch and door lock actuator assembly. <Ref. to SL-29, REMOVAL, Rear Door Latch and Door Lock Actuator Assembly.>
- 2) Remove two screws to remove rear door lock actuator.



B: INSTALLATION

Install in the reverse order of removal.

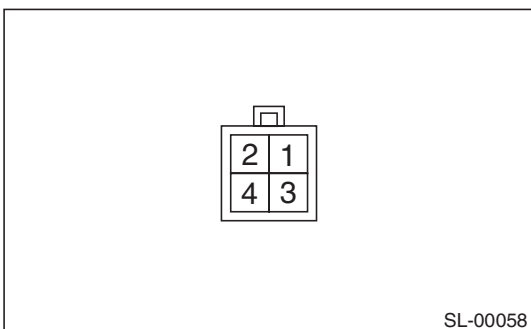
NOTE:

Make sure the lock works properly after installation.

C: INSPECTION

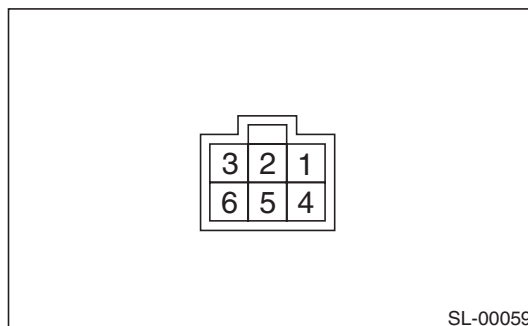
- 1) Disconnect the door lock actuator harness connector.
 - 2) Connect the battery to door lock actuator terminals.
- If NG, replace the door lock actuator.

1. WITHOUT DOUBLE LOCK



Terminal No.	Actuator operation
No. 3 (+) and No. 1 (-)	Unlocked → Locked
No. 1 (+) and No. 3 (-)	Locked → Unlocked

2. WITH DOUBLE LOCK



• DOOR ACTUATOR RH

Terminal No.	Actuator operation
No. 1 (+) and No. 4 (-)	Unlocked → Locked
No. 4 (+) and No. 1 (-)	Locked → Unlocked
No. 6 (+) and No. 3 (-)	Double lock released → Double lock set
No. 3 (+) and No. 6 (-)	Double lock set → Double lock released

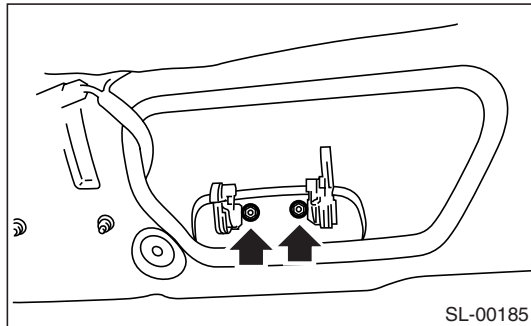
• DOOR ACTUATOR LH

Terminal No.	Actuator operation
No. 6 (+) and No. 3 (-)	Unlocked → Locked
No. 3 (+) and No. 6 (-)	Locked → Unlocked
No. 1 (+) and No. 4 (-)	Double lock released → Double lock set
No. 4 (+) and No. 1 (-)	Double lock set → Double lock released

12.Rear Gate Outer Handle

A: REMOVAL

- 1) Remove the rear gate trim. <Ref. to EI-55, REMOVAL, Rear Gate Trim.>
- 2) Remove the rear gate latch assembly. <Ref. to SL-32, REMOVAL, Rear Gate Latch Assembly.>
- 3) Remove 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.

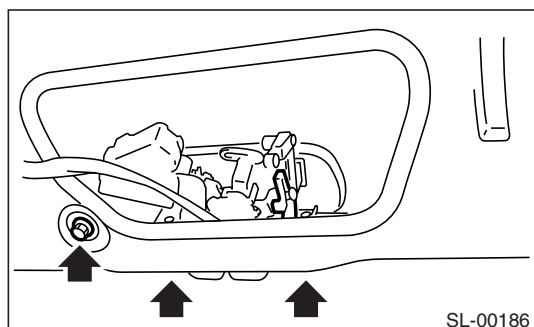
Rear Gate Latch Assembly

SECURITY AND LOCKS

13.Rear Gate Latch Assembly

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear gate trim. <Ref. to EI-55, 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.

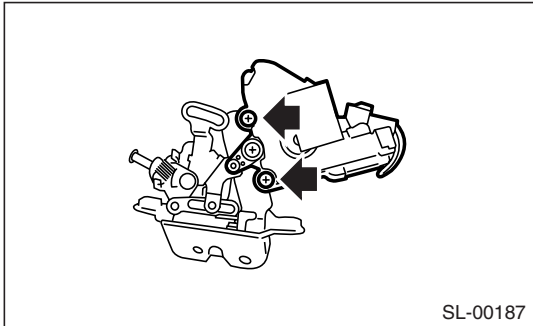
C: INSPECTION

- 1) Make sure the rod is not deformed.
- 2) Make sure the lever and rod work smoothly.

14.Rear Gate Latch Lock Actuator

A: REMOVAL

- 1) Remove the rear gate latch assembly. <Ref. to SL-32, REMOVAL, Rear Gate Latch Assembly.>
- 2) Remove two screws to remove the rear gate lock actuator.



SL-00187

B: INSTALLATION

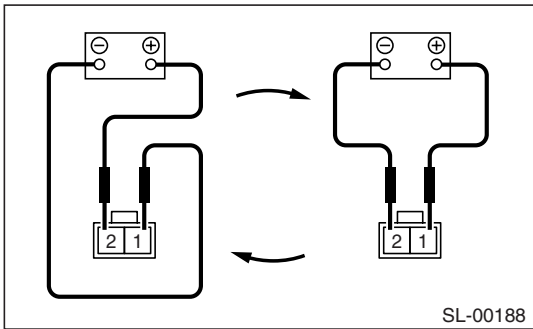
Install in the reverse order of removal.

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.



SL-00188

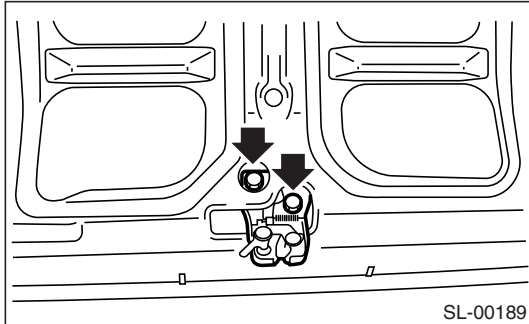
Terminal No.	Actuator operation
No. 1 (+) and No. 2 (-)	Unlocked → Locked
No. 2 (+) and No. 1 (-)	Locked → Unlocked

If NG, replace the rear gate latch lock actuator.

15. Trunk Lid Lock Assembly

A: REMOVAL

- 1) Remove the trunk lid key cylinder rod clamp.
- 2) Remove two bolts to remove the trunk lid lock assembly.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:

- Apply grease to the movable parts.
- Make sure the lock works properly after installation.

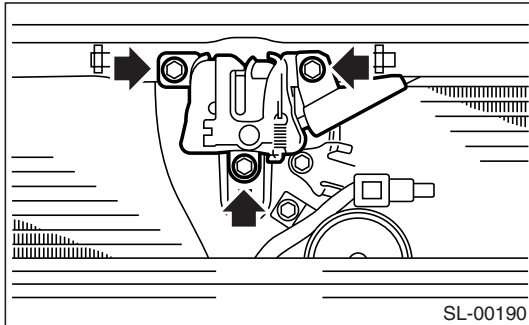
C: INSPECTION

- 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.

16. Front Hood Lock Assembly

A: REMOVAL

- 1) Open the hood.
- 2) Remove the bolts. Remove the hood lock assembly.
- 3) Remove the release cable from lock assembly.



B: INSTALLATION

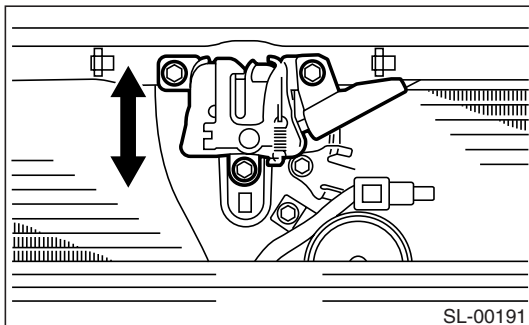
Install in the reverse order of removal.

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.

Remote Openers

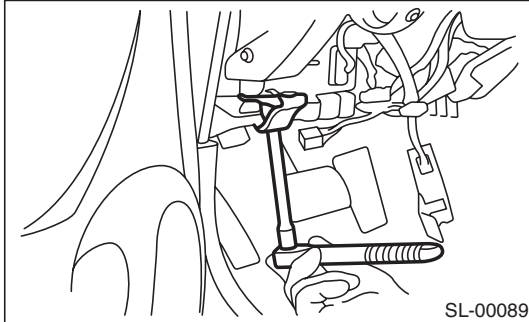
SECURITY AND LOCKS

17.Remote Openers

A: REMOVAL

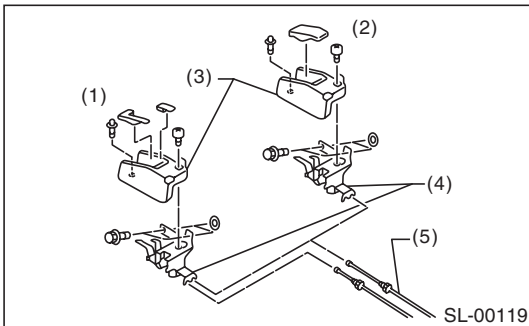
1. HOOD OPENER

- 1) Remove the release cable from hood lock.
- 2) Remove the bolt. Remove the opener lever.



2. TRUNK LID OPENER

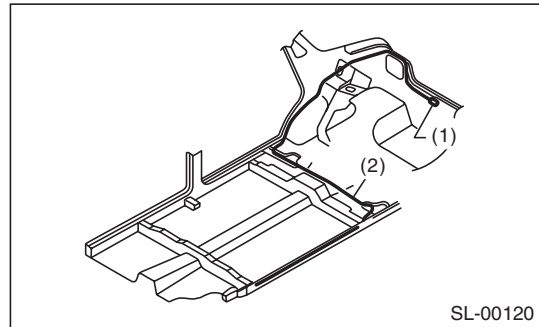
- 1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the center pillar lower trim, and for LHD model, remove the side sill cover on passenger side. Remove the rear pillar lower trim. Pull back the floor mat. Remove the clip holding the cable.
- 3) Remove the bolt. Remove the opener 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.

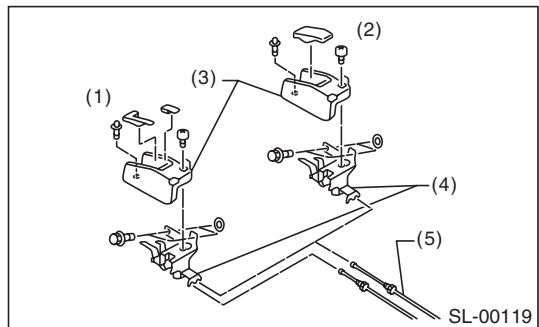
- 6) Remove the cable from striker.



- (1) Striker
- (2) Cable

3. FUEL FLAP OPENER

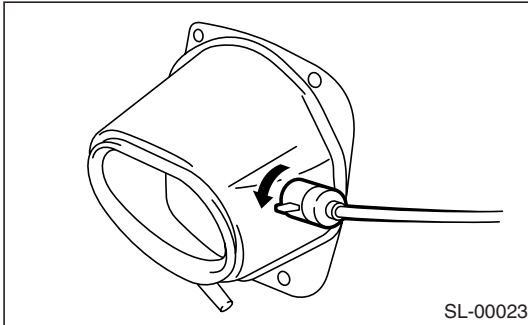
- 1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the center pillar lower trim, and for LHD model, remove the side sill cover on passenger side. Remove the rear pillar lower trim. Pull back the floor mat. Remove the clip holding the cable.
- 3) Remove the bolt. Remove the opener 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-51, 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 front hood, trunk lid and fuel flap open and close smoothly.

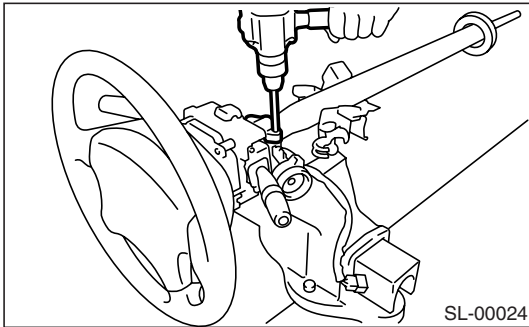
Ignition Key Lock

SECURITY AND LOCKS

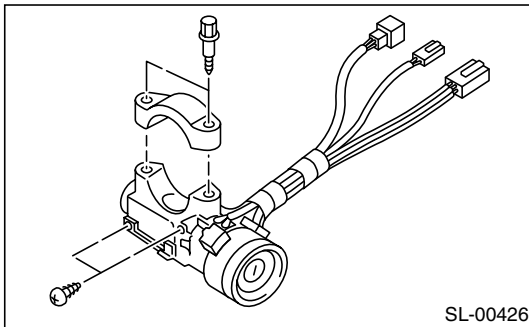
18. Ignition Key Lock

A: REPLACEMENT

- 1) Remove the ground cable from battery.
- 2) Remove the steering column. <Ref. to PS-31, 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.

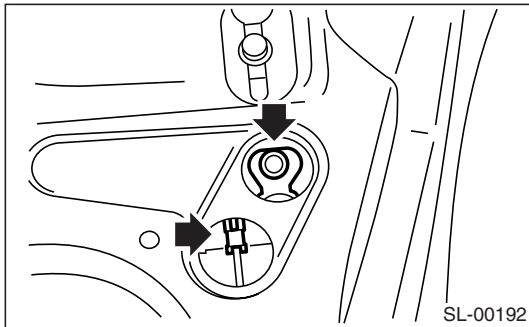
19. Key Lock Cylinders

A: REPLACEMENT

1. FRONT DOOR

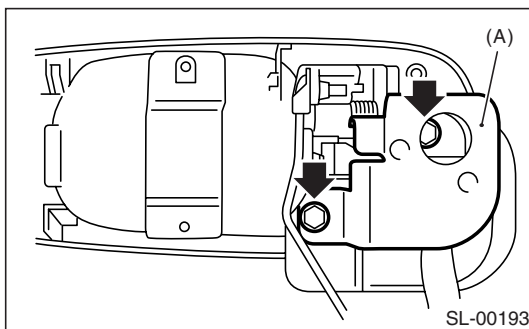
• Without double lock

- 1) Remove the door trim. <Ref. to EI-40, REMOVAL, Front Door Trim.>
- 2) Pull back the sealing cover. <Ref. to EB-17, REMOVAL, Front Sealing Cover.>
- 3) Move the front door glass downward.
- 4) Remove the rod clamp. Remove the bolt. Replace the key cylinder.

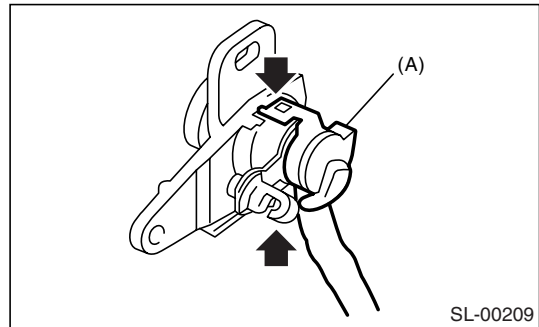


• With double lock

- 1) Remove the door trim. <Ref. to EI-40, REMOVAL, Front Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-17, REMOVAL, Front Sealing Cover.>
- 3) Remove the front door glass. <Ref. to GW-13, REMOVAL, Front Door Glass.>
- 4) Remove the rod clamp.
- 5) Remove two bolts, and then remove the key cylinder and outer handle cover (A).



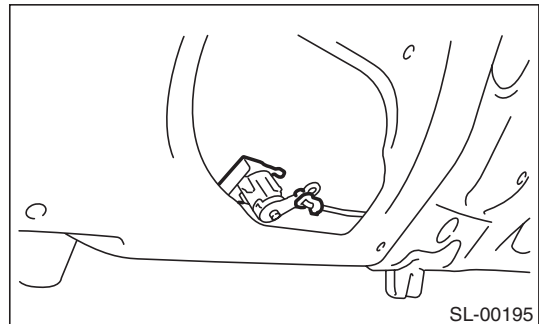
- 6) Remove the hooks (two), and then remove the key cylinder lock switch (A) to replace the key cylinder.



2. TRUNK LID

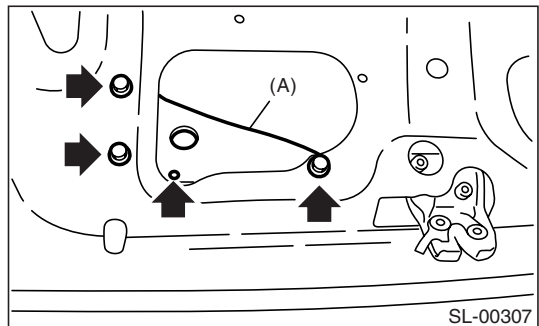
• Without double lock

Remove the rod clamp. Remove the lock plate. Replace the key cylinder.



• With double lock

- 1) Remove the four bolts, and remove the bracket (A).



- 2) Remove the rod clamp on key cylinder side.
- 3) Remove the stopper of key cylinder, and then replace the key cylinder.

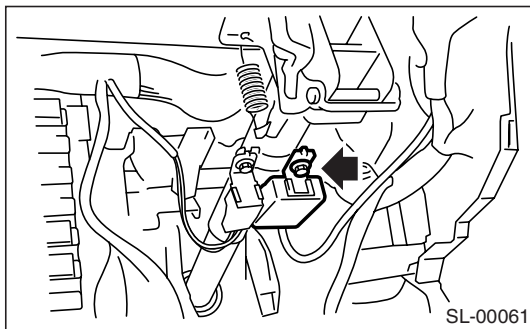
20. Immobilizer Control Module

A: REMOVAL

NOTE:

- The following positions for removal and installation are for LHD models. The positions for RHD models are symmetrically opposite.

- 1) Disconnect the ground cable from battery.
- 2) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Assembly.>
- 3) Disconnect the connector from immobilizer control module.
- 4) Remove the immobilizer control module.



B: INSTALLATION

Install in the reverse order of removal.

C: REPLACEMENT

NOTE:

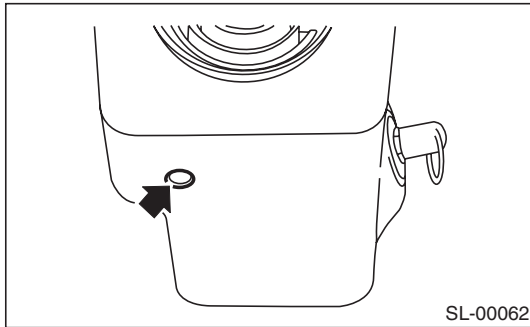
Prepare all the registered immobilizer key.

- 1) Prepare new immobilizer key, and make a registration of immobilizer. For detailed operation procedure, refer to "Immobilizer teaching operation manual".
- 2) Discard the immobilizer control module and immobilizer key which are originally installed to the vehicle.

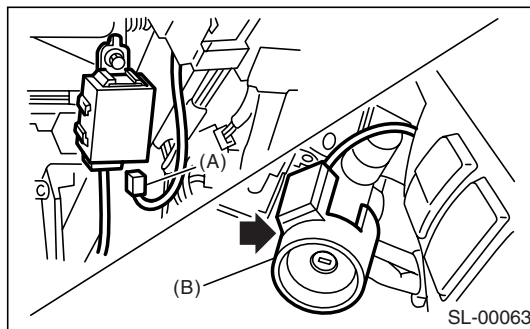
21. Immobilizer Antenna

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Assembly.>
- 3) Remove the screws, separate upper column cover and lower column cover.



- 4) Disconnect the immobilizer antenna connector (A) from immobilizer control module.
- 5) Remove the screw, and detach the immobilizer antenna (B).



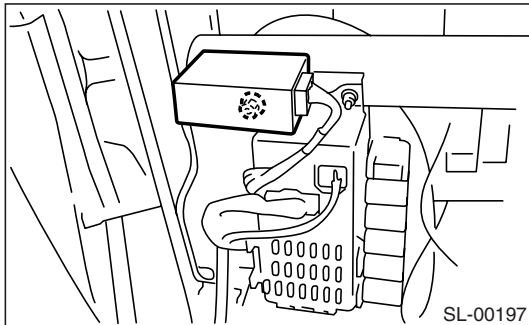
B: INSTALLATION

Install in the reverse order of removal.

22. Keyless Entry Control Module

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Assembly.>
- 3) Remove the nut, and then remove the keyless entry control module while disconnecting connector.



- 4) Disconnect the keyless entry control module and other electrical control module.

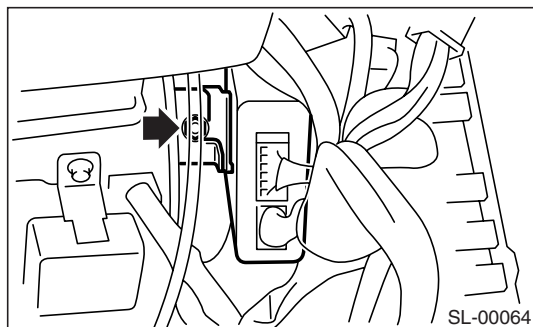
B: INSTALLATION

Install in the reverse order of removal.

23. Double Lock Module

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Assembly.>
- 3) Remove the nut, then remove the double lock module while disconnecting the connector.



B: INSTALLATION

Install in the reverse order of removal.

24.Keyless Transmitter

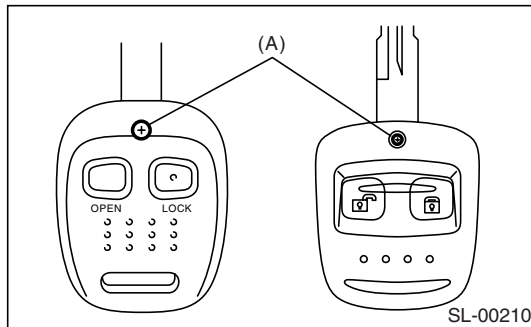
A: REMOVAL

1. TRANSMITTER BATTERY

Remove the screw (A) from transmitter, and then remove the battery.

NOTE:

To prevent static electricity damage to transmitter printed circuit board, touch the steel area of building with hand to discharge the static electricity carried on body or clothes before disassembling transmitter.



(A) Screw

B: INSTALLATION

1. TRANSMITTER BATTERY

Install in the reverse order of removal.

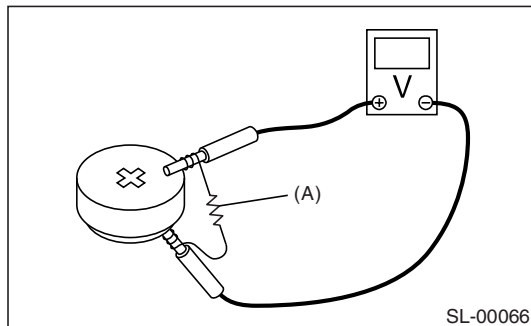
C: INSPECTION

1. TRANSMITTER BATTERY

Measure the voltage between battery (+) terminal and (-) terminal.

NOTE:

Battery discharge occurs during measurement. Complete the measurement within 5 seconds.



(A) Resistance 270 — 300 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. TRANSMITTER REGISTRATION

NOTE:

- A maximum of three transmitters can be registered for each individual vehicle.
- When replacing and adding the transmitter, registration to immobilizer system is also necessary.

1) Remove the side sill cover at driver's side, then connect the registration connectors at front pillar lower section.

2) Push the door lock switch at driver's side to UNLOCK, and then unlock the door lock.

3) Press any button of the transmitter twice to be registered, while pushing the door lock switch to UNLOCK. To make a registration of additional 2nd and 3rd keyless transmitters, press the button of each keyless transmitter twice with door lock switch pressed to unlock side.

4) The door lock will automatically lock and unlock in sequence. This indicates the completion of transmitter registration.

5) Disconnect the registration connectors after the completion of all registration operations. After confirming the operation of door lock using newly registered transmitter(s), reinstall the side sill cover at driver's side.

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

SR

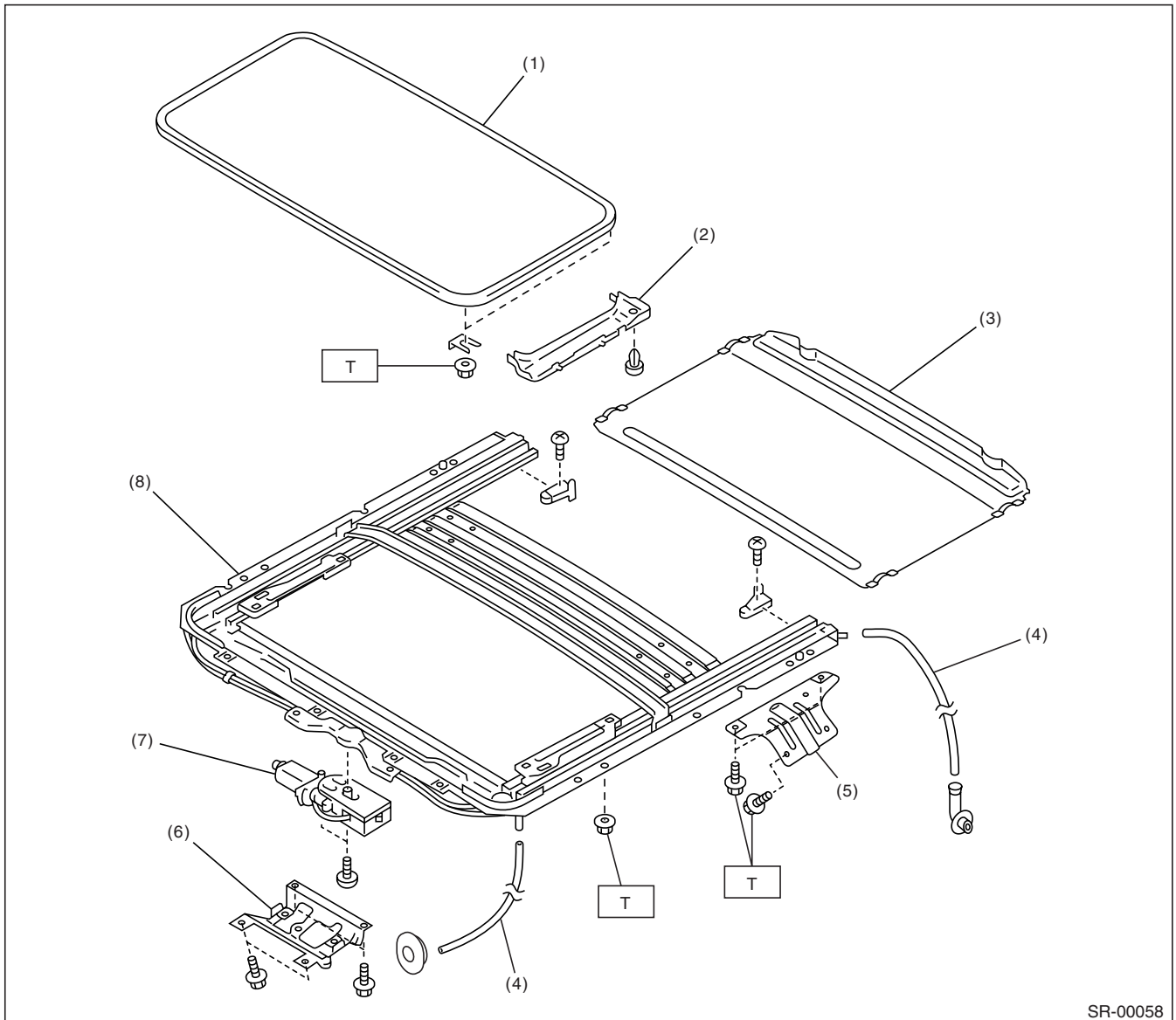
	Page
1. General Description	2
2. Sunroof Control System	4
3. Glass Lid	5
4. Sunroof Assembly	6
5. Sunroof Motor	8
6. Sunroof Switch	9

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) Sunroof motor |
| (4) Drain tube | (8) Frame ASSY |

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

General Description

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

B: CAUTION

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

C: PREPARATION TOOL

1. GENERAL TOOLS

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-259, 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 frame assembly seal and body for improper fit.
Booming noise, wind noise and other noise	(1) Check glass lid and roof panel for improper clearance. (2) Check sunshade and roof trim for improper clearance.
Abnormal motor noise	(1) Check 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.

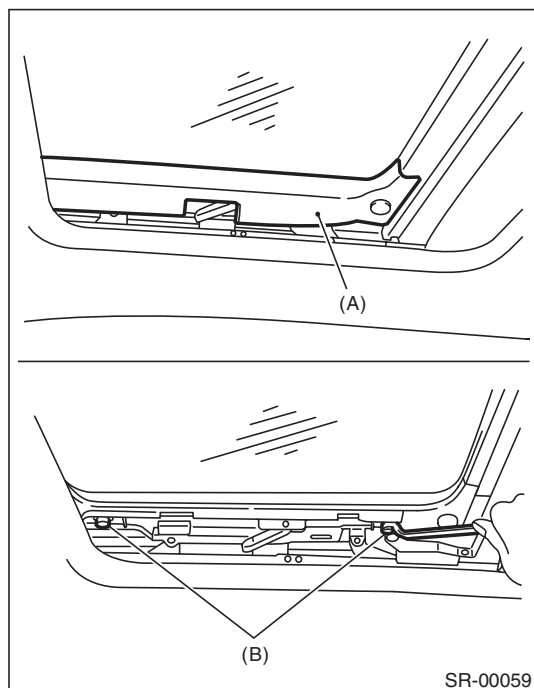
Glass Lid

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.

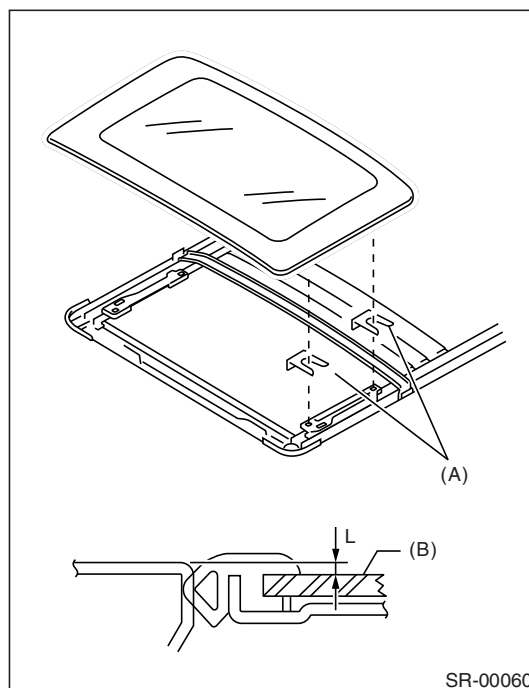
C: ADJUSTMENT

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 pieces) 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

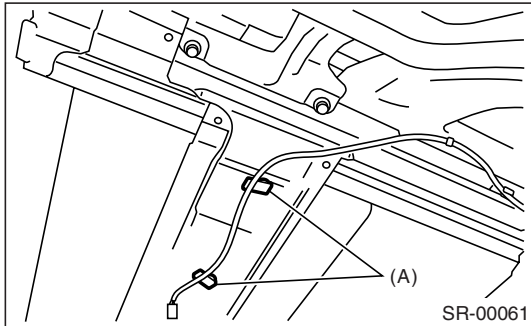
Sunroof Assembly

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

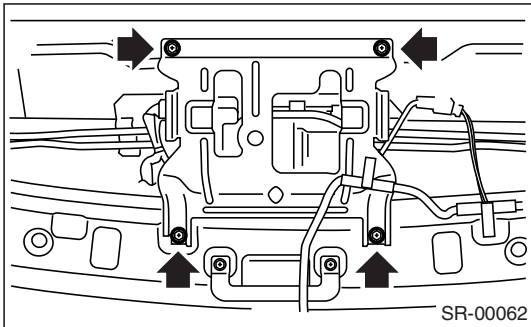
4. Sunroof Assembly

A: REMOVAL

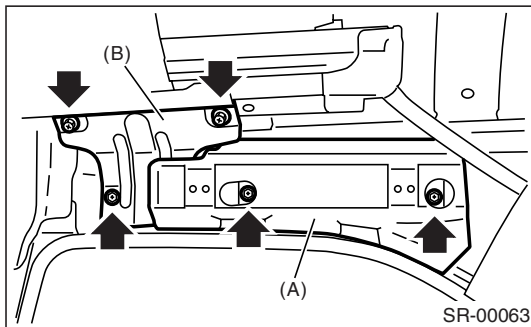
- 1) Disconnect the ground cable from battery.
- 2) Remove the roof trim. <Ref. to EI-53, REMOVAL, Roof Trim.>
- 3) Remove the glass lid. <Ref. to SR-5, REMOVAL, Glass Lid.>
- 4) Disconnect the drain tubes from frame assembly.
- 5) Remove the room lamp harness clip (A).



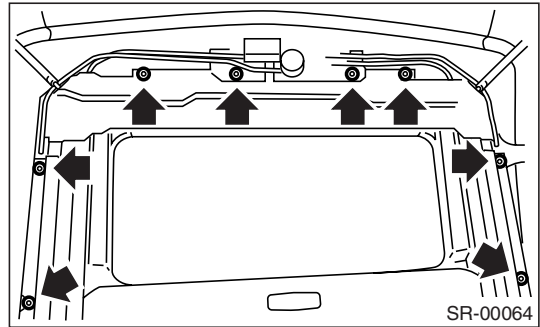
- 6) Disconnect the sunroof harness connector.
- 7) Remove the motor cover.



- 8) Remove the assist grip bracket (A) and sunroof bracket (B).



- 9) Remove the nuts then detach the frame assembly.



B: INSTALLATION

Install in the reverse order of removal.

CAUTION:

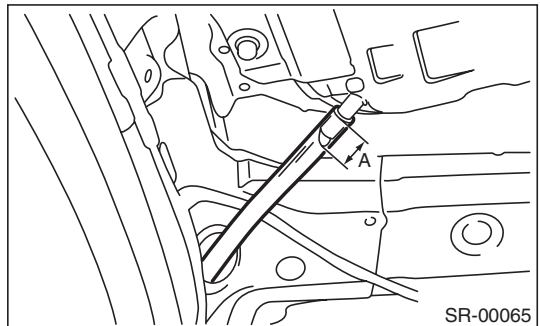
Be careful not to snag the harness.

NOTE:

- Make sure to connect the harness connector.
- When installing the drain tube, insert it securely onto drain pipe.

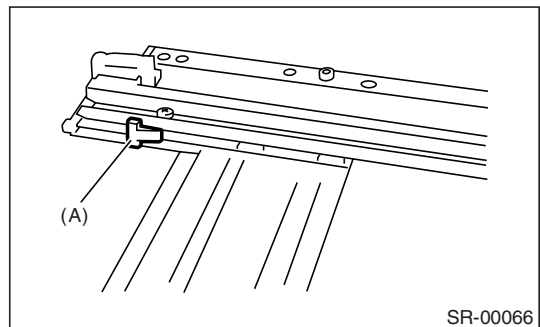
Length A:

15 mm (0.59 in) or more



C: DISASSEMBLY

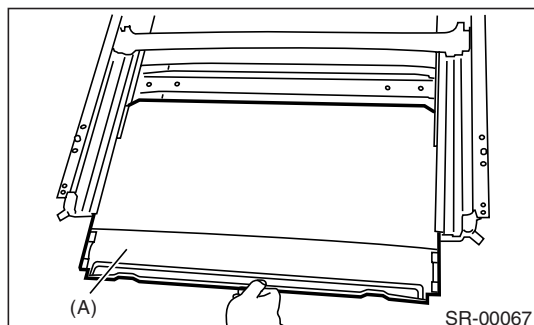
- 1) Remove the frame assembly.
- 2) Remove the rail stoppers (A).



Sunroof Assembly

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

3) Pull out the sunshade (A) from frame assembly.



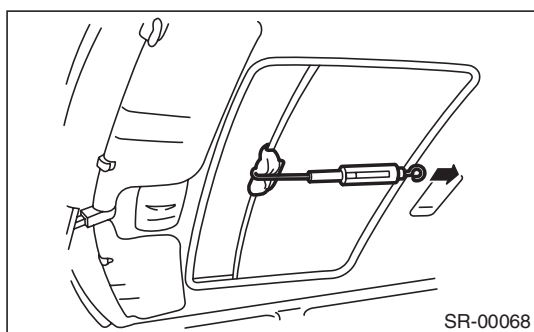
D: ASSEMBLY

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, 55 ± 1.1 lbf)

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 frame assembly for improper installation.

Sunroof Motor

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

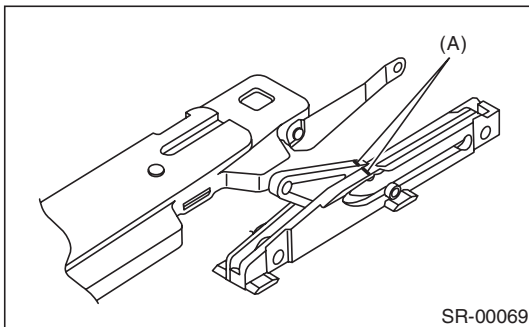
5. Sunroof Motor

A: REMOVAL

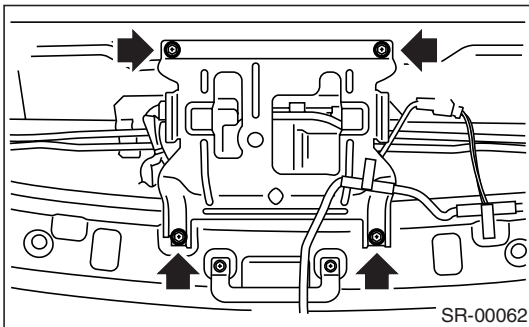
CAUTION:

- 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-53, REMOVAL, Roof Trim.>
- 6) Remove the motor cover.



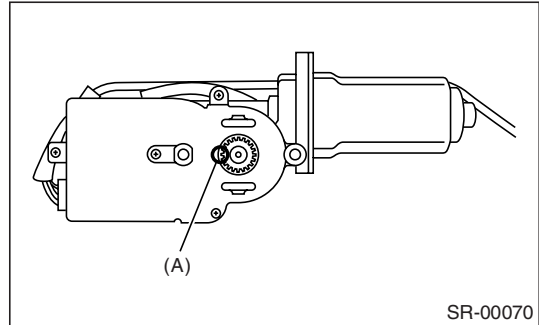
- 7) Disconnect the harness connector and remove the sunroof motor mounting screw.

B: INSTALLATION

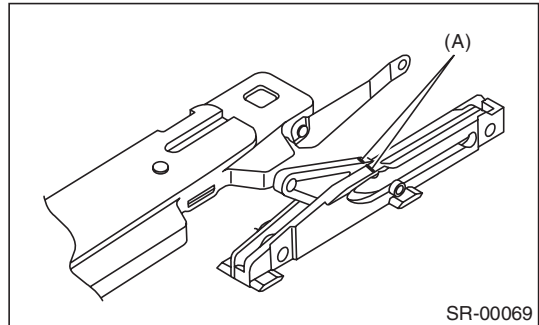
CAUTION:

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) Install the glass lid in the reverse order of removal.
- 6) Connect the sunroof motor harness connector and then connect the battery ground cable.
- 7) 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

- 8) If there is no problem in the operation of the sunroof, install the motor cover and the roof trim.

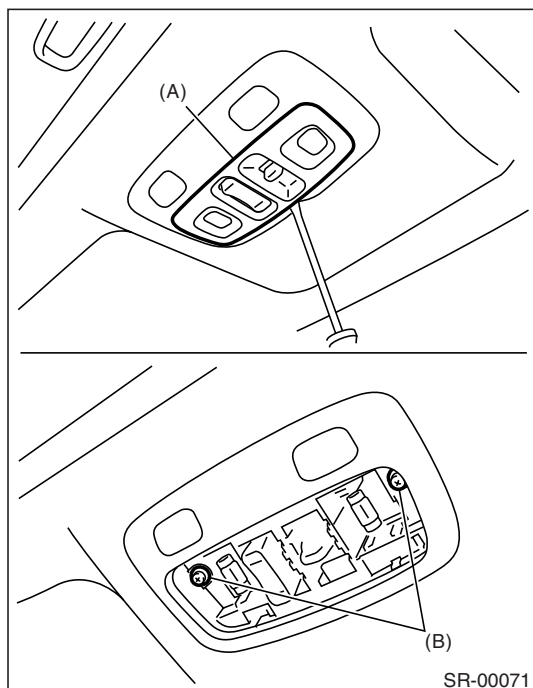
Sunroof Switch

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

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).



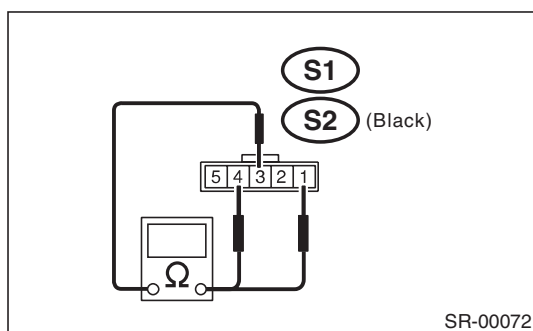
- 3) Disconnect the harness connectors and remove the sunroof switch.

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)

EXTERIOR/INTERIOR TRIM



	Page
1. General Description	2
2. Front Grille	19
3. Front Hood Grille	20
4. Front Under Cover	22
5. Front Bumper	23
6. Air Dam Skirt	29
7. Rear Bumper	30
8. Mud Guard	33
9. Cowl Panel	34
10. Roof Spoiler	35
11. Rear Spoiler	37
12. Side Sill Spoiler	38
13. Arch Cover	39
14. Front Door Trim	40
15. Rear Door Trim	41
16. Glove Box	42
17. Roof Rail	43
18. Roof Molding	44
19. Console Box	45
20. Instrument Panel Assembly	46
21. Upper Inner Trim	49
22. Lower Inner Trim	50
23. Rear Quarter Trim	51
24. Sun Visor	52
25. Roof Trim	53
26. Rear Gate Trim	55
27. Rear Shelf Trim	56
28. Trunk Room Trim	57
29. Floor Mat	58
30. Luggage Floor Mat	59
31. Trunk Room Mat	60
32. Heat Shield Cover	61

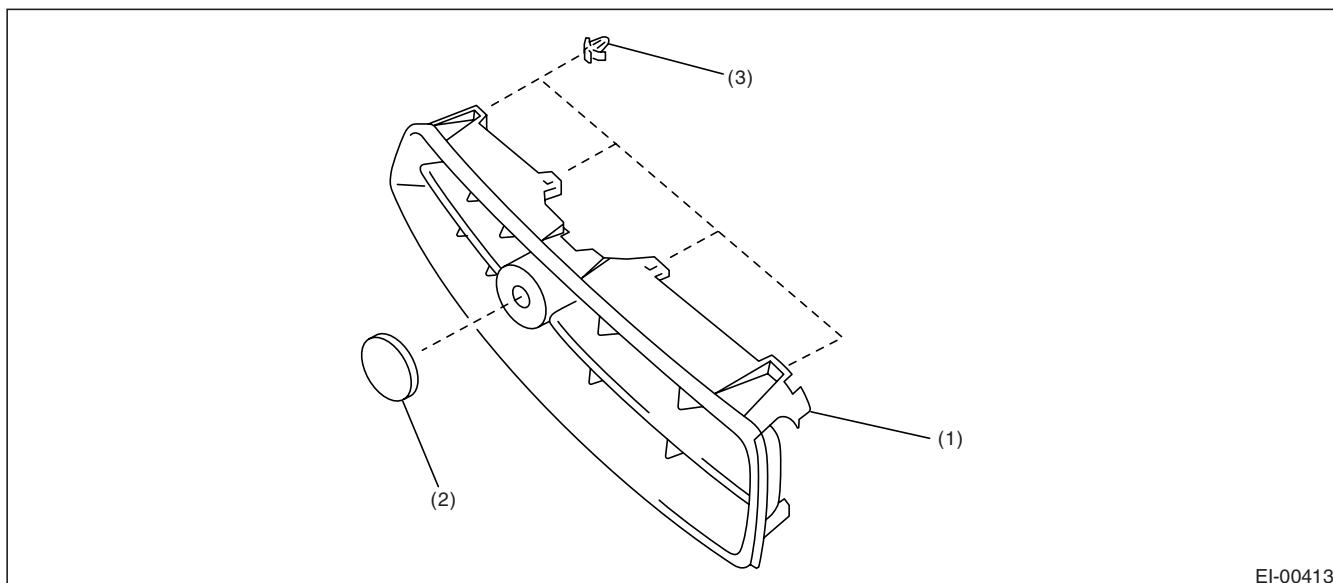
General Description

EXTERIOR/INTERIOR TRIM

1. General Description

A: COMPONENT

1. FRONT GRILLE

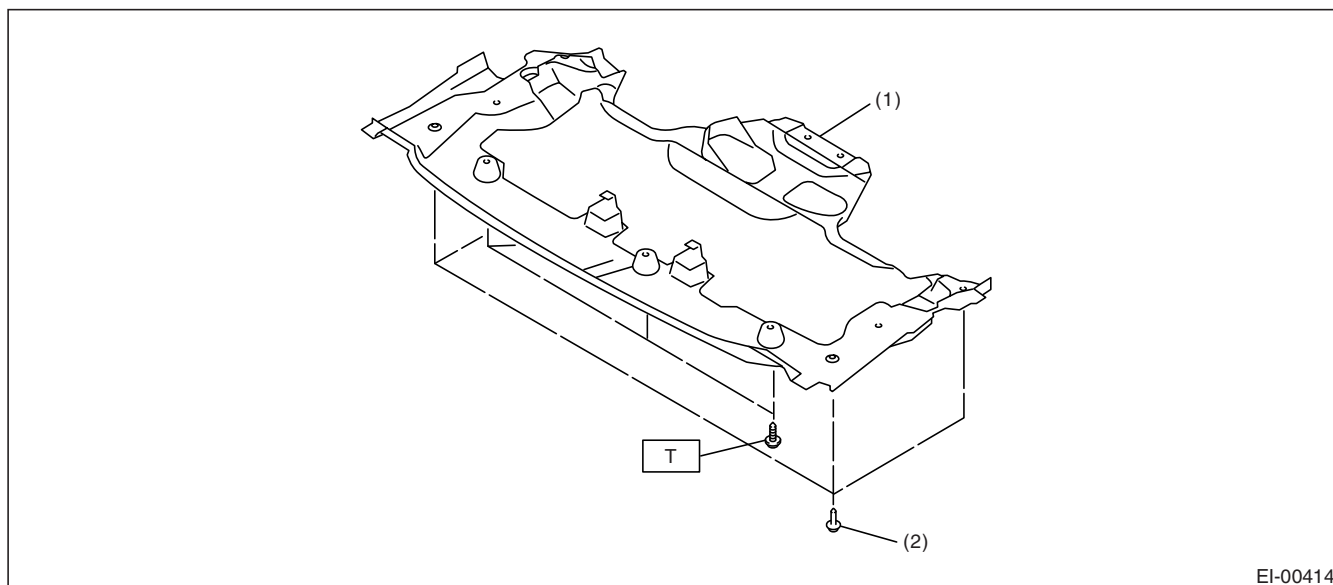


(1) Front grille

(2) Front grille emblem

(3) Clip

2. UNDER COVER



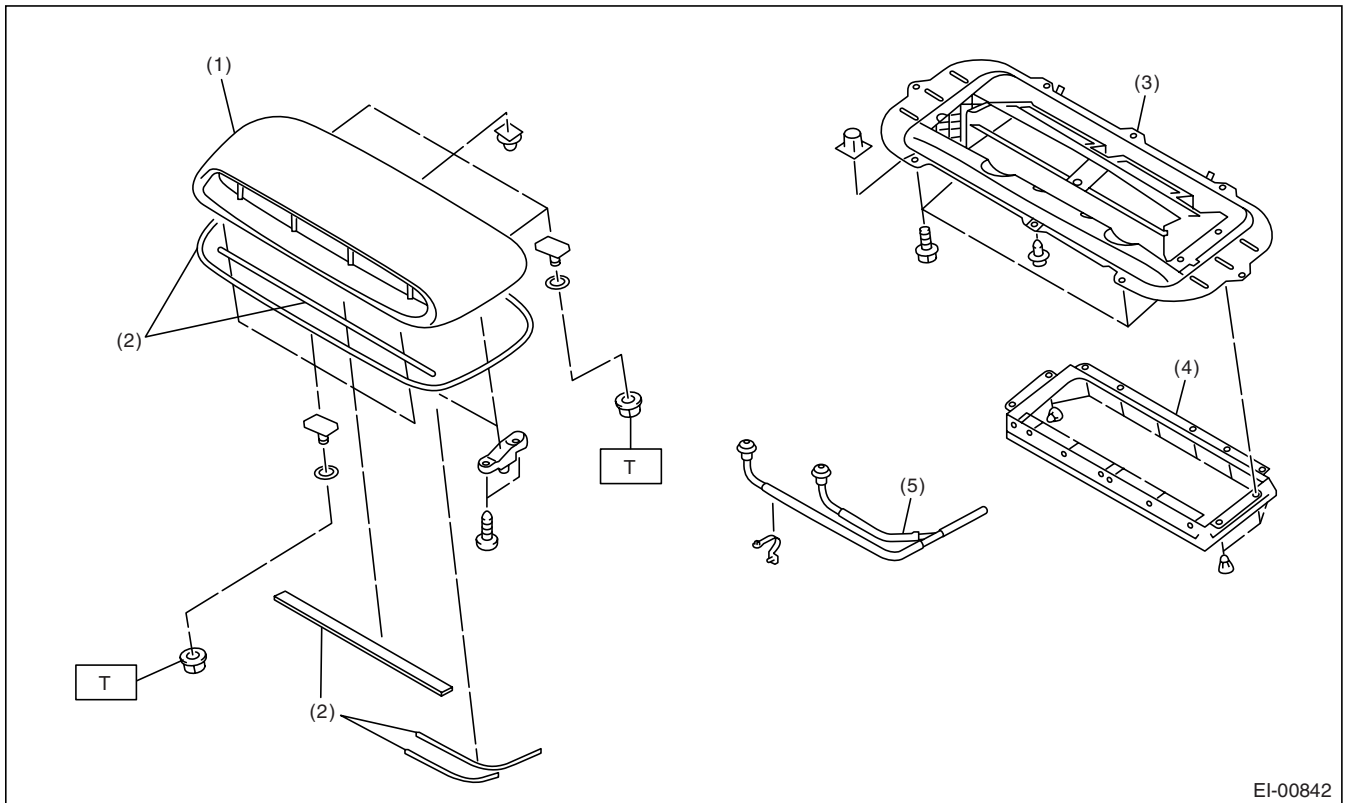
(1) Under cover

(2) Clip (side)

Tightening torque: N·m (kgf-m, ft-lb)

T: 14 (1.42, 10.3)

3. HOOD GRILLE



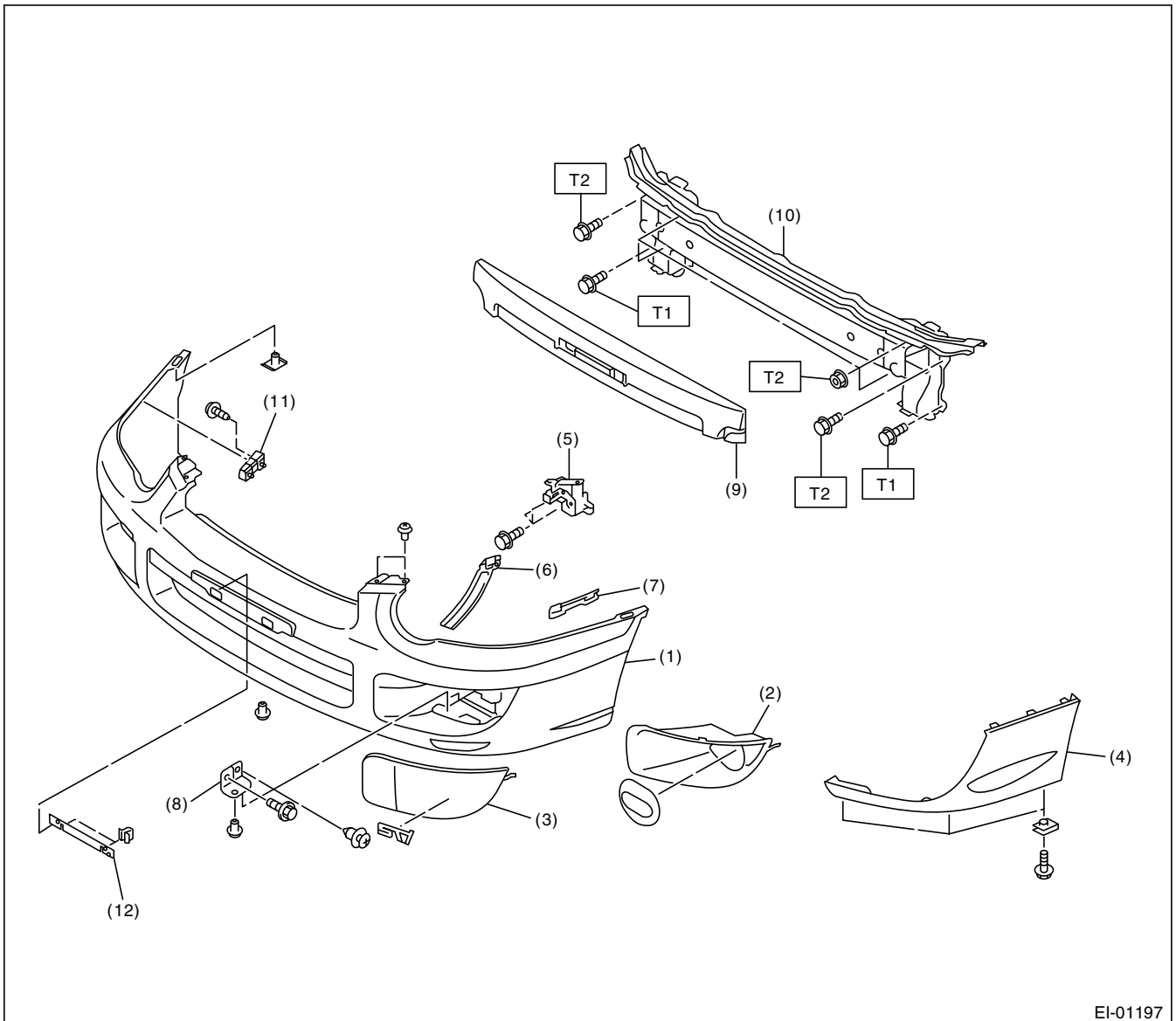
- | | |
|-----------------------|---|
| (1) Front hood grille | (4) Grille duct lower |
| (2) Packing | (5) Intercooler water spray (STi model) |
| (3) Grille duct upper | |

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

General Description

EXTERIOR/INTERIOR TRIM

4. FRONT BUMPER



EI-01197

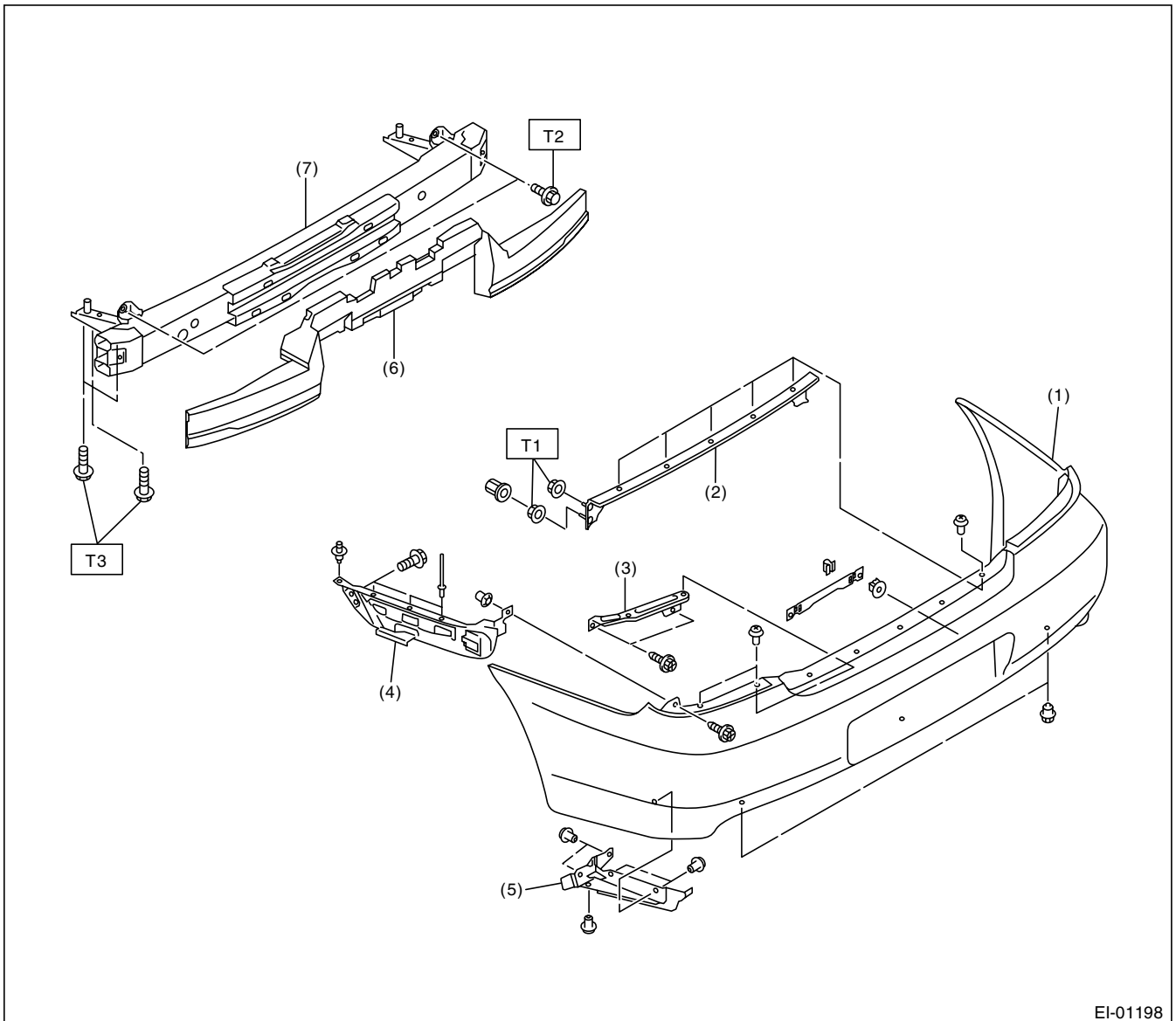
- | | |
|--|---|
| (1) Bumper face | (7) Air dam skirt upper bracket (STi model) |
| (2) Fog light cover | (8) Bumper bracket side lower |
| (3) Fog light cover (STi model) | (9) Energy absorber form |
| (4) Air dam skirt ASSY (STi model) | (10) Bumper beam ASSY |
| (5) Bumper bracket side upper | (11) Slider |
| (6) Air dam skirt side bracket (STi model) | (12) License plate bracket |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 32 (3.3, 24)

T2: 69 (7.0, 51)

5. REAR BUMPER



EI-01198

- | | |
|---------------------------|---|
| (1) Bumper face | (6) Energy absorber form (model with bumper beam) |
| (2) Bumper upper beam | (7) Back beam ASSY (model with bumper beam) |
| (3) Bumper corner bracket | |
| (4) Bumper side bracket | |
| (5) Bumper side cover | |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 33 (3.4, 24)

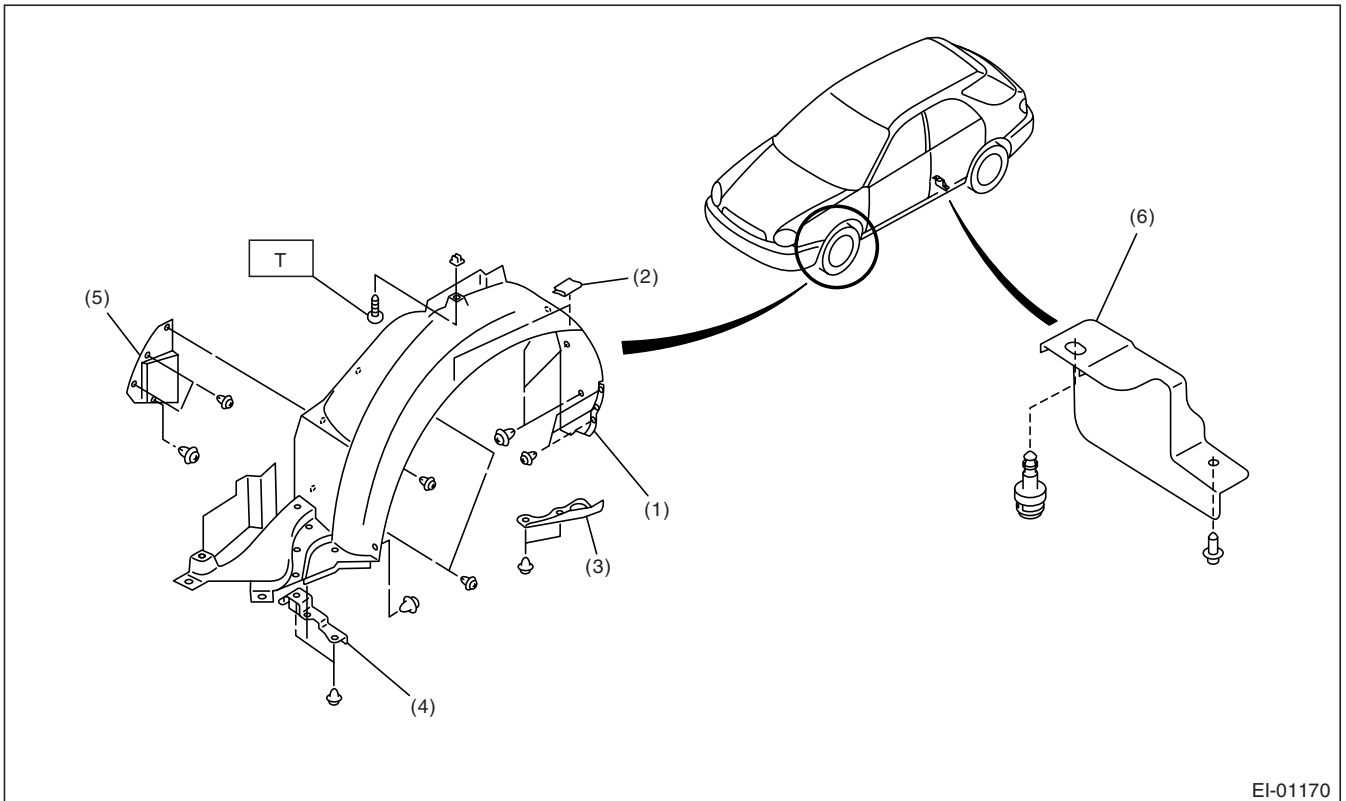
T2: 34 (3.5, 25)

T3: 95 (9.7, 70)

General Description

EXTERIOR/INTERIOR TRIM

6. MUD GUARD

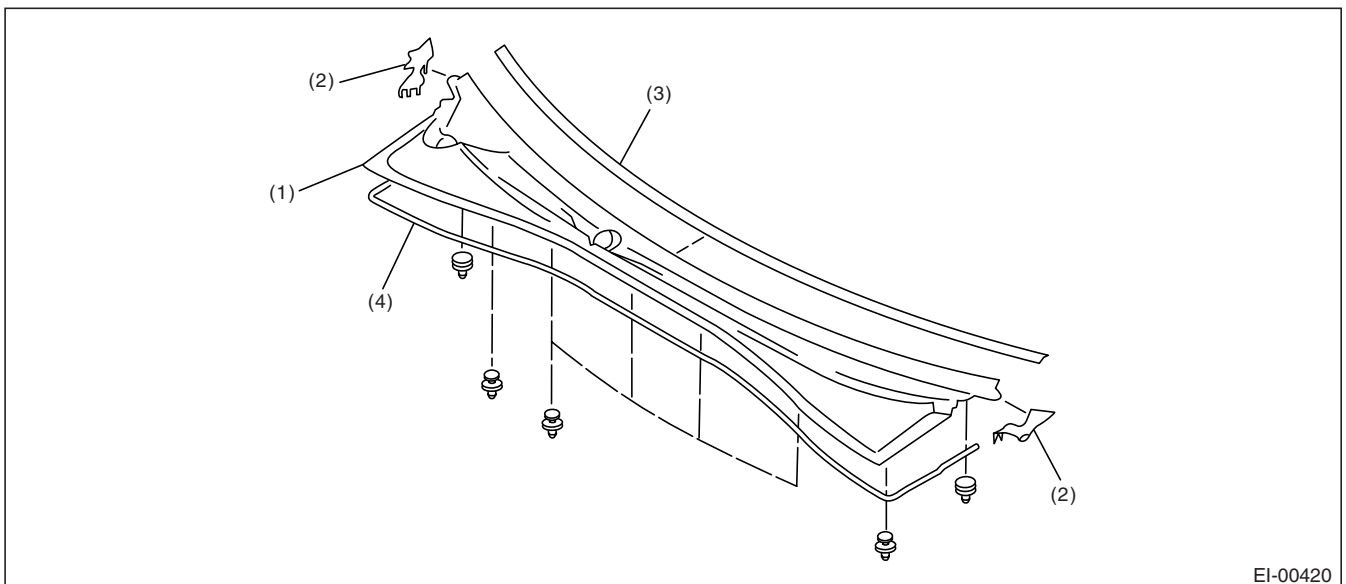


EI-01170

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

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

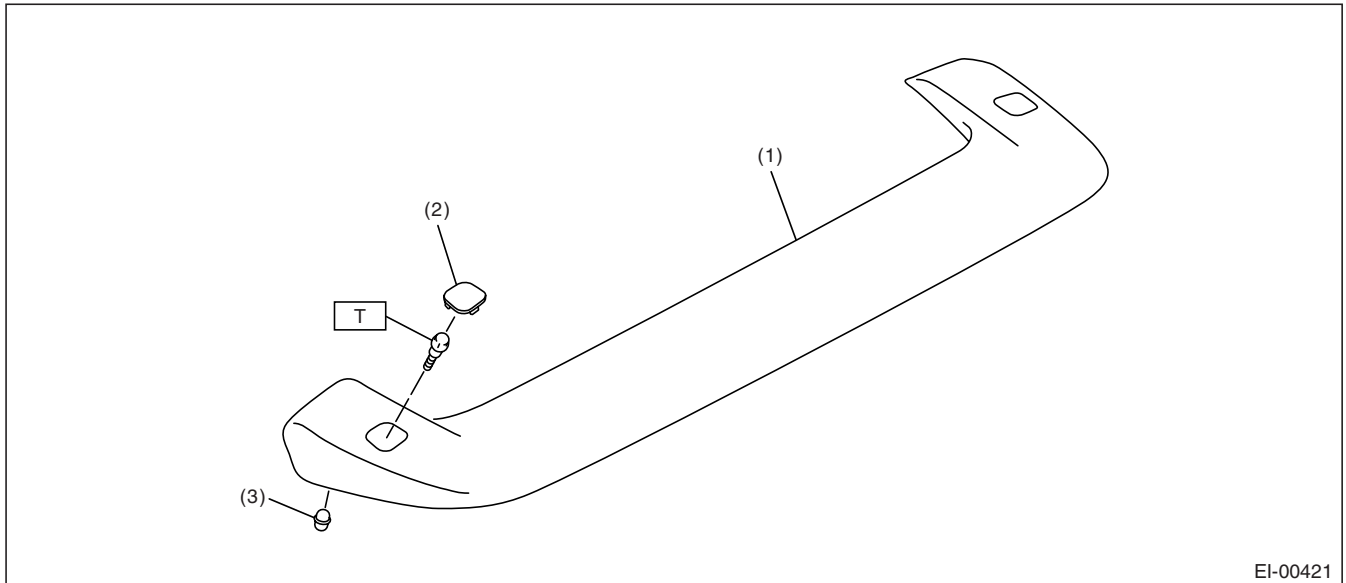
7. COWL PANEL



EI-00420

- | | | |
|---------------------|---------------|----------|
| (1) Cowl panel | (3) Protector | (4) Seal |
| (2) Cowl side panel | | |

8. ROOF SPOILER

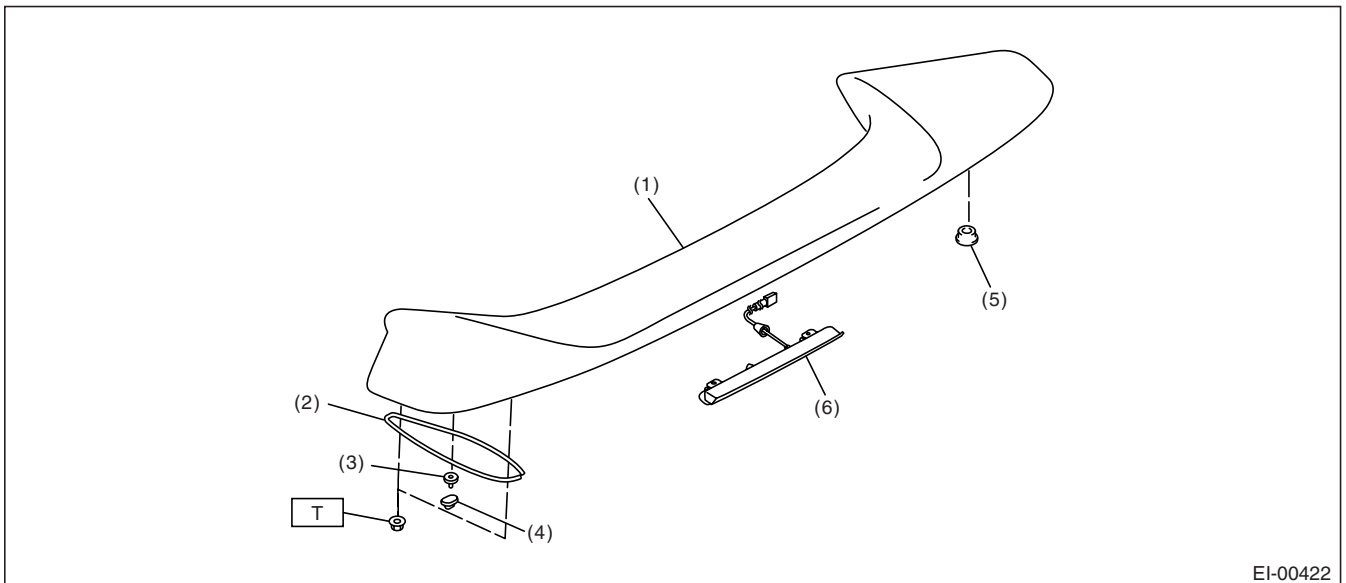


- (1) Roof spoiler
- (2) Cap

- (3) Clip

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

9. REAR SPOILER



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

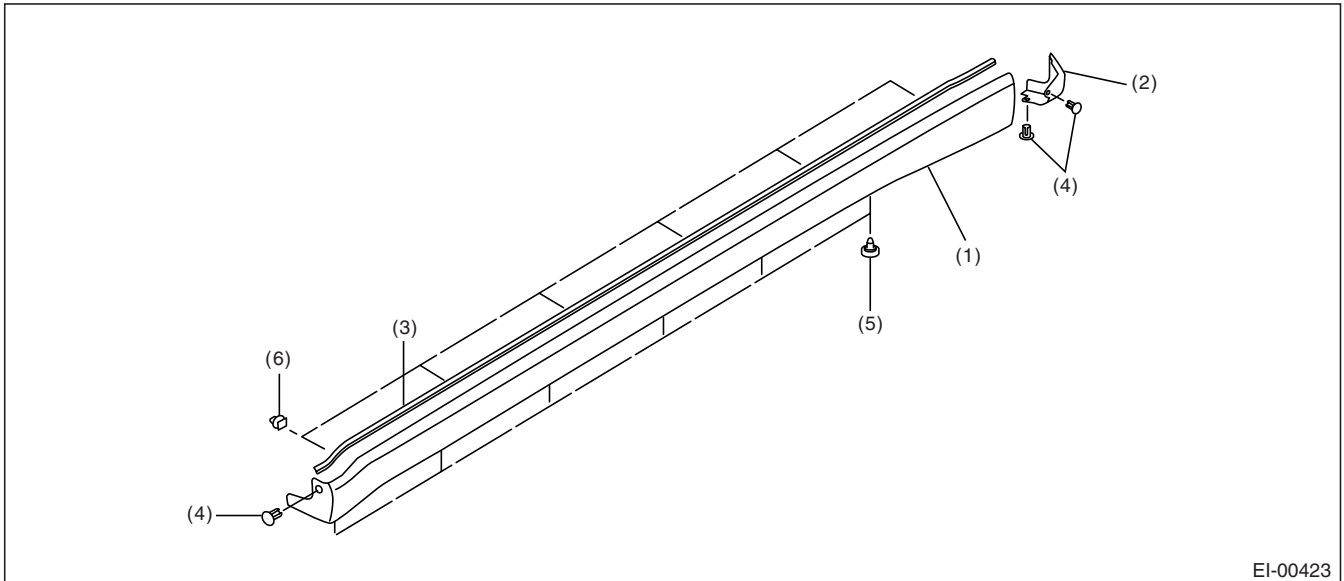
- (4) Grommet
- (5) Seal (RH)
- (6) High mount stop light

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

General Description

EXTERIOR/INTERIOR TRIM

10.SIDE SILL SPOILER

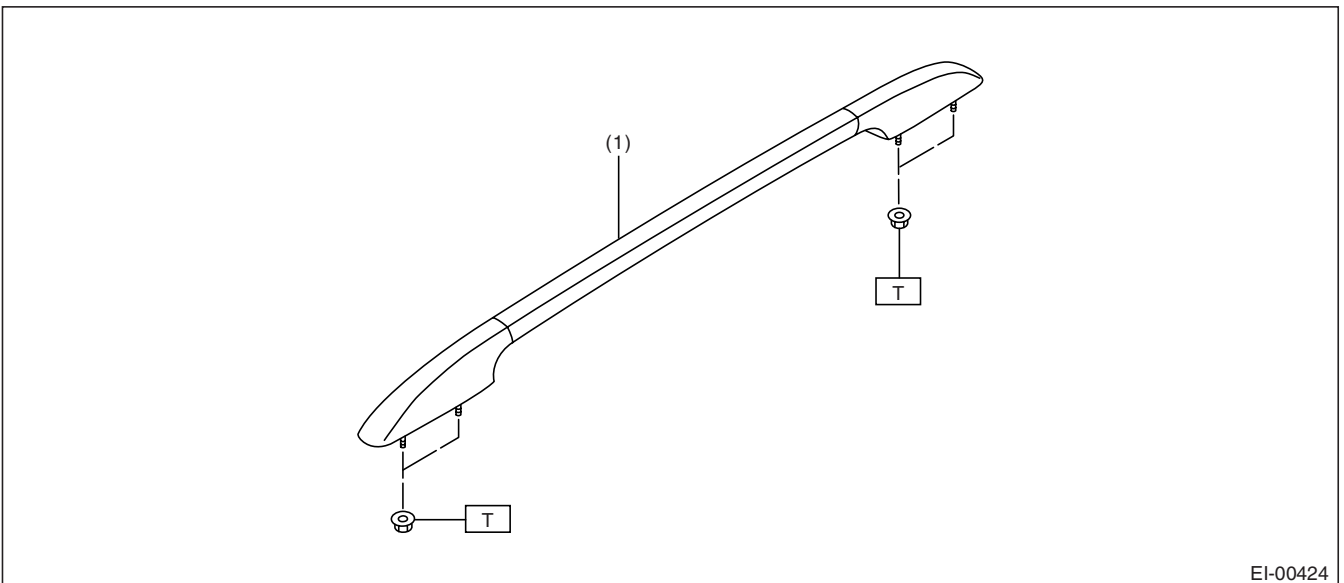


- (1) Side sill spoiler
- (2) End cover

- (3) Protector
- (4) Rivet clip

- (5) Clip (Side sill spoiler)
- (6) Clip

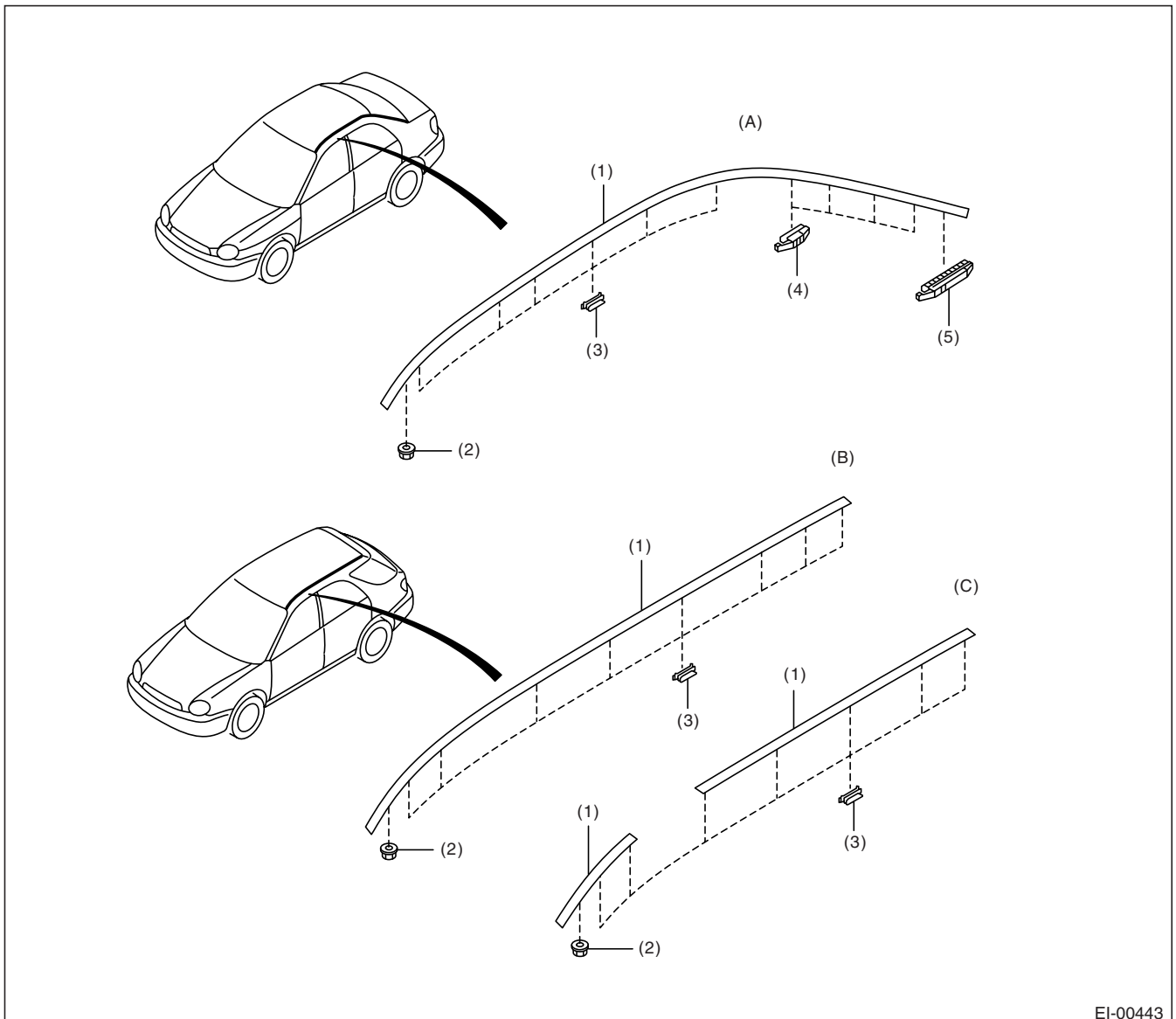
11.ROOF RAIL



- (1) Roof rail

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

12.ROOF MOLDING



EI-00443

(A) For sedan model

(B) For wagon model

(C) For wagon model (with roof rail)

(1) Roof molding

(3) Clip B

(5) Clip D

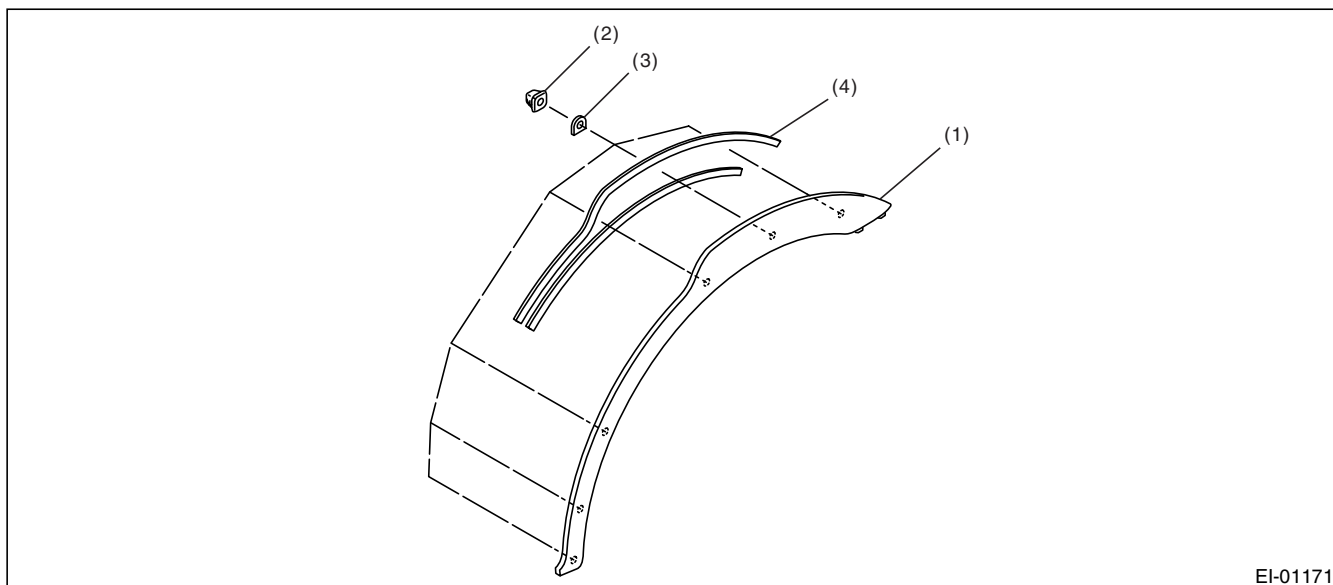
(2) Clip A

(4) Clip C

General Description

EXTERIOR/INTERIOR TRIM

13.ARCH COVER



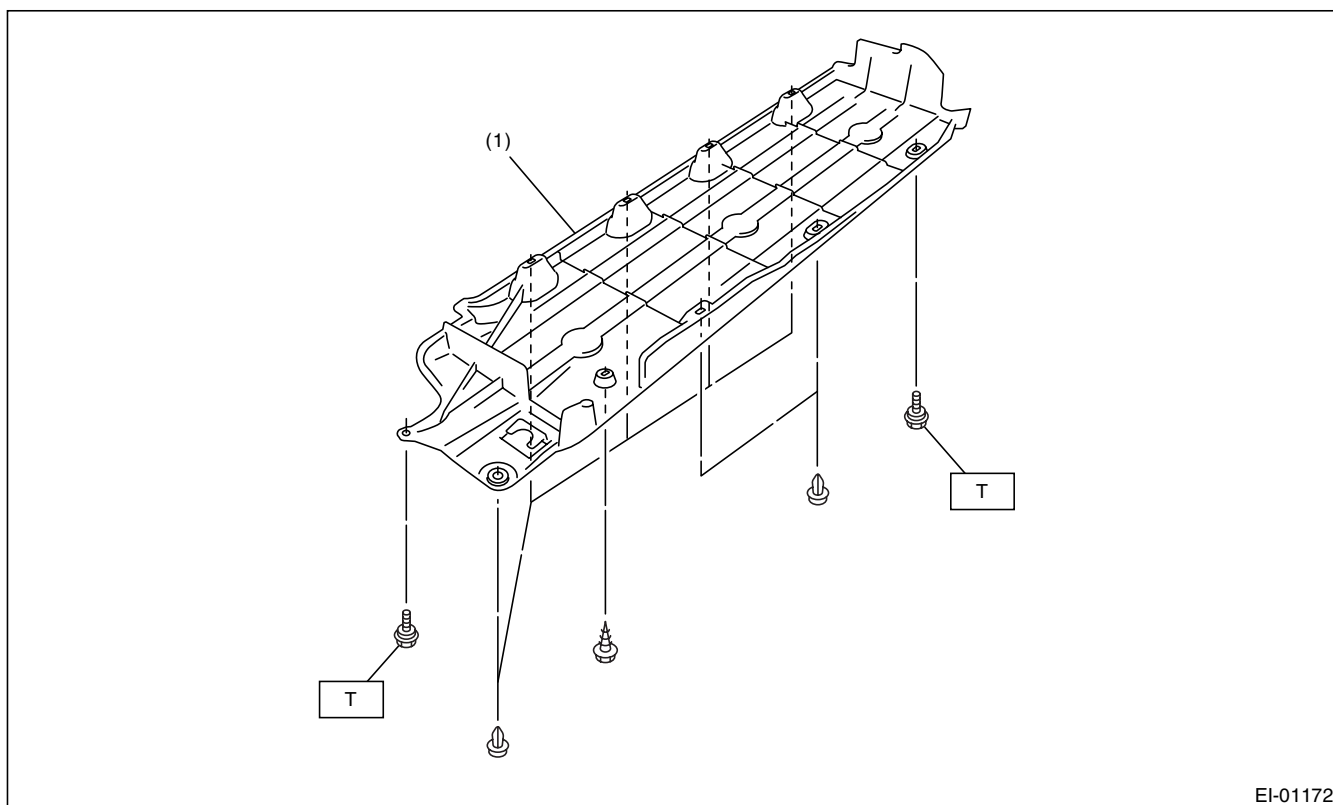
EI-01171

- (1) Arch cover
(2) Clip

- (3) Cushion

- (4) Double side tape

14.FLOOR UNDER PROTECTOR

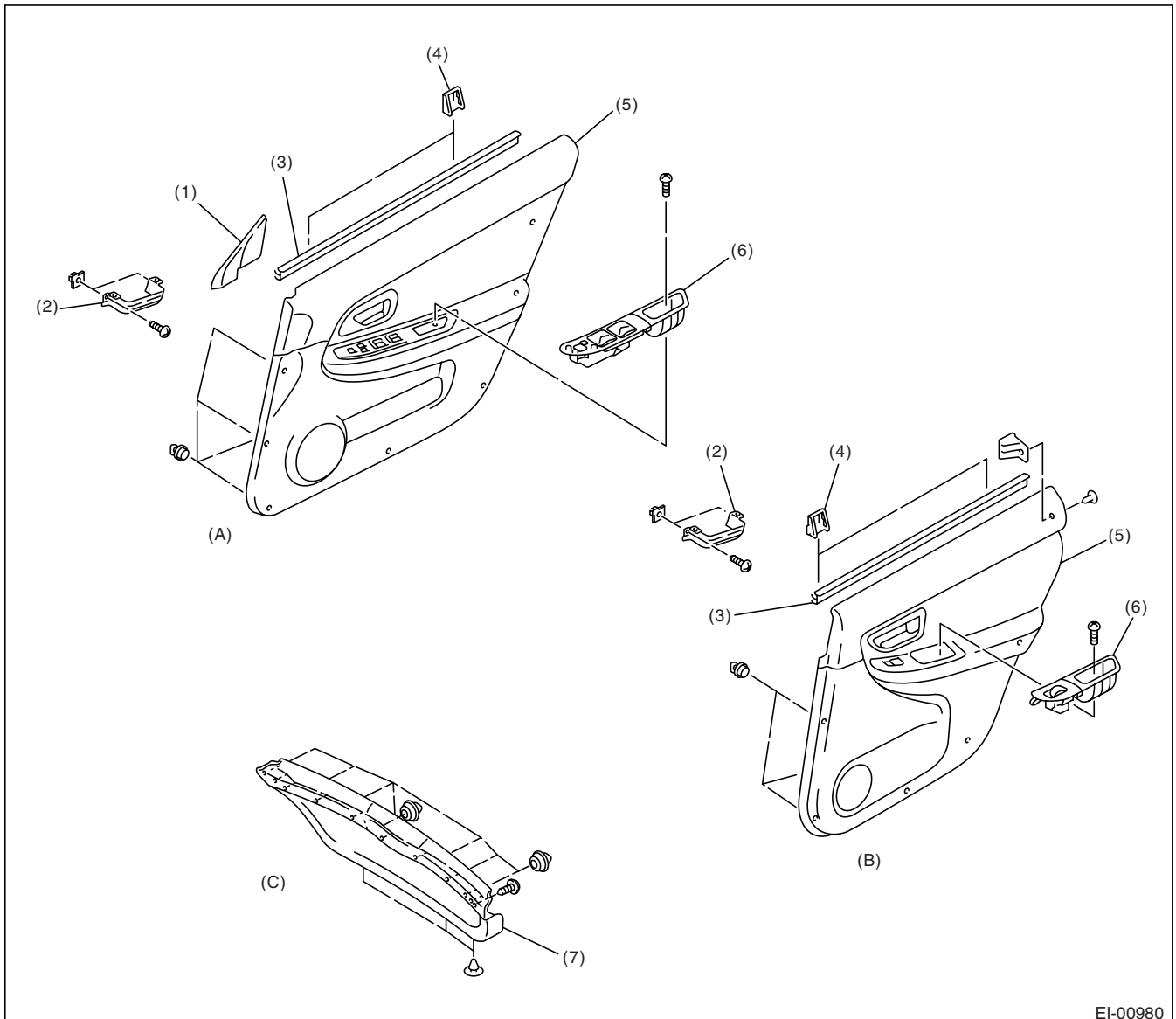


EI-01172

- (1) Floor under protector

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

15.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

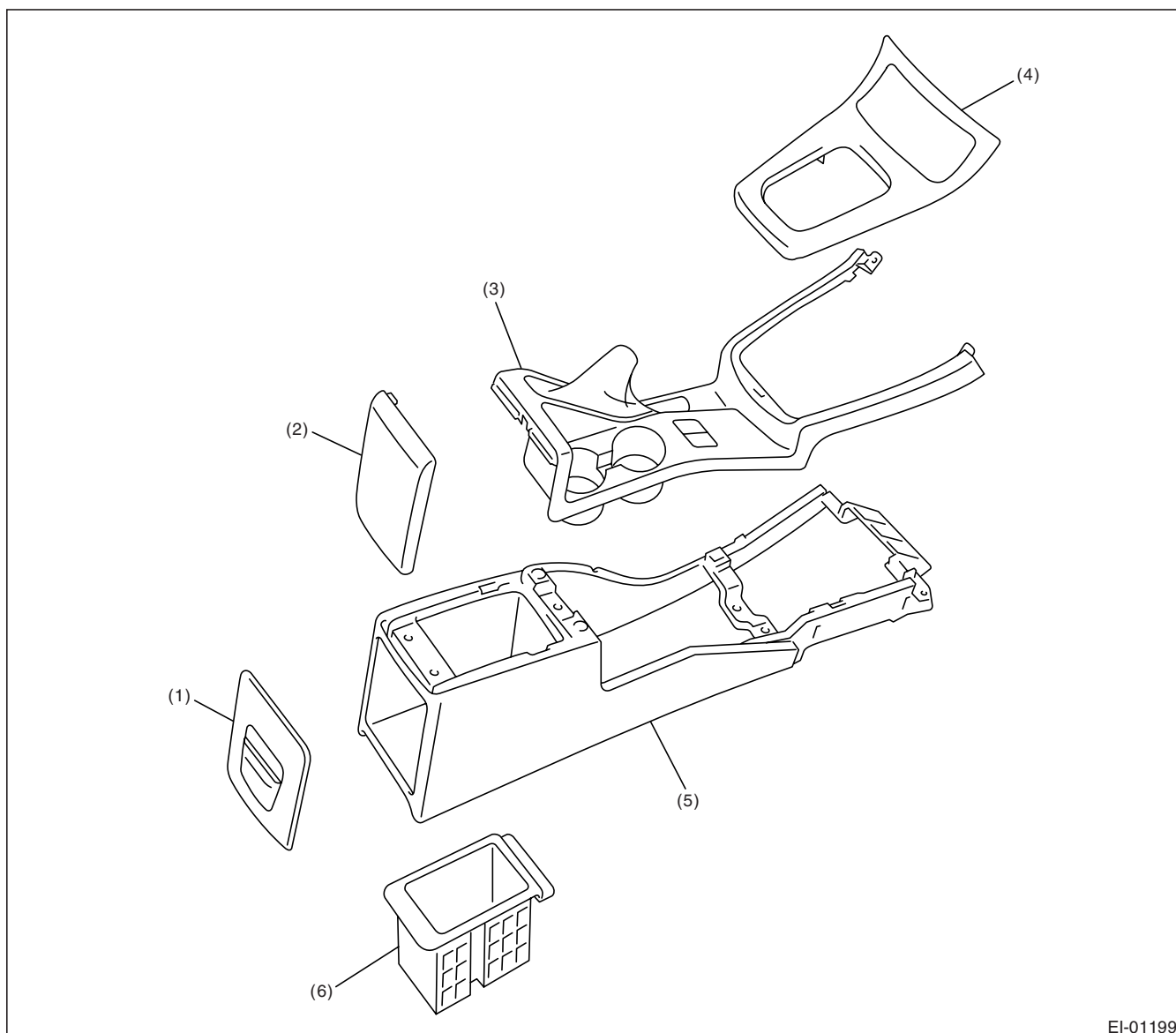
- (4) Clip
- (5) Trim panel

- (6) Power window switch cover
- (7) Lower trim

General Description

EXTERIOR/INTERIOR TRIM

16.CONSOLE BOX



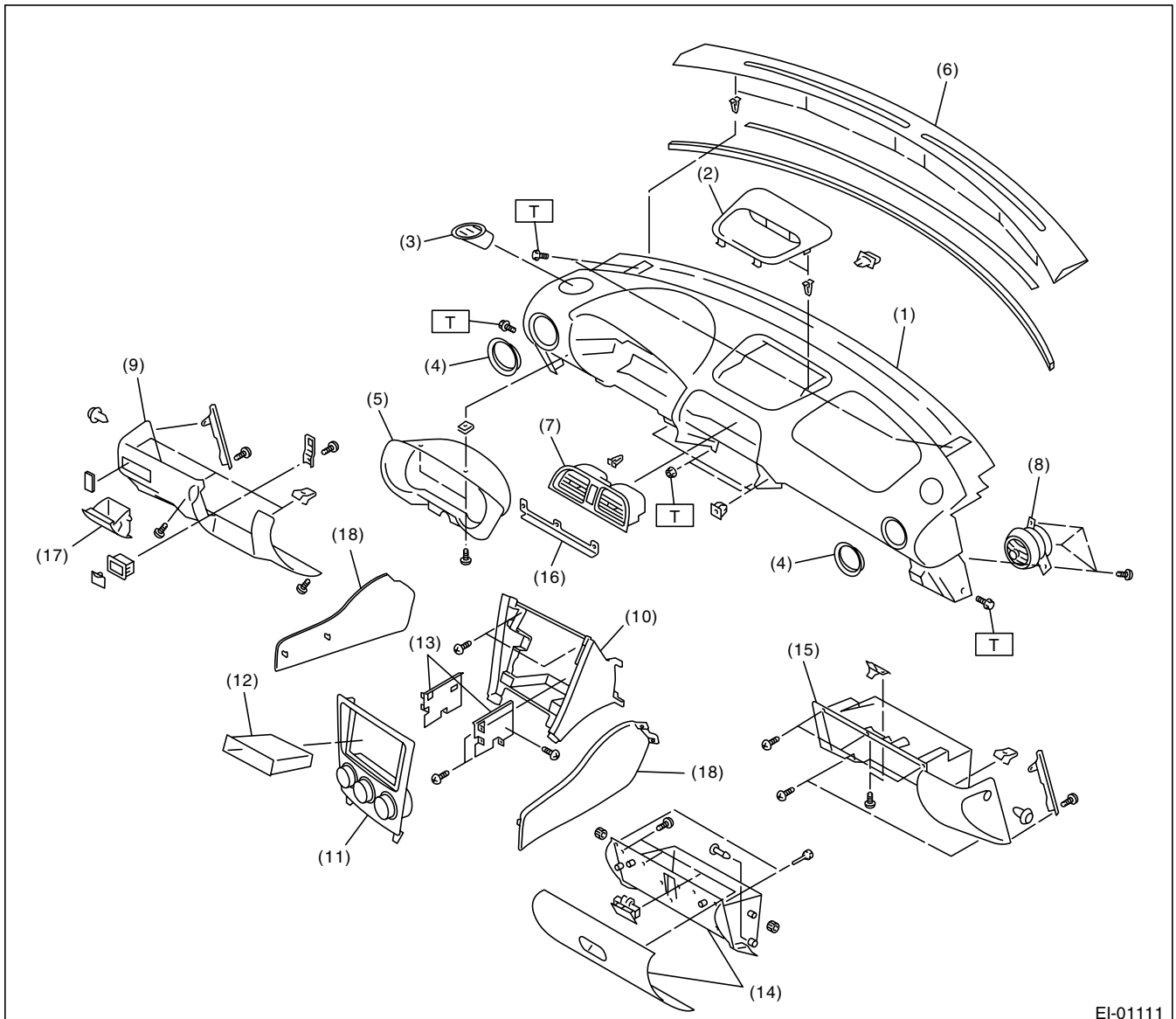
EI-01199

(1) Rear ash tray
(2) Console lid

(3) Console cover
(4) Console front panel

(5) Console box
(6) Console pocket

17. INSTRUMENT PANEL



EI-01111

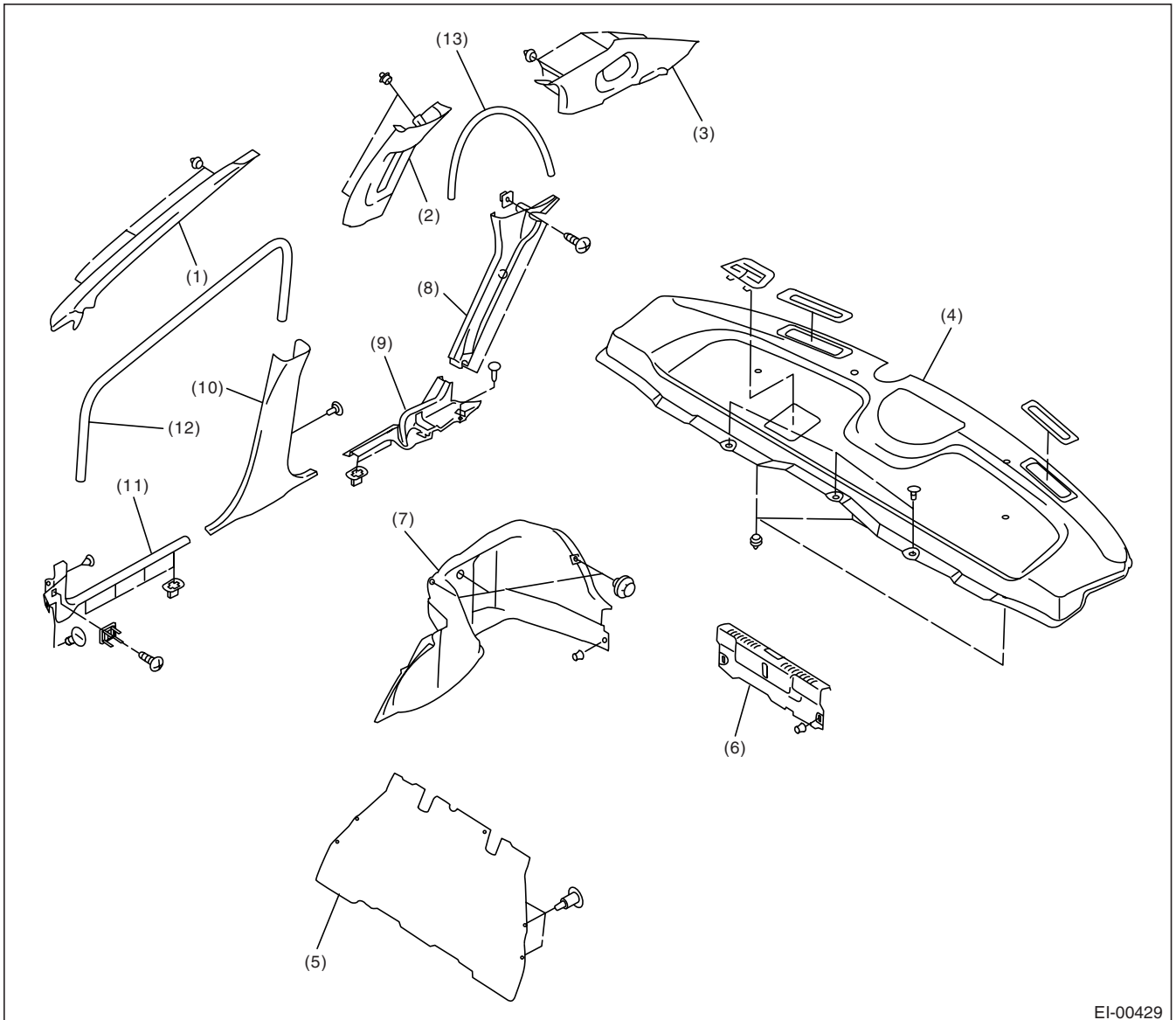
- | | | |
|---------------------------------|----------------------------------|-------------------------|
| (1) Pad & frame | (8) Air vent grille (side) | (15) Glove box panel |
| (2) Center upper panel | (9) Instrument panel lower cover | (16) Bracket |
| (3) Air vent grille (defroster) | (10) Console 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)

General Description

EXTERIOR/INTERIOR TRIM

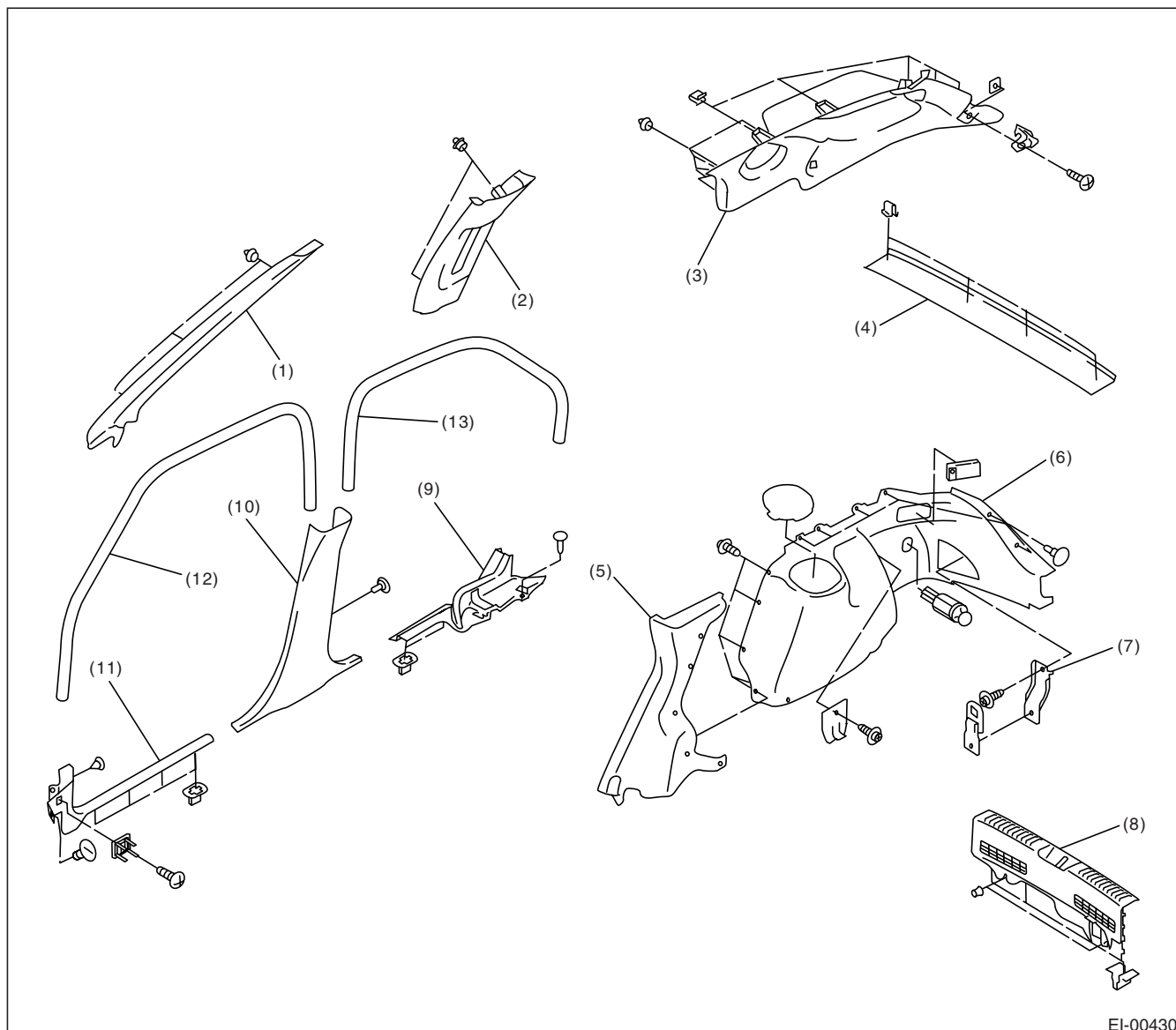
18.INNER TRIM (SEDAN MODEL)



EI-00429

- | | | |
|------------------------------|----------------------------|-------------------------------|
| (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 | | |

19. INNER TRIM (WAGON MODEL)



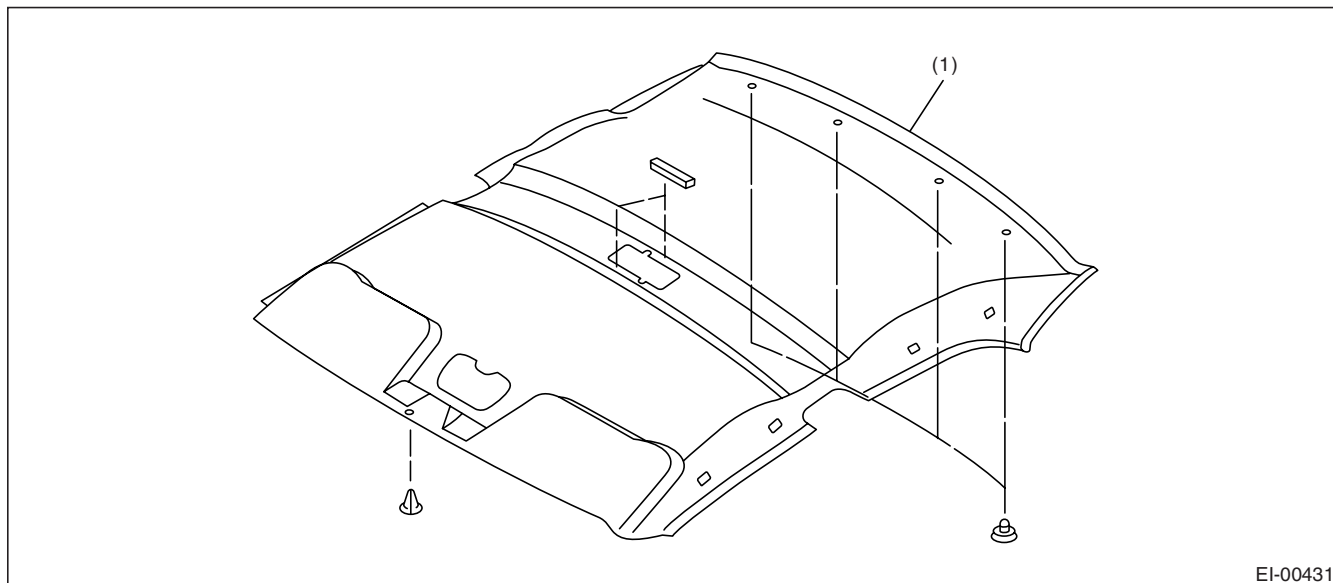
EI-00430

- | | | |
|------------------------------|-------------------------------|----------------------------|
| (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 | |

General Description

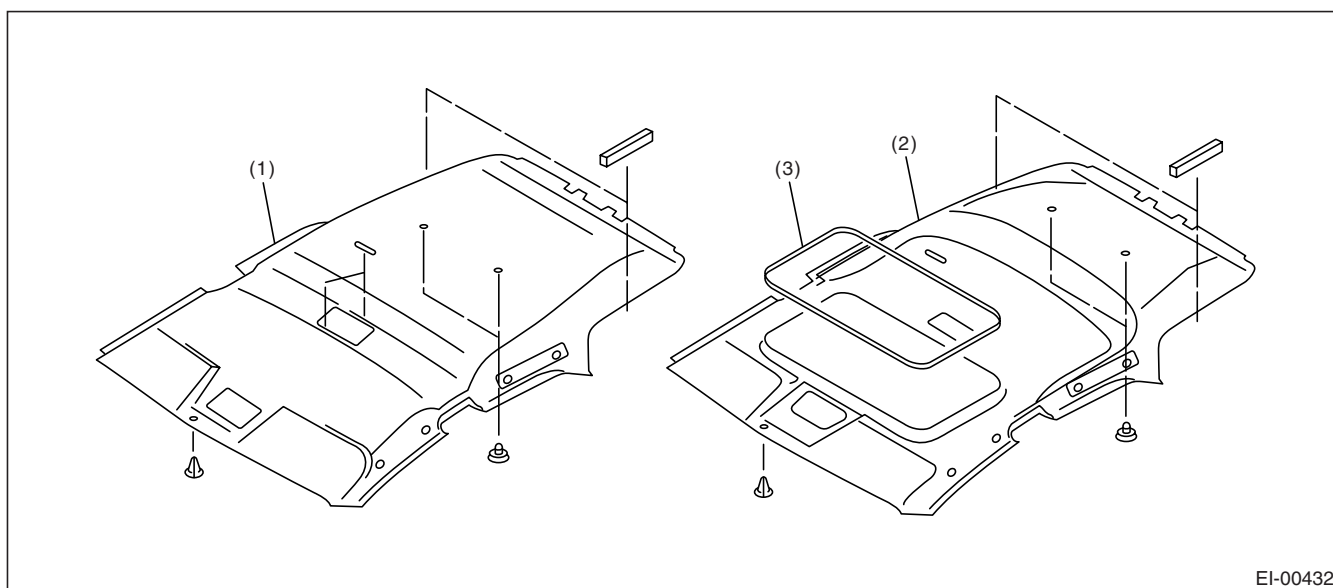
EXTERIOR/INTERIOR TRIM

20.ROOF TRIM (SEDAN MODEL)



(1) Roof trim

21.ROOF TRIM (WAGON MODEL)

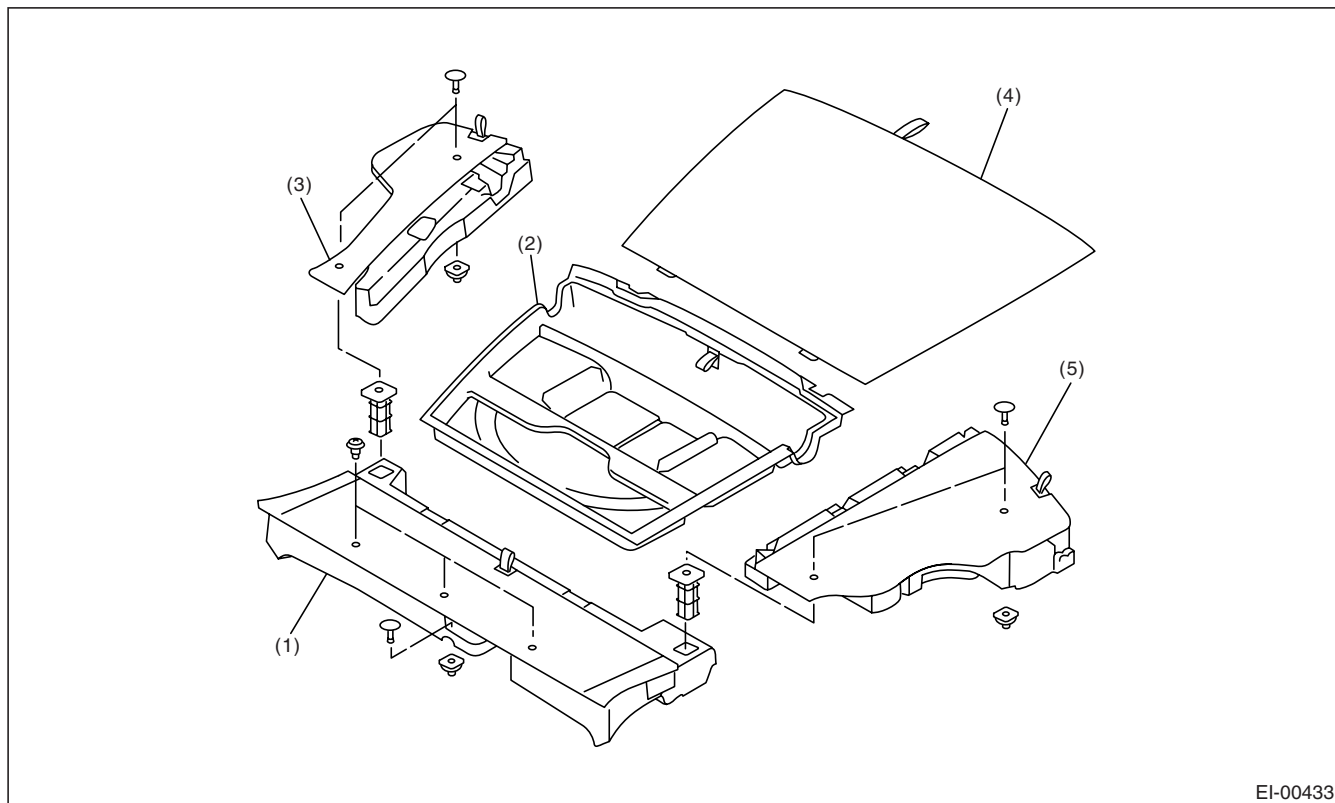


(1) Roof trim

(2) Roof trim (Model with sun roof)

(3) Sun roof garnish

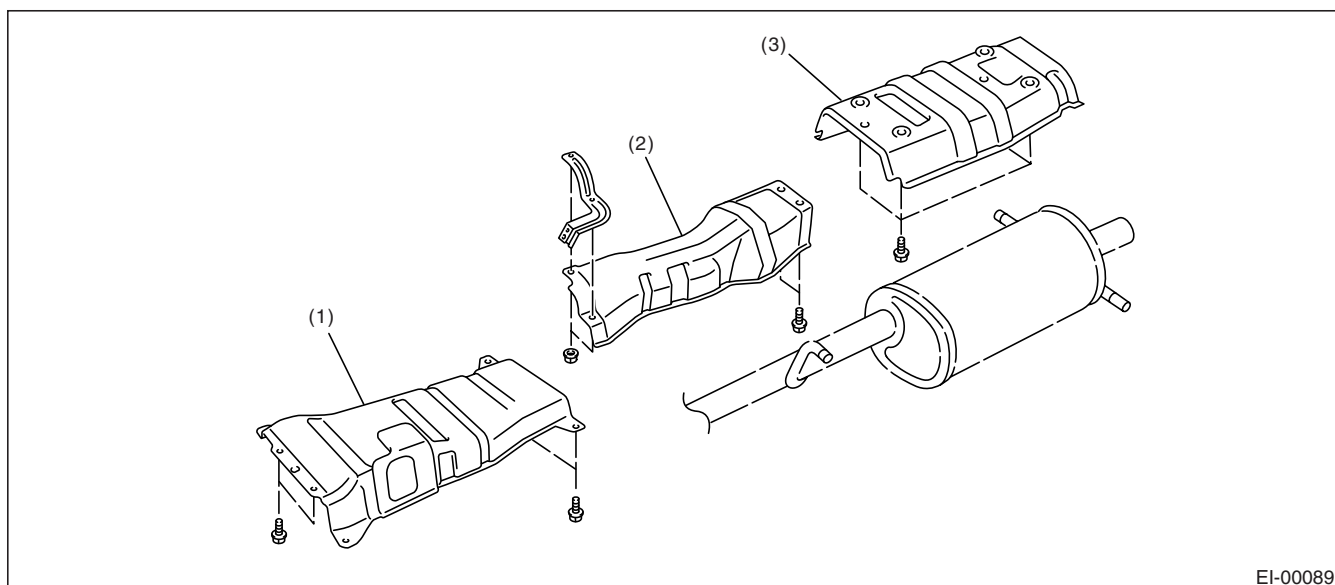
22.LUGGAGE FLOOR MAT



EI-00433

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

23.HEAT SHIELD COVER



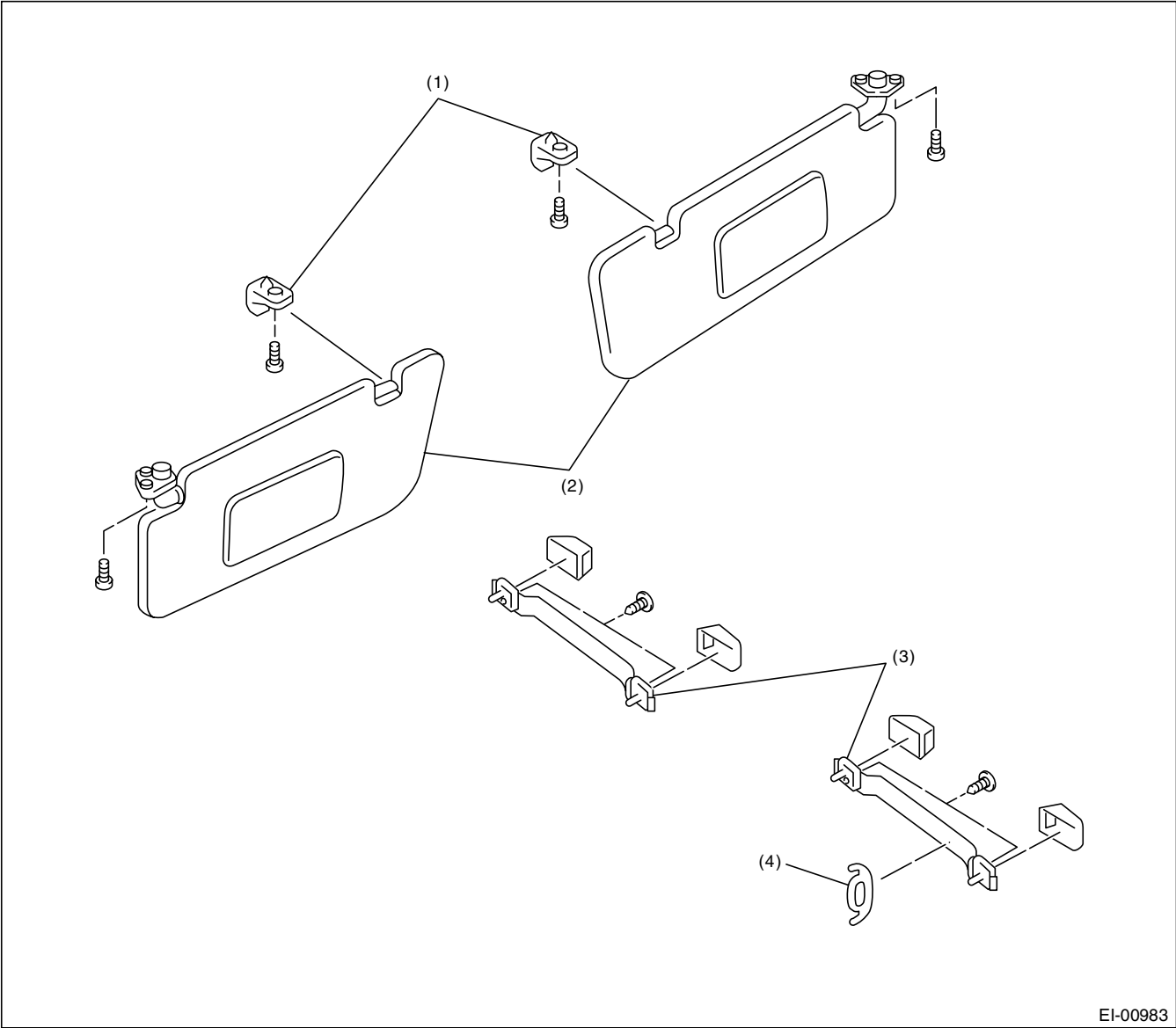
EI-00089

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

General Description

EXTERIOR/INTERIOR TRIM

24.INNER ACCESSORIES



- (1) Hook
- (2) Sun visor
- (3) Assist grip
- (4) Coat hook

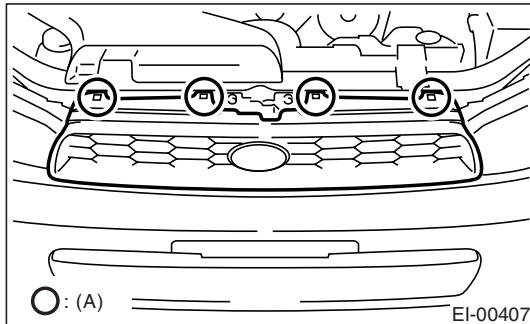
B: PREPARATION TOOL

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

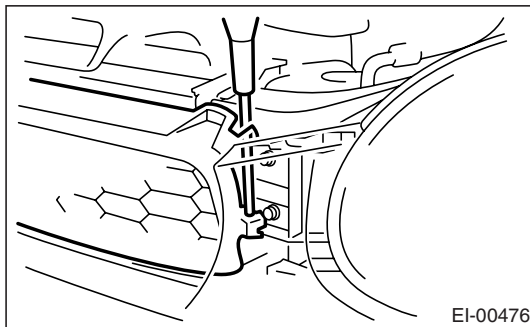
2. Front Grille

A: REMOVAL

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



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



B: INSTALLATION

Install in the reverse order of removal.

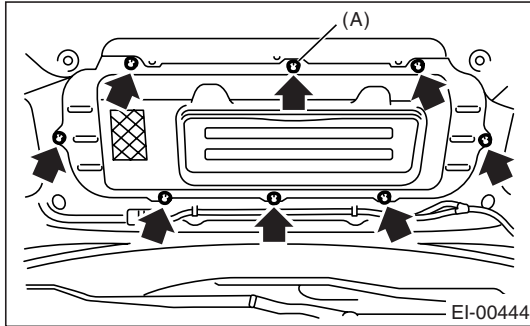
Front Hood Grille

EXTERIOR/INTERIOR TRIM

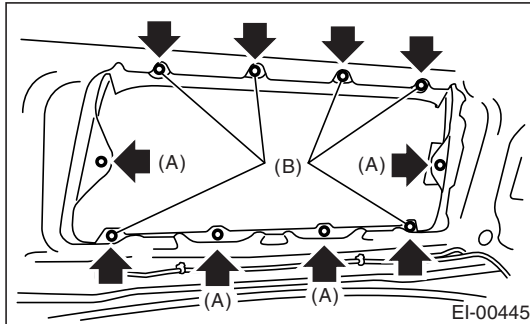
3. Front Hood Grille

A: REMOVAL

- 1) Remove the hood insulator.
- 2) Remove the seven tapping screws and clip (A) to remove the hood duct.

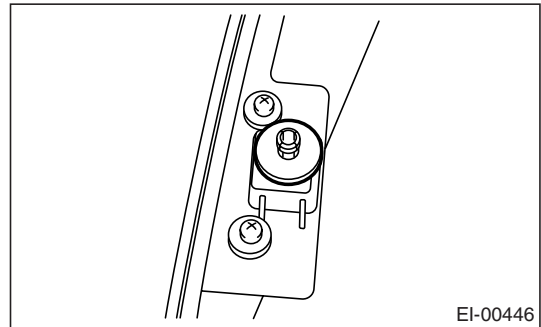


- 3) Loosen the six nuts (B), remove the four clips (A), and then remove the hood grille.



B: INSTALLATION

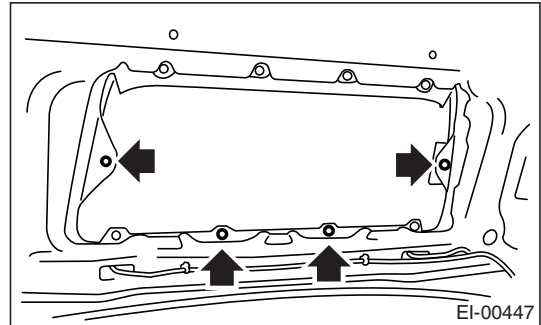
- 1) Replace the four clips with new ones.



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

CAUTION:

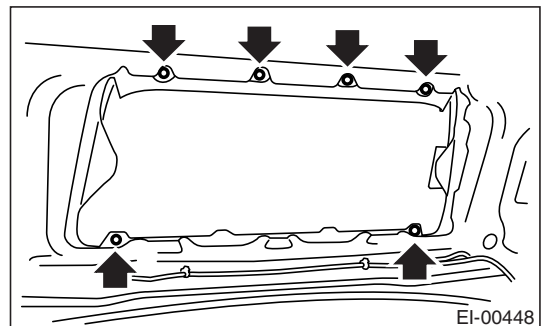
Make sure that the anchor portion of each clip is firmly engaged.



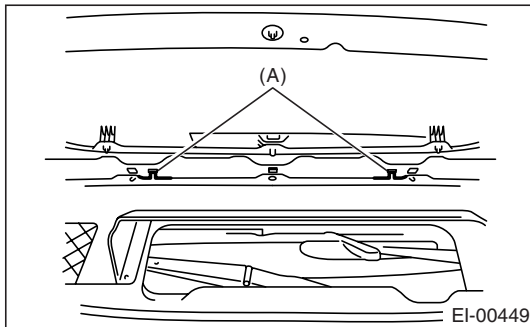
- 3) Install the six nuts.

Tightening torque:

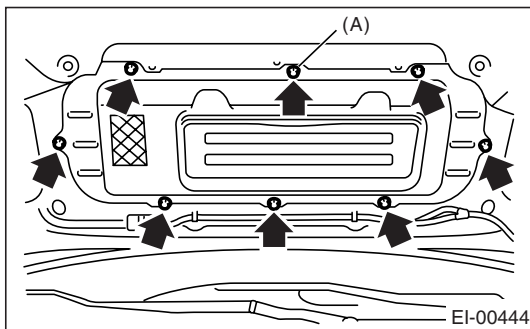
4.5 N·m (0.46 kgf-m, 3.32 ft-lb)



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



5) Install the hood duct with clip (A) and seven tapping screws.



6) Install the hood insulator with new clips.

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.

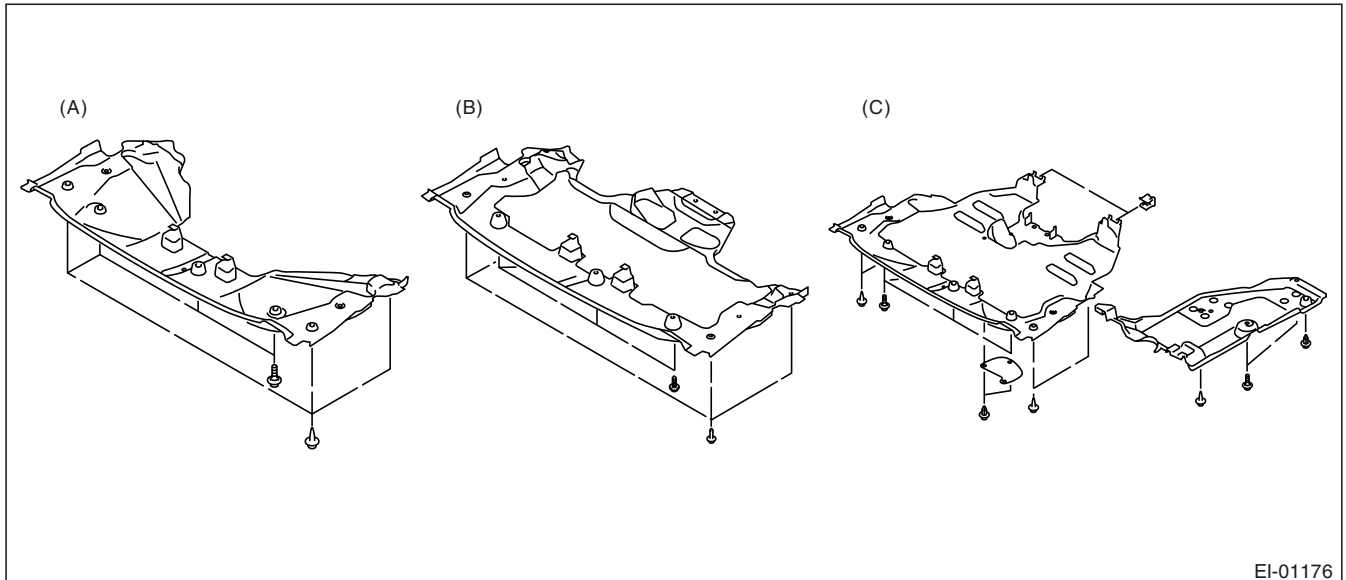
Front Under Cover

EXTERIOR/INTERIOR TRIM

4. Front Under Cover

A: REMOVAL

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



EI-01176

(A) Small type

(B) Large type

(C) Extra large type

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

14 N·m (1.42 kgf-m, 10.3 ft-lb)

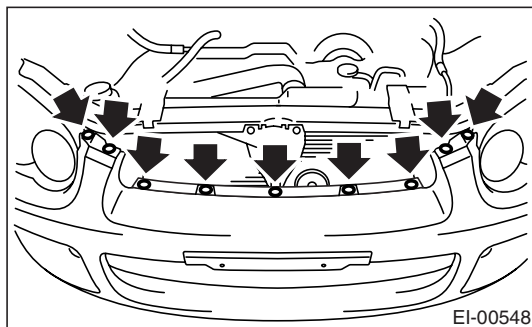
Front Bumper

EXTERIOR/INTERIOR TRIM

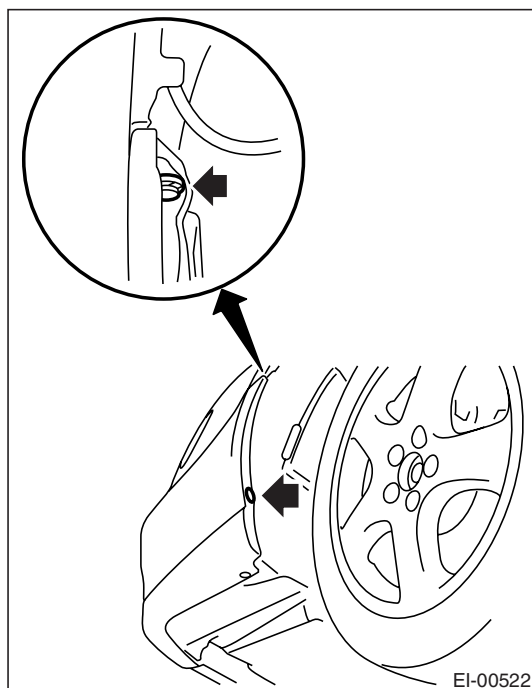
5. Front Bumper

A: REMOVAL

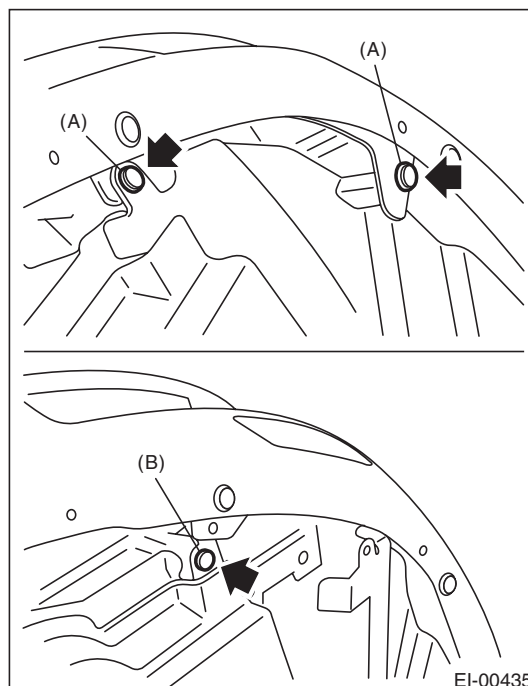
- 1) Disconnect the ground cable from battery.
- 2) Remove the front grille. <Ref. to EI-19, REMOVAL, Front Grille.>
- 3) Remove the nine clips on the upper part of bumper.



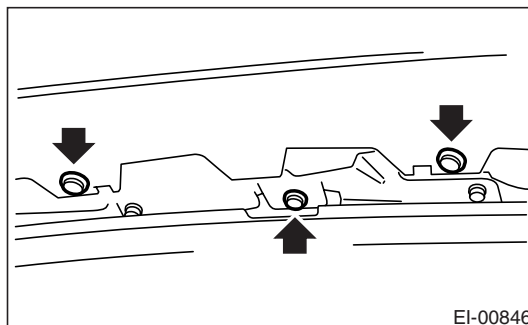
- 4) Turn over the mud guard, and then remove the clips, which secure the front bumper to fender.



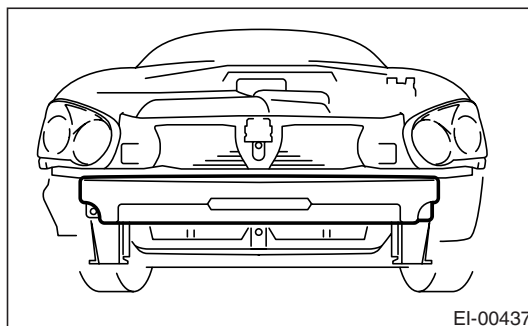
- 5) Remove the two clips (A), turn over the mud guard, and then remove the clip (B). (Same procedure on the right side.)



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



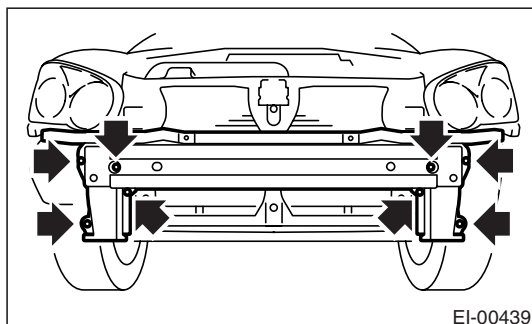
- 7) Remove the fog light. <Ref. to LI-19, REMOVAL, Front Fog Light Assembly.>
- 8) Remove the bumper from body.
- 9) Remove the energy absorber foam.



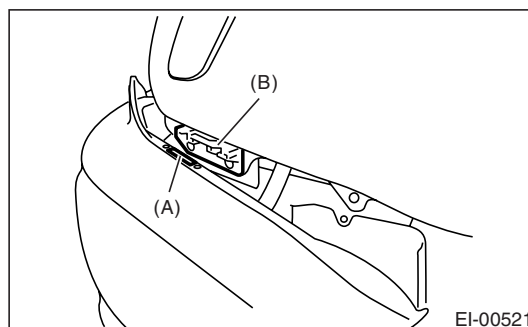
Front Bumper

EXTERIOR/INTERIOR TRIM

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



2) Secure the bumper (A) to slider (B).



B: INSTALLATION

1) Install in the reverse order of removal.

Tightening torque:

Refer to COMPONENT in General Description.

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

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 compressed air. 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 — 45 μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kgf/cm ² , 36 — 50 psi)	Use section (block) paint for top coat. • Paint 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 — 20 μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kgf/cm ² , 36 — 50 psi)

Front Bumper

EXTERIOR/INTERIOR TRIM

Process No.	Process name	Job contents	
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 — 30 μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kgf/cm ² , 36 — 50 psi)
9	Drying	60°C (140°F), 60 min. or 80°C (176°F), 30 min. If higher than 80°C (176°F), PP may 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.

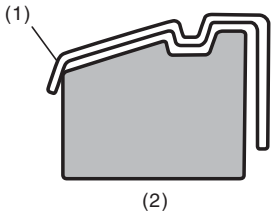
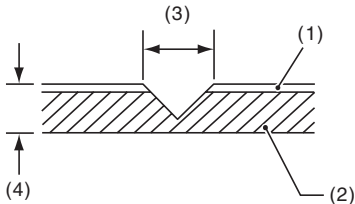
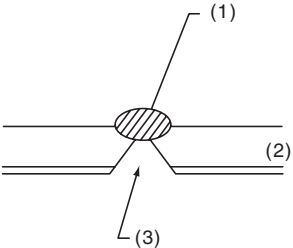
Front Bumper

EXTERIOR/INTERIOR TRIM

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

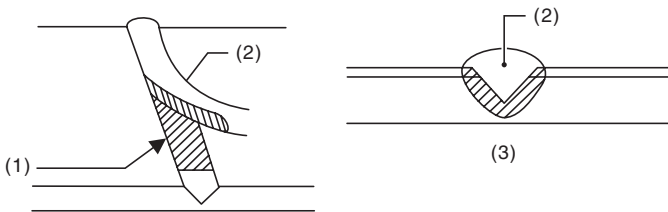
Much of the peripheral grained surface must be sacrificed for repair, and the degree of restoration is not really worth the expense. (The surface, however, will become almost flush with adjacent areas.)

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.	 EI-00234 (1) Bumper (2) Set bumper section
4	Surface preparation	Remove dust, oil, etc. from areas to be repaired and surrounding areas, using a suitable solvent (NRM No. 900 Precleno, white gasoline, or alcohol).	
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.

Front Bumper

EXTERIOR/INTERIOR TRIM

Process No.	Process name	Job contents
9	Welding	Using a heater gun and PP welding rod, weld the beveled spot while melting the rod and damaged area.  (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. EI-00237
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 kgf/cm², 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 — 50 μ

Front Bumper

EXTERIOR/INTERIOR TRIM

Process No.	Process name	Job contents	
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 — 50 μ • Spraying thickness: 245 — 343 kPa (2.5 — 3.5 kgf/cm ² , 36 — 50 psi)	Use a “block” coating method. • Recommended paint: Suncryl (SC) No. 307 Flex Hardener SC Reducer (thinner) • Mixing ratio: 3 : 1 Suncryl (SC) vs. No. 307 Flex Hardener • Viscosity: 11 — 13 sec/20°C (68°F) • Coated film thickness: 20 — 30 μ • Spraying thickness: 245 — 343 kPa (2.5 — 3.5 kgf/cm ² , 36 — 50 psi)
20	Leave unattended.	Not required.	Leave unattended at 20°C (68°F) for at least 10 minutes until the topcoated area is half-dry. NOTE: Be careful to keep dust or dirt from coming in contact with the affected area.
21	Top coat (II)	Not required.	Apply a clear coat three times at an interval of 3 to 5 minutes. • Recommended paint: SC710 Overlay Clear No. 307 Flex Hardener SC Reducer (thinner) • Mixing ratio: 3 : 1 Suncryl (SC) vs. No. 307 Flex Hardener • Viscosity: 10 — 13 sec/20°C (68°F) • Coated film thickness: 20 — 30 μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kgf/cm ² , 36 — 50 psi)
22	Drying	Allow the coated surface to dry 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.	

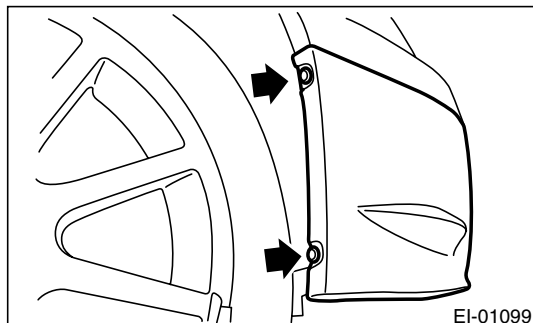
Air Dam Skirt

EXTERIOR/INTERIOR TRIM

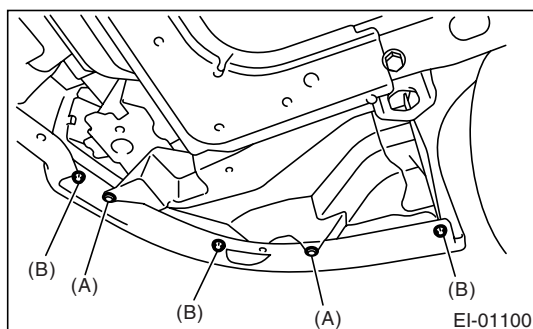
6. Air Dam Skirt

A: REMOVAL

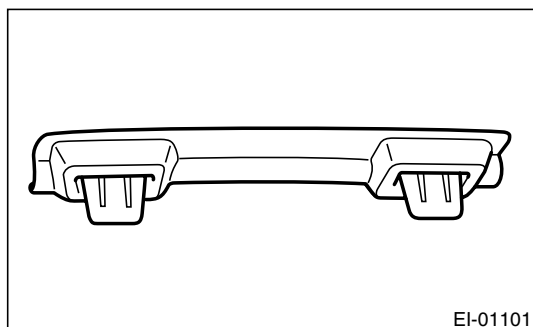
- 1) Lift-up the vehicle.
- 2) Remove the clip in the backside of air dam skirt.



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

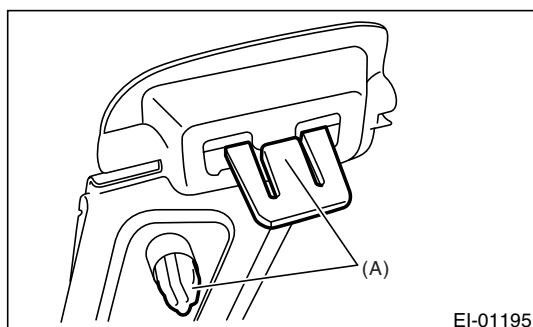


- 4) Turn over the mud guard, and remove the air dam skirt upper bracket from the inside of bumper.

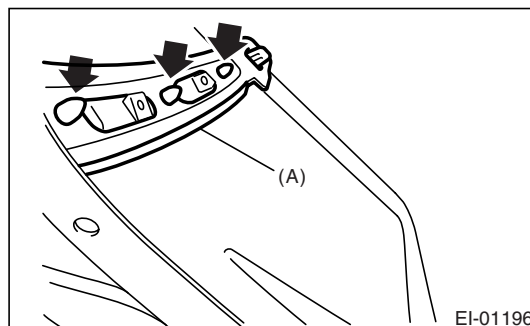


NOTE:

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



- 5) Push the clip to remove the air dam skirt side bracket (A).



- 6) Remove the air dam skirt assembly.

B: INSTALLATION

Install in the reverse order of removal.

Rear Bumper

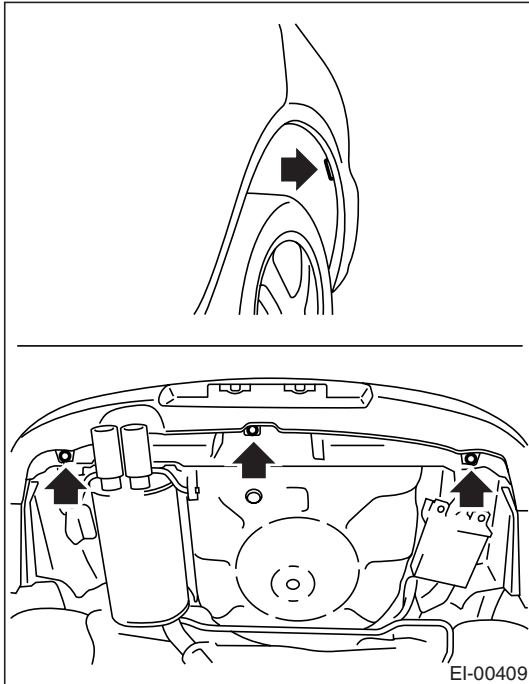
EXTERIOR/INTERIOR TRIM

7. Rear Bumper

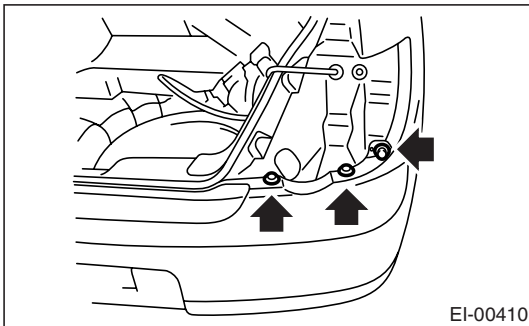
A: REMOVAL

1. WAGON MODEL

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

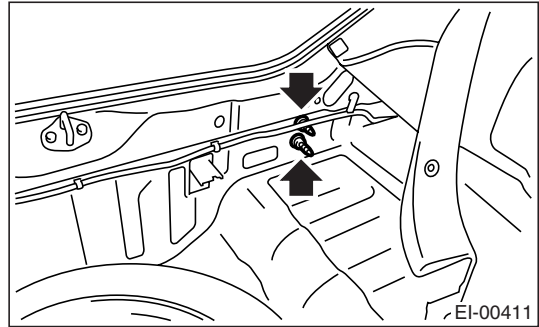


- 3) Remove the rear combination light assembly. <Ref. to LI-21, REMOVAL, Rear Combination Light Assembly.>
- 4) Remove the screw and two clips (both sides).



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

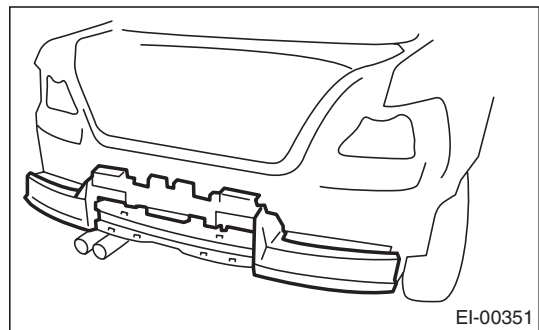
- 7) Turn over the rear quarter lower trims on both sides, and then loosen the four nuts.



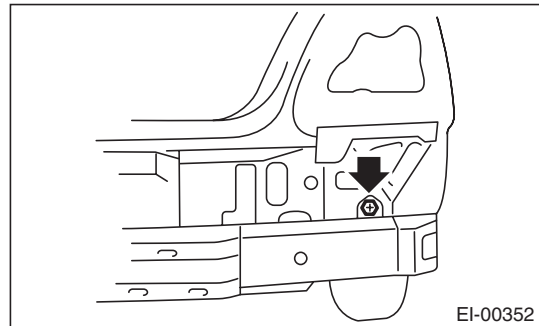
- 8) Disconnect the license plate light connector, and then remove the rear bumper.
- 9) Remove the energy absorber form from bumper beam. (model with bumper beam)

CAUTION:

Energy absorber form may easily break. Do not apply excessive force to it during removal.



- 10) Remove the bolt. (model with bumper beam)



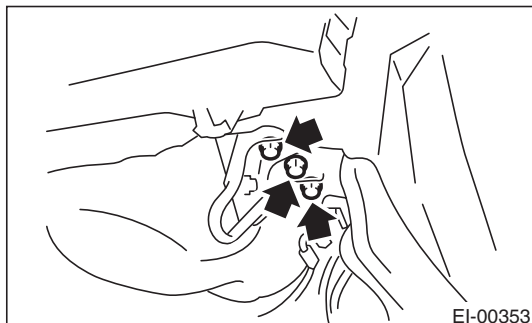
- 11) Remove the six bolts, then remove the bumper beam. (model with bumper beam)

Rear Bumper

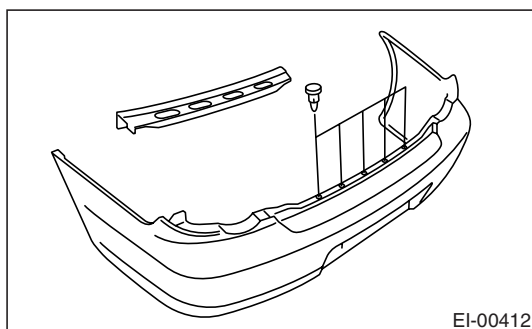
EXTERIOR/INTERIOR TRIM

NOTE:

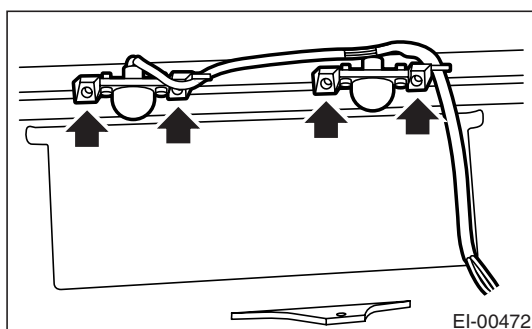
In the case of right side, remove the canister first. Loosen the bolt, and then remove the bumper beam.



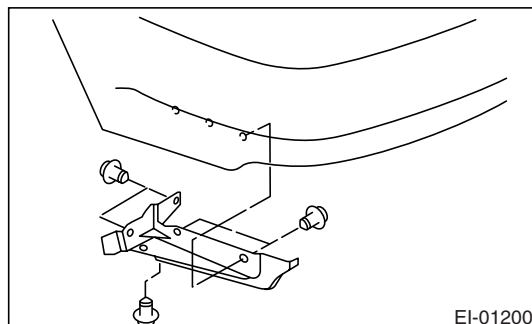
12) Remove the five clips, and then remove the bumper upper beam.



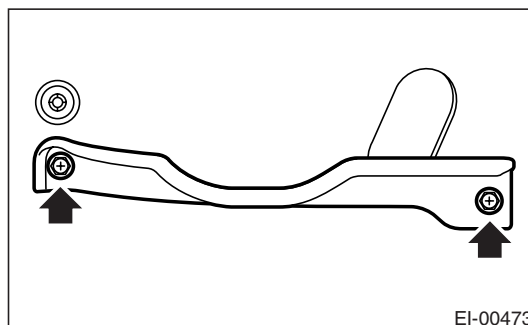
13) Remove the license plate light.



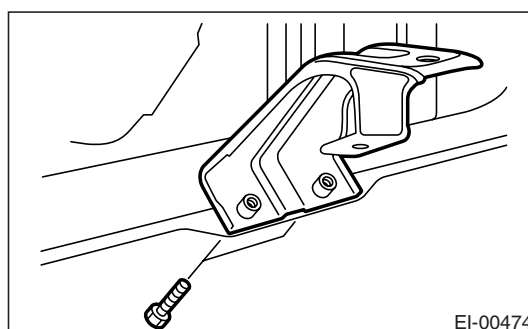
14) Remove the six clips, and then remove the bumper side cover.



15) Remove the corner bracket from body.



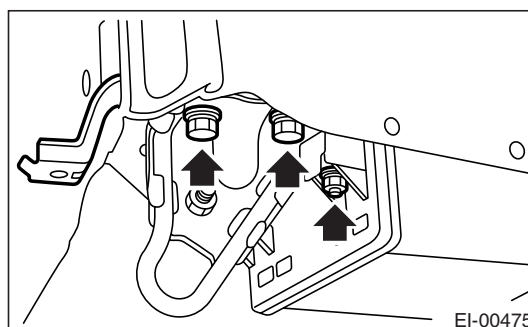
16) Remove the lower bracket (center) from body. (model without bumper beam)



17) Loosen the three bolts, and then remove the lower bracket (side). (model without bumper beam)

NOTE:

On the right side, after removing the canister, loosen the bolts and remove the lower bracket.



2. SEDAN MODEL

Refer to description about removal of rear bumper of wagon model. <Ref. to EI-30, 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-5, REAR BUMPER, COMPONENT, General Description.>

Rear Bumper

EXTERIOR/INTERIOR TRIM

2. SEDAN MODEL

Install in the reverse order of removal.

Tightening torque:

Refer to COMPONENT in General Description.

<Ref. to EI-5, REAR BUMPER, COMPONENT, General Description.>

C: REPAIR

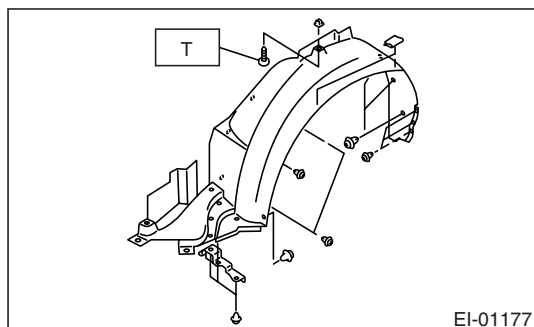
Refer to description about repair of front bumper.

<Ref. to EI-23, 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: 4.5 N·m (0.46 kgf-m, 3.32 ft-lb)

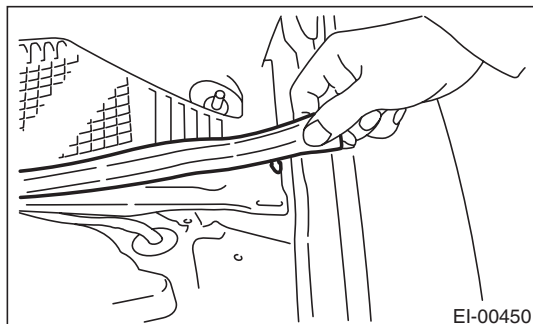
Cowl Panel

EXTERIOR/INTERIOR TRIM

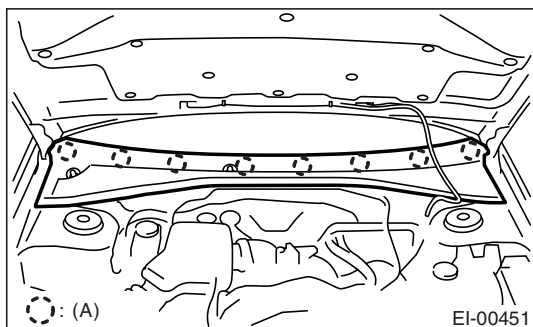
9. Cowl Panel

A: REMOVAL

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



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



B: INSTALLATION

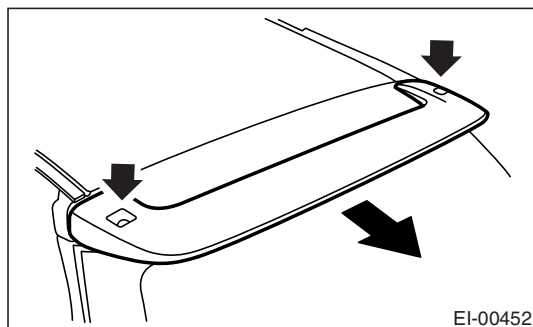
Install in the reverse order of removal.

10. Roof Spoiler

A: REMOVAL

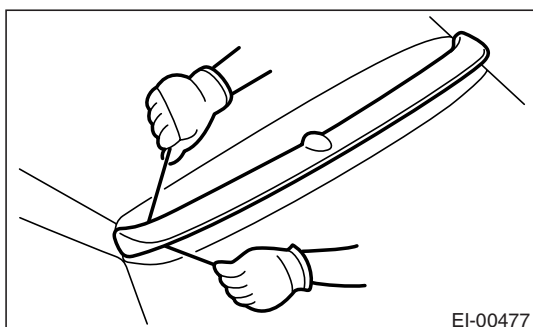
1. LARGE-SIZED ROOF SPOILER

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



2. SMALL-SIZED ROOF SPOILER

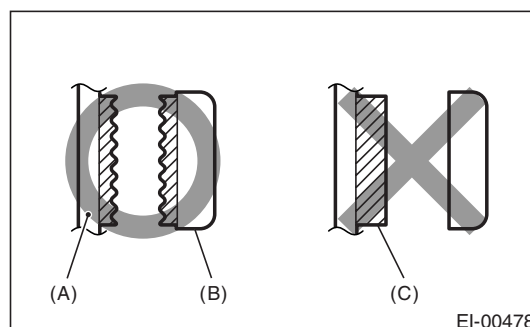
- 1) Slide in a thin thread of 0.8 mm (0.031 in) diameter or less (fishing line etc.) between body and spoiler, and then remove the spoiler detaching double-sided tape.



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).

- 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.



- (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.

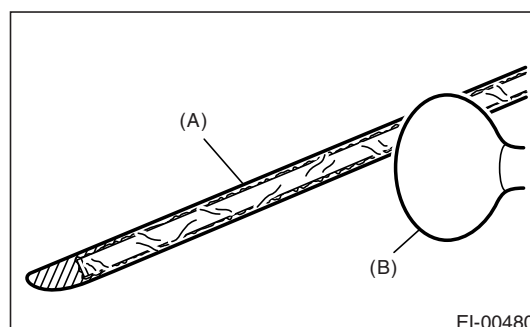
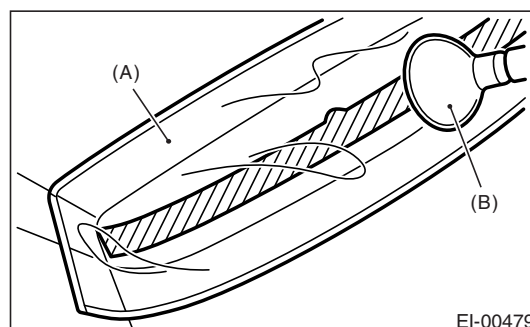
CAUTION:

- 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

- 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).



Roof Spoiler

EXTERIOR/INTERIOR TRIM

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. LARGE-SIZED ROOF SPOILER

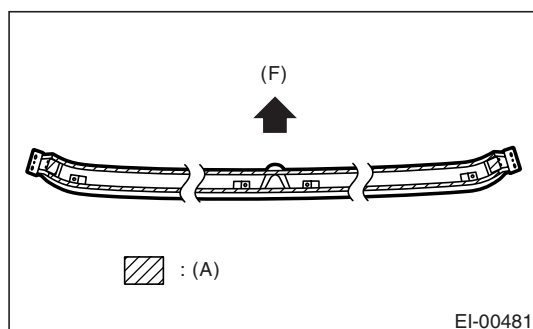
Install in the reverse order of removal.

Tightening torque:

7.4 N·m (0.75 kgf-m, 5.46 ft-lb)

2. SMALL-SIZED ROOF SPOILER

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



(F) Front side

(A) Double-sided tape; thickness: 0.8 mm (0.031 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.

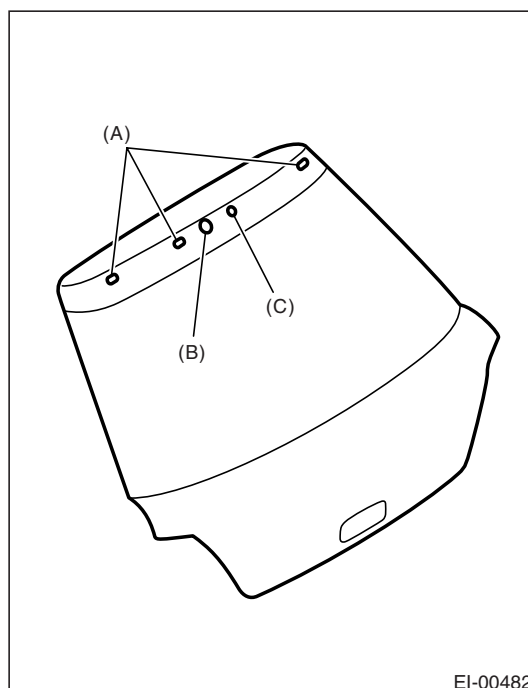
Body side: 40 — 60°C (104 — 140°F)

Spoiler 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.



(A) Cap oblong hole

(B) Washer nozzle

(C) Cap round hole

11.Rear Spoiler

A: REMOVAL

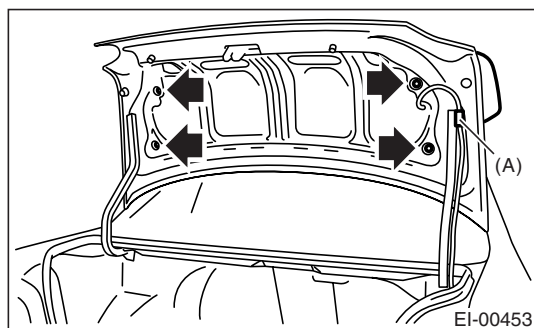
- 1) Disconnect the ground cable from battery.
- 2) Open the trunk lid.
- 3) Remove the electrical connector (A) of high mount stop light.
- 4) Loosen the mounting nut of rear spoiler to remove rear spoiler.

CAUTION:

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

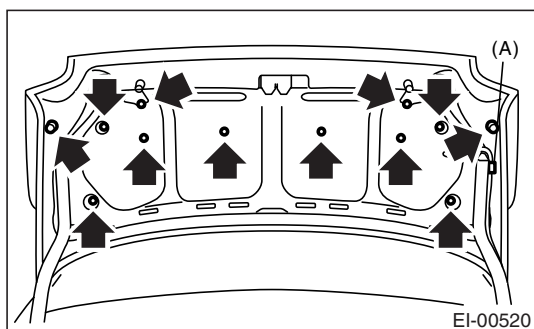
Small-sized rear spoiler:

Four tightening positions



Large-sized rear spoiler:

Twelve tightening positions



B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Clean the mounting surfaces of trunk lid and spoiler before installation.

Tightening torque:

7.5 N·m (0.76 kgf-m, 5.53 ft-lb)

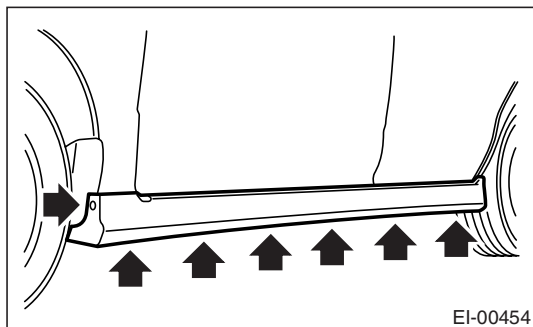
Side Sill Spoiler

EXTERIOR/INTERIOR TRIM

12.Side Sill Spoiler

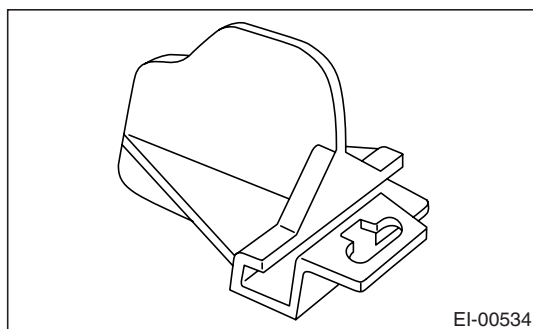
A: REMOVAL

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



NOTE:

Some vehicle have a clip to retain the splash board together with side sill spoiler (forward of rear tire) at rearmost end.



B: INSTALLATION

Install in the reverse order of removal.

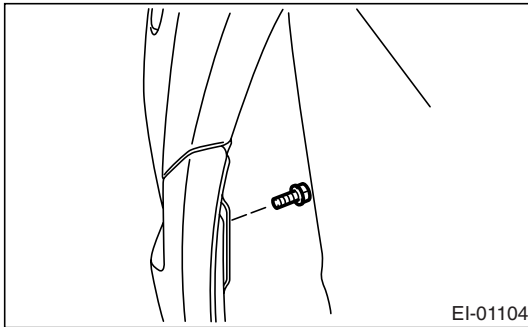
13.Arch Cover

A: REMOVAL

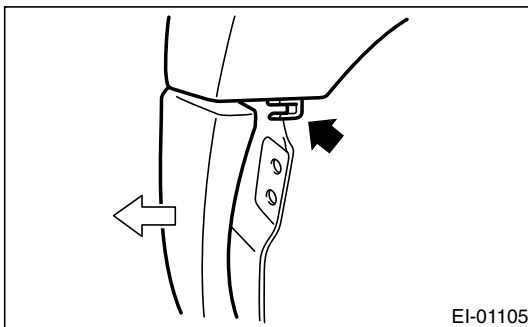
CAUTION:

**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.

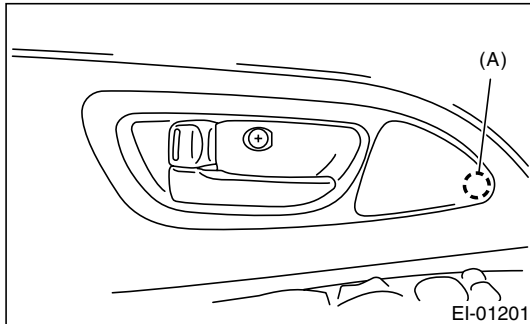
14. Front Door Trim

A: REMOVAL

CAUTION:

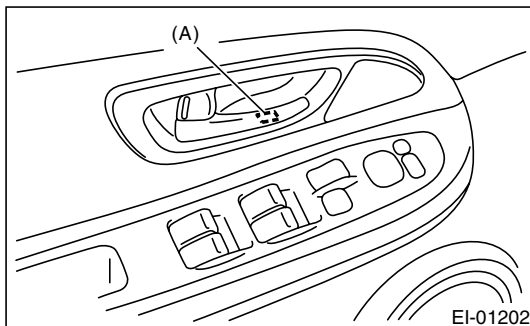
Do not apply excessive force to the clip. Otherwise the clip may be broken.

- 1) Disconnect the ground cable from battery.
- 2) Remove the gusset cover.
- 3) Remove a clip (A) of inner remote cover.



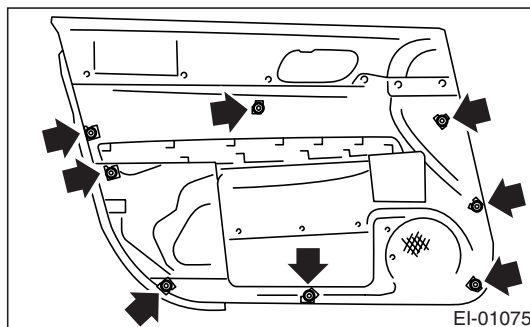
- 4) Insert the flat tip screw driver into (A) part of inner remote cover, and then remove the lower hook with turning screw driver.

Remove the upper hook with pulling inner remote cover, and then remove the inner remote cover.



- 5) Remove the power window control switch. <Ref. to GW-9, REMOVAL, Power Window Control Switch.>

- 6) Remove the clips of trim panel using clip remover to remove trim panel.



B: INSTALLATION

Install in the reverse order of removal.

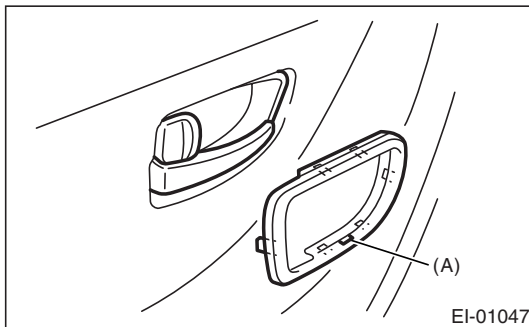
15.Rear Door Trim

A: REMOVAL

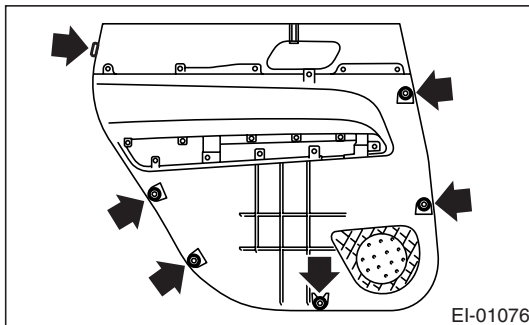
CAUTION:

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.

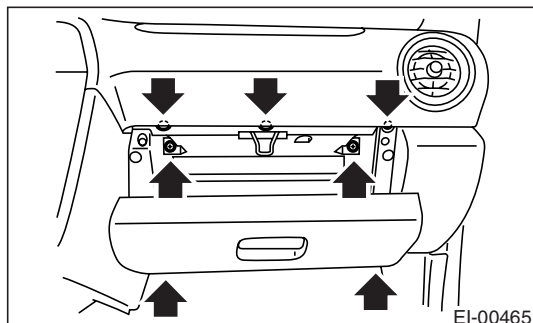
Glove Box

EXTERIOR/INTERIOR TRIM

16. Glove Box

A: REMOVAL

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



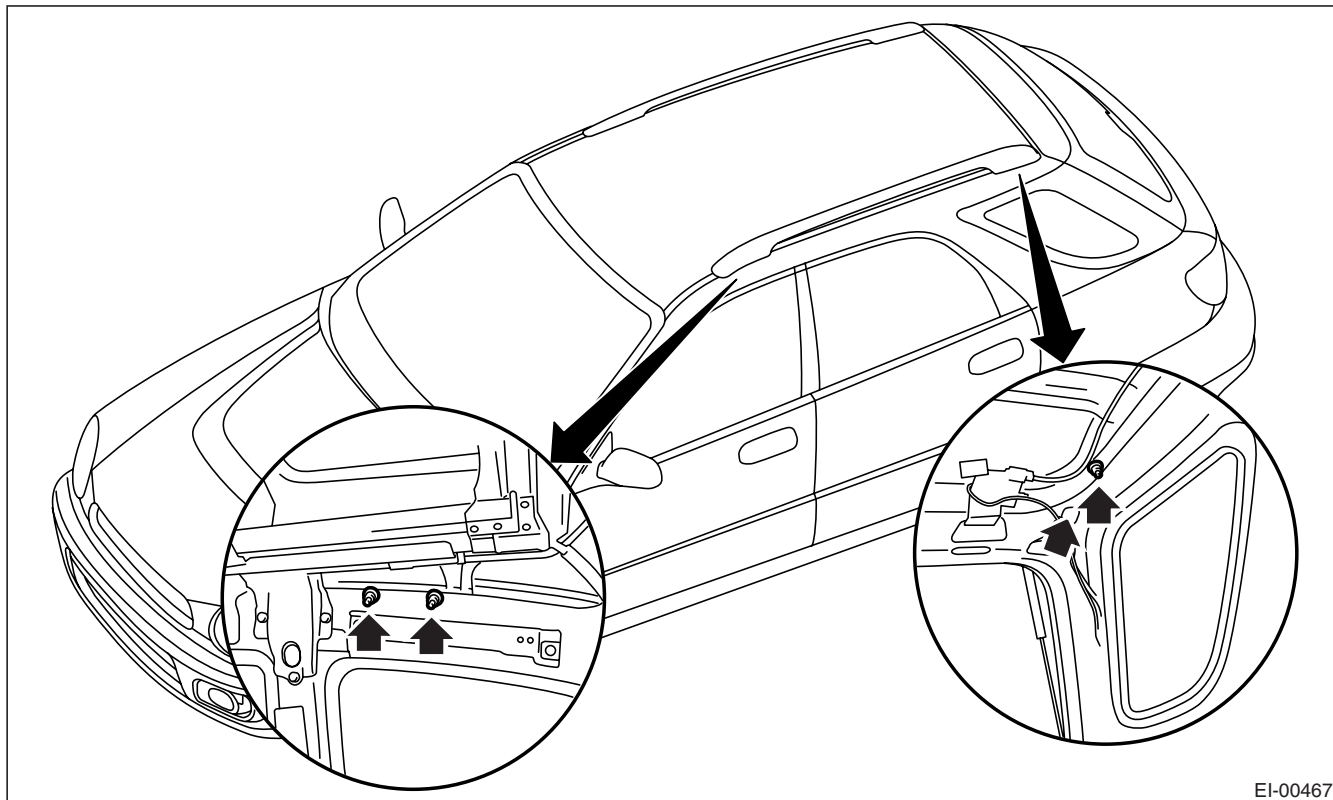
B: INSTALLATION

Install in the reverse order of removal.

17. Roof Rail

A: REMOVAL

- 1) Remove the roof trim. <Ref. to EI-53, REMOVAL, Roof Trim.>
- 2) Remove the four mounting nuts, and then detach the roof rail carefully.



EI-00467

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)

Roof Molding

EXTERIOR/INTERIOR TRIM

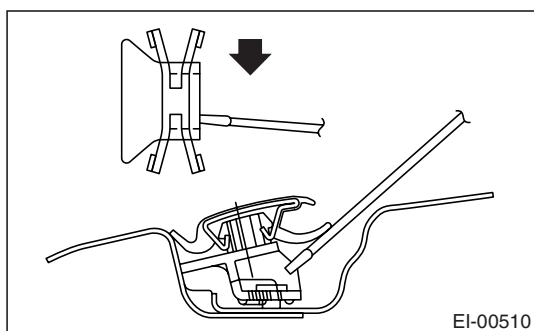
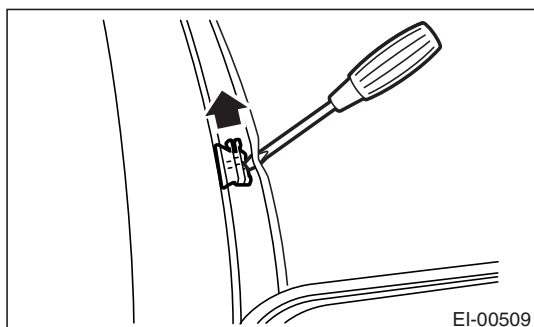
18. Roof Molding

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.

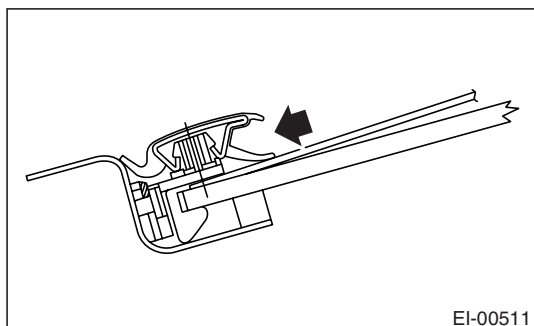
LH: Slide the molding toward the front side of vehicle.



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.

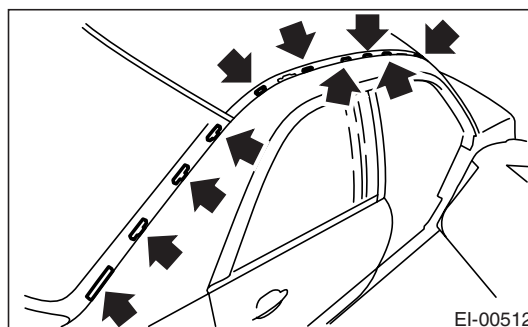


B: INSTALLATION

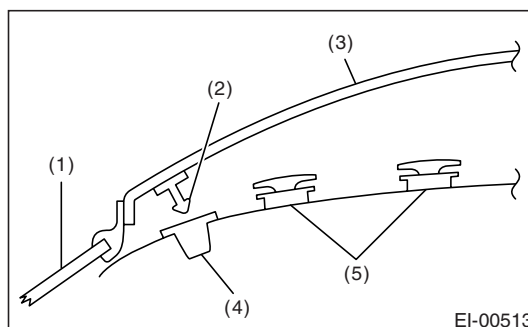
1) Remove the clip of roof and rear pillar (sedan model) from roof molding, and then install it to body side.

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

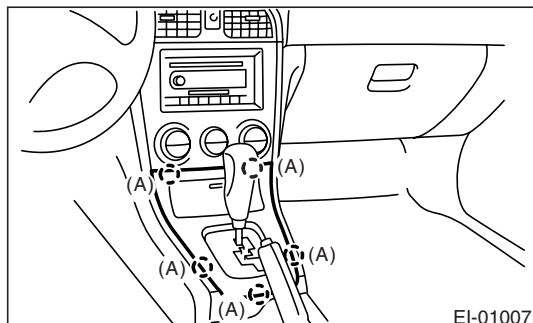
(5) Clip (roof)

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

19.Console Box

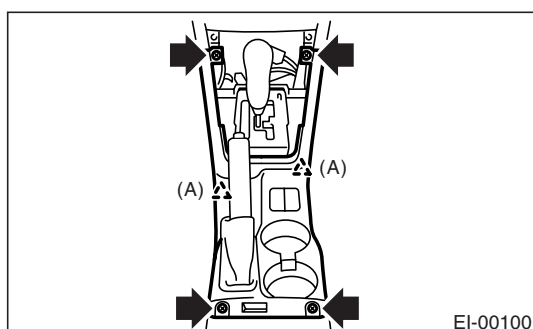
A: REMOVAL

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



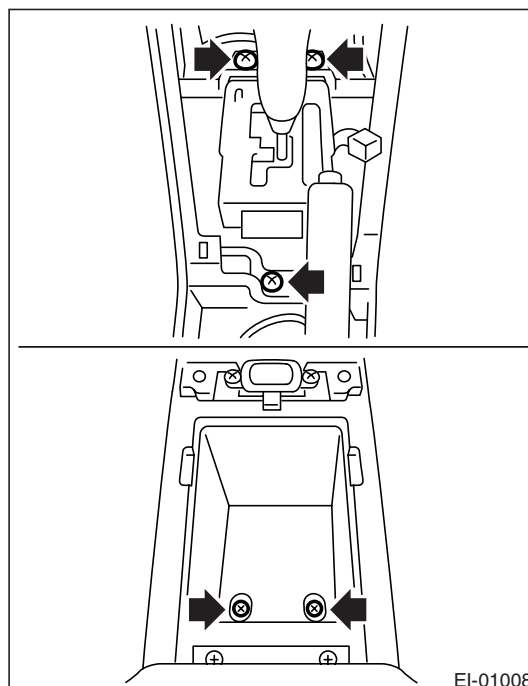
(A) Hook pawl

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

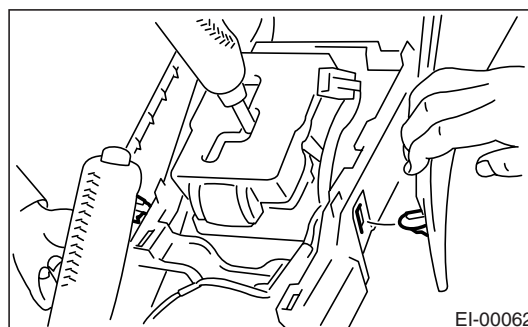


(A) Clip

- 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.

Instrument Panel Assembly

EXTERIOR/INTERIOR TRIM

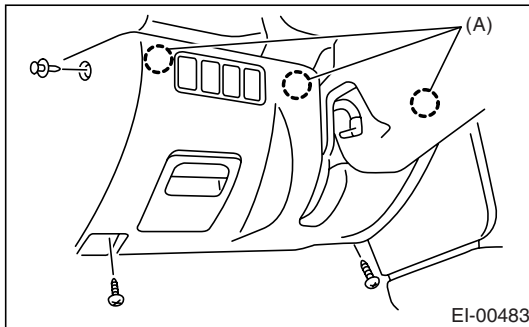
20. Instrument Panel Assembly

A: REMOVAL

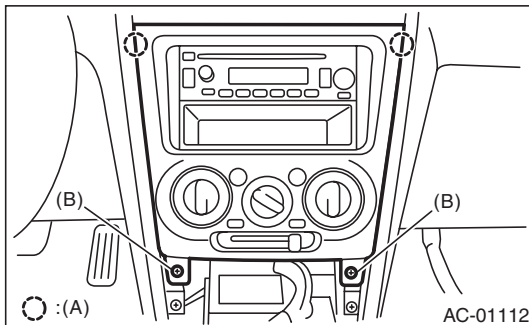
CAUTION:

- 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.



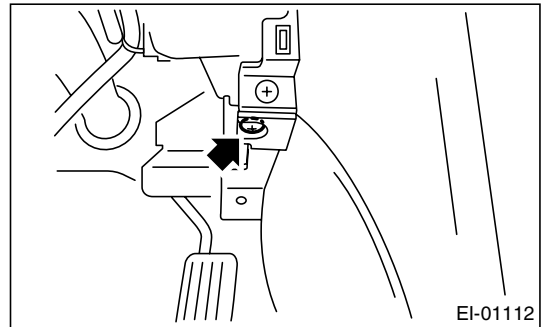
- 3) Remove the console front panel and console cover. <Ref. to EI-45, REMOVAL, Console Box.>
- 4) Remove the clip (A) and screw (B), and then remove the center console panel.



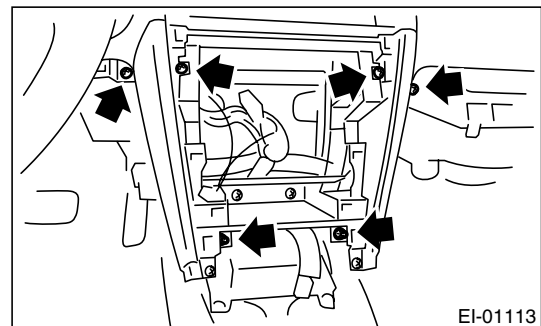
- (A) Clip
(B) Screw

- 5) Remove the glove box. <Ref. to EI-42, REMOVAL, Glove Box.>

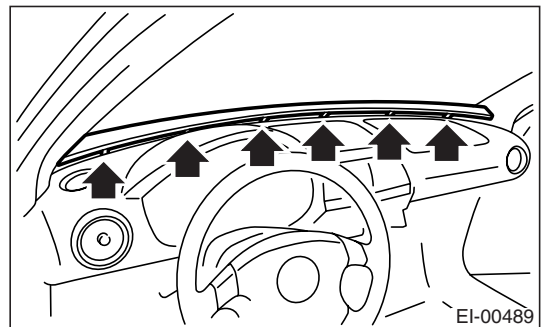
- 6) Loosen the screws, and then remove the console side panel.



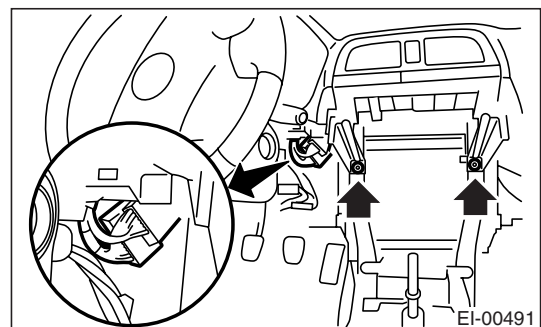
- 7) Remove the passenger's airbag module. <Ref. to AB-13, Passenger's Airbag Module.>
- 8) Loosen the four screws and two nuts, and then remove the lower console panel.



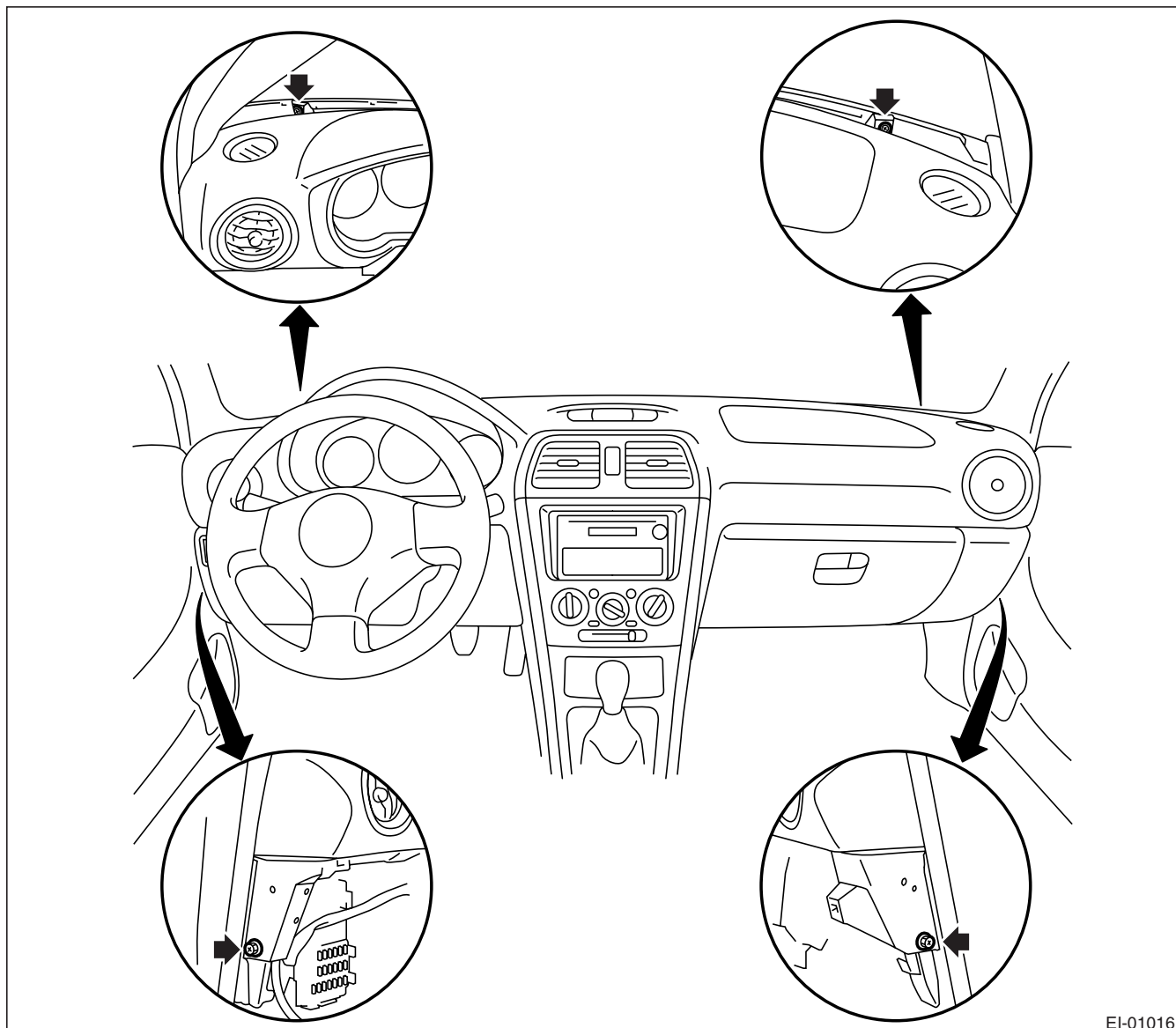
- 9) Remove the hook, and then remove the defroster panel.



- 10) Remove the front pillar upper trim. <Ref. to EI-49, REMOVAL, Upper Inner Trim.>
- 11) Disconnect the two connectors, and then loosen the nuts.



12) Remove the instrument panel installation bolts.



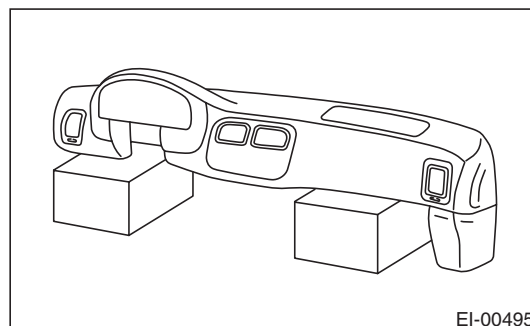
EI-01016

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.



EI-00495

Instrument Panel Assembly

EXTERIOR/INTERIOR TRIM

B: INSTALLATION

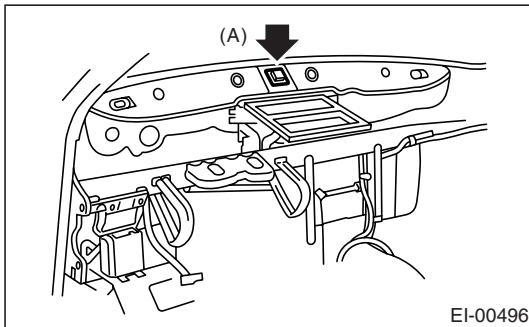
CAUTION:

- 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.

Install in the reverse order of removal.

NOTE:

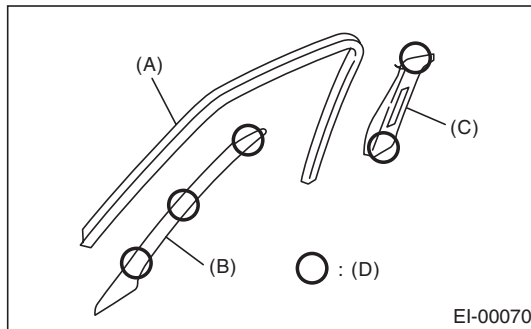
When installing the instrument panel into position, push the hook into grommet (A) on the body panel. After tightening the bolts, recheck the installation.



21.Upper Inner Trim

A: REMOVAL

- 1) Remove the lower inner trim. <Ref. to EI-50, RE-MOVAL, 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

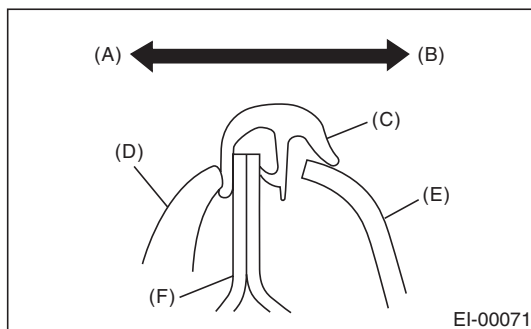
Install in the reverse order of removal.

CAUTION:

Be sure to securely hook 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

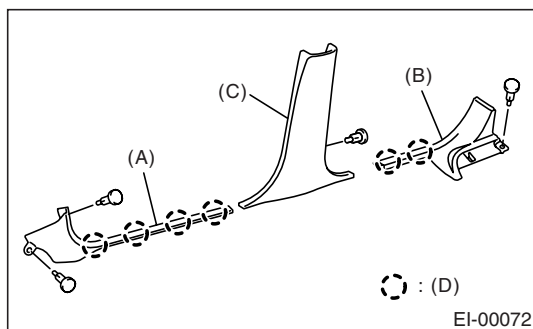
Lower Inner Trim

EXTERIOR/INTERIOR TRIM

22.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:

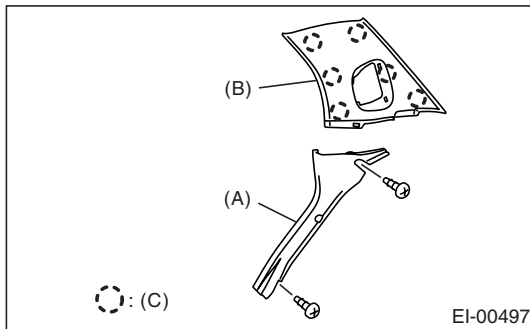
Be sure to securely hook pawls of inner trim panel to body flange.

23.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-50, REMOVAL, Lower Inner Trim.>
- 3) Remove the rear pillar lower cover (A).
- 4) Remove the seatbelt lower anchor bolt, and then remove the rear pillar upper trim (B).

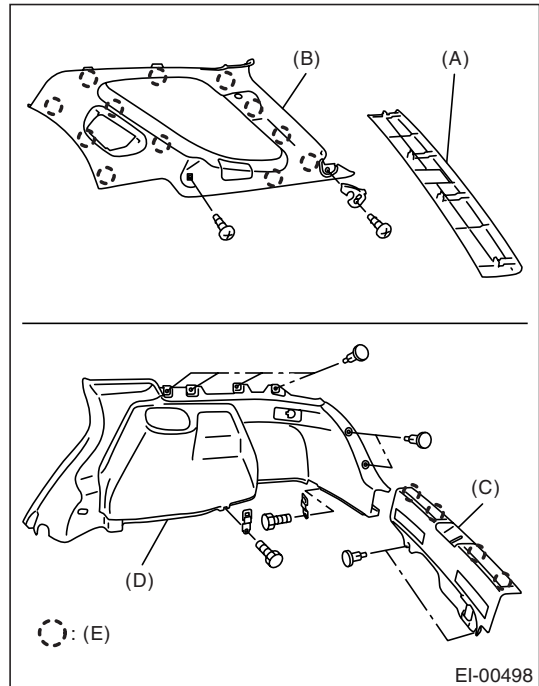


(C) Clip

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

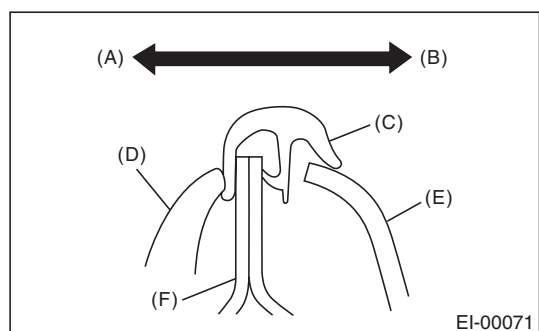
Install in the reverse order of removal.

CAUTION:

Be sure to securely hook 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

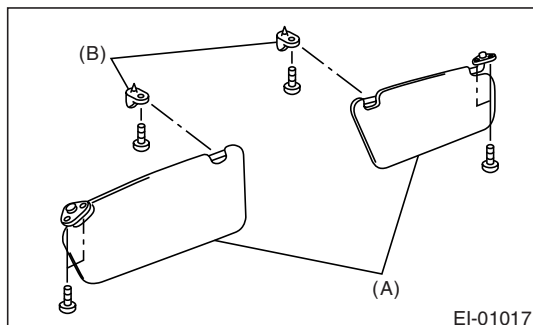
Sun Visor

EXTERIOR/INTERIOR TRIM

24.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.

25. Roof Trim

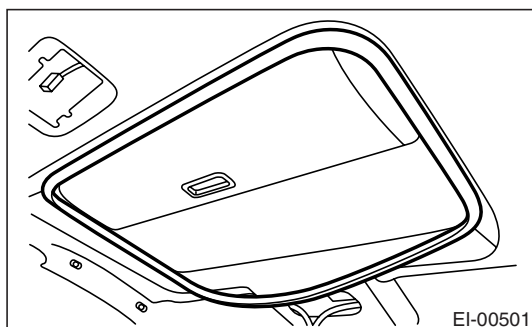
A: REMOVAL

CAUTION:

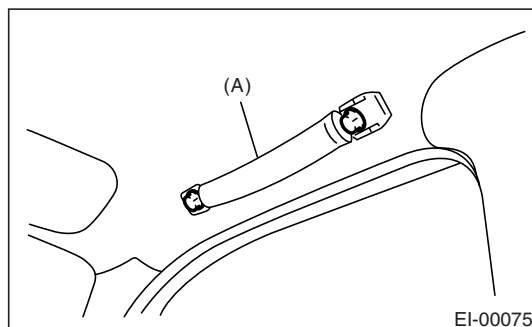
When removing the clip, use great care not to damage the roof trim.

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-29, REMOVAL, Spot Map Light.>
- 4) Remove the room light. <Ref. to LI-30, REMOVAL, Room Light.>
- 5) Remove the sun visor and hook or both sides. <Ref. to EI-52, REMOVAL, Sun Visor.>
- 6) In case of models with sunroof, remove the sunroof weather strip.

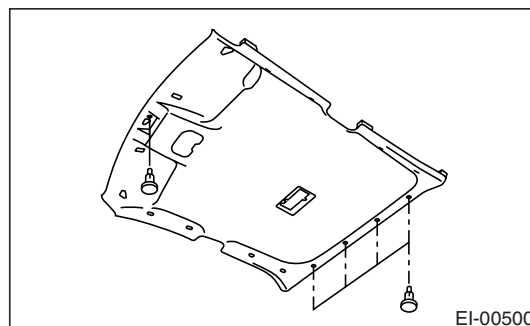


- 7) Remove the assist-grips (A).



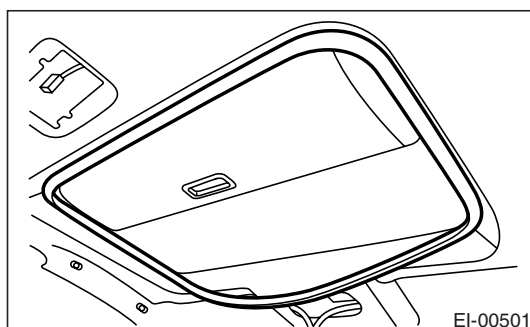
- 8) Remove the upper inner trim. <Ref. to EI-49, REMOVAL, Upper Inner Trim.>
- 9) Remove the quarter upper trim. <Ref. to EI-51, SEDAN MODEL, REMOVAL, Rear Quarter Trim.>

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

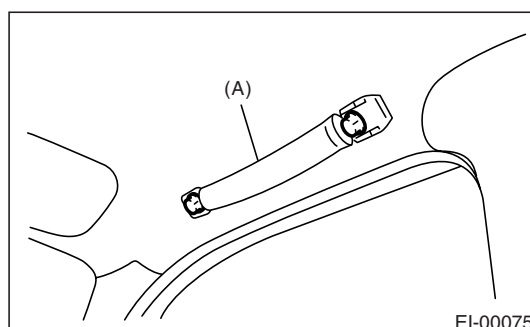


2. WAGON MODEL

- 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-30, REMOVAL, Room Light.>
- 4) Remove the sun visor and hook or both sides. <Ref. to EI-52, REMOVAL, Sun Visor.>
- 5) In case of models with sunroof, remove the sunroof weather strip.



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

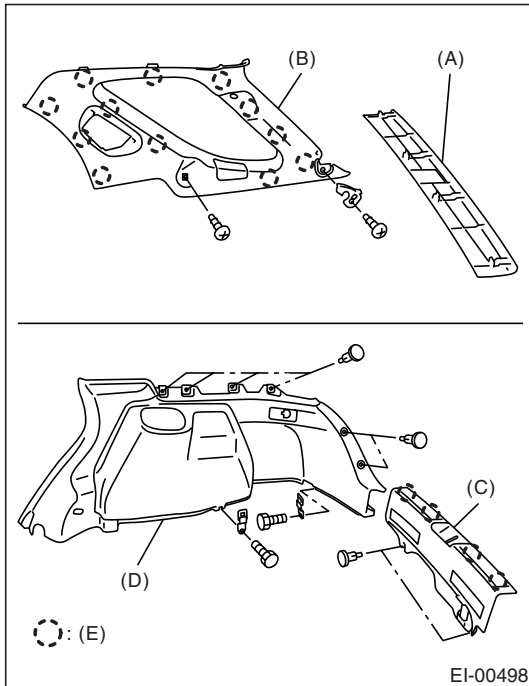


- 7) Remove the upper inner trim. <Ref. to EI-49, REMOVAL, Upper Inner Trim.>
- 8) Remove the rear quarter upper trim shown in the figure.
- 9) Remove the rear rail trim (A).

Roof Trim

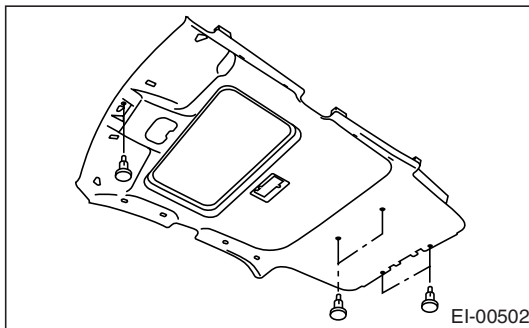
EXTERIOR/INTERIOR TRIM

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.

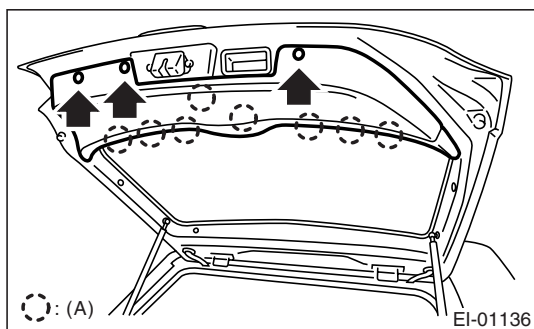
26.Rear Gate Trim

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.

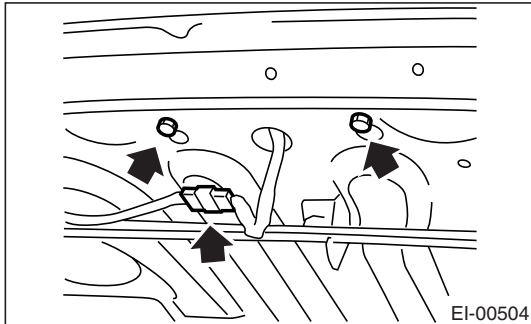
Rear Shelf Trim

EXTERIOR/INTERIOR TRIM

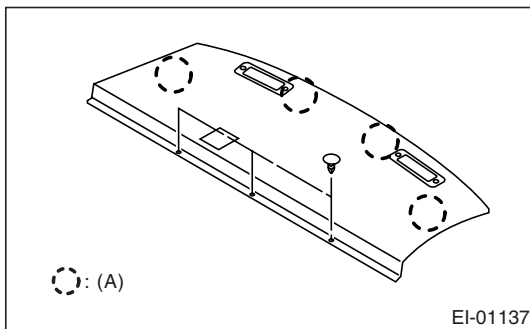
27.Rear Shelf Trim

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the high mount stop light.



- 3) Remove the rear quarter upper trim. <Ref. to EI-51, REMOVAL, Rear Quarter Trim.>
- 4) Remove the seat belt center anchor lower bolt.
- 5) Remove the clips, and then detach the roof trim.



(A) Clip

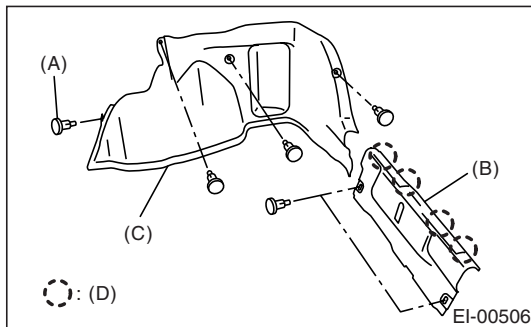
B: INSTALLATION

Install in the reverse order of removal.

28.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) Loosen the clips, and then detach the trunk rear trim (B).
- 5) Loosen the clips to remove the trunk side trim (C).



(D) Clip

B: INSTALLATION

Install in the reverse order of removal.

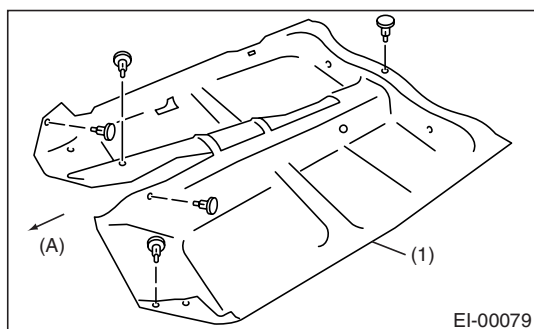
Floor Mat

EXTERIOR/INTERIOR TRIM

29.Floor Mat

A: REMOVAL

- 1) Remove the front seats. <Ref. to SE-6, REMOVAL, Front Seat.>
- 2) Remove the rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 3) Remove the console box. <Ref. to EI-45, Console Box.>
- 4) Remove the side sill front cover, side sill rear cover and center pillar lower trim. <Ref. to EI-50, 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.

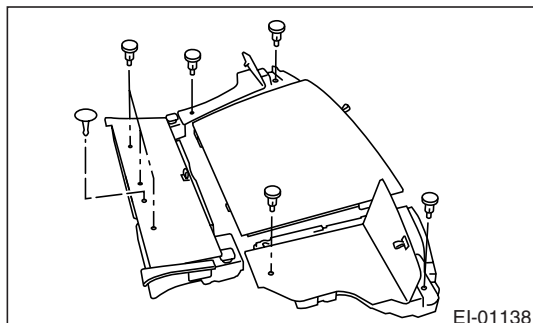
NOTE:

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

30.Luggage Floor Mat

A: REMOVAL

Remove the clips, and then detach the rear floor mats and boxes.



EI-01138

B: INSTALLATION

Install in the reverse order of removal.

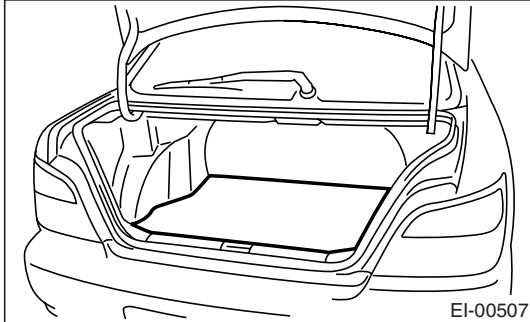
Trunk Room Mat

EXTERIOR/INTERIOR TRIM

31.Trunk Room Mat

A: REMOVAL

Draw out the trunk room mat.



B: INSTALLATION

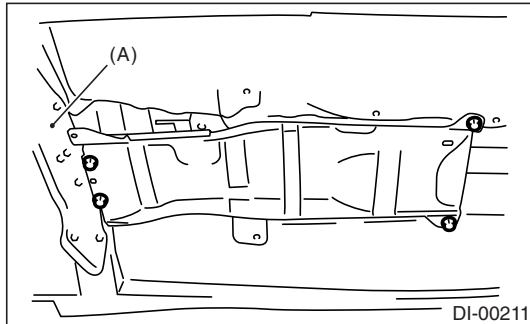
Install in the reverse order of removal.

32.Heat Shield Cover

A: REMOVAL

1. FRONT HEAT SHIELD COVER

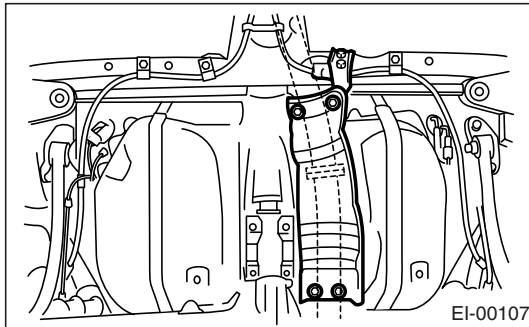
Loosen the four bolts to remove the front heat shield cover.



(A) Transmission mount

2. CENTER HEAT SHIELD COVER

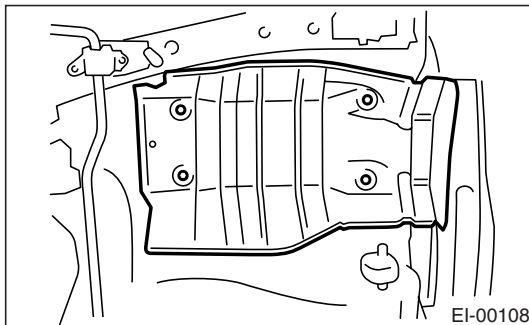
Loosen the four bolts to remove the center heat shield cover.



3. REAR HEAT SHIELD COVER

1) Remove the muffler. <Ref. to EX(H4SO)-12, REMOVAL, Muffler.>, <Ref. to EX(H4SOw/oOBD)-11, REMOVAL, Muffler.>, <Ref. to EX(H4DOTC)-16, REMOVAL, Muffler.>

2) Loosen the four bolts to remove the rear heat shield cover.



B: INSTALLATION

Install in the reverse order of removal.

EXTERIOR BODY PANELS



	Page
1. General Description	2
2. Front Hood	13
3. Front Fender	14
4. Front Door	15
5. Front Sealing Cover	17
6. Rear Door	18
7. Rear Sealing Cover	20
8. Trunk Lid	21
9. Rear Gate	22

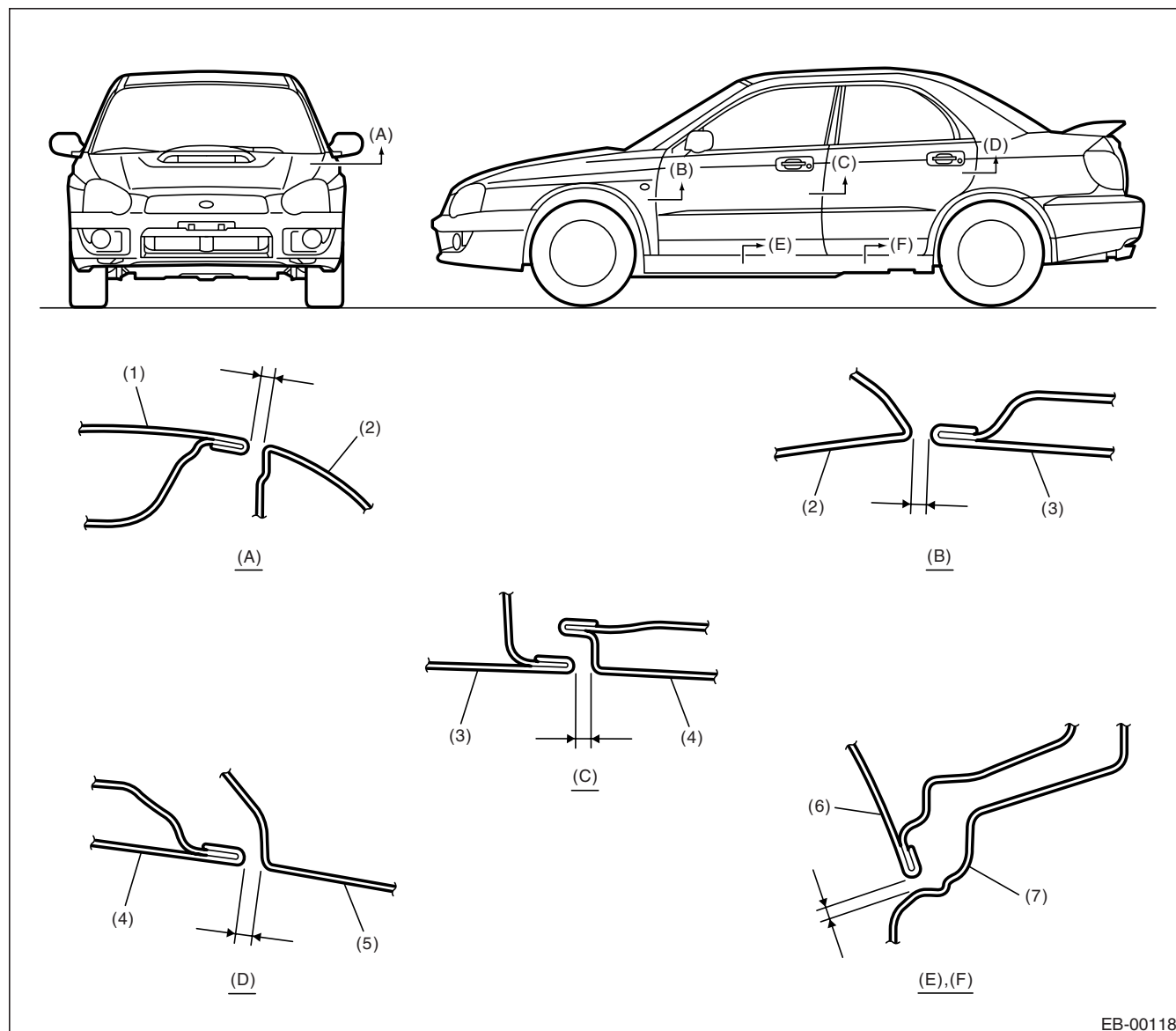
General Description

EXTERIOR BODY PANELS

1. General Description

A: SPECIFICATION

1. SIDE



EB-00118

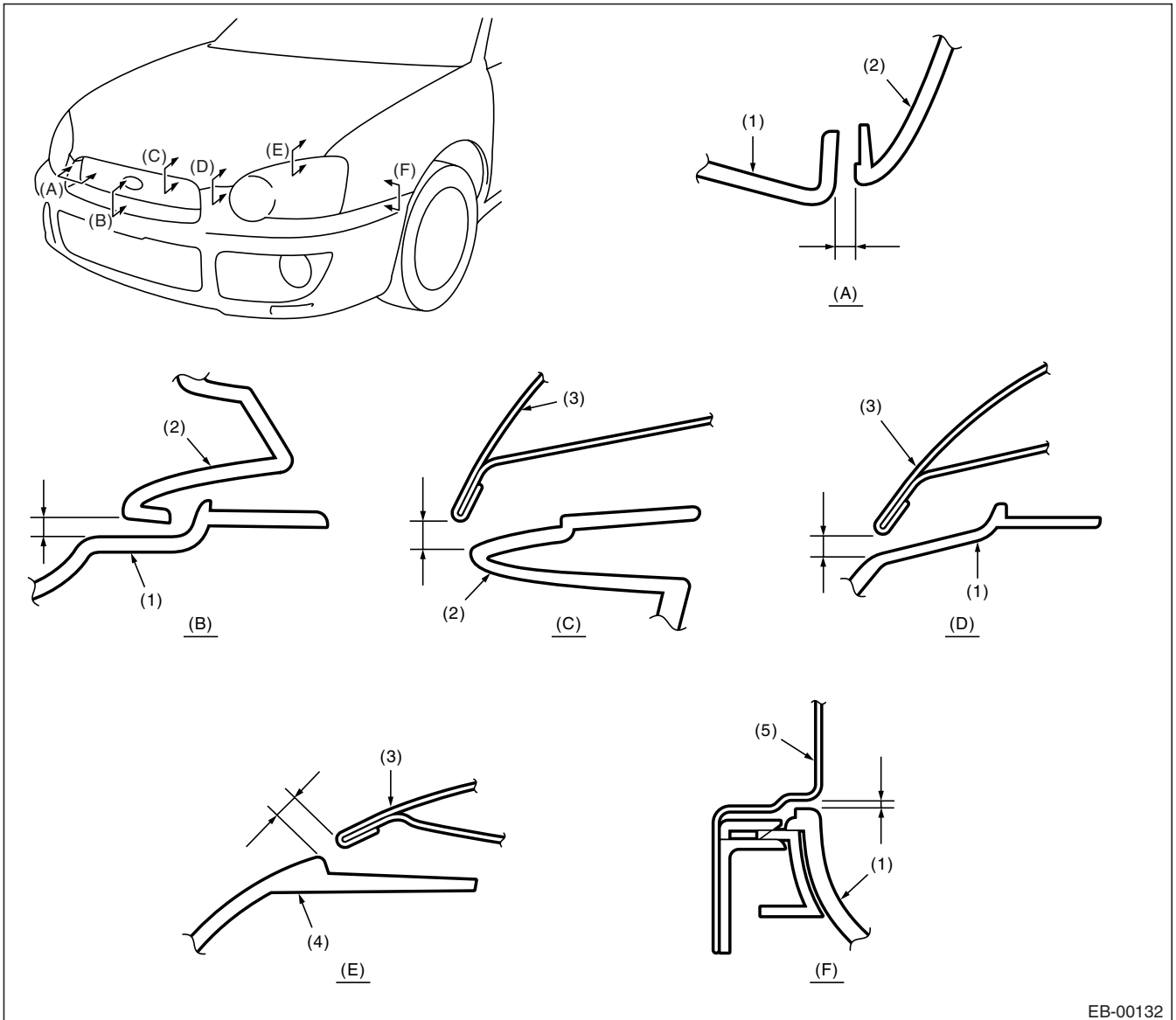
- | | | |
|------------------------|------------------------|---------------|
| (1) Front hood panel | (4) Rear door panel | (7) Side sill |
| (2) Front fender panel | (5) Rear quarter panel | |
| (3) Front door panel | (6) Door panel | |

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)

General Description

EXTERIOR BODY PANELS

2. FRONT



EB-00132

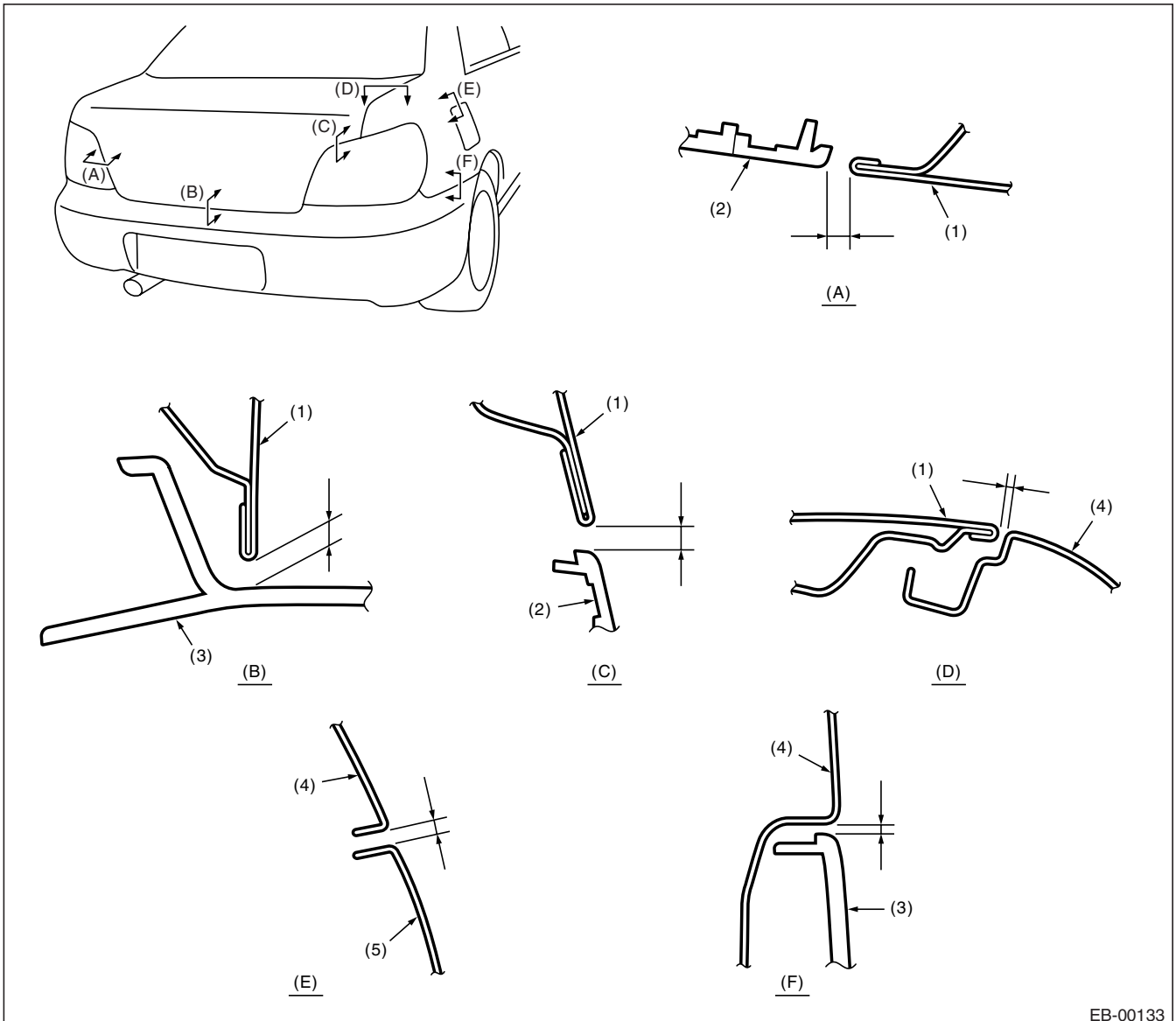
- | | | |
|------------------|----------------------|------------------------|
| (1) Front bumper | (3) Front hood panel | (5) Front fender panel |
| (2) Front grille | (4) Headlight | |

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)



EB-00133

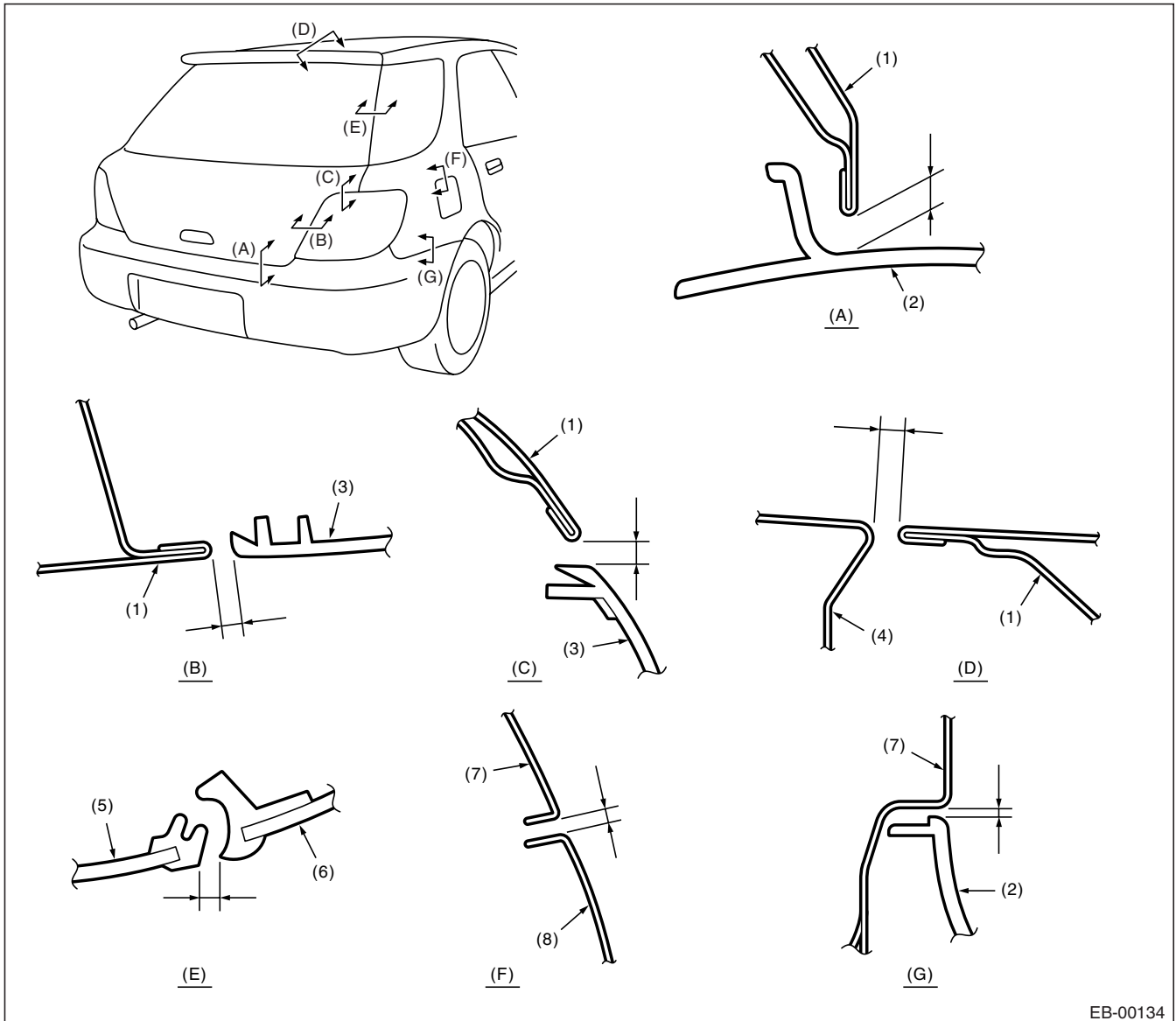
- (1) Trunk lid panel
 (2) Rear combination light
 (3) Rear bumper
 (4) Rear fender panel
 (5) Fuel filler flap lid

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

General Description

EXTERIOR BODY PANELS

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 | |

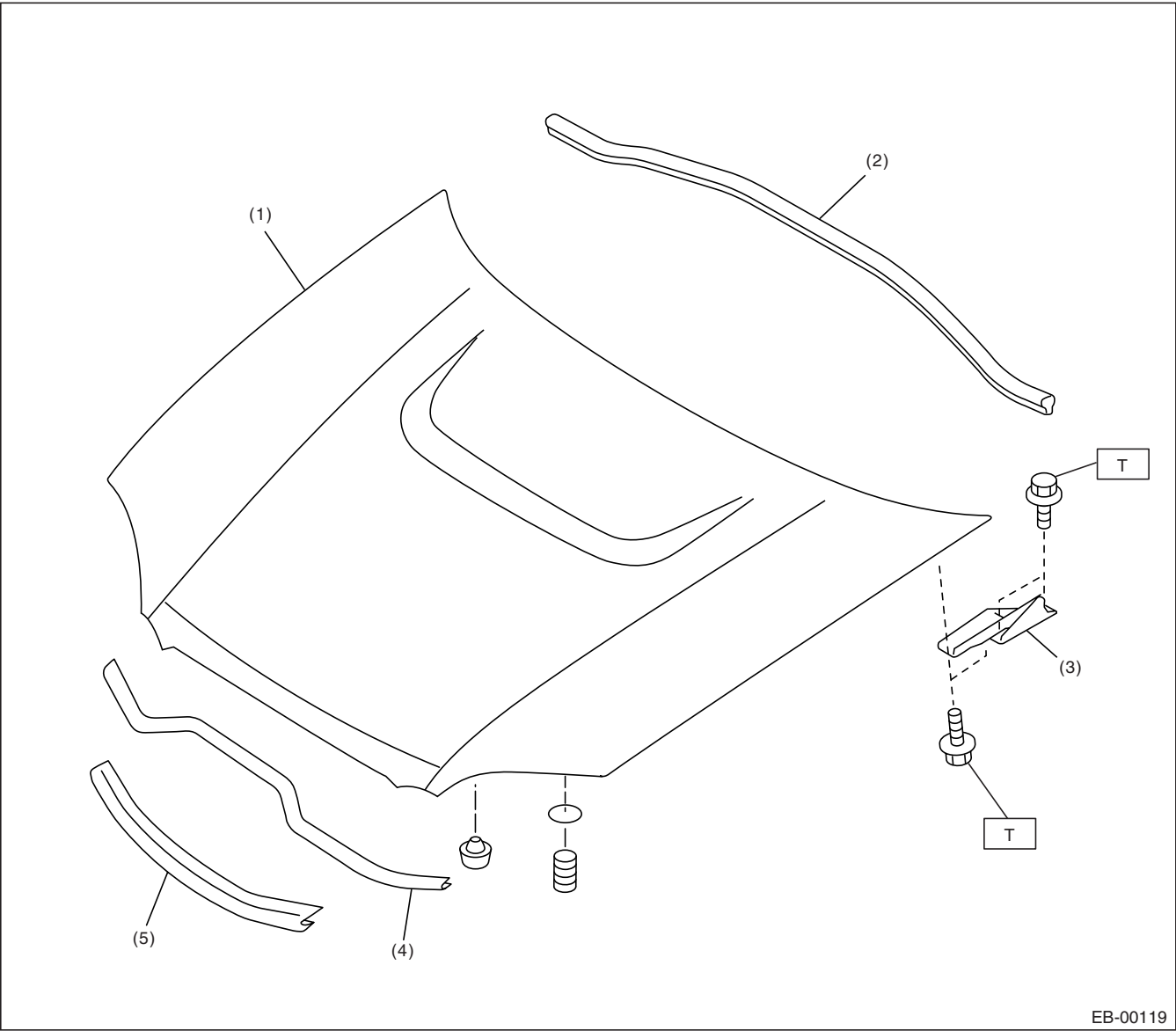
Section	Part	Standard
(A)	Rear gate panel to Rear bumper	8.3±1.5 mm (0.33±0.06 in)
(B)	Rear gate panel to Rear combination light (Lateral direction)	5.0±1.0 mm (0.20±0.04 in)
(C)	Rear gate panel to Rear combination light (Longitudinal direction)	6.0±1.0 mm (0.24±0.04 in)
(D)	Roof panel to Rear gate panel	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 filler flap lid	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)

General Description

EXTERIOR BODY PANELS

B: COMPONENT

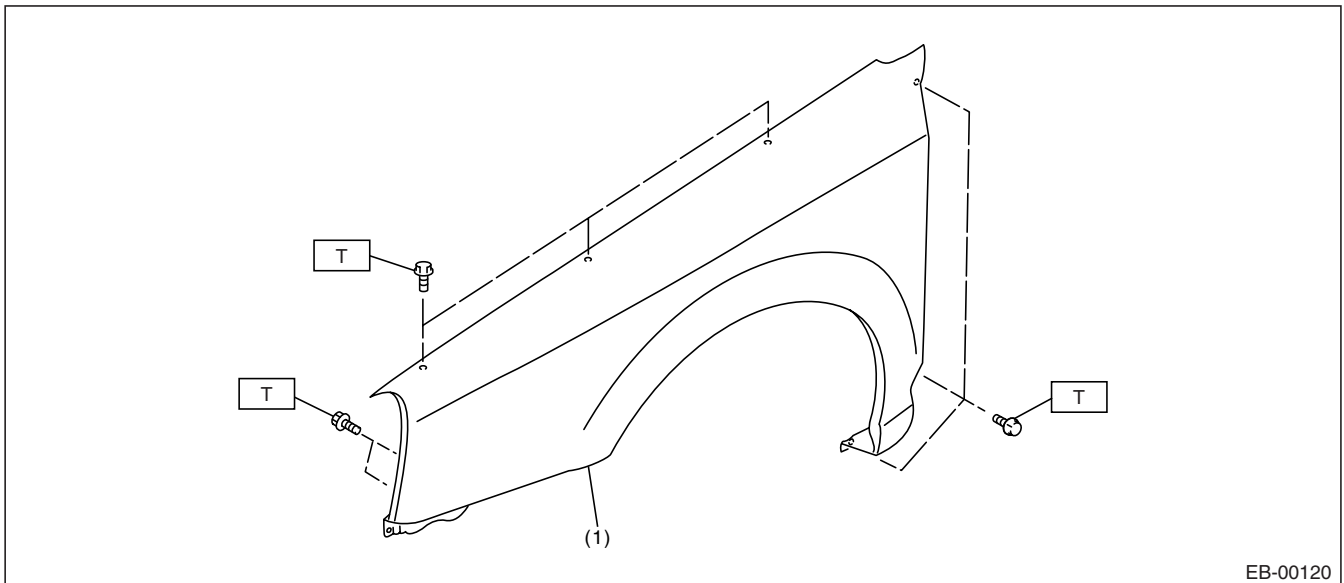
1. FRONT HOOD



- | | |
|------------------------|--------------------------------------|
| (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



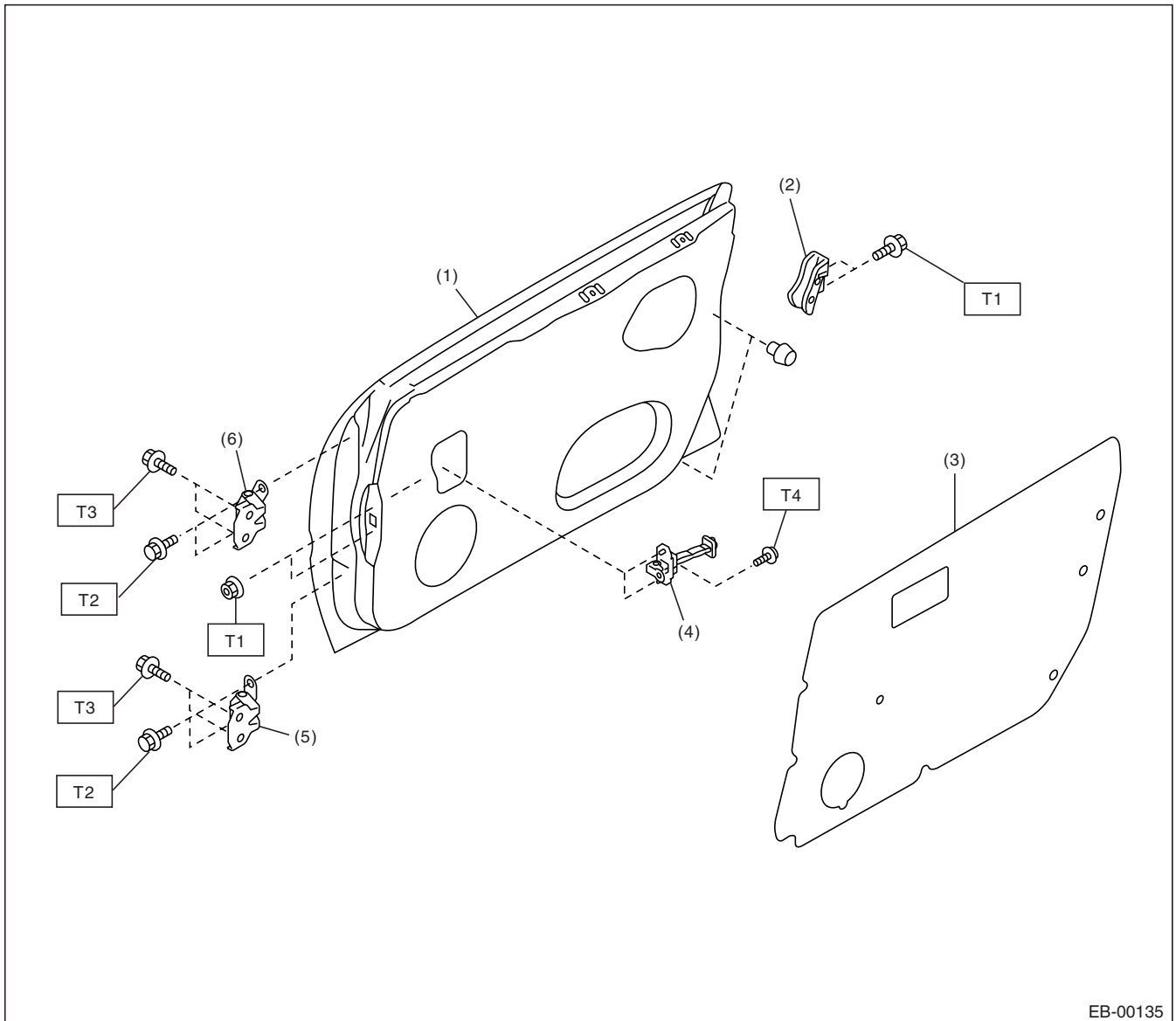
(1) Front fender panel

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

General Description

EXTERIOR BODY PANELS

3. FRONT DOOR



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)

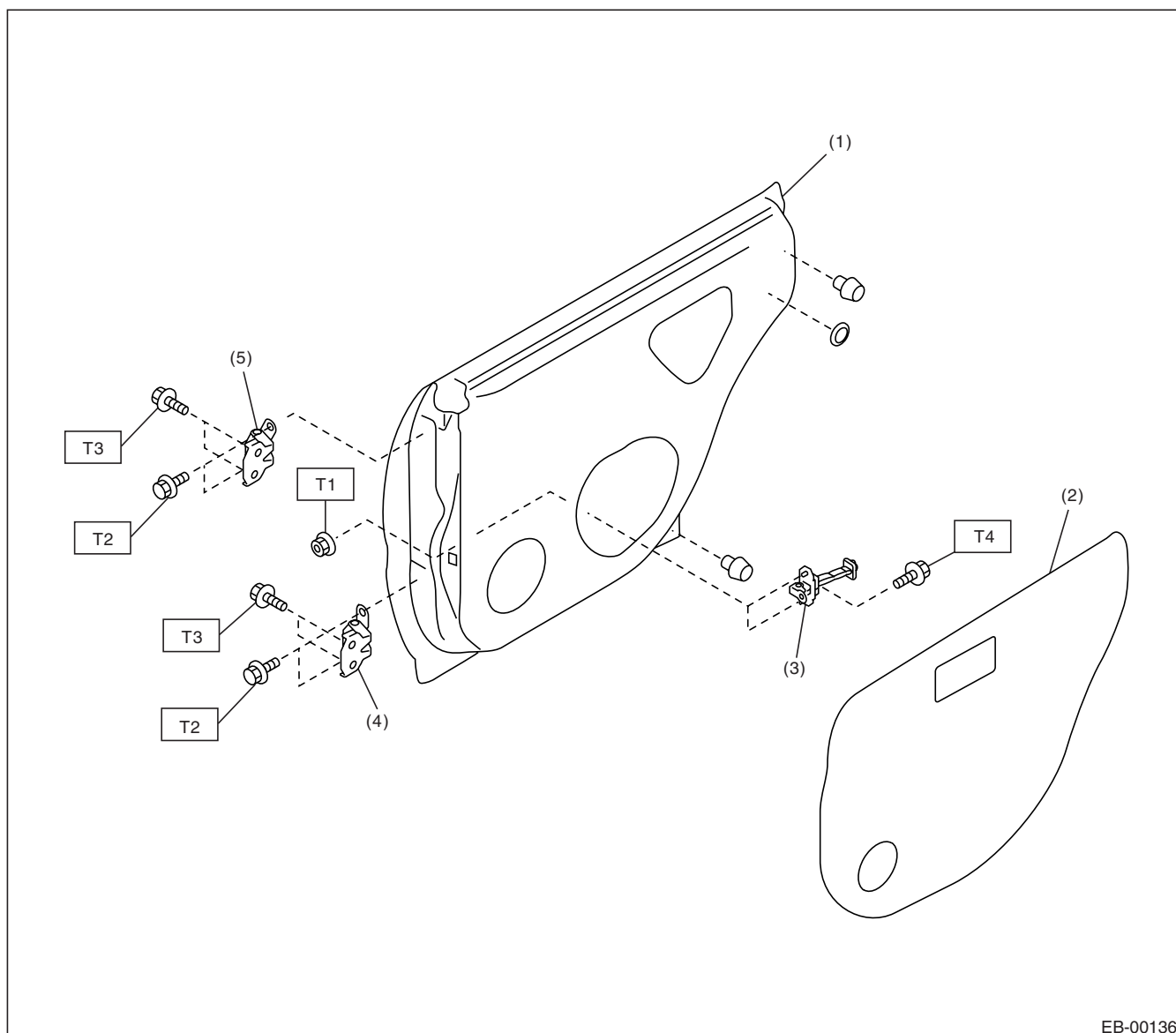
T1: 7.4 (0.75, 5.5)

T2: 24.5 (2.5, 18.1)

T3: 29.4 (3.0, 21.7)

T4: 32.3 (3.3, 23.8)

4. REAR DOOR



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)

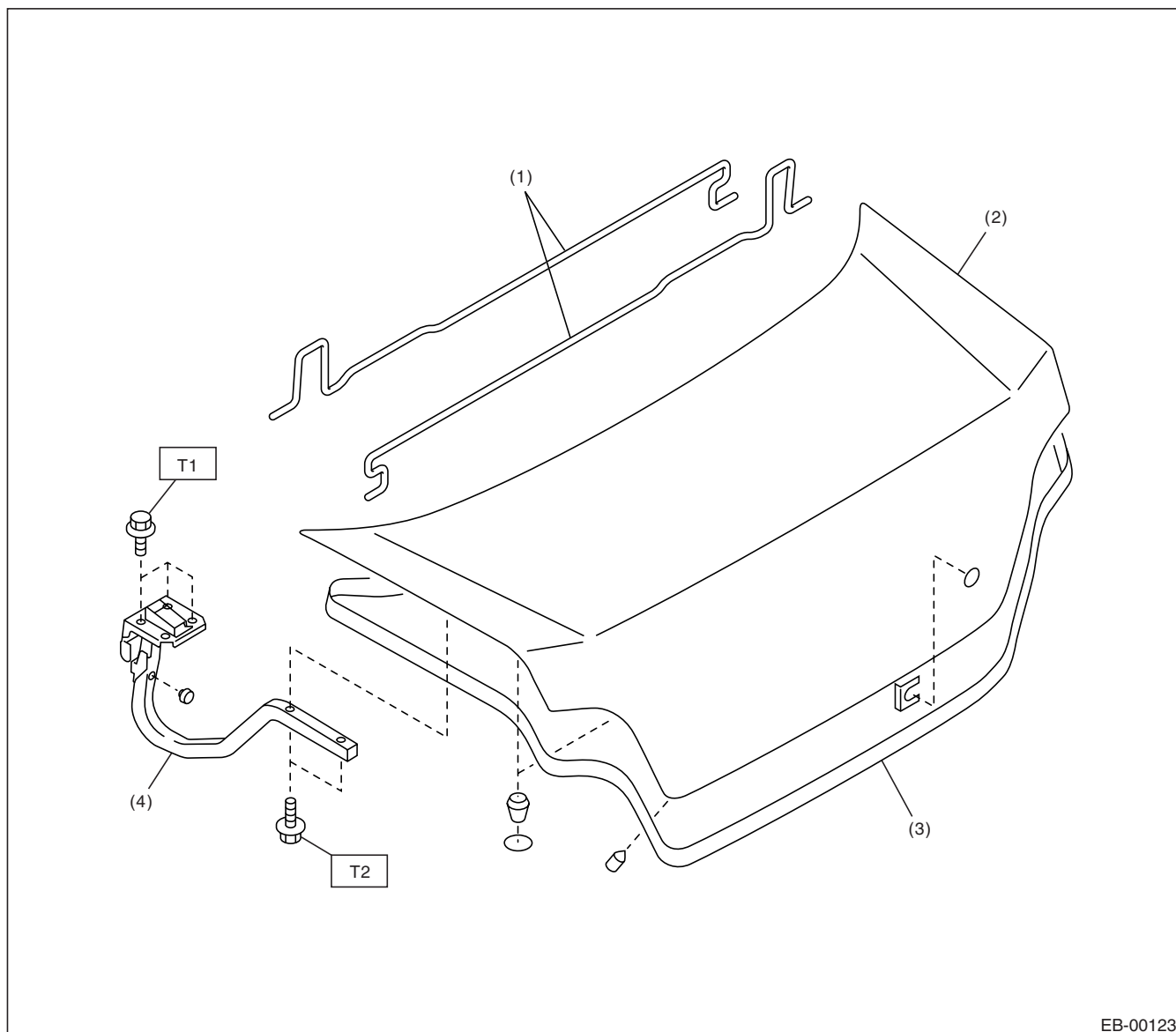
T3: 29.4 (3.0, 21.7)

T4: 32.3 (3.3, 23.8)

General Description

EXTERIOR BODY PANELS

5. TRUNK LID



- (1) Torsion bar
- (2) Trunk lid panel
- (3) Weather strip

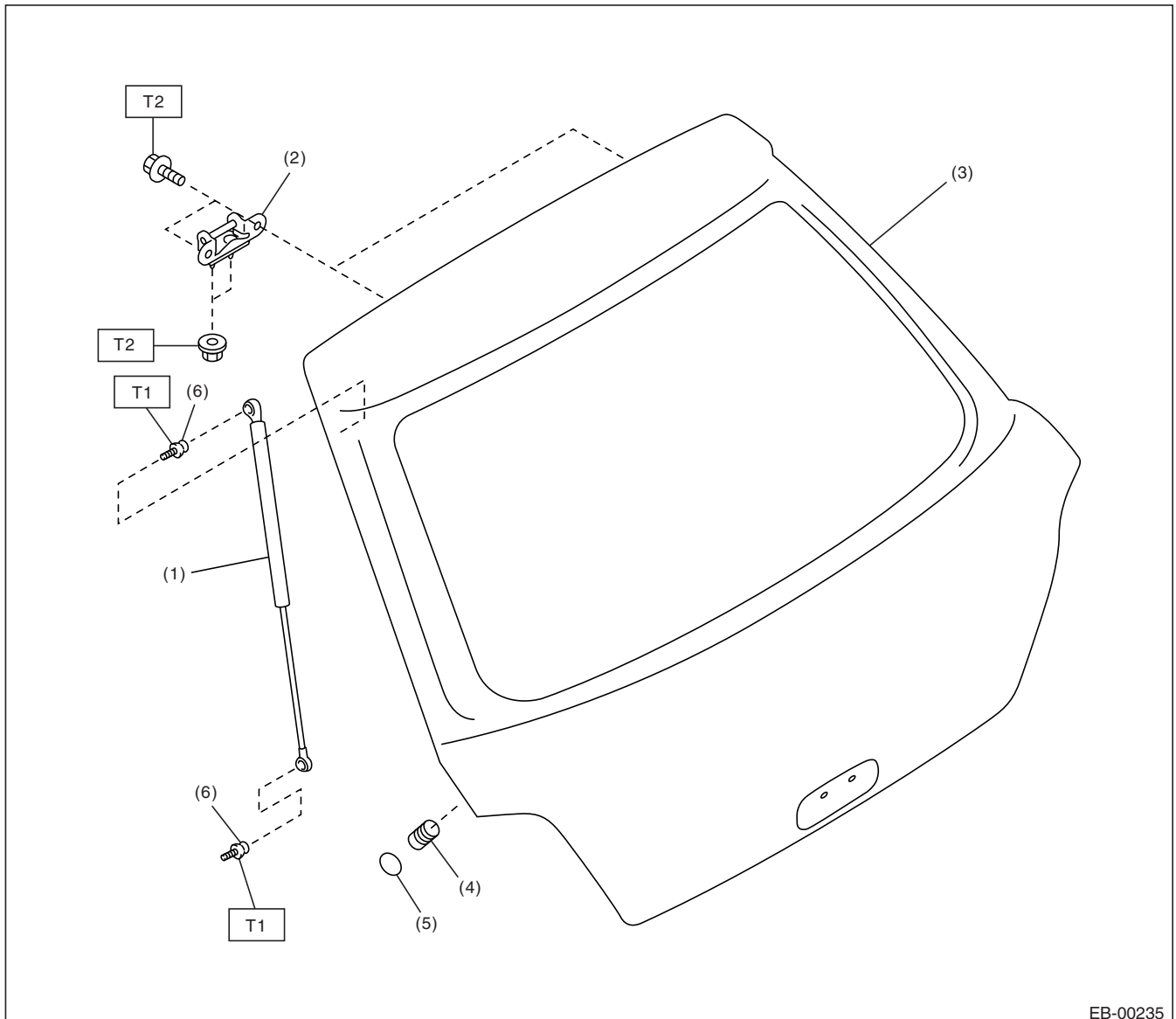
- (4) Hinge ASSY

Tightening torque: N·m (kgf·m, ft·lb)

T1: 7.5 (0.76, 5.5)

T2: 14 (1.43, 10.3)

6. REAR GATE



EB-00235

- | | |
|---------------------------|--------------------|
| (1) Rear gate damper stay | (4) Stopper rubber |
| (2) Hinge | (5) Protector seat |
| (3) Rear gate panel | (6) Stud bolt |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 19.6 (2.0, 14.5)

T2: 24.5 (2.5, 18.1)

C: CAUTION

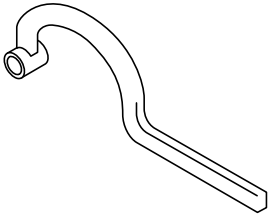
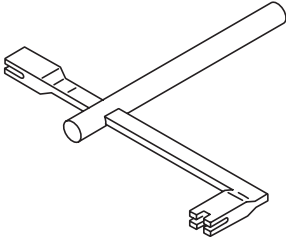
- Exterior body panels are heavy. Do not drop and damage the panels. During removal and installation, do not damage the panel painting surface.
- While removing the mounting bolts, using assistance devices such as a support jack will help support the panel.
- Be careful not to lose small parts.

General Description

EXTERIOR BODY PANELS

D: PREPARATION TOOL

1. SPECIAL TOOLS

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.

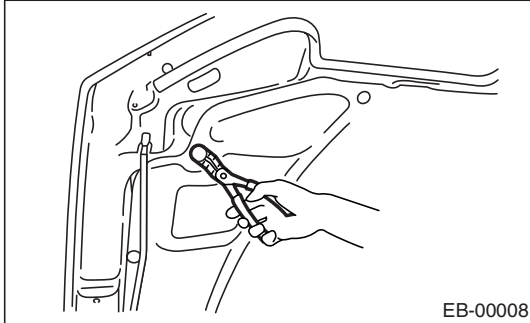
2. GENERAL TOOL

TOOL NAME	REMARKS
Support Jack	Used for supporting door panel.

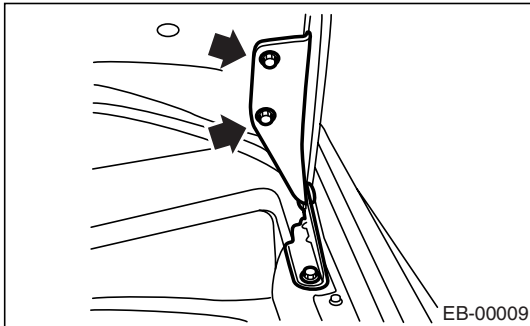
2. Front Hood

A: REMOVAL

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



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



B: INSTALLATION

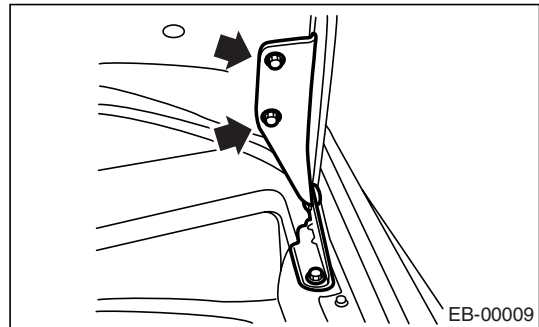
- 1) Install in the reverse order of removal.
- 2) Adjust the clearance between front hood panel and front fender panel. Clearance must be equal at both sides.

Tightening torque:

24.5 N·m (2.5 kgf-m, 18.1 ft-lb)

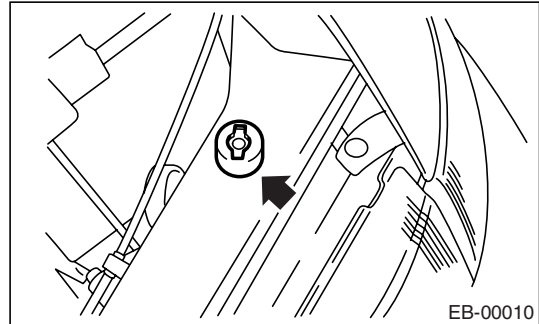
C: ADJUSTMENT

- 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-35, ADJUSTMENT, Front Hood Lock Assembly.>

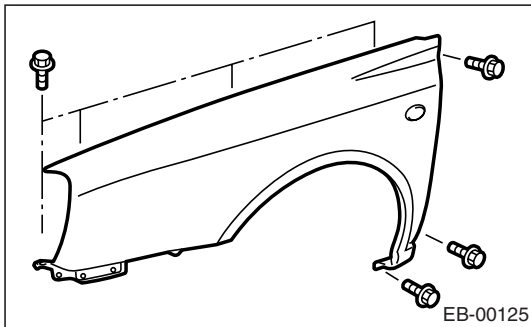
- 3) Rotate the hood buffer to adjust lateral height.



3. Front Fender

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the front bumper face. <Ref. to EI-23, REMOVAL, Front Bumper.>
- 3) Remove the headlight. <Ref. to LI-14, REMOVAL, Headlight Assembly.>
- 4) Remove the side sill spoilers. <Ref. to EI-38, Side Sill Spoiler.> (Model with side sill spoiler)
- 5) Remove the mud guard. <Ref. to EI-33, REMOVAL, Mud Guard.>
- 6) Loosen 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.

CAUTION:

After the installation of front fender panel, be sure to perform headlight aiming adjustment.

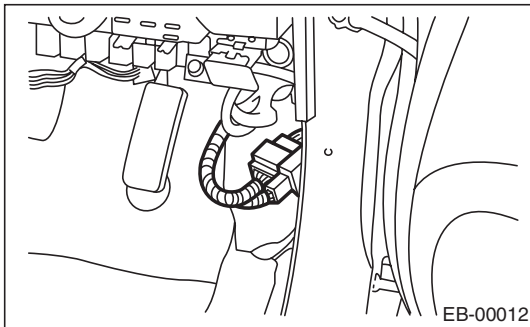
Tightening torque:

7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

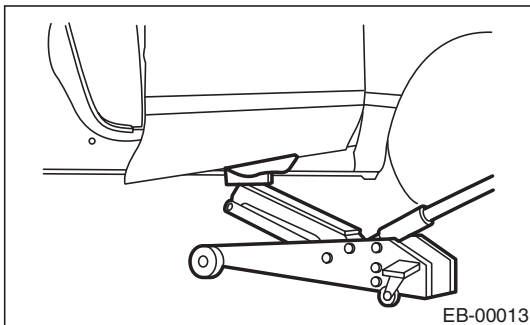
4. Front Door

A: REMOVAL

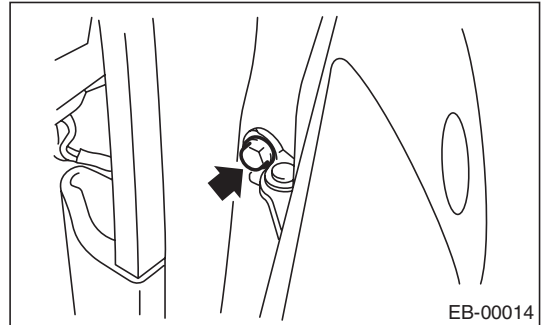
- 1) Disconnect the ground cable from battery.
- 2) Remove the front door trim. <Ref. to EI-40, REMOVAL, Front Door Trim.>
- 3) Remove the outer mirror assembly. <Ref. to GW-21, REMOVAL, Outer Mirror Assembly.>
- 4) Remove the front door glass. <Ref. to GW-13, REMOVAL, Front Door Glass.>
- 5) Remove the front door regulator and motor. <Ref. to GW-18, REMOVAL, Front Regulator and Motor Assembly.>
- 6) Remove the front door latch assembly. <Ref. to SL-25, REMOVAL, Front Door Latch and Door Lock Actuator Assembly.>
- 7) Remove the front outer handle. <Ref. to SL-24, REMOVAL, Front Outer Handle.>
- 8) Remove the front pillar lower trim to disconnect the connector from body harness.



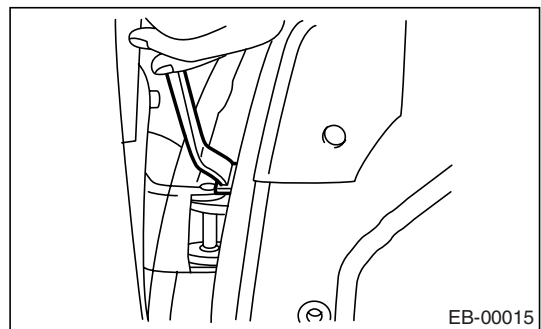
- 9) Put a wooden block on jack and place the jack under front door panel. Support the front door with the jack to protect it from damage.



- 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, COMPONENT, General Description.>

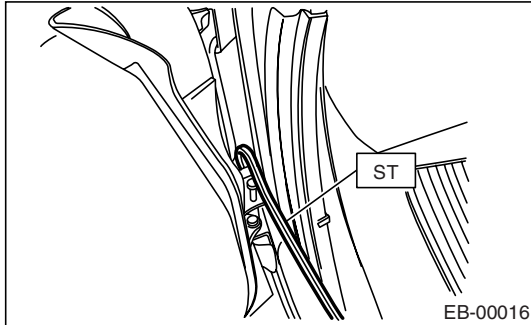
Front Door

EXTERIOR BODY PANELS

C: ADJUSTMENT

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

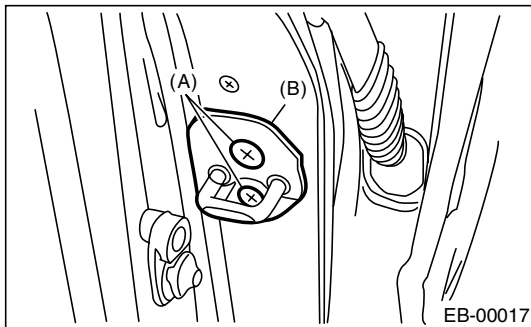
ST 925610000 DOOR HINGE WRENCH



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.

CAUTION:

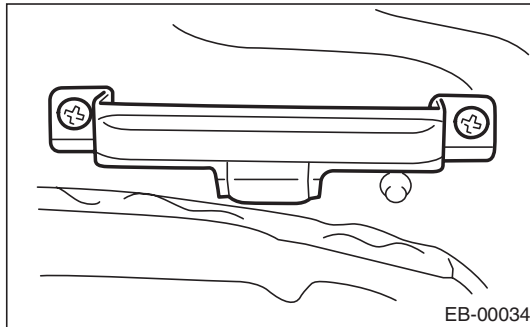
Do not use an impact wrench. Welding area on the striker nut plate is easily broken.



5. Front Sealing Cover

A: REMOVAL

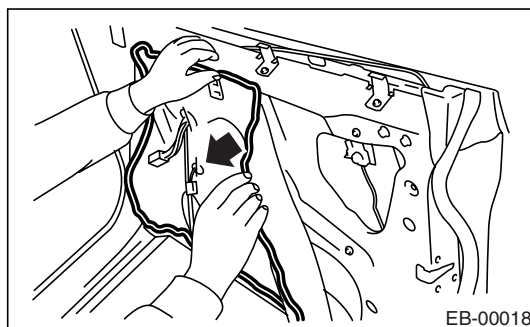
- 1) Disconnect the ground cable from battery.
- 2) Remove the front door trim. <Ref. to EI-40, REMOVAL, Front Door Trim.>
- 3) Remove the front speaker. <Ref. to ET-6, REMOVAL, Front Speaker.>
- 4) Remove the door trim bracket.



- 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.

Rear Door

EXTERIOR BODY PANELS

6. Rear Door

A: REMOVAL

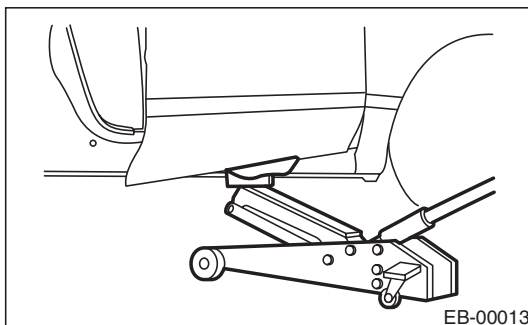
- 1) Disconnect the ground cable from battery.
- 2) Remove the rear door trim. <Ref. to EI-41, REMOVAL, Rear Door Trim.>
- 3) Remove the rear door glass. <Ref. to GW-25, REMOVAL, Rear Door Glass.>
- 4) Remove the rear door regulator and motor assembly. <Ref. to GW-27, REMOVAL, Rear Regulator and Motor Assembly.>
- 5) Remove the rear door latch. <Ref. to SL-29, REMOVAL, Rear Door Latch and Door Lock Actuator Assembly.>
- 6) Remove the rear outer handle. <Ref. to SL-28, REMOVAL, Rear Outer Handle.>
- 7) Remove the connection of rubber dust (A) from center pillar, pull out the connection of door harness to separate.



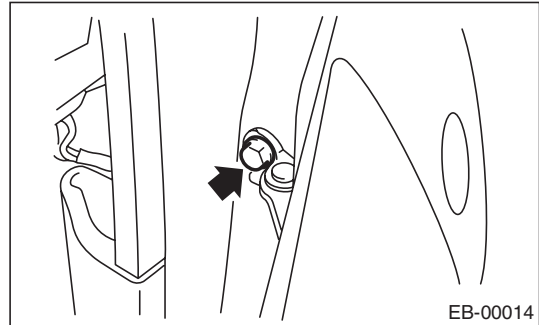
- 8) Put a wooden block on the jack and place the jack under the rear door. Support the rear door with jack to protect it.

NOTE:

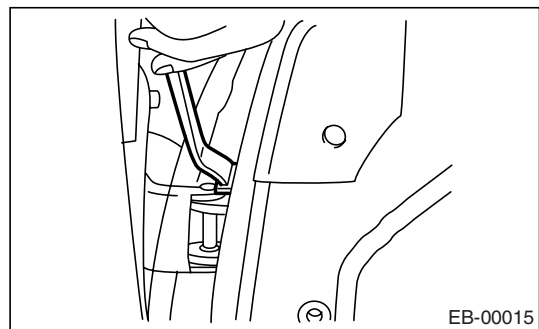
When supporting the door with jack, do not deform the hinge portion of door during work.



- 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.

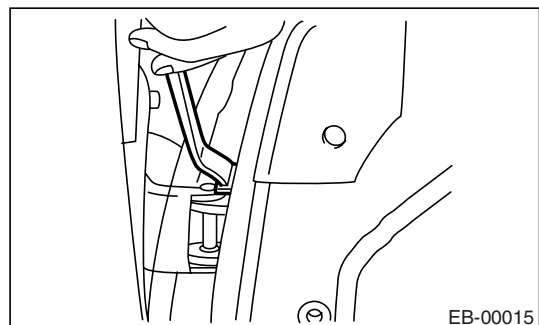
Tightening torque:

Refer to COMPONENT in General Description.

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

C: ADJUSTMENT

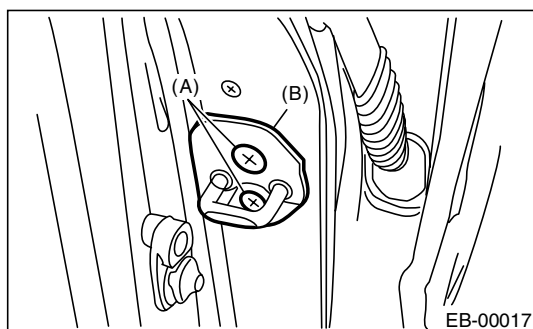
- 1) Open the rear door, loosen the door-side bolts of upper and lower hinges to align the position for vertical and horizontal direction of rear door panel.



- 2) Loosen the screw (A), and 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.



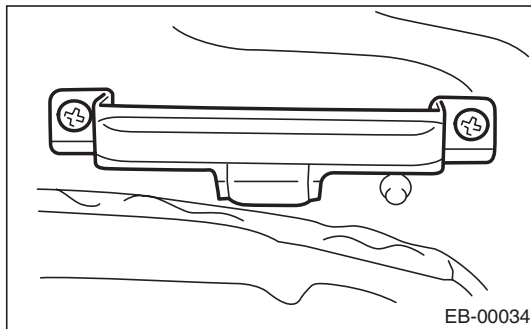
Rear Sealing Cover

EXTERIOR BODY PANELS

7. Rear Sealing Cover

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear door trim. <Ref. to EI-41, 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

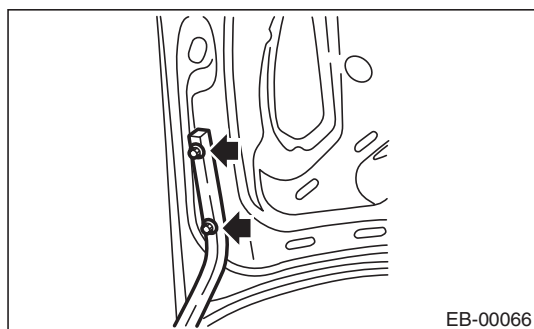
If the sealing cover is damaged, replace it with a new one.

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.



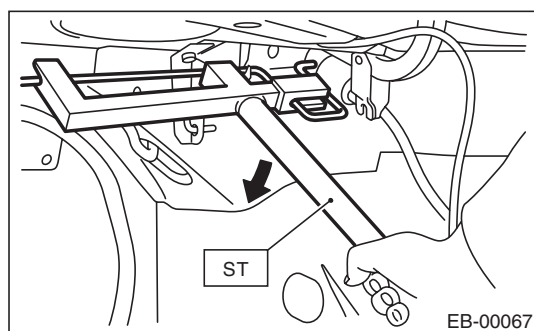
2. TORSION BAR

- 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)

Rear Gate

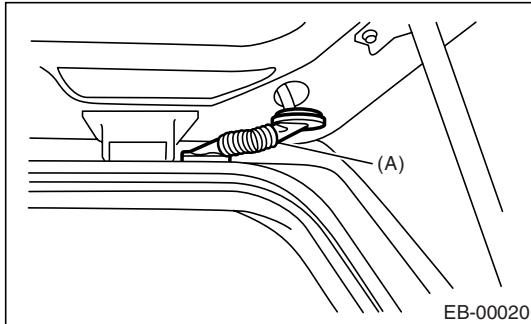
EXTERIOR BODY PANELS

9. Rear Gate

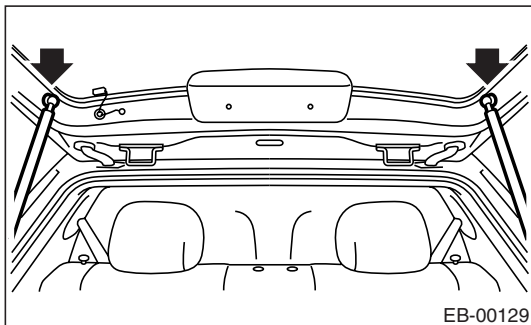
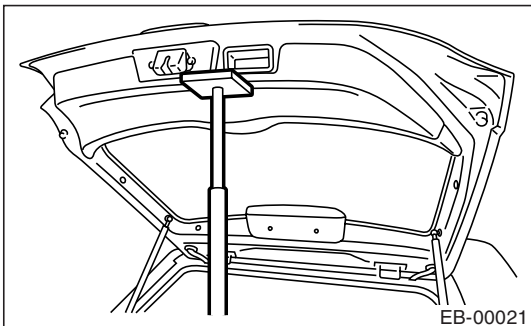
A: REMOVAL

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-31, REMOVAL, Rear Gate Outer Handle.>
- 4) Remove the rear gate latch assembly. <Ref. to SL-32, REMOVAL, Rear Gate Latch Assembly.>
- 5) Remove the rear wiper. <Ref. to WW-16, 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.



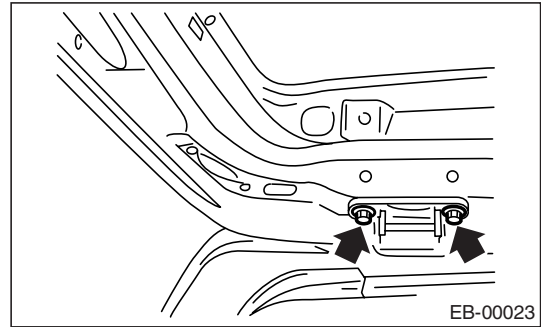
- 9) Using a support jack, support the rear gate while removing the rear gate damper stay stud bolts.



CAUTION:

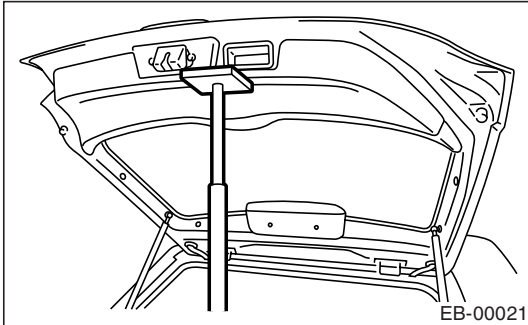
When the support jack to support the rear gate is released, it may hit and damage the body. To prevent this, place a shop cloth between the body and gate.

- 10) Loosen 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.



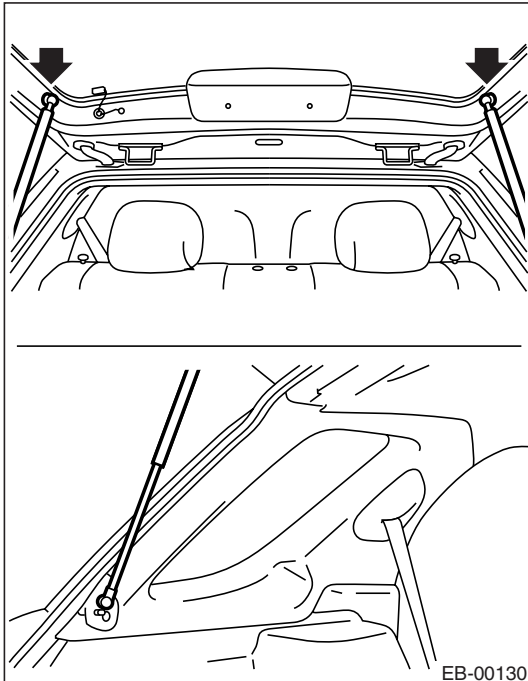
NOTE:

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.



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, COMPONENT, General Description.>

CAUTION:

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

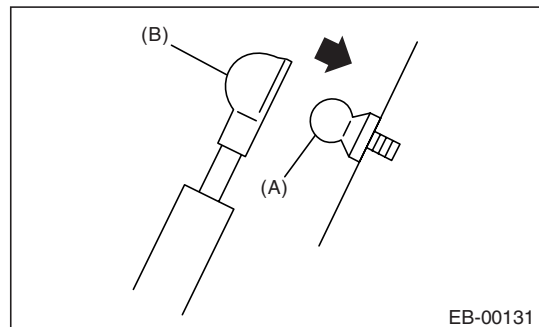
2. REAR GATE DAMPER STAY

- 1) Install the stud 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 stud bolt (A).



NOTE:

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

C: DISPOSAL

1. REAR GATE DAMPER STAY

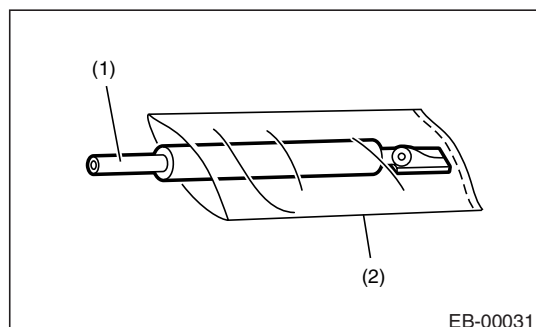
CAUTION:

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

Rear Gate

EXTERIOR BODY PANELS

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

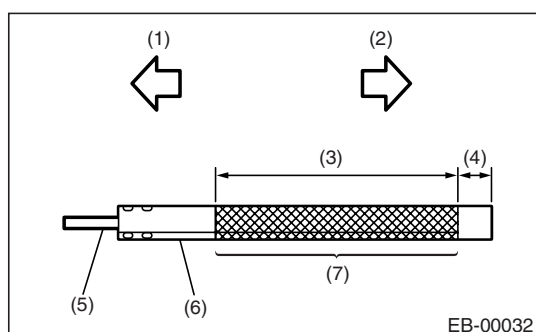


- (1) Rear gate damper stay
- (2) Vinyl sack

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.



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

CRUISE CONTROL SYSTEM

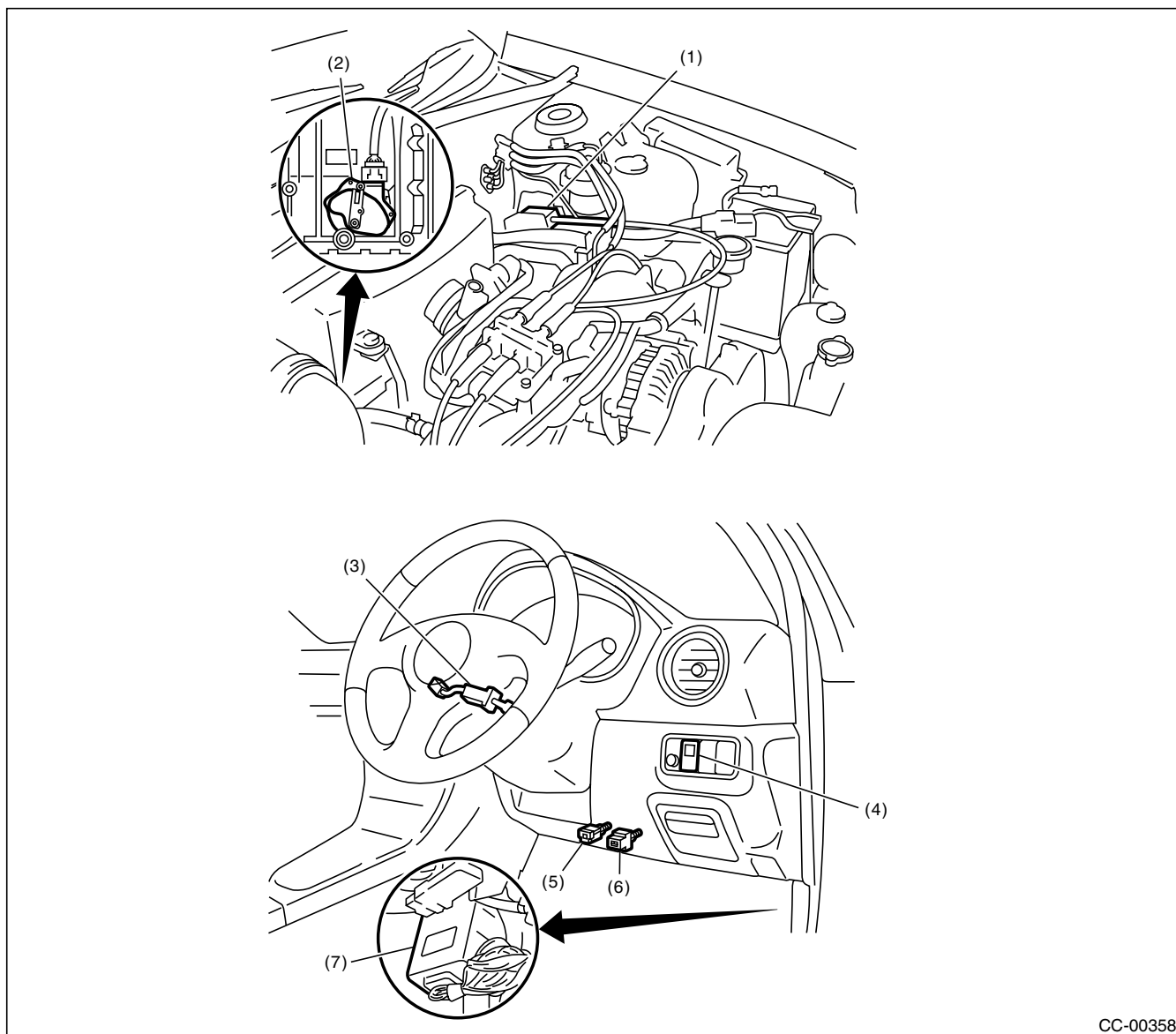


	Page
1. General Description	2
2. Actuator	4
3. Cruise Control Unit	5
4. Cruise Control Main Switch	6
5. Cruise Control Command Switch	7
6. Stop Light & Brake Switch	8
7. Clutch Switch	9
8. Inhibitor Switch	10

General Description

1. General Description

A: COMPONENT



CC-00358

- | | | |
|-----------------------------------|---------------------------------|---------------------------|
| (1) Actuator | (4) Cruise control main switch | (7) Cruise control module |
| (2) Inhibitor switch (AT model) | (5) Clutch switch (MT model) | |
| (3) Cruise control command switch | (6) Stop light and brake 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.
TORX® BIT T30	Used for removing and installing driver's airbag module.

Actuator

CRUISE CONTROL SYSTEM

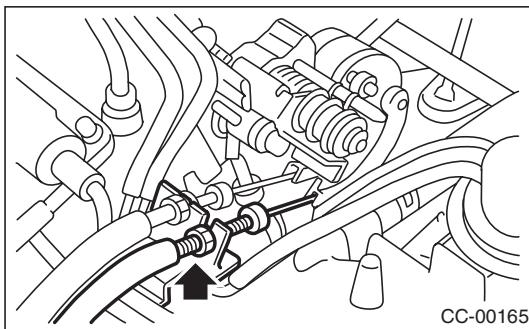
2. Actuator

A: REMOVAL

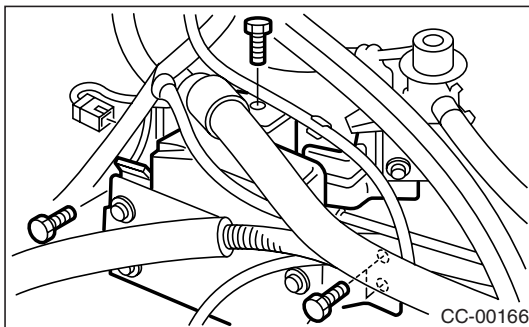
CAUTION:

- Be careful not to apply excessive load to the wire cable when adjusting and/or installing; otherwise, the actuator may be deformed or damaged.
- Do not bend 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 actuator attaching bolts.
- 5) Remove the actuator while disconnecting the connector.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

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)

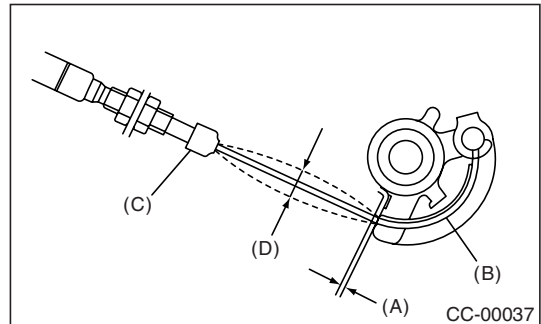
NOTE:

(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), and, inner cable deflection (D) is 1 — 8 mm (0.04 — 0.31 in) when the throttle cable is installed.

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

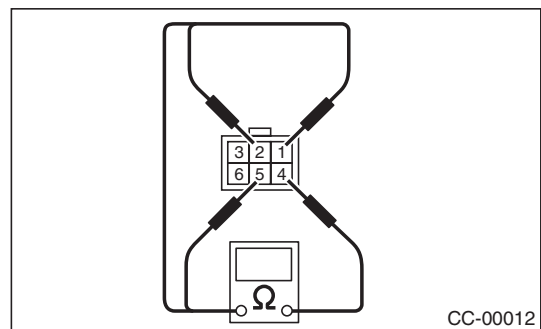
(B): Must be coated evenly on the cam end inner connection.

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



C: INSPECTION

Measure the cruise control actuator resistance.



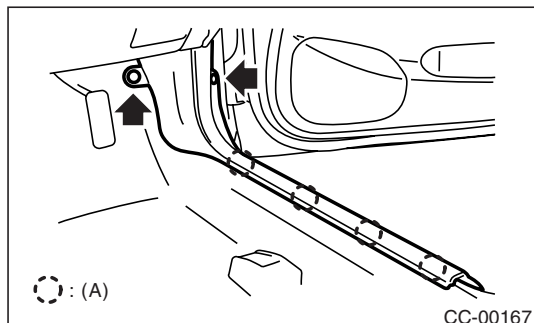
Terminal No.	Standard value
4 and 1	Approx. 5 Ω
4 and 2	Approx. 5 Ω
4 and 5	Approx. 5 Ω
3 and 6	Approx. 39 Ω

If NG, replace the cruise control actuator.

3. Cruise Control Unit

A: REMOVAL

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



(A) Hook

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



B: INSTALLATION

Install in the reverse order of removal.

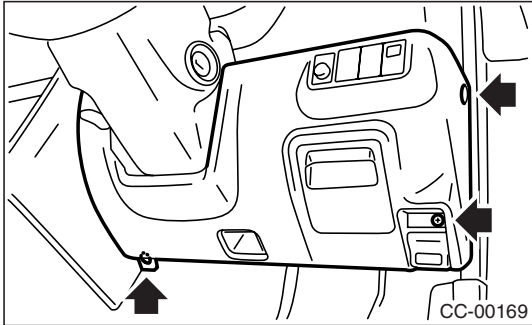
Cruise Control Main Switch

CRUISE CONTROL SYSTEM

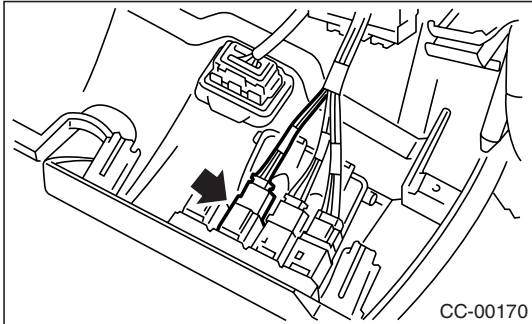
4. Cruise Control Main Switch

A: REMOVAL

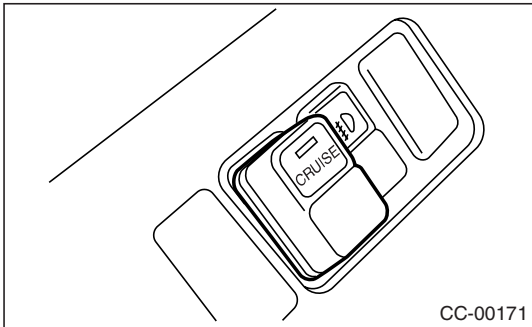
- 1) Disconnect the ground cable from battery.
- 2) Remove the screws and clip from instrument panel lower cover.
- 3) Remove the instrument panel lower cover.



- 4) Disconnect the connector from cruise control main switch.



- 5) Remove the main switch by pushing it outward.

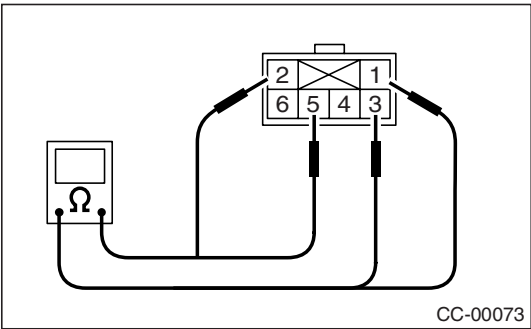


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the cruise control main switch resistance.



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

If NG, replace the cruise control main switch.

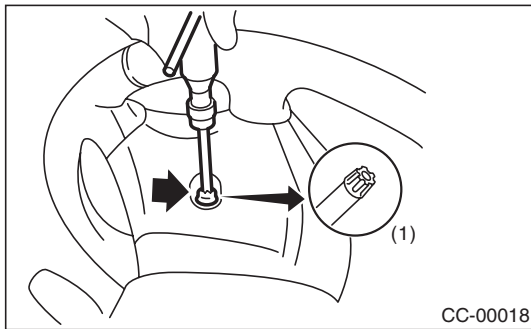
5. Cruise Control Command Switch

A: REMOVAL

WARNING:

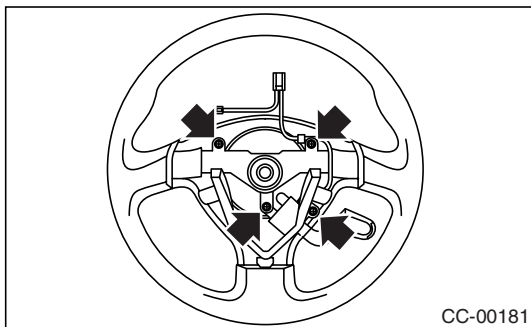
Before servicing, be sure to read the notes in the AB section for proper handling of the driver's airbag module. <Ref. to AB-3, CAUTION, General Description.>

- 1) Set 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.

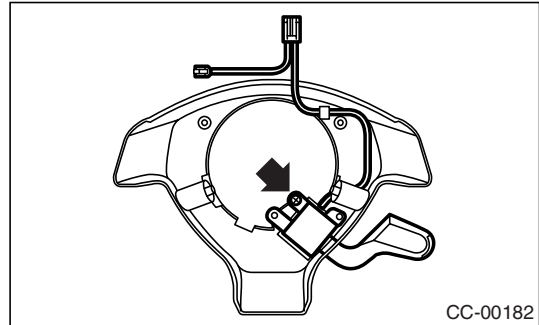


(1) TORX® BIT T30

- 5) Disconnect the airbag module connector on back of airbag module.
- 6) Remove the horn switch from steering wheel.
- 7) Remove the steering wheel. <Ref. to PS-28, REMOVAL, Steering Wheel.>
- 8) Remove four screws, and then remove the lower cover from steering wheel.



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

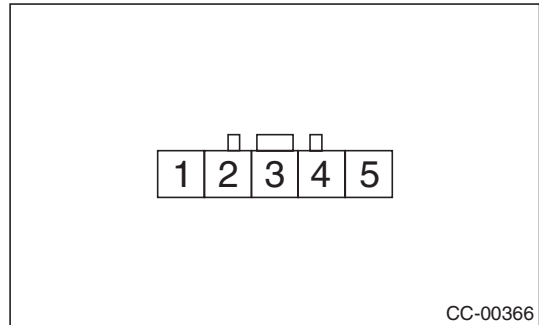


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the cruise control command switch resistance.



Switch	Position	Terminal No.	Standard value
CANCEL	ON	5 (+) and 4 (-)	Less than 1 Ω
	ON	5 (+) and 3 (-)	Less than 1 Ω
SET/COAST	OFF	5 and 3	More than 1 M Ω
	ON	5 and 3	Less than 1 Ω
RESUME/ACCEL	OFF	5 and 4	More than 1 M Ω
	ON	5 and 4	Less than 1 Ω

If NG, replace the cruise control command switch.

Stop Light & Brake Switch

CRUISE CONTROL SYSTEM

6. Stop Light & Brake Switch

A: REMOVAL

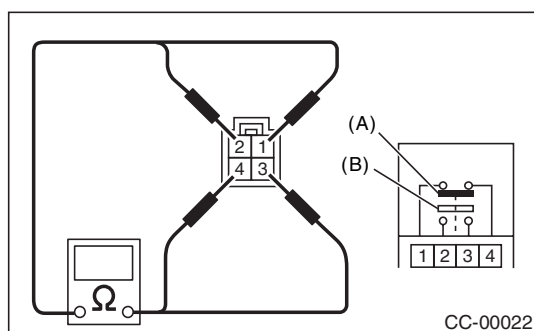
- 1) Disconnect the ground cable from battery.
- 2) Disconnect the connector from stop light and brake switch, and then remove the switch. <Ref. to BR-73, REMOVAL, Stop Light Switch.>

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 value
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.

7. Clutch Switch

A: REMOVAL

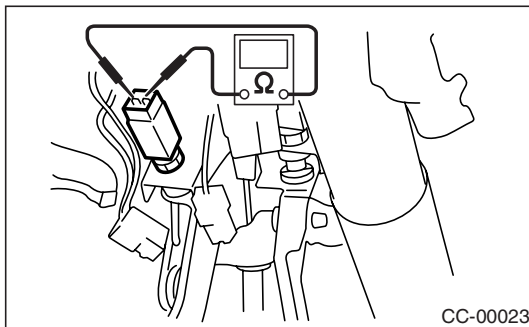
- 1) Disconnect the ground cable from battery.
- 2) Disconnect the connector from clutch switch, and then remove the switch. <Ref. to CL-41, DIS-ASSEMBLY, Clutch Pedal.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the clutch switch resistance.



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

If NG, replace the clutch switch.

Inhibitor Switch

CRUISE CONTROL SYSTEM

8. Inhibitor Switch

A: REMOVAL

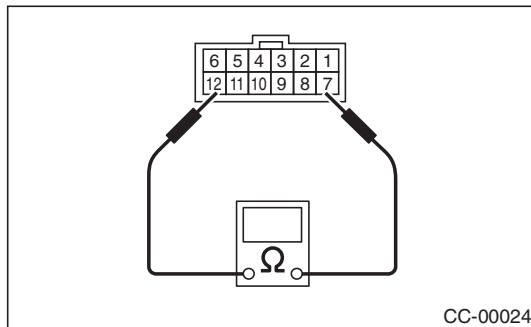
- 1) Disconnect the ground cable from battery.
- 2) Disconnect the connector from inhibitor switch, and then remove the switch. <Ref. to 4AT-54, REMOVAL, Inhibitor Switch.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the inhibitor switch resistance.



Selector lever position	Terminal No.	Standard value
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.

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

CC(diag)

	Page
1. Basic Diagnostic Procedure	2
2. General Description	4
3. Electrical Component Location	6
4. Cruise Control Module I/O Signal.....	7
5. Subaru Select Monitor.....	9
6. Diagnostics with Phenomenon.....	11
7. List of Diagnostic Trouble Code (DTC)	25
8. Diagnostic Procedure with Diagnostic Trouble Code (DTC)	27

Basic Diagnostic Procedure

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

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 main switch operation.	Is the cruise control main switch turned ON?	Go to step 2.	Go to phenomenon 1. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
2 PREPARE SUBARU SELECT MONITOR.	Is the select monitor available?	Go to step 3.	Go to step 4.
3 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)-25, List of Diagnostic Trouble Code (DTC).>	Go to step 4.
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 5.	Go to phenomenon 2. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
5 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 6.	Go to phenomenon 3. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
6 CHECK RESUME/ACCEL OPERATION. Check the RESUME/ACCEL operation.	Does the vehicle speed increase or return to set speed after RESUME/ACCEL switch has been pressed?	Go to step 7.	Go to phenomenon 4. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
7 CHECK SET/COAST OPERATION. Check the SET/COAST operation.	Does the vehicle speed decrease after SET/COAST switch has been pressed?	Go to step 8.	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
8	CHECK CANCEL OPERATION. Check the CANCEL operation.	Is the cruise control released after CANCEL switch has been pressed?	Go to step 9.	Go to phenomenon 6. <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 brake pedal has been depressed?	Go to step 10.	Go to phenomenon 7. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
10	CHECK CRUISE CONTROL RELEASE OPERATION. Check the cruise control release operation.	Is the cruise control released after 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"

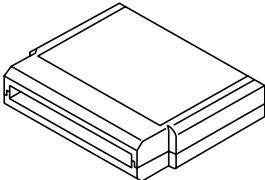
Airbag system wiring harness is routed near the cruise control module and cruise control command switch.

CAUTION:

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

B: PREPARATION TOOL

1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST18482AA000	18482AA000	CARTRIDGE	Used for troubleshooting for electrical systems.
 ST22771AA030	22771AA030	SUBARU SELECT MONITOR KIT	Used for troubleshooting for electrical systems. • English: 22771AA030 (Without printer) • German: 22771AA070 (Without printer) • French: 22771AA080 (Without printer) • Spanish: 22771AA090 (Without printer)

2. GENERAL TOOLS

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

General Description

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

C: INSPECTION

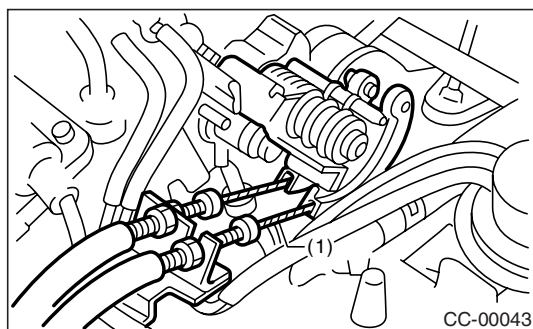
1. BATTERY

Measure the battery voltage and specific gravity of electrolyte.

Standard voltage:
12 V, or more

Specific gravity:
Above 1.260

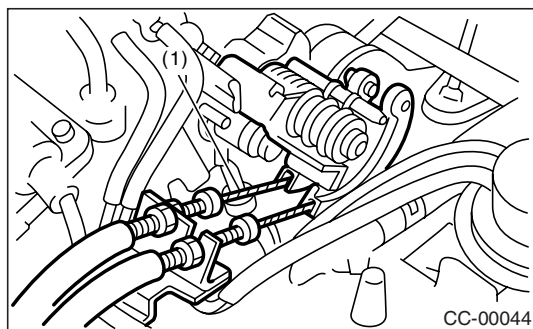
2. CRUISE CONTROL CABLE



(1) Cruise control cable

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

3. ACCELERATOR CABLE



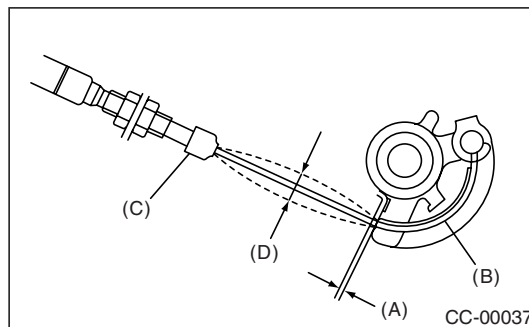
(1) Accelerator cable

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) and cable (B) 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 the adjust nut.

NOTE:

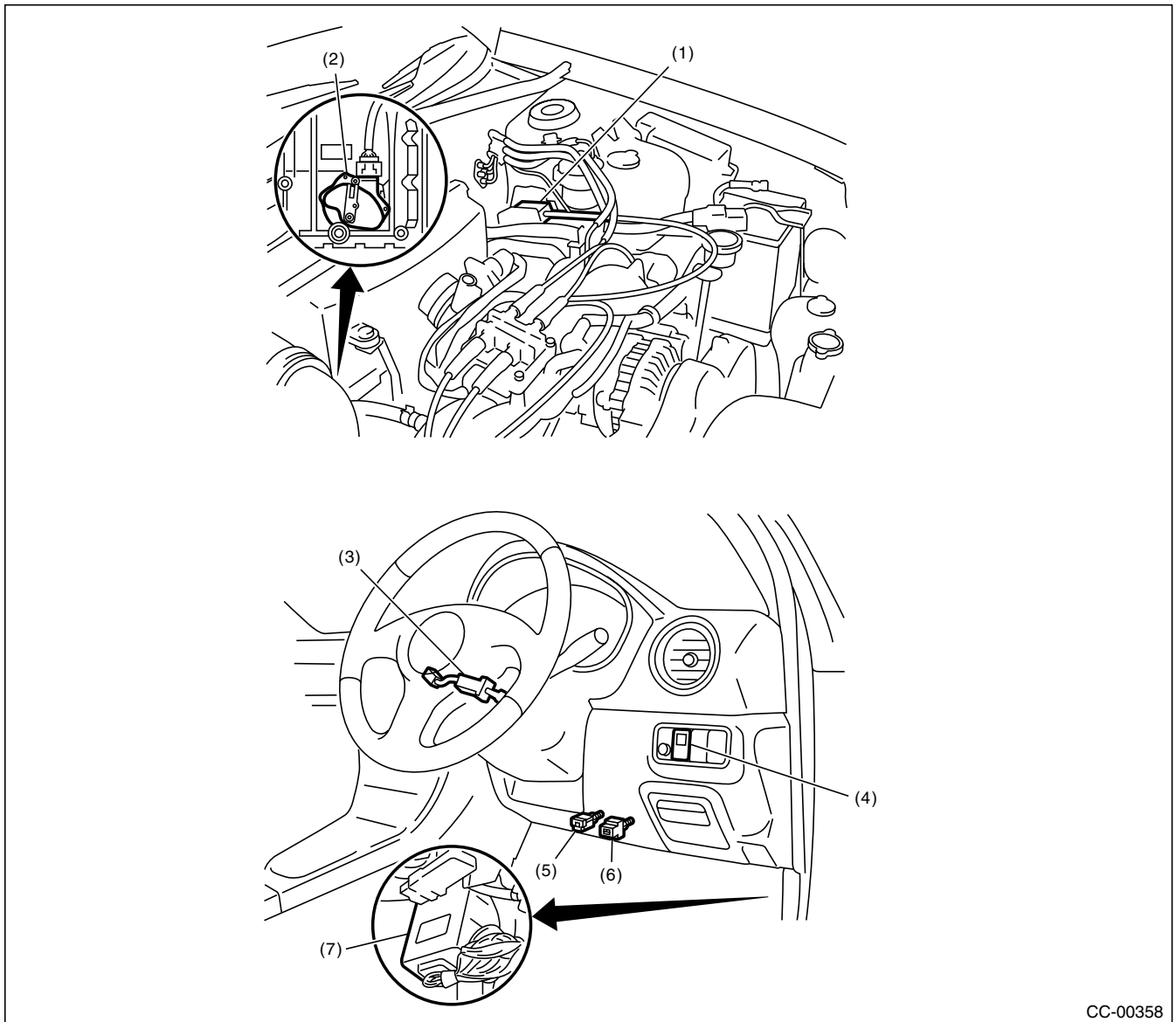
Check that the cap (C) is positioned in the groove.

Electrical Component Location

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

3. Electrical Component Location

A: LOCATION



CC-00358

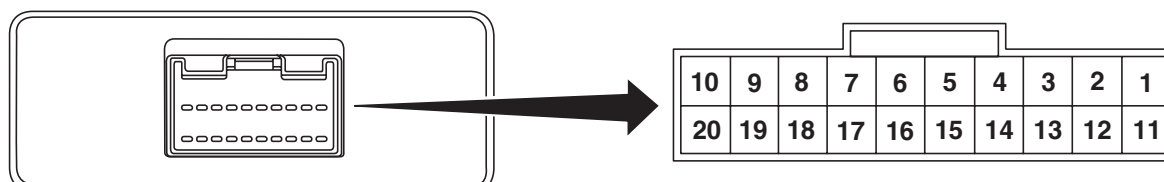
- | | | |
|-----------------------------------|---------------------------------|---------------------------|
| (1) Actuator | (4) Cruise control main switch | (7) Cruise control module |
| (2) Inhibitor switch (AT model) | (5) Clutch switch (MT model) | |
| (3) Cruise control command switch | (6) Stop light and brake switch | |

Cruise Control Module I/O Signal

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

4. Cruise Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



CC-00027

Content	Terminal No.	Measuring conditions and I/O signals (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.
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.
RESUME/ACCEL switch	9	- Battery voltage is present when command switch is turned to RESUME/ACCEL position. "0 V" voltage is present when command switch is released.
SET/COAST switch	10	- Battery voltage is present when command switch is turned to SET/COAST position. "0 V" voltage is present when command 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 during pressing the cruise control main switch. "0 V" voltage is present when main switch is turned OFF.

Cruise Control Module I/O Signal

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Content	Terminal No.	Measuring conditions and I/O signals (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 V” voltage is present when brake pedal is depressed. Additionally only in MT model, keep the cruise control main switch to ON and leave brake pedal released. Then check that; • Battery voltage is present when clutch pedal is released. • “0 V” voltage 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 V” and “0 V” voltage 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 V” voltage 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-175, WIRING DIAGRAM, Cruise Control System.>

Subaru Select Monitor

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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 main switch is turned OFF.

2) Real-time diagnosis:

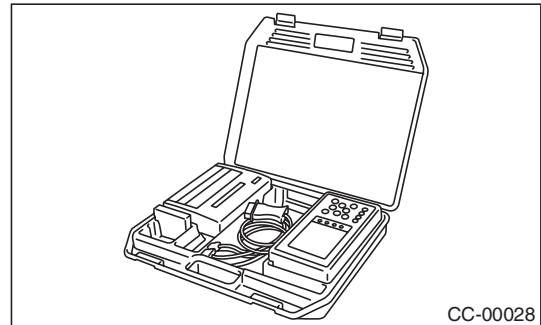
The real-time diagnosis function is used to determine whether or not the input signal system is in good order, according to signal emitted from switches, sensors, etc.

(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.

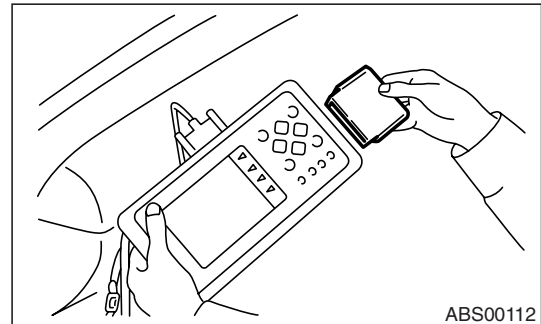
2. CRUISE CANCEL CONDITIONS DIAGNOSIS

1) Prepare the Subaru Select Monitor kit.



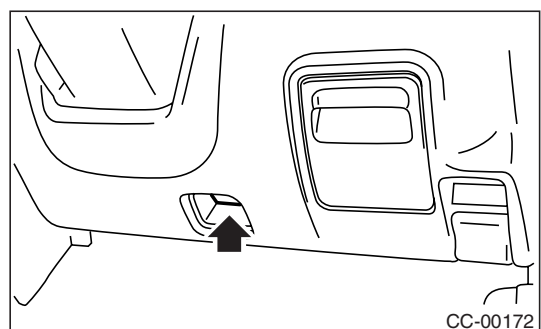
2) Connect the diagnosis cable to Subaru Select Monitor.

3) Insert the cartridge into Subaru Select Monitor. <Ref. to CC(diag)-4, SPECIAL TOOLS, 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).



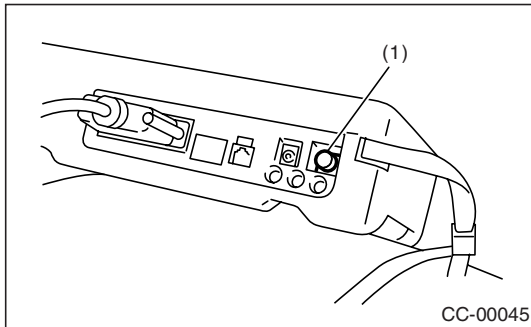
(2) Connect the diagnosis cable to data link connector.

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 power switch to ON.



(1) Power switch

- Turn ON the “SET/COAST” switch.
- Turn ON the “RESUME/ACCEL” 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 DTC. <Ref. to CC(diag)-25, 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 select monitor display.

CAUTION:

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

NOTE:

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

3. REAL-TIME DIAGNOSIS

- 1) Connect the select monitor.
- 2) Turn the ignition switch and cruise control main switch to ON.
- 3) Turn the Subaru Select Monitor switch to ON.
- 4) On the Main Menu display screen, select the {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 controls are operated as indicated below:
 - Depress/release the brake pedal. (Stop light switch and brake switch turn ON.)

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 ON.	(1) Check the power supply.	<Ref. to CC(diag)-13, CHECK POWER SUPPLY AND GROUND LINE, 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 control cannot be set.	(1) Check the SET/COAST switch.	<Ref. to CC(diag)-17, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
		(2) Check the stop light switch and brake switch.	<Ref. to CC(diag)-19, CHECK STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostics with Phenomenon.>
		(3) Check the clutch switch (MT model).	<Ref. to CC(diag)-21, CHECK CLUTCH SWITCH (MT MODEL), Diagnostics with Phenomenon.>
		(4) Check the inhibitor switch (AT model).	<Ref. to CC(diag)-23, CHECK INHIBITOR SWITCH, Diagnostics with Phenomenon.>
		(5) Check the vehicle speed sensor.	<Ref. to CC(diag)-28, DTC 22 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(6) Check the motor drive system.	<Ref. to CC(diag)-31, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(7) Check the motor clutch drive system.	<Ref. to CC(diag)-33, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
3	Vehicle speed is not held within set speed ± 3 km/h (± 2 MPH).	(1) Check the vehicle speed sensor.	<Ref. to CC(diag)-28, DTC 22 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(2) Check the motor drive system.	<Ref. to CC(diag)-31, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-33, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
4	Vehicle speed does not increase or does not return to set speed after RESUME/ACCEL switch has been pressed.	(1) Check the RESUME/ACCEL switch.	<Ref. to CC(diag)-17, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
		(2) Check the motor drive system.	<Ref. to CC(diag)-31, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-33, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
5	Vehicle speed does not decrease after SET/COAST switch has been pressed.	(1) Check the SET/COAST switch.	<Ref. to CC(diag)-17, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
		(2) Check the motor drive system.	<Ref. to CC(diag)-31, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-33, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Phenomenon		Checking item	Reference
6	Cruise control is not released after CANCEL switch has been pressed.	(1) Check the CANCEL switch.	<Ref. to CC(diag)-17, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
		(2) Check the motor drive system.	<Ref. to CC(diag)-31, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-33, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
7	Cruise control is not released after brake pedal has been depressed.	(1) Check the stop light switch and brake switch.	<Ref. to CC(diag)-19, CHECK STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostics with Phenomenon.>
		(2) Check the motor drive system.	<Ref. to CC(diag)-31, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-33, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
8	Cruise control is not released after clutch pedal has been depressed (MT model).	(1) Check the clutch switch.	<Ref. to CC(diag)-21, CHECK CLUTCH SWITCH (MT MODEL), Diagnostics with Phenomenon.>
		(2) Check the motor drive system.	<Ref. to CC(diag)-31, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-33, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Diagnostics with Phenomenon

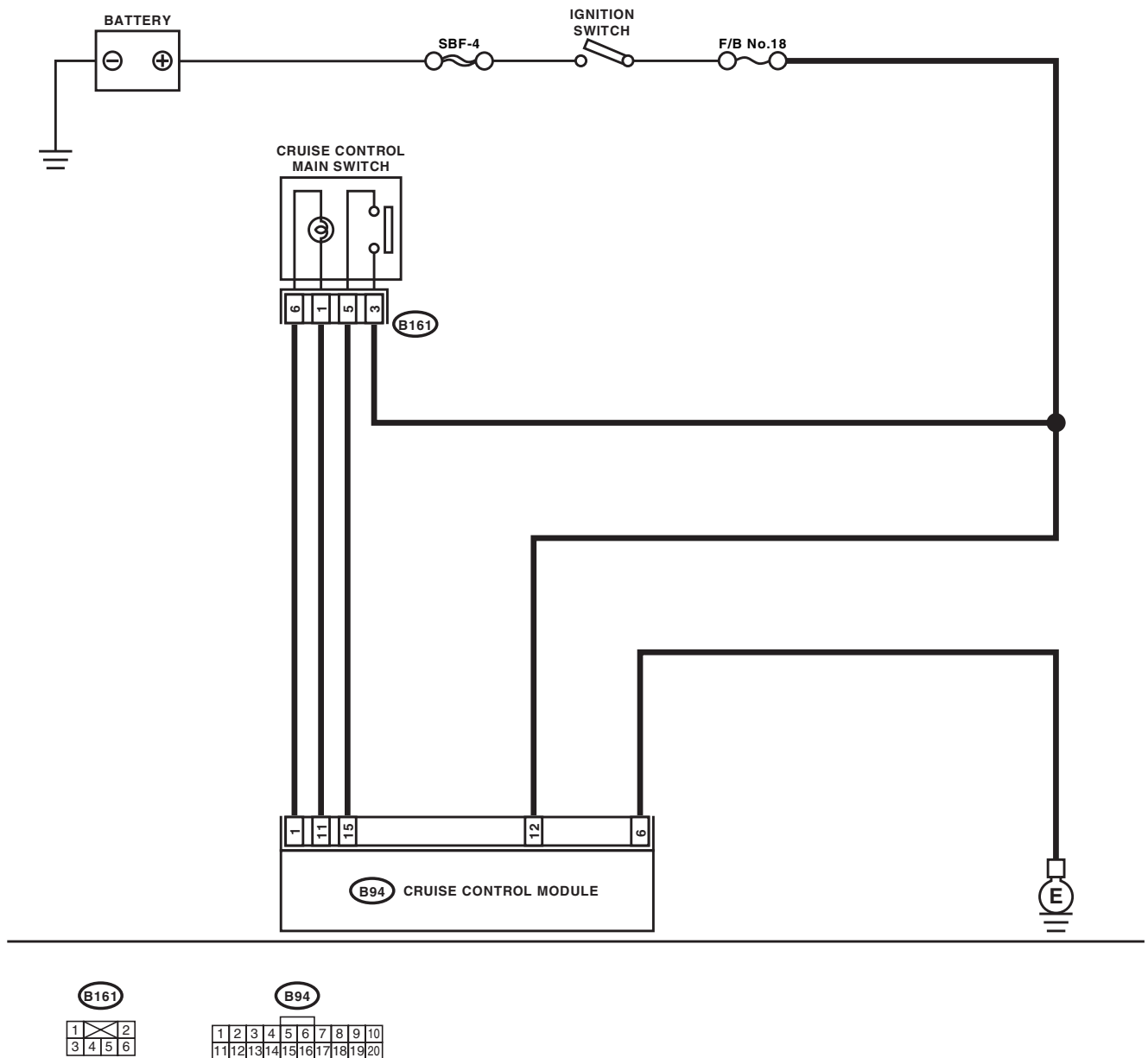
CRUISE CONTROL SYSTEM (DIAGNOSTICS)

B: CHECK POWER SUPPLY AND GROUND LINE

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



CC-00173

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.
	CHECK GROUND CIRCUIT. 1) Turn the ignition switch OFF. 2) Measure the resistance between harness connector terminal and chassis ground. Connector & terminal (B94) No. 6 — Chassis ground:			
2		Is the resistance less than 10 Ω ?	Power supply and ground circuit are OK.	Repair the harness.

Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

C: CHECK CRUISE CONTROL MAIN SWITCH

TROUBLE SYMPTOM:

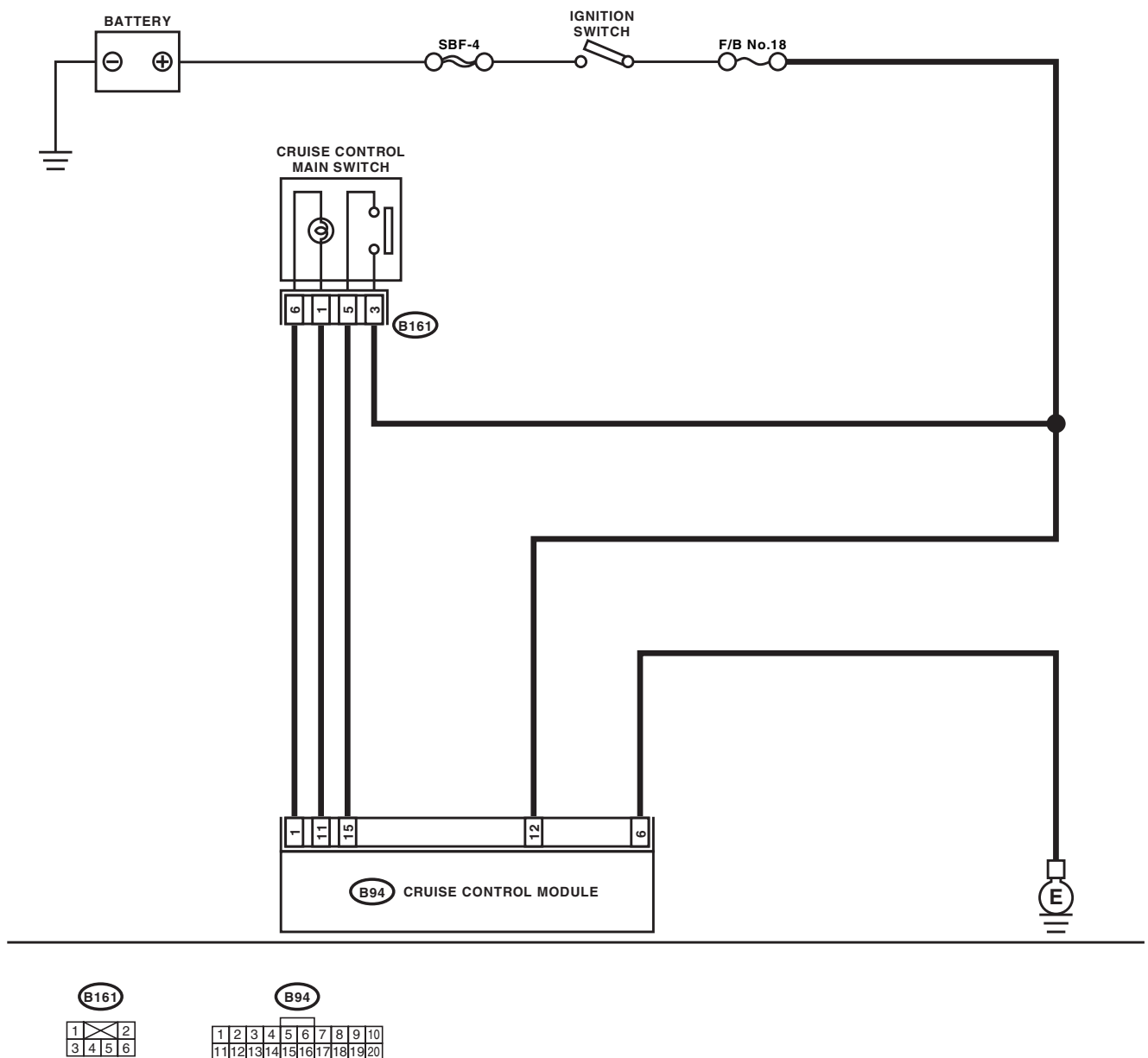
Cruise control main switch is not turned ON and cruise control cannot be set.

NOTE:

When the main relay (built-in cruise control module) operates, the main switch circuit is in normal condition. The main relay operation can be checked by hearing the operation sound.

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

WIRING DIAGRAM:



CC-00173

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 main switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (B161) No. 3 (+) — 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 main switch harness connector terminal. Connector & terminal (B94) No. 15 — (B161) No. 5: (B94) No. 1 — (B161) No. 6: (B94) No. 11 — (B161) No. 1:	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 main switch. <Ref. to CC-6, Cruise Control Main Switch.>	Is the cruise control main switch OK?	Replace the cruise control module.	Replace the cruise control main switch.

Diagnostics with Phenomenon

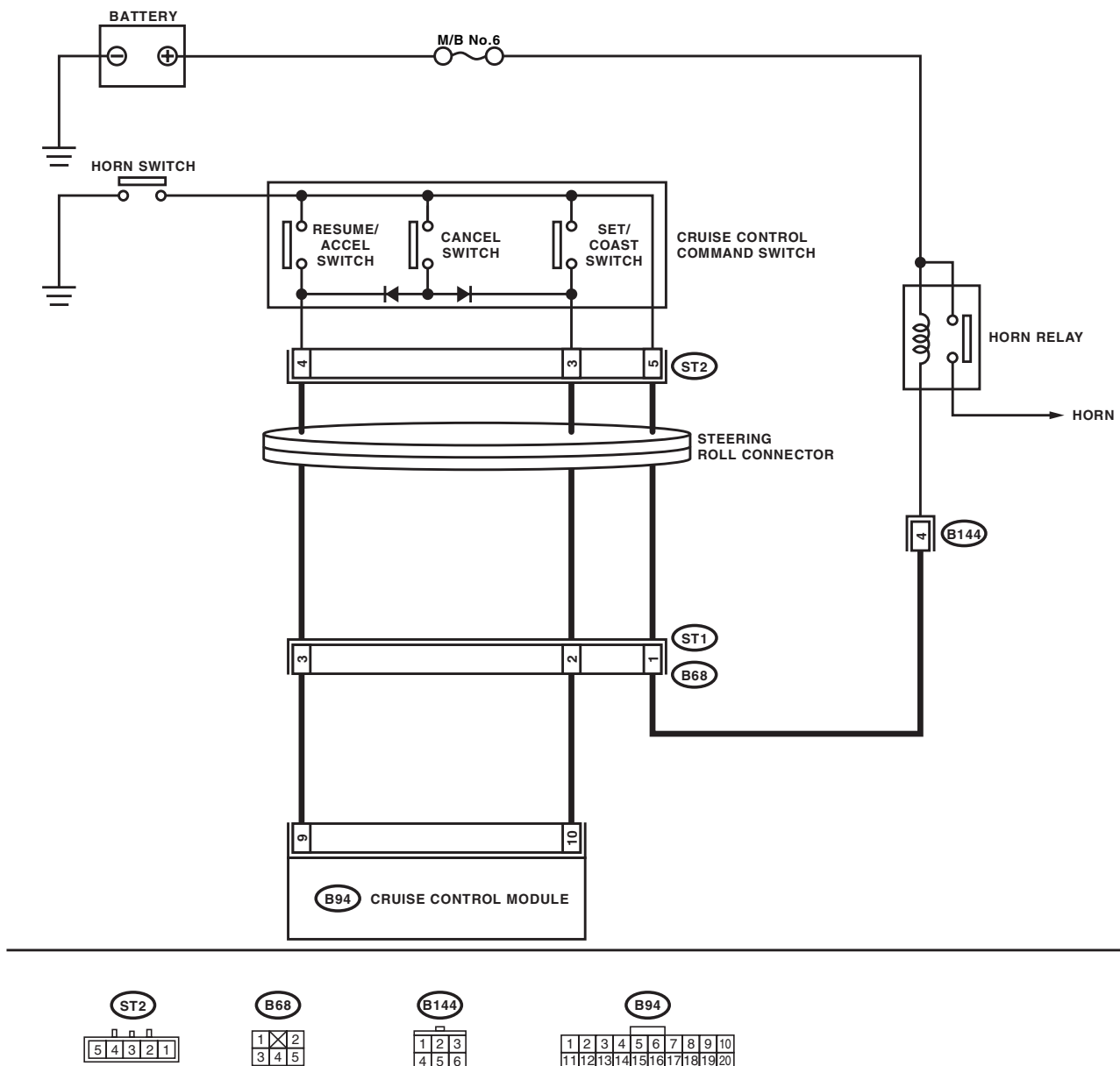
CRUISE CONTROL SYSTEM (DIAGNOSTICS)

D: CHECK CRUISE CONTROL COMMAND SWITCH

TROUBLE SYMPTOM:

Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:



CC-00359

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 RESUME/ACCEL SWITCH CIRCUIT. Measure the voltage between harness connector terminal and chassis ground when RESUME/ACCEL switch is pressed and not pressed. Connector & terminal (B94) No. 9 (+) — Chassis ground (-):	Is the voltage 0 V when RESUME/ACCEL switch is not pressed? Is the voltage more than 10 V when RESUME/ACCEL switch is pressed?	Go to step 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 command switch circuit is OK.	Go to step 4.
4 CHECK POWER SUPPLY FOR COMMAND 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 command switch and fuse & relay box.
5 CHECK CRUISE CONTROL COMMAND SWITCH. Remove and check the cruise control command switch. <Ref. to CC-7, Cruise Control Command Switch.>	Is the cruise control command switch OK?	Check the harness between cruise control command switch and cruise control module.	Replace the cruise control command switch.

Diagnostics with Phenomenon

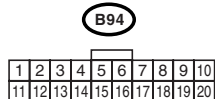
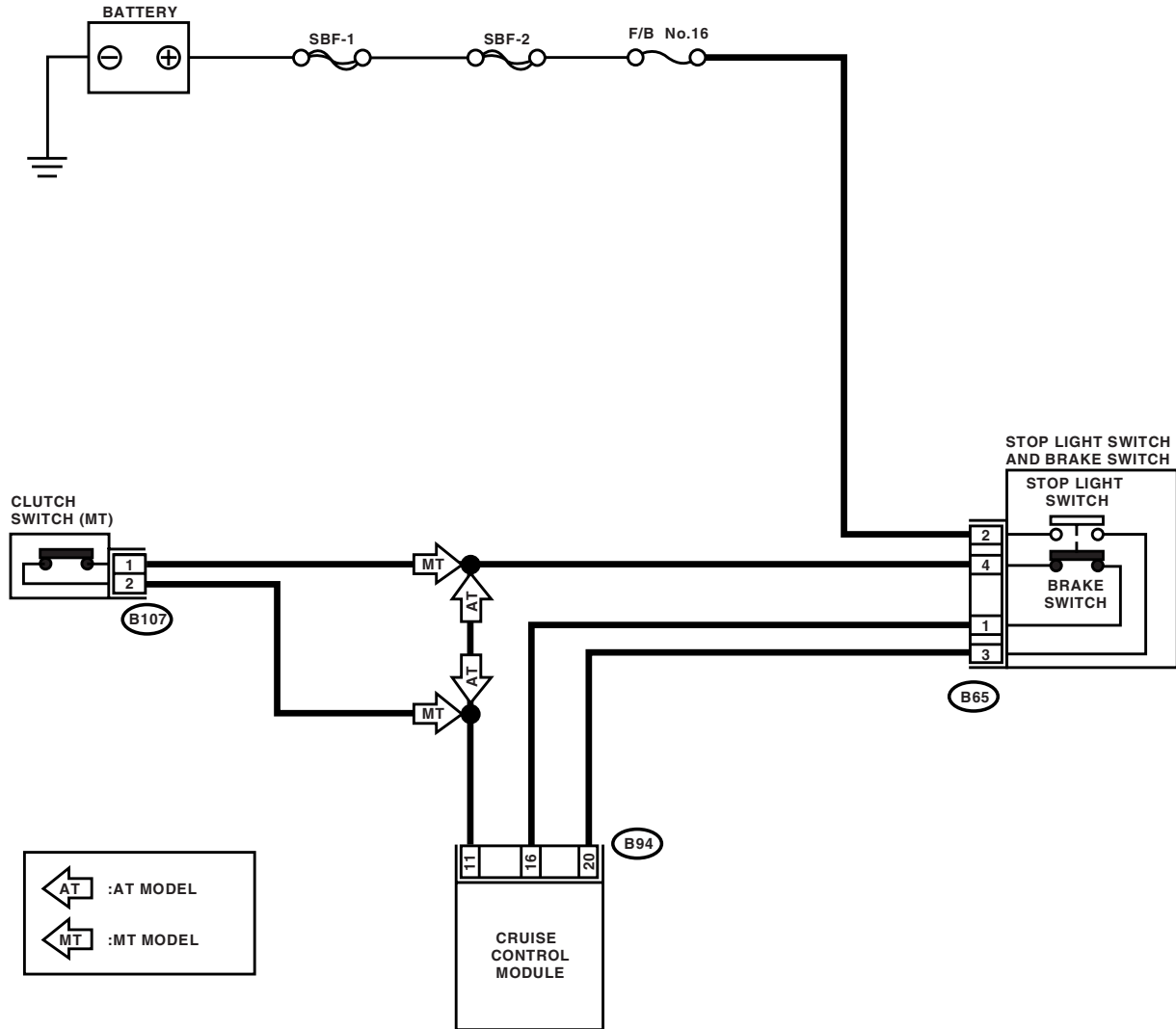
CRUISE CONTROL SYSTEM (DIAGNOSTICS)

E: CHECK STOP LIGHT SWITCH AND BRAKE SWITCH

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:



CC-00033

Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

	Step	Check	Yes	No
1	CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the stop light switch and brake switch harness connector. 3) Turn the ignition switch to ON. 4) 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 SWITCH 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 SWITCH 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 switch 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 SWITCH AND BRAKE SWITCH. Remove and check the stop light switch and brake switch. <Ref. to CC-8, Stop Light & Brake Switch.>	Are the stop light switch and brake switch OK?	Stop light switch and brake switch circuit are OK.	Replace the stop light switch and brake switch.

Diagnostics with Phenomenon

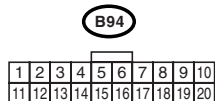
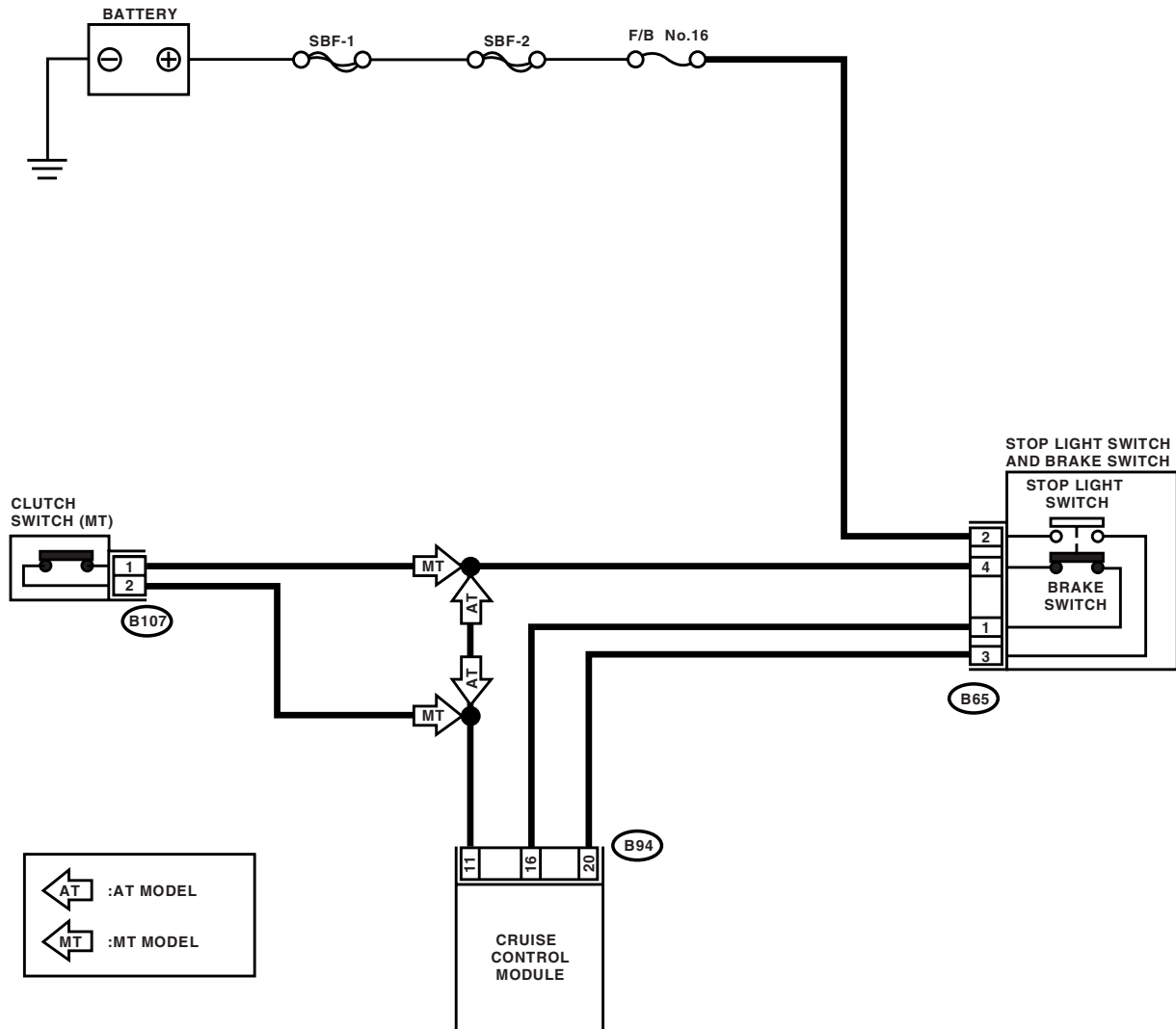
CRUISE CONTROL SYSTEM (DIAGNOSTICS)

F: CHECK CLUTCH SWITCH (MT MODEL)

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:



CC-00033

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 OFF. 2) Disconnect the stop light switch and brake switch harness connector. 3) Measure the resistance between clutch switch harness connector terminal and stop light switch 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-9, Clutch Switch.>	Is the clutch switch OK?	Clutch switch circuit is OK.	Replace the clutch switch.

Diagnostics with Phenomenon

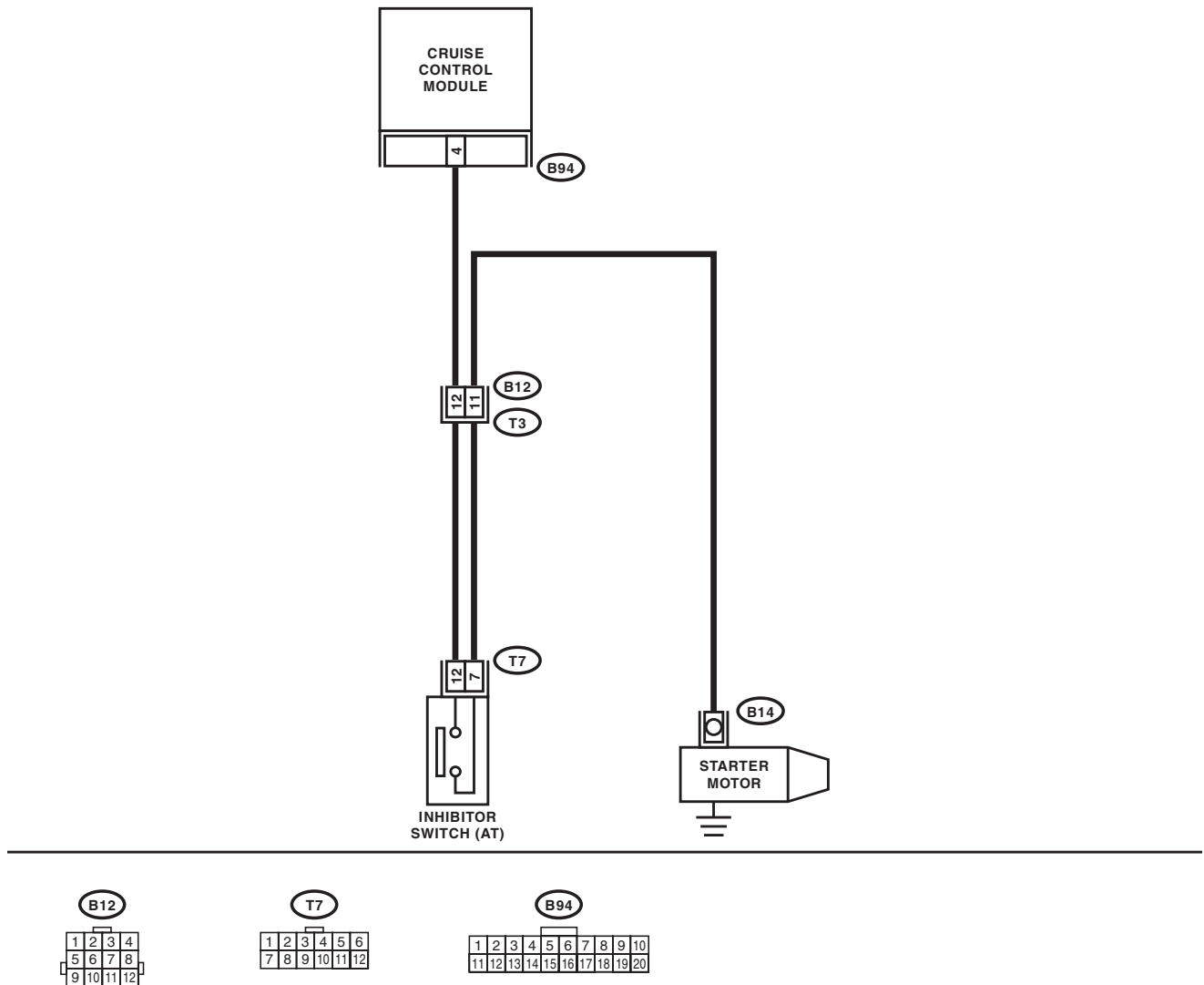
CRUISE CONTROL SYSTEM (DIAGNOSTICS)

G: CHECK INHIBITOR SWITCH

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:



CC-00360

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-10, 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)-27, 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)-28, 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)-27, 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)-27, 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)-30, 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)-31, 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)-31, 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)-33, 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)-35, 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)-35, 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)-27, DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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.)

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

B: DTC 22 VEHICLE SPEED SENSOR

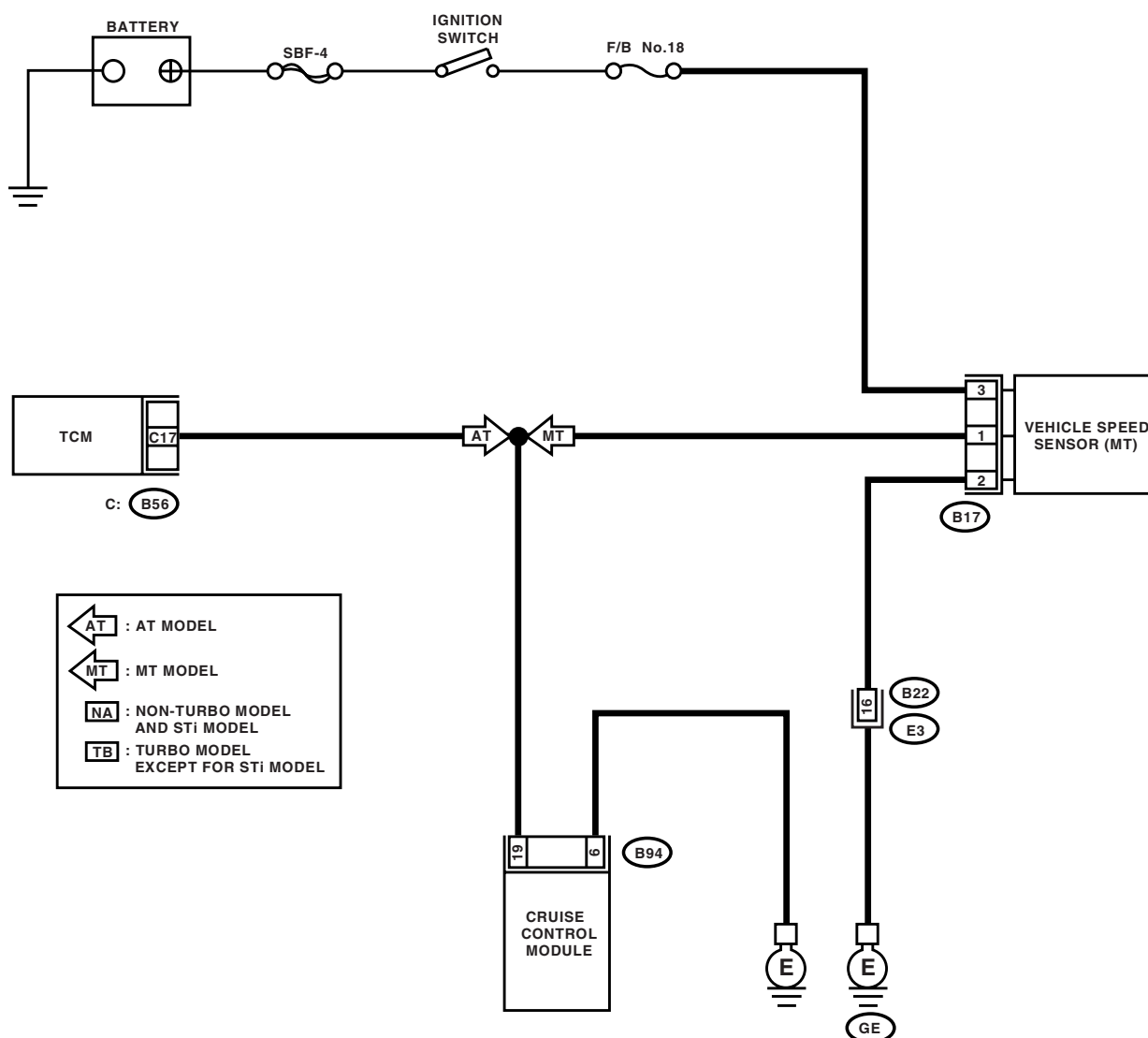
DIAGNOSIS:

Disconnection or short circuit of vehicle speed sensor system.

TROUBLE SYMPTOM:

Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:



B17 NA

1	2	3
---	---	---

B17 TB

1	2
3	4

B94

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

B22

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

C: B56

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24			

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.
2	CHECK HARNESS BETWEEN BATTERY AND VEHICLE SPEED SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from vehicle speed sensor. 3) Turn the ignition switch to ON. 4) Measure the voltage between vehicle speed sensor harness connector terminal and chassis ground. Connector & terminal (B17) No. 3 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.
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:	Is the resistance less than 10 Ω ?	Go to step 4.
4	CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND ENGINE GROUND. 1) Turn the ignition switch to OFF. 2) Measure the resistance between vehicle speed sensor harness connector terminal and engine ground. Connector & terminal (B17) No. 2 — Engine ground:	Is the resistance less than 10 Ω ?	Go to step 5.
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-5, Cruise Control Unit.>
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.

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-5, Cruise Control Unit.>	Replace the transmission control module. <Ref. to 4AT-75, 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

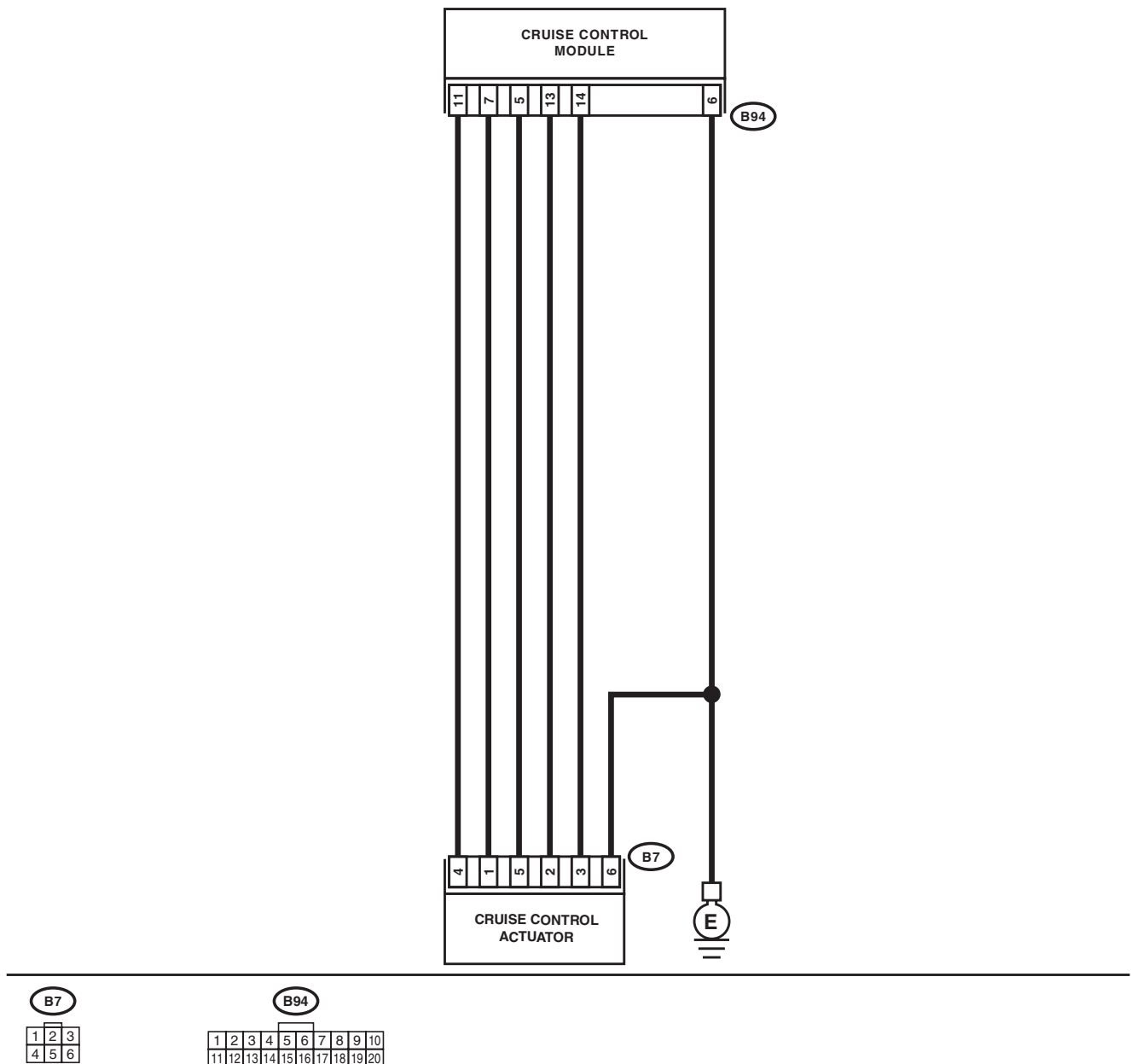
DIAGNOSIS:

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. 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. 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-4, 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-5, Cruise Control Unit.>	Repair the harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

E: DTC 37 ACTUATOR MOTOR CLUTCH

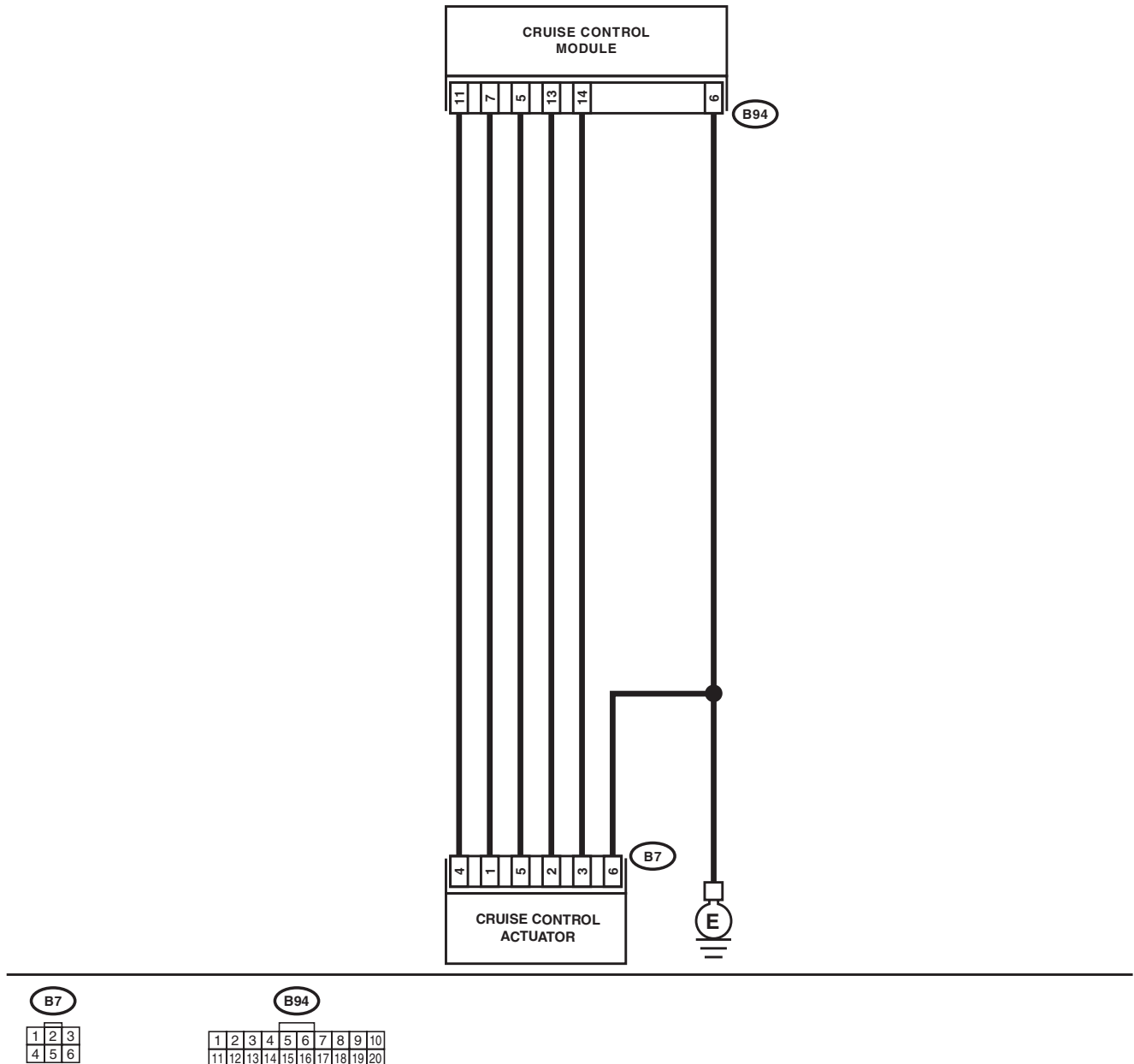
DIAGNOSIS:

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 approx. 39 Ω ?	Go to step 4.	Replace the cruise control actuator. <Ref. to CC-4, 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-5, 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-4, 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-5, Cruise Control Unit.>	Check the power supply circuit. <Ref. to CC(diag)-13, CHECK POWER SUPPLY AND GROUND LINE, Diagnostics with Phenomenon.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

IMMOBILIZER (DIAGNOSTICS)

IM(diag)

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

Basic Diagnostic Procedure

IMMOBILIZER (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

Step	Check	Yes	No
1 CHECK IMMOBILIZER INDICATOR LIGHT. 1) Turn the ignition switch to "OFF" or "ACC". 2) Wait for more than 60 seconds.	Does the immobilizer indicator light blink?	Go to step 2.	Check the immobilizer indicator light circuit. <Ref. to IM(diag)-11, CHECK IMMOBILIZER INDICATOR CIRCUIT, INSPECTION, Diagnostics Chart for Immobilizer Indicator Light.>
2 CHECK KEY SWITCH. Remove the key from ignition switch.	Does the immobilizer indicator light blink within 1 second after removing ignition key?	Go to step 3.	Check the key switch circuit. <Ref. to IM(diag)-13, CHECK KEY SWITCH CIRCUIT, INSPECTION, Diagnostics Chart for Immobilizer Indicator Light.>
3 CHECK IMMOBILIZER INDICATOR LIGHT. Turn the ignition switch to ON.	Does the immobilizer indicator light go off?	Go to step 4.	Perform teaching operation on all keys of the vehicle. Go to step 4.
4 CHECK ENGINE START. Turn the ignition switch to START.	Does the starter operate?	Go to step 5.	Check the starter motor circuit.
5 CHECK ENGINE START. Turn the ignition switch to START.	Does the engine start?	Immobilizer system is OK.	Go to step 6.
6 CHECK ANY OTHER DTC ON DISPLAY. 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to data link connector. <Ref. to IM(diag)-8, OPERATION.> 3) Turn the ignition switch and Subaru Select Monitor switch to ON. 4) Read DTC on display. <Ref. to IM(diag)-9, Read Diagnostic Trouble Code (DTC).>	Is the DTC displayed on screen?	Go to step 7.	Inspection using "Engine Starting Failure". <Ref. to EN(H4DOTC)(diag)-58, Diagnostics for Engine Starting Failure.> <Ref. to EN(H4SO)(diag)-56, Diagnostics for Engine Starting Failure.> <Ref. to EN(H4SOw/oOBD)(diag)-37, Diagnostics for Engine Starting Failure.>

Basic Diagnostic Procedure

IMMOBILIZER (DIAGNOSTICS)

Step		Check	Yes	No
7	PERFORM THE DIAGNOSIS. 1) Inspect using the "Diagnostic Procedure with Diagnostic Trouble Code (DTC)". <Ref. to IM(diag)-16, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> 2) Repair the trouble cause. 3) Perform clear memory mode. 4) Read DTC again.	Is the DTC displayed on screen?	Inspect using the "Diagnostic Procedure with Diagnostic Trouble Code (DTC)". <Ref. to IM(diag)-16, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

General Description

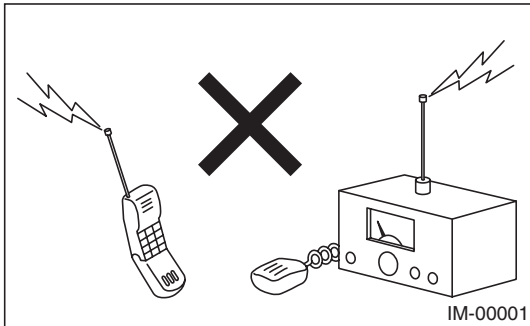
IMMOBILIZER (DIAGNOSTICS)

2. General Description

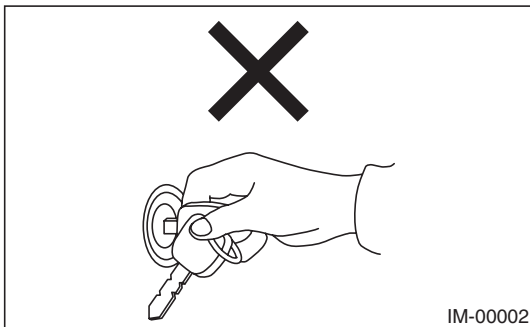
A: CAUTION

CAUTION:

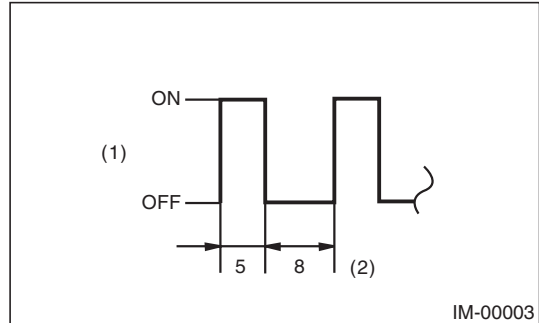
- The airbag system wiring harness is routed near the immobilizer control module. All airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuits.
- Be careful not to damage the airbag system wiring harness when servicing the immobilizer control 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 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.

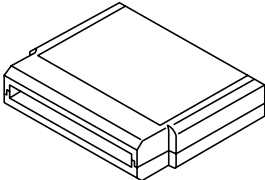
- If the engine fails to start with a registered ignition key, detach the ignition key from ignition switch and wait for approx. 1 second until immobilizer indicator light begins to flash. Start the engine again.
- Before checking the diagnostic items, obtain all keys for the vehicle to be checked possessed by owner.

General Description

IMMOBILIZER (DIAGNOSTICS)

B: PREPARATION TOOL

1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST18482AA000	18482AA000	CARTRIDGE	Troubleshooting for electrical systems.
 ST22771AA030	22771AA030	SUBARU SELECT MONITOR KIT	Troubleshooting for electrical systems. - English: 22771AA030 (Without printer) - German: 22771AA070 (Without printer) - French: 22771AA080 (Without printer) - Spanish: 22771AA090 (Without printer)

2. GENERAL TOOLS

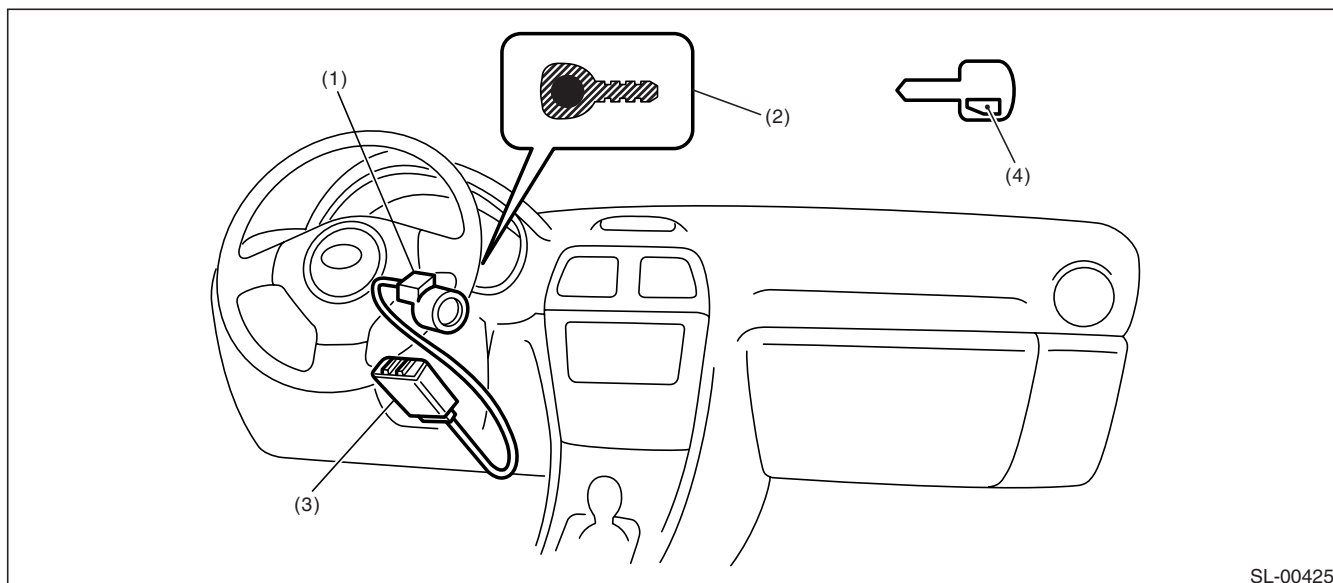
TOOL NAME	REMARKS
Circuit Tester	Used for measuring resistance, voltage and current.

Electrical Component Location

IMMOBILIZER (DIAGNOSTICS)

3. Electrical Component Location

A: LOCATION



SL-00425

- | | | |
|--|--|-----------------|
| (1) Antenna | (3) Immobilizer control module (IMM ECM) | (4) Transponder |
| (2) Immobilizer indicator light (LED bulb) | | |

NOTE:

IMM ECM location for RHD model is symmetrically opposite.

Immobilizer Control Module I/O Signal

IMMOBILIZER (DIAGNOSTICS)

4. Immobilizer Control Module I/O Signal

A: WIRING DIAGRAM

1. IMMOBILIZER

<Ref. to WI-171, WIRING DIAGRAM, Immobilizer
System.>

Subaru Select Monitor

IMMOBILIZER (DIAGNOSTICS)

5. Subaru Select Monitor

A: OPERATION

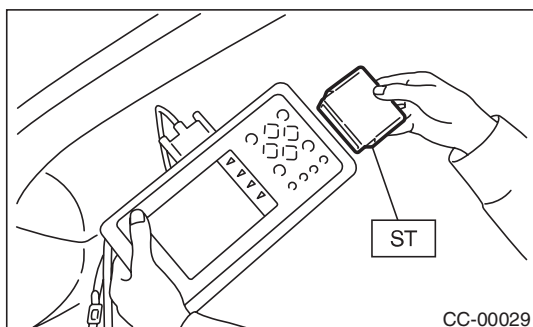
1. HOW TO USE SUBARU SELECT MONITOR

- 1) Prepare the Subaru Select Monitor kit.



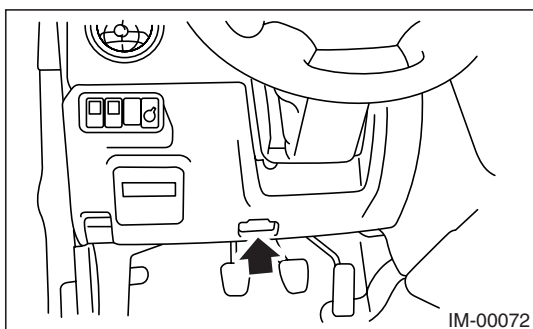
- 2) Connect the diagnosis cable to Subaru Select Monitor.

- 3) Insert the cartridge into 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 driver's side).

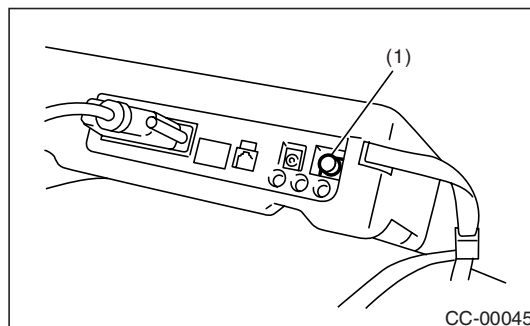


- (2) Connect the diagnosis cable to data link connector.

CAUTION:

Do not connect the scan tools except for Subaru Select Monitor.

- 5) Turn the ignition switch to ON (engine OFF), and then Subaru Select Monitor power switch to ON.



- (1) Power switch

- 6) Using the Subaru Select Monitor, call up any DTCs and various data, and then record them.

2. READ DIAGNOSTIC TROUBLE CODE (DTC) FOR ENGINE.

Refer to Read DTC for information about how to indicate DTC. <Ref. to IM(diag)-9, Read Diagnostic Trouble Code (DTC).>

3. COMMUNICATION LINE CHECK

NOTE:

The communication line between ECM and body integrated 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)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

6. Read Diagnostic Trouble Code (DTC)

A: OPERATION

- 1) On the «Main Menu» display screen, select the {Each System Check}, and then press the [YES] key.
- 2) On the «System Selection Menu» display screen, select the {Engine Control System}, and then press the [YES] key.
- 3) Press the [YES] key after the information of engine type is displayed.
- 4) On the «Engine Diagnosis» display screen, select the {DTC Display}, and then press the [YES] key.
- 5) On the «DTC Display» display screen, select the {Current DTC} or {History DTC}, 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)-15, LIST, List of Diagnostic Trouble Code (DTC).>

Clear Memory Mode

IMMOBILIZER (DIAGNOSTICS)

7. Clear Memory Mode

A: OPERATION

- 1) On the «Main Menu» display screen, select the {Each System Check}, and then press the [YES] key.
- 2) On the «System Selection Menu» display screen, select the {Engine Control System}, and then press the [YES] key.
- 3) Press the [YES] key after the information of engine type is displayed.
- 4) On the «Engine Diagnosis» display screen, select the {Clear Memory}, and then 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 do this, turn the ignition switch to ON position. Wait 3 seconds before starting the engine.
- For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.

Diagnostics Chart for Immobilizer Indicator Light

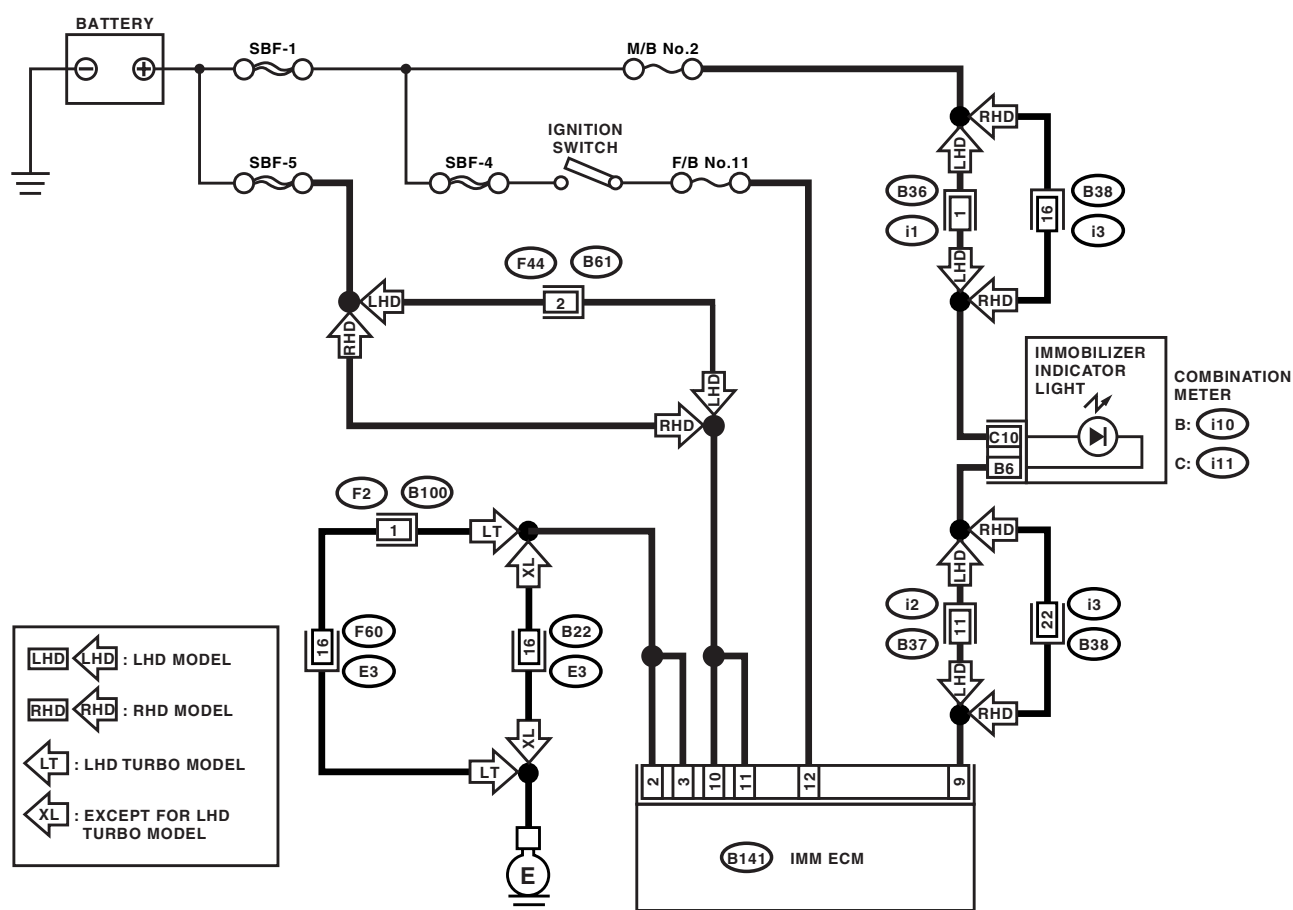
IMMOBILIZER (DIAGNOSTICS)

8. Diagnostics Chart for Immobilizer Indicator Light

A: INSPECTION

1. CHECK IMMOBILIZER INDICATOR CIRCUIT

WIRING DIAGRAM:



1	2	3	4
5	6	7	8

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

1	2	3	4	5
6	7	8	9	10

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

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

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			

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

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

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

IM-00135

Diagnostics Chart for Immobilizer Indicator Light

IMMOBILIZER (DIAGNOSTICS)

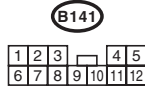
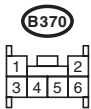
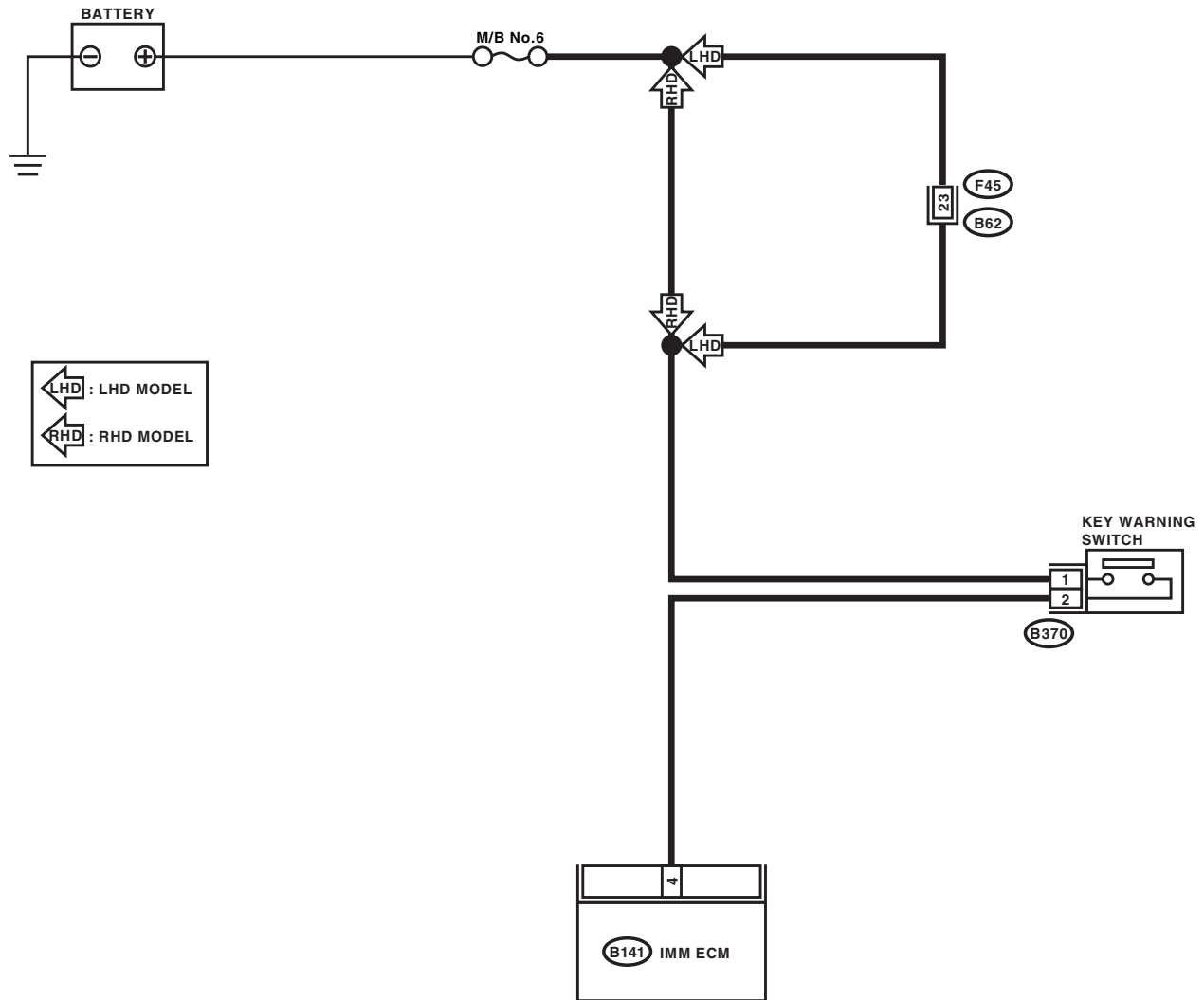
Step	Check	Yes	No
1 CHECK IMMOBILIZER INDICATOR LIGHT COMES ON. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from IMM ECM. 3) Connect a resistor (750 Ω) between IMM ECM harness connector terminal No. 9 and chassis ground.	Does the indicator light come on?	Go to step 2.	Go to step 5.
2 CHECK IMM ECM GROUND CIRCUIT. Measure the resistance between IMM ECM harness connector terminal and chassis ground. Connector & terminal (B141) No. 2, No. 3 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 3.	Repair the open circuit of IMM ECM ground circuit.
3 CHECK IMM ECM IGNITION CIRCUIT. 1) Turn the ignition switch to ON. (Engine OFF.) 2) Measure the voltage between IMM ECM harness connector terminal and chassis ground. Connector & terminal (B141) No. 12 (+) — 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. Connector & terminal (B141) No. 10, No. 11 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Replace the IMM ECM <Ref. to SL-40, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to teaching operation manual.	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-12, Combination Meter.> 2) Measure the voltage between combination meter harness connector terminal and chassis ground. Connector & terminal (i11) No. 10 (+) — 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. Connector & terminal (B141) No. 9 — (i10) No. 6:	Is the resistance less than 10 Ω ?	Faulty LED bulb. Replace the combination meter printed circuit or meter main assembly. <Ref. to IDI-13, DISASSEMBLY, Combination Meter.>	Repair the harness or connector.

Diagnostics Chart for Immobilizer Indicator Light

IMMOBILIZER (DIAGNOSTICS)

2. CHECK KEY SWITCH CIRCUIT

WIRING DIAGRAM:



IM-00136

Diagnostics Chart for Immobilizer Indicator Light

IMMOBILIZER (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK POWER SUPPLY CIRCUIT. 1) Disconnect the harness connector from key warning switch. 2) Turn the ignition switch to ACC or LOCK position (The key inserted). 3) Measure the voltage between key warning switch harness connector terminal and chassis ground. Connector & terminal (B370) No. 1 (+) — 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 SWITCH. 1) Insert the ignition key to the ignition switch. (OFF or ACC position) 2) Measure the resistance between key warning switch connector terminals. Connector & terminal No. 1 — No. 2:	Is the resistance less than 1 Ω ?	Go to step 3.	Replace the key warning switch.
3 CHECK KEY SWITCH. 1) Remove the ignition key from the ignition switch. 2) Measure the resistance between key warning switch connector terminals. Connector & 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 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. 2 — (B141) No. 4:	Is the resistance less than 10 Ω ?	Replace the IMM ECM <Ref. to SL-40, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to teaching operation manual.	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.
Without OBD	With OBD			
53	P0513	Incorrect Immobilizer Key	Incorrect immobilizer key (Use of unregistered key in IMM ECM)	<Ref. to IM(diag)-16, DTC P0513 INCORRECT IMMOBILIZER KEY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
	P1570	ANTENNA	Faulty antenna	<Ref. to IM(diag)-17, DTC P1570 ANTENNA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
	P1571	Reference Code Incompatibility	Reference code incompatibility between IMM ECM and ECM	<Ref. to IM(diag)-19, DTC P1571 REFERENCE CODE INCOMPATIBILITY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
	P1572	IMM Circuit Failure (Except Antenna Circuit)	Communication failure between IMM ECM and ECM	<Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
	P1574	Key Communication Failure	Failure of IMM ECM to verify key (transponder) ID code	<Ref. to IM(diag)-23, DTC P1574 KEY COMMUNICATION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
	P1576	EGI Control Module EEPROM	ECM malfunctioning	<Ref. to IM(diag)-23, DTC P1576 EGI CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
	P1577	IMM Control Module EEPROM	IMM ECM malfunctioning	<Ref. to IM(diag)-23, DTC P1577 IMM CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

NOTE:

If any DTC except for the above immobilizer DTC has been output, carry out diagnosis for the engine DTC. <Ref. to EN(H4SO)(diag)-70, List of Diagnostic Trouble Code (DTC).> or <Ref. to EN(H4SOw/oOBD)(diag)-54, List of Diagnostic Trouble Code (DTC).> or <Ref. to EN(H4DOTC)(diag)-72, List of Diagnostic Trouble Code (DTC).>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

10. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC P0513 INCORRECT IMMOBILIZER KEY

DIAGNOSIS:

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.	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.	Is teaching operation for all keys completed?	END	Replace the IMM ECM <Ref. to SL-40, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

B: DTC P1570 ANTENNA

DIAGNOSIS:

Faulty antenna

WIRING DIAGRAM:



B142

1 2

IM-00008

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-41, Immobilizer Antenna.> 3) Measure the resistance of antenna circuit. Connector & terminal (B142) No. 1 — No. 2:	Is the resistance less than 10 Ω ?	Go to step 2.	Replace the antenna. <Ref. to SL-41, Immobilizer Antenna.>
2 CHECK ANTENNA CIRCUIT. Measure the resistance between antenna harness connector and chassis ground. Connector & terminal (B142) No. 1 — Chassis ground:	Is the resistance less than 10 Ω ?	Replace the antenna. <Ref. to SL-41, Immobilizer Antenna.>	Go to step 3.
3 CHECK ANTENNA CIRCUIT. Measure the resistance between antenna harness connector and chassis ground. Connector & terminal (B142) No. 2 — Chassis ground:	Is the resistance less than 10 Ω ?	Replace the antenna. <Ref. to SL-41, 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 (B142) No. 1 (+) — Chassis ground (-):	Is the voltage 0 V?	Go to step 5.	Replace the antenna. <Ref. to SL-41, Immobilizer Antenna.>
5 CHECK ANTENNA CIRCUIT. Measure the voltage between antenna harness connector and chassis ground. Connector & terminal (B142) No. 2 (+) — Chassis ground (-):	Is the voltage 0 V?	Go to step 6.	Repair the harness between IMM ECM and antenna, because there is short circuit with battery voltage circuit or ignition switch "ON" circuit.
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 (B142) No. 1 (+) — No. 2 (-):	Is the voltage -30 — 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-40, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual.
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.	Replace the IMM ECM <Ref. to SL-40, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

C: DTC P1571 REFERENCE CODE INCOMPATIBILITY

DIAGNOSIS:

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	Replace the ECM <Ref. to FU(H4SO)-47, Engine Control Module (ECM).>, <Ref. to FU(H4SOw/oOBD)-42, Engine Control Module (ECM).> or <Ref. to FU(H4DOTC)-50, Engine Control Module (ECM).>, IMM ECM <Ref. to SL-40, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual.

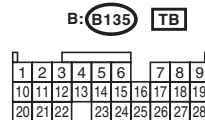
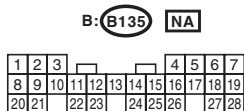
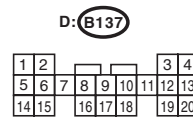
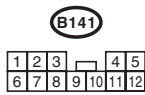
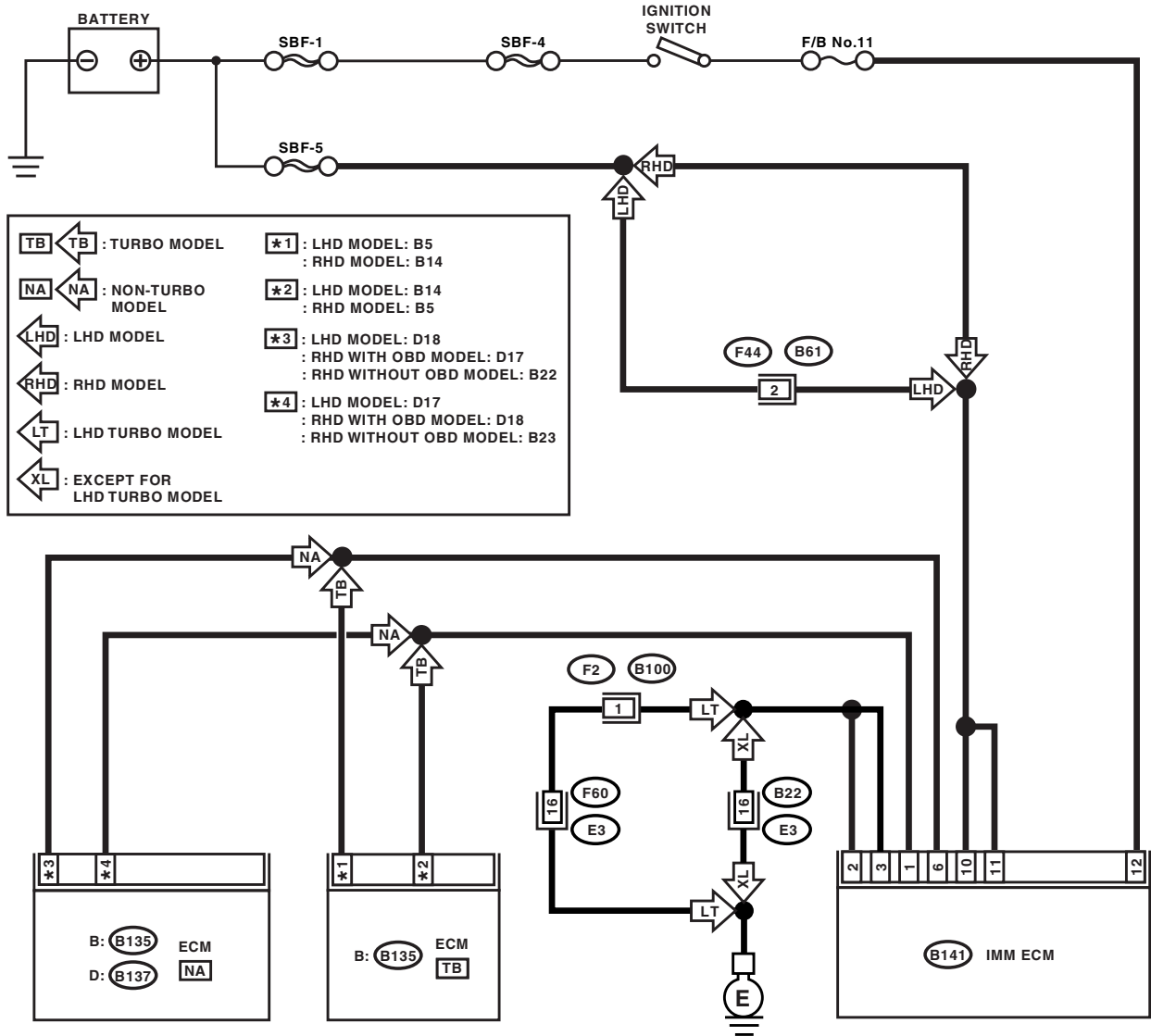
Diagnostic Procedure with Diagnostic Trouble Code (DTC) IMMOBILIZER (DIAGNOSTICS)

D: DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT)

DIAGNOSIS:

Communication failure between IMM ECM and ECM

WIRING DIAGRAM:



IM-00137

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. 10, No.11 (+) — 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 POWER SUPPLY CIRCUIT OF IMM ECM. 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. 12 (+) — 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. 2, No.3 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 4.	Repair the open circuit of IMM ECM ground circuit.
4 CHECK HARNESS BETWEEN IMM ECM AND ECM. 1) Disconnect the harness connector from ECM and IMM ECM. 2) Measure the resistance between IMM ECM harness connector terminal and ECM harness connector terminal. Connector & terminal LHD non-turbo model (B141) No. 1 — (B137) No. 17: RHD non-turbo model with OBD (B141) No. 1 — (B137) No. 18: RHD non-turbo model without OBD (B141) No. 1 — (B135) No. 23: LHD turbo model (B141) No. 1 — (B135) No. 14: RHD turbo model (B141) No. 1 — (B135) No. 5:	Is the resistance less than 10 Ω ?	Go to step 5.	Repair the open circuit of harness between IMM ECM and ECM.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK HARNESS BETWEEN IMM ECM AND ECM. Measure the resistance between IMM ECM harness connector terminal and ECM harness connector terminal. <i>Connector & terminal</i> <i>LHD non-turbo model</i> <i>(B141) No. 6 — (B137) No. 18:</i> <i>RHD non-turbo model with OBD</i> <i>(B141) No. 6 — (B137) No. 17:</i> <i>RHD non-turbo model without OBD</i> <i>(B141) No. 6 — (B135) No. 22:</i> <i>LHD turbo model</i> <i>(B141) No. 6 — (B135) No. 5:</i> <i>RHD turbo model</i> <i>(B141) No. 6 — (B135) No. 14:</i>	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. <i>Connector & terminal</i> <i>(B141) No. 1, No.6 (+) — Chassis ground (-):</i>	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 circuit or ignition switch "ON" circuit.
7 CHECK HARNESS OF COMMUNICATION LINE. Measure the voltage between ECM harness connector terminal and engine ground. <i>Connector & terminal</i> <i>LHD non-turbo and RHD non-turbo model with OBD</i> <i>(B137) No. 17, No. 18 (+) — Engine ground (-):</i> <i>RHD non-turbo model without OBD</i> <i>(B135) No. 22, No.23 (+) — Engine ground (-):</i> <i>Turbo model</i> <i>(B135) No. 5, No.14 (+) — Engine ground (-):</i>	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 circuit or ignition switch "ON" circuit.
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)-8, COMMUNICATION LINE CHECK, OPERATION, Subaru Select Monitor.>	Does "Communication Line not Shorted" appear on the screen?	Replace the IMM ECM <Ref. to SL-40, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual.	Replace the ECM. <Ref. to FU(H4DOTC)-50, Engine Control Module (ECM).> Then perform teaching operation. Refer to the teaching operation manual.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

E: DTC P1574 KEY COMMUNICATION FAILURE

DIAGNOSIS:

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 $-30 \sim 30$ 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-40, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual.
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.	Replace the IMM ECM <Ref. to SL-40, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual.

F: DTC P1576 EGI CONTROL MODULE EEPROM

DIAGNOSIS:

ECM malfunctioning

1. REPLACE ECM.

Replace the ECM.

<Ref. to FU(H4SO)-47, Engine Control Module (ECM).>, <Ref. to FU(H4SOw/oOBD)-42, Engine Control Module (ECM).> or <Ref. to FU(H4DOTC)-50, Engine Control Module (ECM).>

Then perform teaching operation. Refer to the teaching operation manual.

G: DTC P1577 IMM CONTROL MODULE EEPROM

DIAGNOSIS:

IMM ECM malfunctioning

1. REPLACE IMM ECM.

Replace the IMM ECM <Ref. to SL-40, Immobilizer Control Module.>, and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)
