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.

FUJI HEAVY INDUSTRIES LTD.

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

AC

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1. General Description

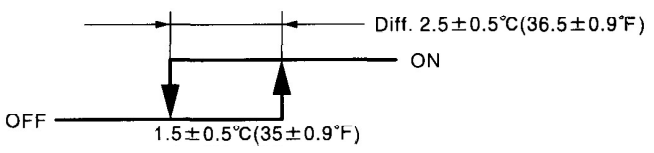
A: SPECIFICATIONS

1. HEATER SYSTEM

Item		Specifications	Condition
Heating capacity		5.0 kW (4,300 kcal/h, 17,062 BTU/h) or more	• Mode selector switch: HEAT • Temperature control switch: FULL HOT • Temperature difference between hot water and inlet air: 65°C (149°F) • Hot water flow rate: 360 ℓ (95.1 US gal, 79.2 Imp gal)/h
Air flow rate		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)	—

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2. A/C SYSTEM

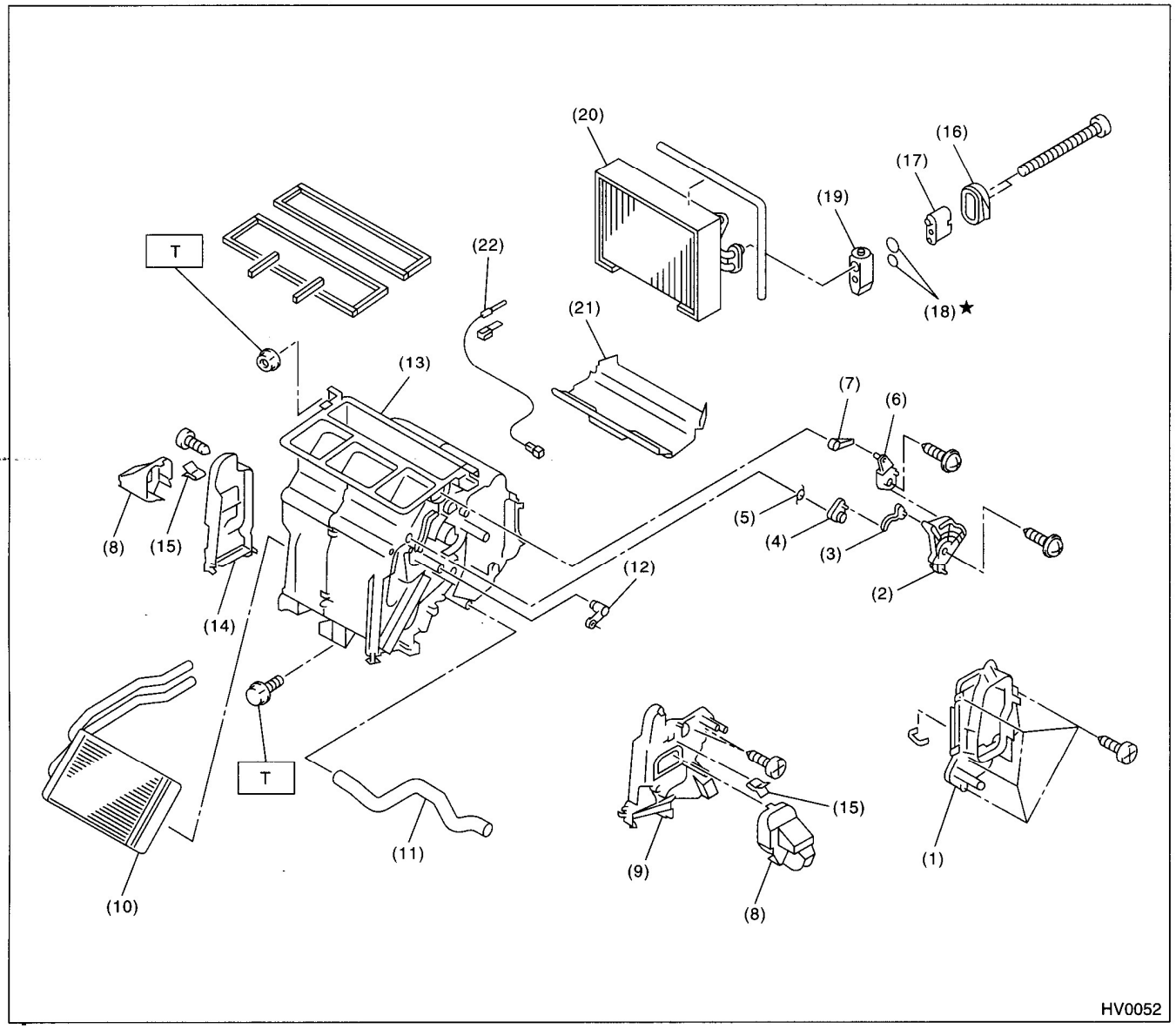
Item			Specifications
Type of air conditioner			Reheat air-mix type
Cooling capacity			5.1 kW (4,385 kcal/h, 17,402 BTU/h)
Refrigerant			HFC-134a (CH_2FCF_3) [0.5±0.05 kg (0.99±0.11 lb)]
Compressor		Type	Vane rotary, fix volume (CR-14)
		Discharge	144 cm^3 (8.79 cu in)/rev
		Max. permissible speed	7,000 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 (57.5 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 at 12 V
Condenser fan (Sub fan)		Motor type	Magnet
		Power consumption	70 W at 12 V
		Fan outer diameter	320 mm (12.6 in)
Radiator fan (Main fan)		Motor type	Magnet
		Power consumption	70 W at 12 V
		Fan outer diameter	320 mm (12.6 in)
Idling speed (A/C ON)		MPFI model	850±100 rpm
Dual switch (Pressure switch)	Low-pressure switch operating pressure	ON → OFF	278±29 kPa (2.83±0.3 kg/cm^2, 40.3±4.2 psi)
		OFF → ON	$287^{+39}/_{-25}$ kPa ($2.9^{+0.4}/_{-0.25}$ kg/cm^2, $42^{+5.7}/_{-3.6}$ psi)
	High-pressure switch operating pressure	ON → OFF	2,800±100 kPa (29±1 kg/cm^2, 406±15 psi)
		DIFF	600±200 kPa (6.12±2 kg/cm^2, 87±29 psi)
Thermo control amplifier working temperature (Evaporator outlet air)			

HV0045

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B: COMPONENT

1. HEATER COOLING UNIT

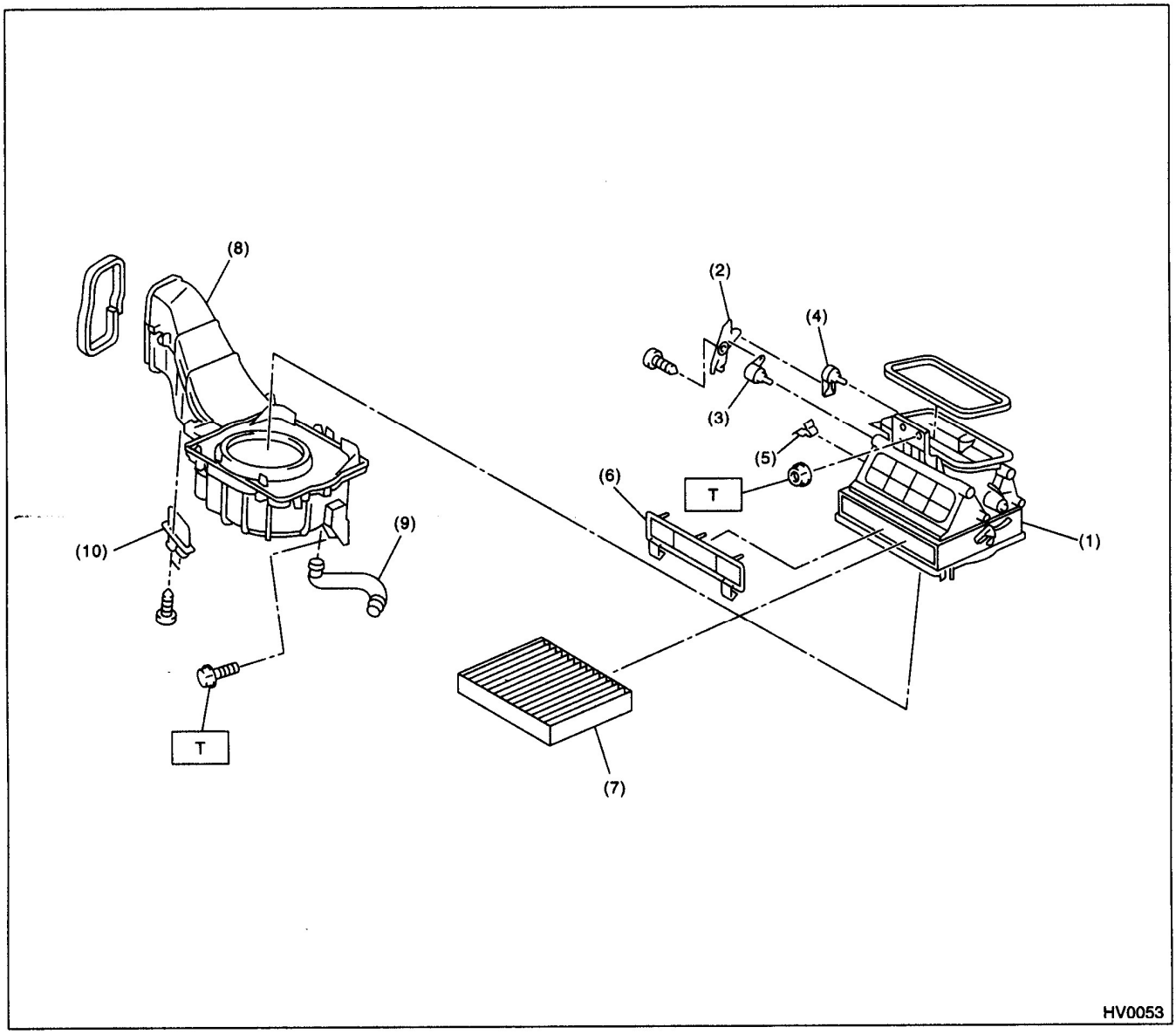


(1) Unit cover
(2) Side link
(3) Mode acutuator lever
(4) Foot lever
(5) Spring
(6) Mode acutuator link
(7) Defroster lever
(8) Foot nozzle
(9) Unit duct cover
(10) Heater core
(11) Drain hose
(12) Mix acutuator lever
(13) Unit assembly
(14) Foot duct
(15) Clip
(16) Packing
(17) Cooling unit block
(18)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

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

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2. BLOWER MOTOR UNIT

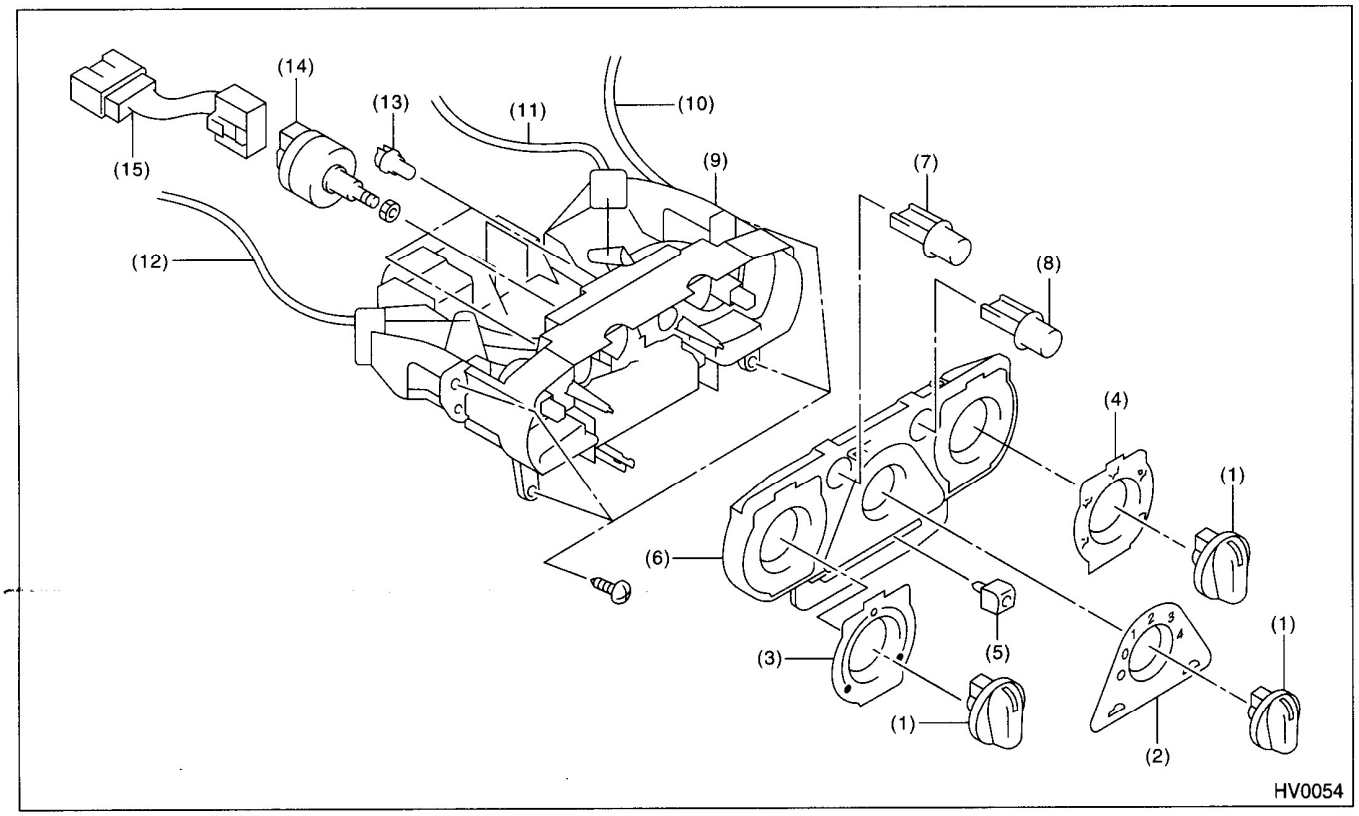


(1) Upper case
(2) Blower link
(3) Blower link lever A
(4) Blower link lever B
(5) Clip
(6) Filter cover
(7) Filter
(8) Blower motor assembly
(9) Hose
(10) Blower resistor

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

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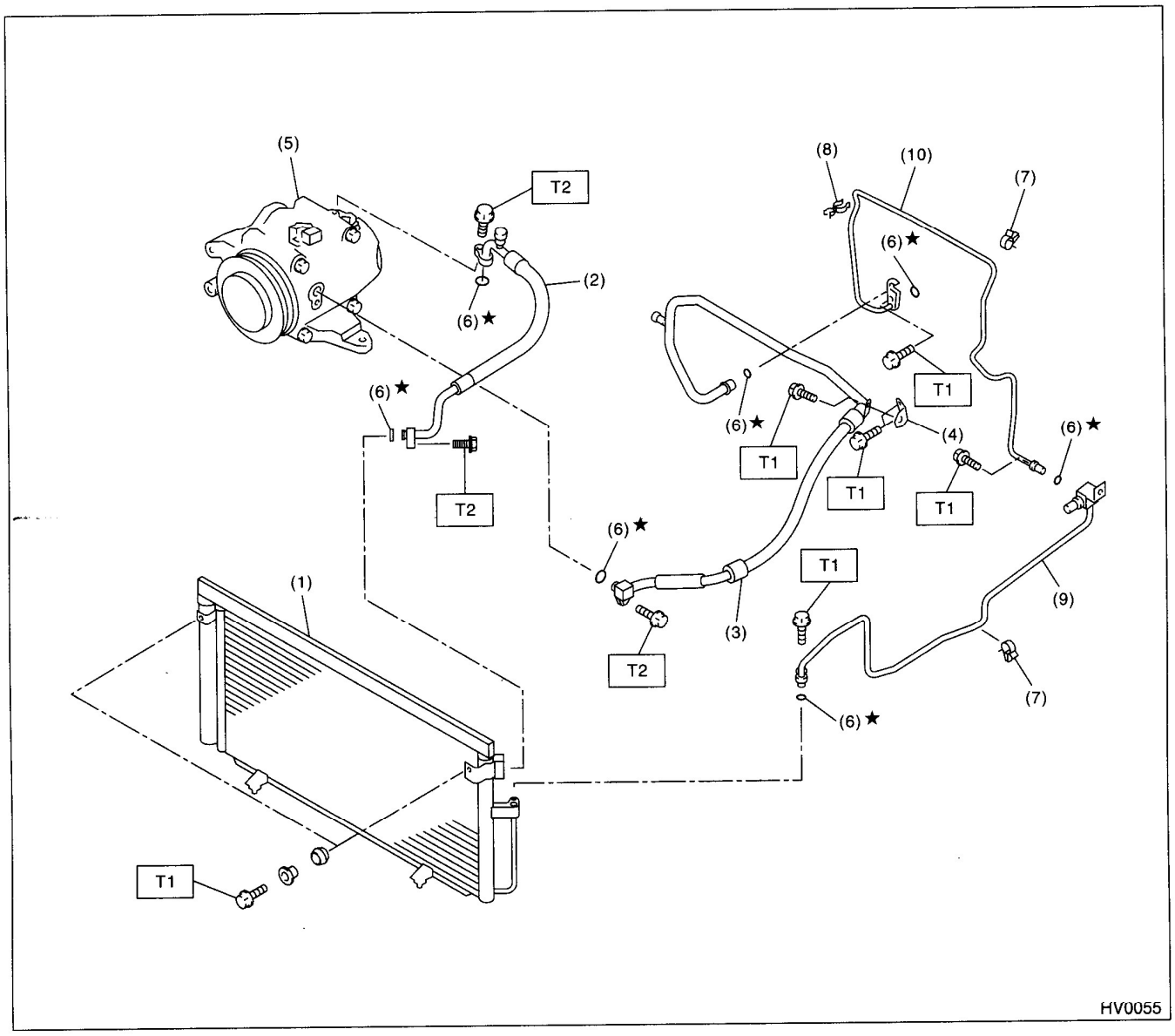
3. CONTROL UNIT



(1) Dial
(2) Fan control plate
(3) Temperature control plate
(4) Mode control plate
(5) Heater control knob
(6) Heater control panel
(7) Air conditioner knob
(8) Plug knob
(9) Heater control base
(10) Intake cable
(11) Mode cable
(12) Temperature cable
(13) Bulb
(14) Fan switch ASSY
(15) Harness

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4. AIR CONDITIONING UNIT

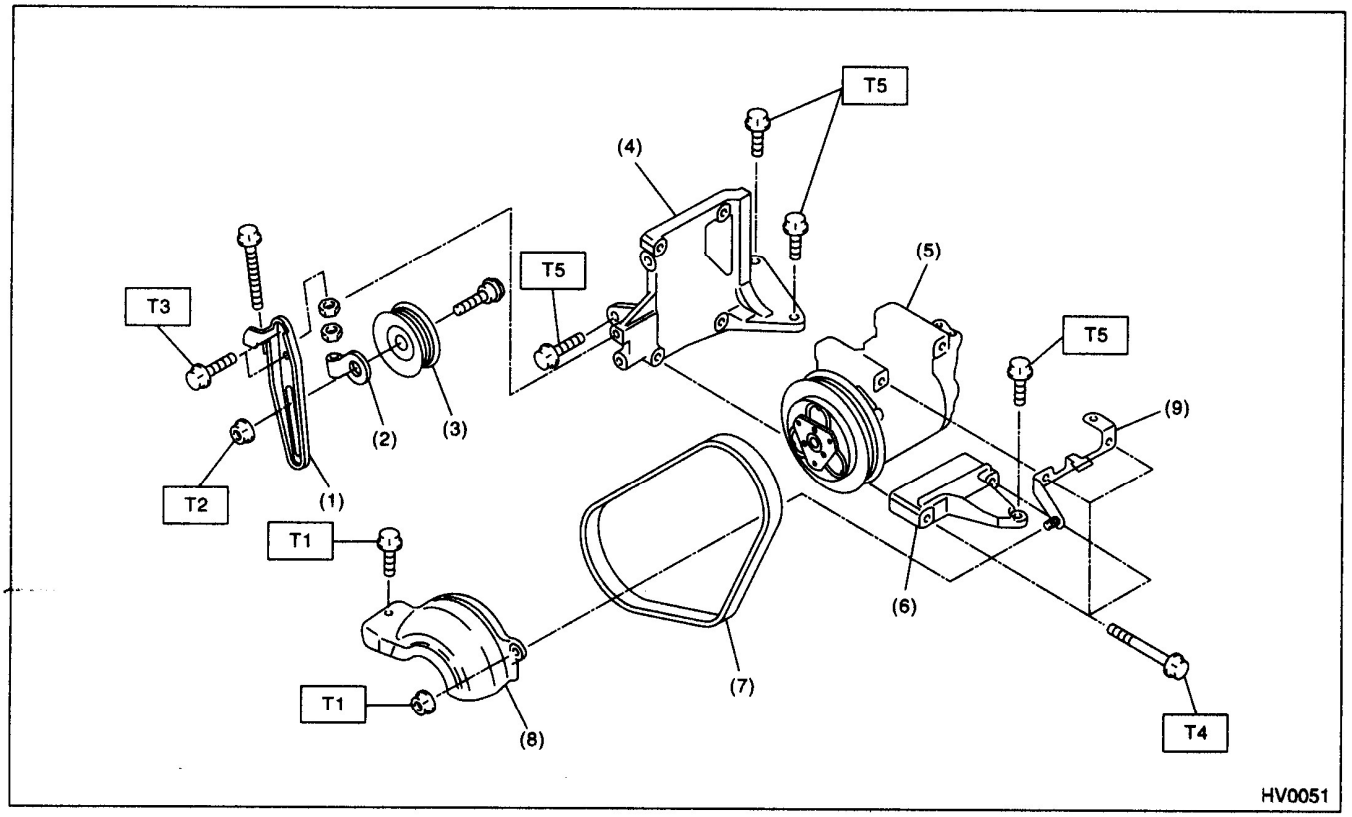


(1) Condenser
(2) Hose (High-pressure)
(3) Hose (Low-pressure)
(4) Bracket
(5) Compressor
(6) O-ring
(7) Clamp A
(8) Clamp B
(9) Tube (To condenser)
(10) Tube (To evaporator)

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

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5. COMPRESSOR

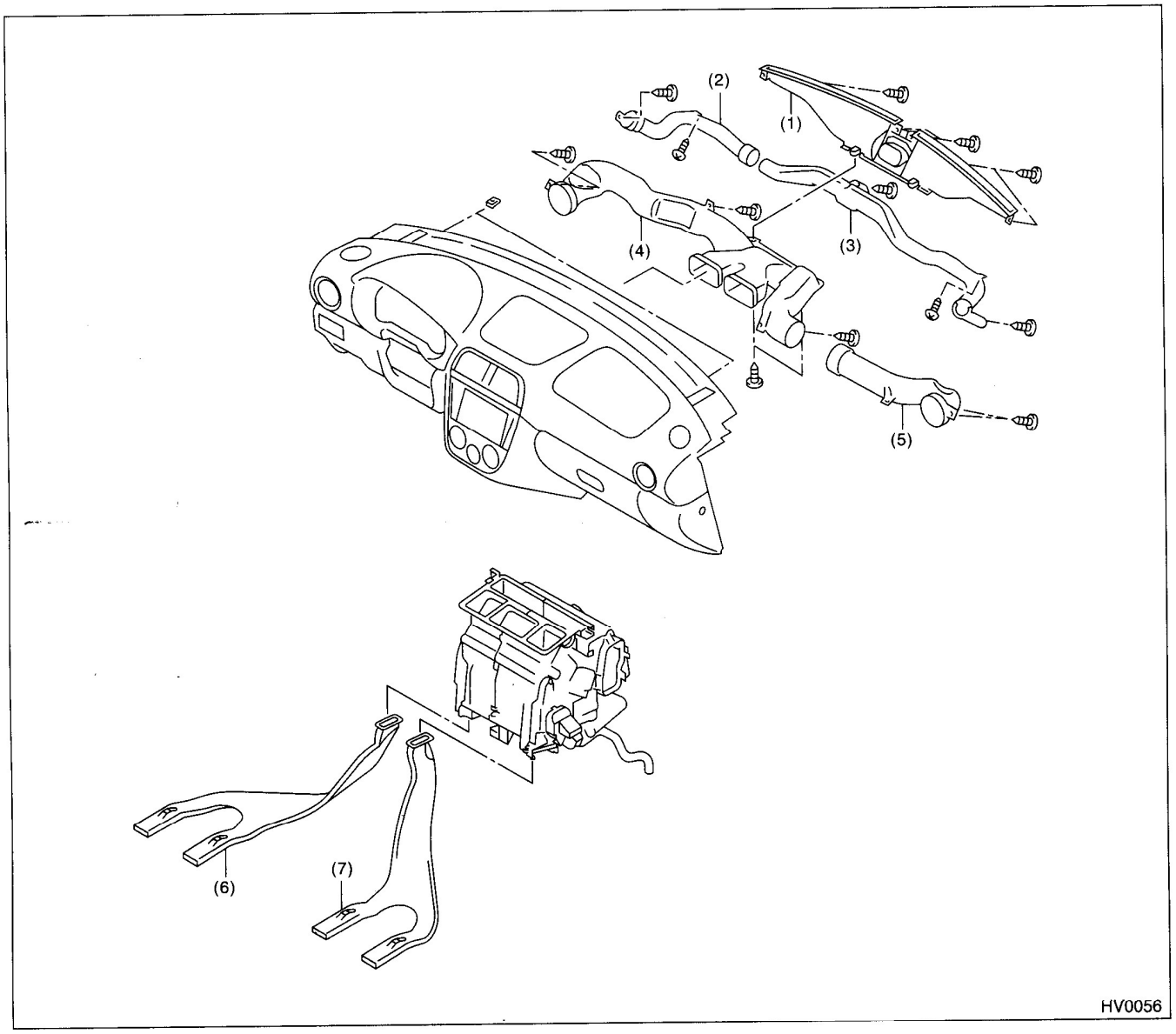


(1) Idler pulley bracket
(2) Idler pulley adjuster
(3) Idler pulley
(4) Compressor bracket upper
(5) Compressor
(6) Compressor bracket lower
(7) V-belt
(8) Compressor belt cover

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)

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6. HEATER DUCT



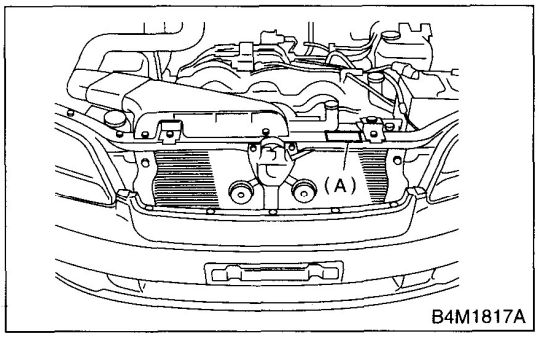
(1) Front defroster nozzle
(2) Side defroster duct (LH)
(3) Side defroster duct (RH)
(4) Side ventilation duct (LH)
(5) Side ventilation duct (RH)
(6) Rear heater duct (LH)
(7) Rear heater duct (RH)

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C: CAUTION

1. HFC-134A A/C SYSTEM

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



2. COMPRESSOR OIL

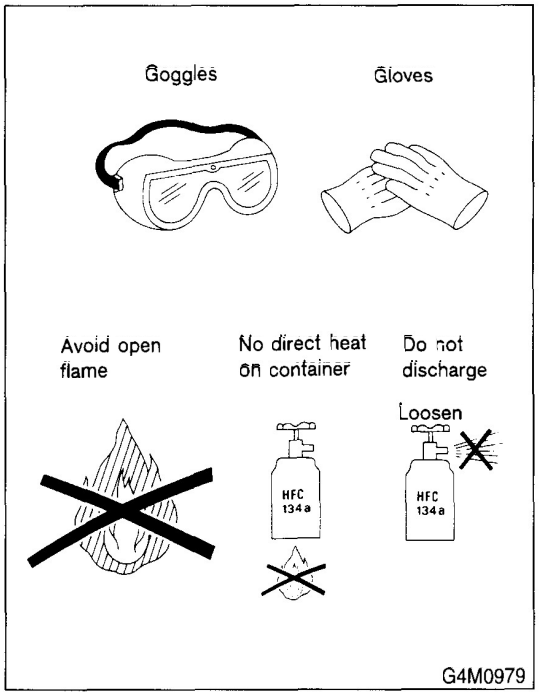
• HFC-134a compressor oil has no compatibility with that for R12 system.
• Use only the manufacturer-authorized compressor oil for the HFC-134a system; only use DH-PR.
• Do not mix multiple compressor oils.
If HFC-12 compressor oil is used in a HFC-134a A/C system, the compressor may become stuck due to poor lubrication, or the refrigerant may leak due to swelling of rubber parts.
On the other hand, if HFC-134a compressor oil is used in a HFC-12 A/C system, the durability of the A/C system will be lowered.
• HFC-134a compressor oil is very hygroscopic. When replacing or installing/removing A/C parts, immediately isolate the oil from the atmosphere using a plug or tape. In order to avoid moisture, store the oil in a container with its cap tightly closed.

3. REFRIGERANT

• The HFC-12 refrigerant cannot be used in the HFC-134a A/C system. The HFC-134a refrigerant, also, cannot be used in the HFC-12 A/C system.
• If an incorrect or no refrigerant is used, poor lubrication will result and the compressor itself may be damaged.

4. HANDLING OF REFRIGERANT

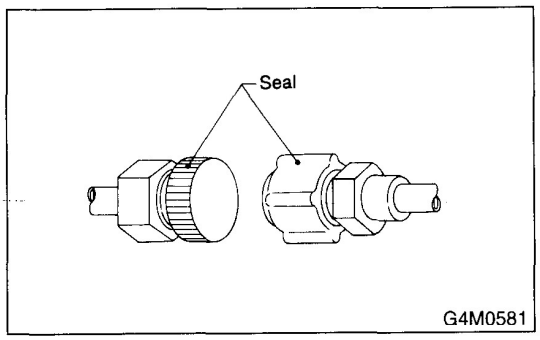
• The refrigerant boils at approx. –30°C (–22°F). When handling it, be sure to wear safety goggles and protective gloves. Direct contact of the refrigerant with skin may cause frostbite.
If the refrigerant gets into your eye, avoid rubbing your eyes with your hands. Wash your eye with plenty of water, and receive medical treatment from an eye doctor.
• Do not heat a service can. If a service can is directly heated, or put into boiling water, the inside pressure will become extremely high. This may cause the can to explode. If a service can must be warmed up, use hot water in 40°C (104°F) max.
• Do not drop or impact a service can. (Observe the precautions and operation procedure described on the refrigerant can.)
• When the engine is running, do not open the high-pressure valve of the manifold gauge. The high-pressure gas will back-flow resulting in an explosion of the can.
• The refrigerant is non-toxic and harmless under normal operating circumstance, but it may change to phosgene (a noxious fume) under open flames or high temperatures (caused by a cigarette or heater).
• Provide good ventilation and do not work in a closed area.
• Never perform a gas leak test using a halide torch-type leak tester.
• In order to avoid destroying the ozone layer, prevent HFC-134a from being released into the atmosphere. Using a refrigerant recovery system, discharge and reuse it.



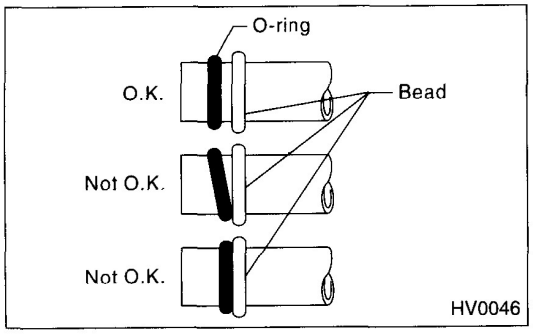
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5. O-RING CONNECTIONS

- Use new O-rings.
- In order to keep the O-rings free of lint which will cause a refrigerant gas leak, perform operations without gloves and shop towels.
- Apply the compressor oil to the O-rings to avoid sticking, then install them.
- Use a torque wrench to tighten the O-ring fittings: Over-tightening will damage the O-ring and tube end distortion.
- If the operation is interrupted before completing a pipe connection, recap the tubes, components, and fittings with a plug or tape to prevent contamination from entering.



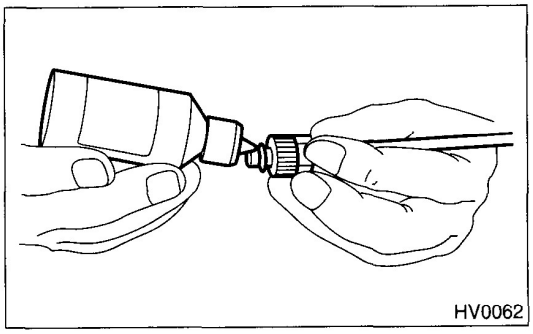
- Visually check the surfaces and mating surfaces of O-rings, threads, and connecting points. If a failure is found, replace the applicable parts.
- Install the O-rings at right angle to the tube beads.



- 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 towel to remove excess oil from the connections and any oil which may have run on the vehicle body or other parts.
- If any leakage is suspected after tightening, do not retighten the connections, Disconnect the connections, remove the O-rings, and check the O-rings, threads, and connections.

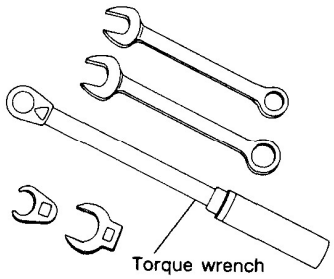
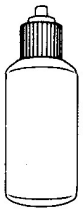
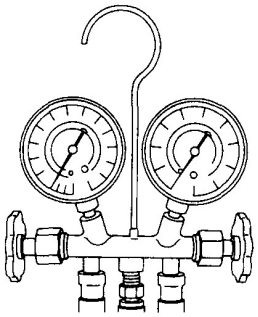
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D: PREPARATION TOOL

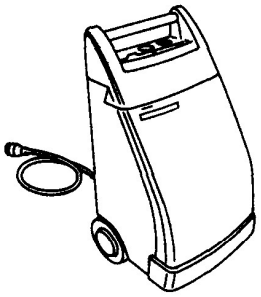
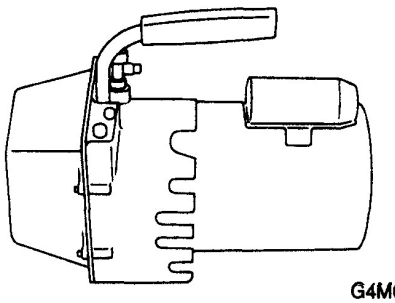
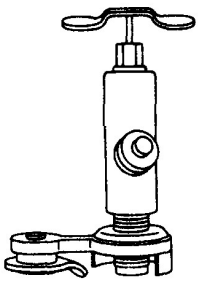
CAUTION:
When working on vehicles with the HFC-134a system, only use HFC-134a specified tools and parts. Do not mix with CFC-12 tools and parts. If HFC-134a and CFC-12 refrigerant or compressor oil is mixed, poor lubrication will result and the compressor itself may be destroyed.

In order to help prevent mixing HFC-134a and CFC-12 parts and liquid, the tool and screw type and the type of service valves used are different. The gas leak detectors for the HFC-134a and CFC-12 systems must also not be interchanged.

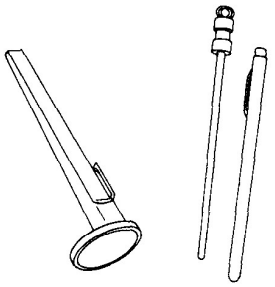
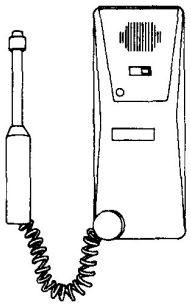
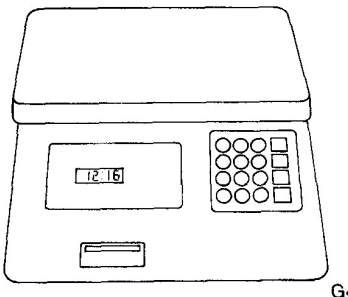
	HFC-134a	CFC-12
Tool & screw type	Millimeter size	Inch size
Valve type	Quick joint type	Screw-in type

Tools and Equipment	Description
Wrench Various **WRENCHES** will be required to service any A/C system. A 7 to 40 N·m (0.7 to 4.1 kg-m, 5 to 30 ft-lb) torque wrench with various crowfoot wrenches will be needed. Open end or flare nut wrenches will be needed for back-up on the tube and hose fittings.	 G4M0571
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.	 G4M0572
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.	 G4M0573

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Tools and Equipment	Description
Refrigerant recovery system A **REFRIGERANT RECOVERY SYSTEM** is used for the recovery and reuse of A/C system refrigerant after contaminants and moisture have been removed from the refrigerant.	 G4M0574
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.	 G4M0575
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.	 G4M0576
Can tap A **CAN TAP** for the 397 g (14 oz) can is available from an auto supply store.	 G4M0577

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Tools and Equipment	Description
Thermometer Pocket **THERMOMETERS** are available from either industrial hardware store or commercial refrigeration supply houses.	 G4M0578
Electronic leak detector An **ELECTRONIC LEAK DETECTOR** can be obtained from either a specialty tool supply or an A/C equipment supplier.	 G4M0579
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.	 G4M0580

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2. Refrigerant Pressure with Manifold Gauge Set

A: OPERATION

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

Standard:
Low pressure: 127 - 196 kPa (1.3 - 2.0 kg/cm^2, 18 - 28 psi)
High pressure: 1,471 - 1,667 kPa (15 - 17 kg/cm^2, 213 - 242 psi)
Ambient temperature: 30 - 35 °C (86 - 95 °F)

B: INSPECTION

Symptom	Probable cause	Repair order
High-pressure side is unusually high.	• Defective condenser fan motor • Clogged condenser fan • Too much refrigerant • Air inside the system • Defective receiver dryer	• Replace the fan motor. • Clean the condenser fin. • Discharge refrigerant. • Replace the receiver dryer.
High-pressure side is unusually low.	• Defective compressor • Not enough refrigerant • Clogged expansion valve • Expansion valve frozen temporarily by moisture	• Replace the compressor. • Check for leaks. • Replace the expansion valve.
Low-pressure side is unusually high.	• Defective compressor • Defective expansion valve • Too much refrigerant	• Replace the compressor. • Replace the expansion valve. • Discharge refigerant.
Low-pressure side is unusually low.	• Not enough refrigerant • Clogged expansion valve • Expansion valve frozen temporarily by moisture • Saturated receiver dryer	• Check for leaks. • Replace the expansion valve • Replace the receiver dryer.

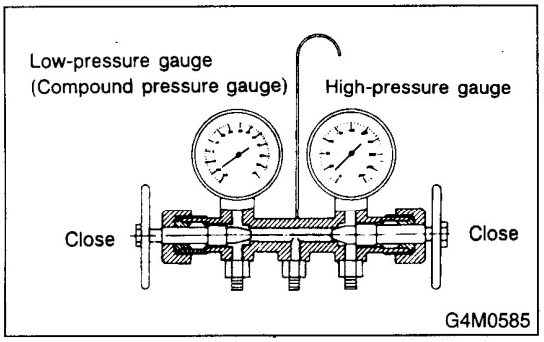
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3. Refrigerant Recovery Procedure

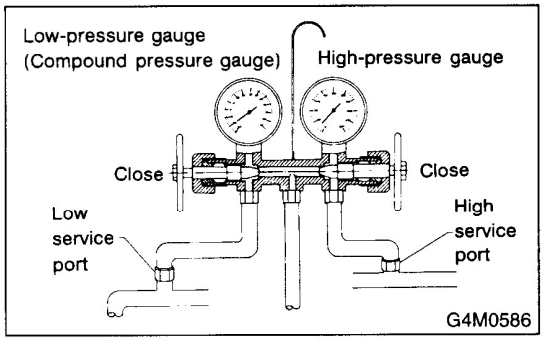
A: OPERATION

CAUTION:
• During operation, be sure to wear safety goggles and protective gloves.
• Connect the refrigerant recovery system with the manifold gauge set to discharge the refrigerant from the A/C system and reuse it.
• When reusing the discharged refrigerant, keep service cans on hand. Because the discharge rate with the recovery system is approx. 90%, service cans are necessary to charge the refrigerant.
• Follow the detailed operation procedure described in the operation manual attached to the refrigerant recovery system.

1) Perform the compressor oil return operation.<Ref. to AC-21, OPERATION, Compressor Oil.>
2) Stop the engine.
3) Close the valves on the low-/high-pressure sides of the manifold gauge set.



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



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

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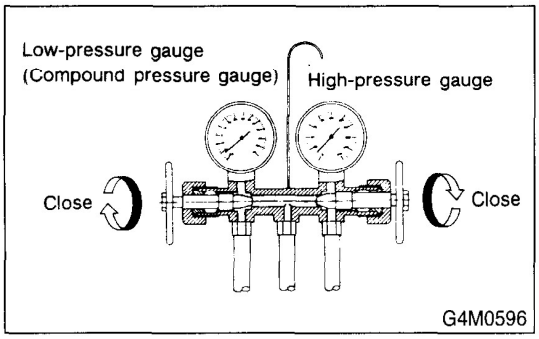
4. Refrigerant Charging Procedure

A: OPERATION

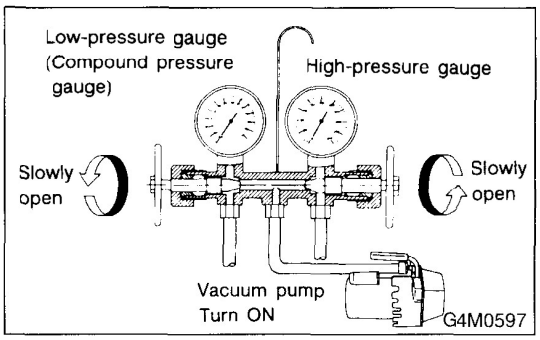
CAUTION:
• During operation, be sure to wear safety goggles and protective gloves.
• Before charging the refrigerant, evacuate the system to remove small amounts of moisture remaining in the system.
The moisture in the system can be completely evacuated only under the minimum vacuum level. The minimum 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)

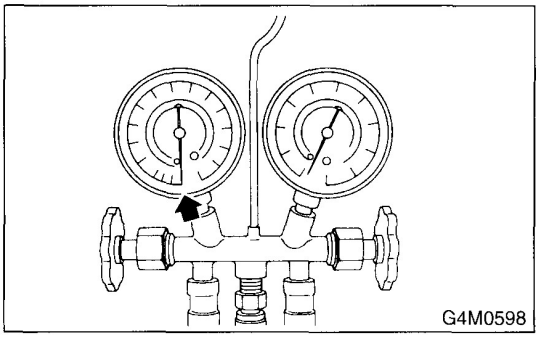
1) Close the valves on low-/high-pressure sides of the manifold gauge.



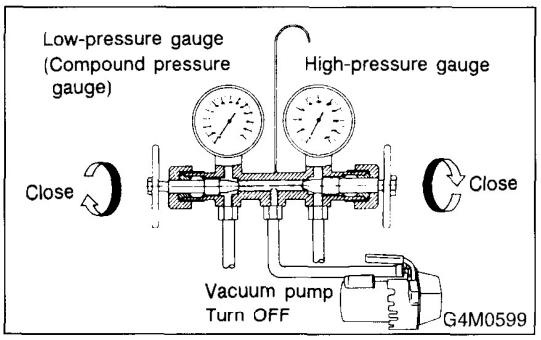
2) Install the low-/high-pressure hoses to the corresponding service ports on the vehicle respectively.
3) Connect the center hose of the manifold gauge set with the vacuum pump.
4) Carefully open the valves on the low-/high-pressure sides to activate the vacuum pump.



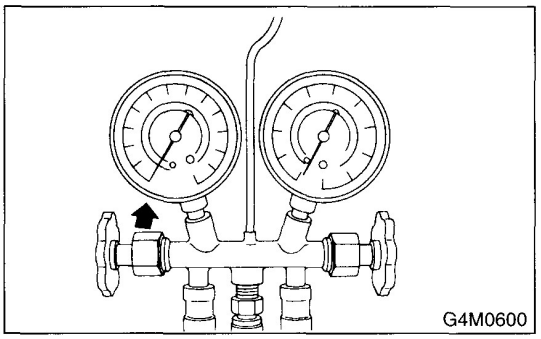
5) After the low-pressure gauge reaches 100.0 kPa (750 mmHg, 29.5 inHg) or higher, evacuate the system for approx. 15 minutes.



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.

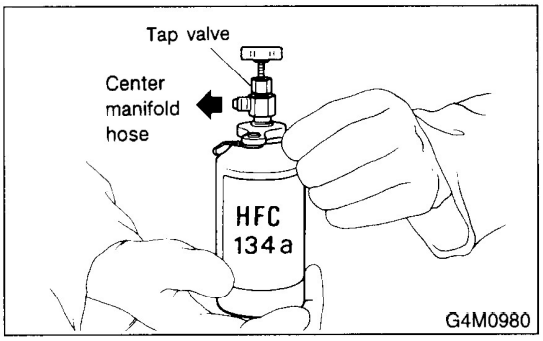


7) Note the low-pressure gauge reading.

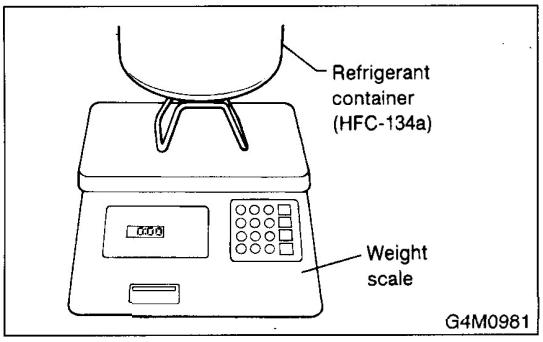


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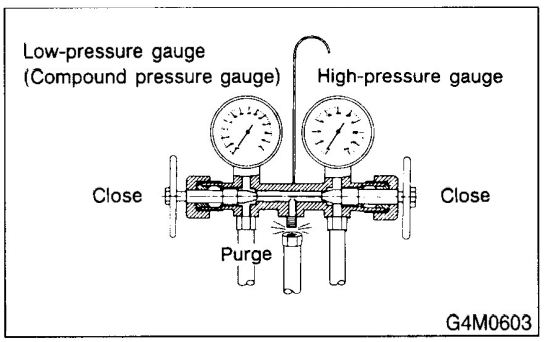
8) Leave it at least 5 minutes, and then check the low-pressure gauge reading for any changes.
When a gauge indicator shows near to zero point, this is a sign of leakage. Check pipe connector points, repair them, make sure there is no leakage by air bleeding.
9) Following the can tap operation manual instructions, install it to the refrigerant can.



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 weight scale.

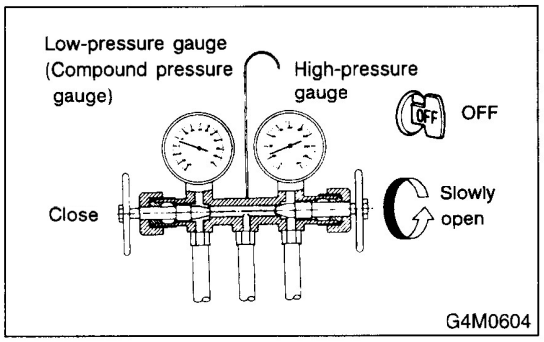


12) Confirm that all the 3 hoses are tightly connected to the manifold gauge set.



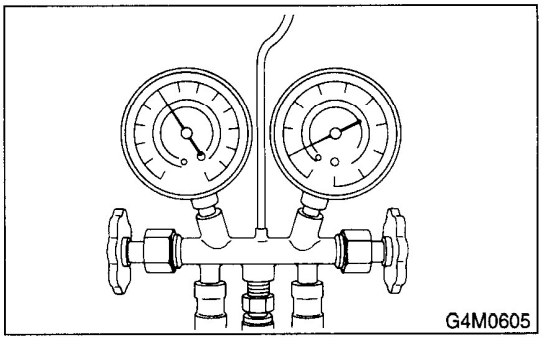
13) Open the valve on the HFC-134a source.
14) Loosen the center hose connection on the manifold gauge set (if applicable, press a purge valve on the manifold gauge set) only for a couple of seconds to allow the air in the center hose to escape by the refrigerant.
15) Carefully open the high-pressure valve with the engine stopping.

CAUTION:
Do not open the low-pressure valve.



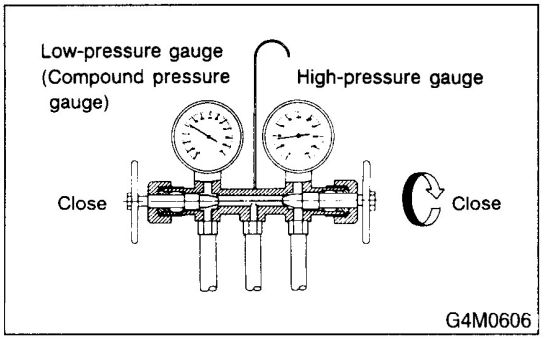
CAUTION:
Never run the engine during charging from the high-pressure side.
16) Close the high-pressure valve when the low-pressure gauge reaches 98 kPa (1 kg/cm^2, 14 psi).
Using a leak tester, check the system for leaks.
If any leakage is found after the refrigerant recovery is completed, repair the applicable area.
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.



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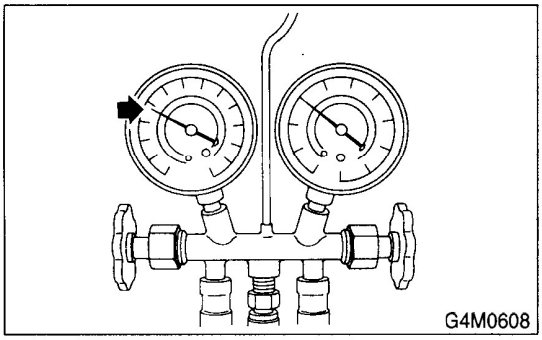
19) If the HFC-134a source is empty, close the high-pressure valve, close the valve on the can tap, and replace the HFC-134a source with a new one to restart the operation.



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 is running.



24) Adjust the refrigerant flow to maintain the pressure on the low-pressure side at 276 kPa (2.81 kg/cm^2, 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	0.6 kg (1.3 lb)	0.7 kg (1.5 lb)

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

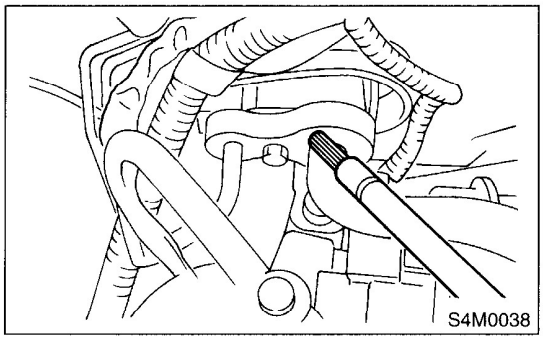
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5. Refrigerant Leak Check

A: INSPECTION

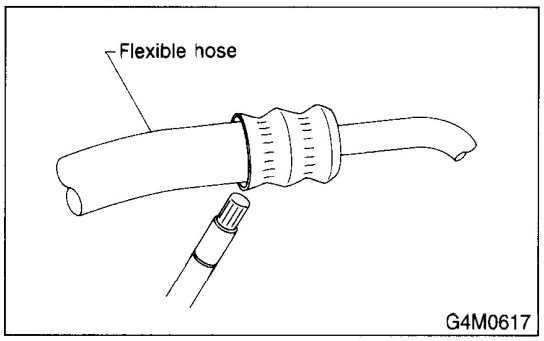
1) Operate the A/C system for approx. 10 minutes, and confirm that the high-side pressure shows at least 690 kPa (7.03 kg/cm^2, 100 psi). Then stop the engine to start the leak test.
2) Starting from the connection between the high-pressure tube and evaporator, check the system for leaks along the high-pressure side through the compressor. The following items must be checked thoroughly.
3) Check the joint and seam between the pressure switch (dual switch) and receiver dryer.
4) Check the connections between the condenser and tubes, and welded joints on the condenser.
The leak tester may detect the oil on the condenser fins as a leak.
5) Check the joint between the compressor and hoses.
6) Check the machined area of compressor and other joints on the compressor.
7) Check the thermal limiter (if equipped) on the compressor housing.
8) Check the compressor shaft seal at the area near the center of compressor clutch pulley.
Some shaft seals show a slight amount of leakage about 28 g (1.0 oz) per year. This is not a problem.
9) Starting from the connection between the low-pressure tube and evaporator, check the system for leakage along the high-pressure side through the compressor. The following items must be checked thoroughly.

- Connection between the tube and tube fitting
- Connection between 2 parts
- Connection between the tube and nut


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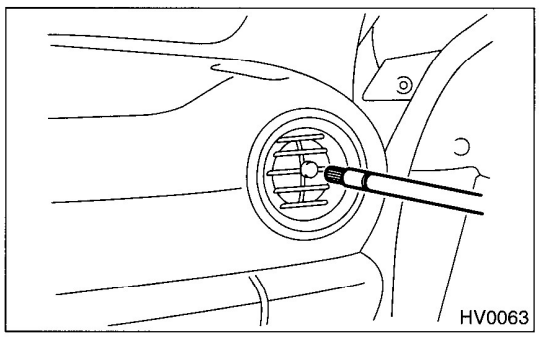
10) Visually check the rubber area of the flexible hose for cracks.
Check the entire length of the flexible hose, especially the connection with the metal hose end.

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

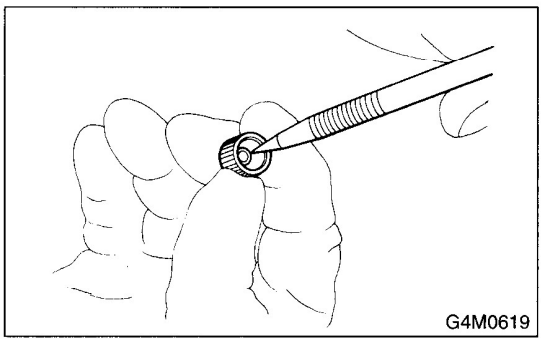


G4M0617

11) Disconnect the drain hose from the evaporator case, and check the hose end for at least 10 seconds.
After the test is finished, reconnect the drain hose.
12) Turn the ignition key to ON position, and run the blower at high speed for 1 minute. Stop the blower to check the ventilation grille on the instrument panel. While moving the tester closer to the grille, run the blower for 1 or 2 seconds, then stop it. Check the grille at that point for at least 10 seconds.


HV0063

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


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6. Compressor Oil

A: OPERATION

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

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

B: REPLACEMENT

NOTE:
• 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.

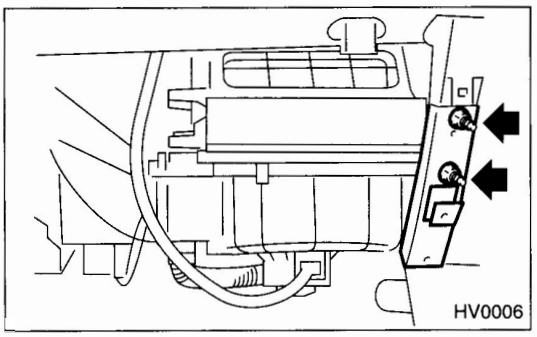
Replacement parts	Amount of oil replenishment
Evaporator	114 mℓ (3.9 US fl oz, 4.0 Imp fl oz)
Condenser	7 mℓ (0.24 US fl oz, 0.25 Imp fl oz)
Hose	1 mℓ (0.03 US fl oz, 0.04 Imp fl oz)

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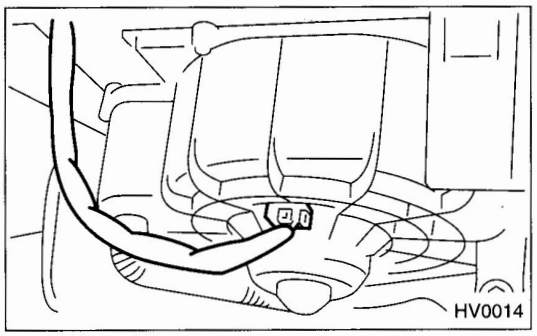
7. Blower Motor Unit Assembly

A: REMOVAL

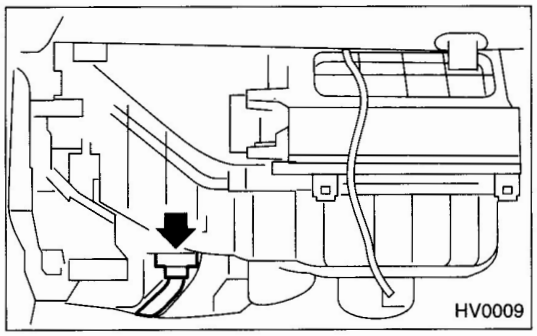
1) Disconnect the ground terminal from battery.
2) Remove the glove box. <Ref. to EI-39, REMOVAL, Glove Box.>
3) Loosen the nut to remove support beam stay.



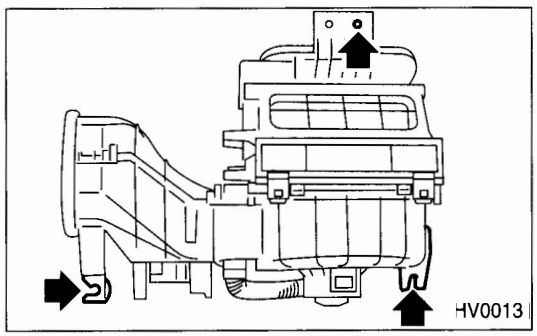
4) Disconnect the blower motor connector.



5) Disconnect the blower resistor connector.



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

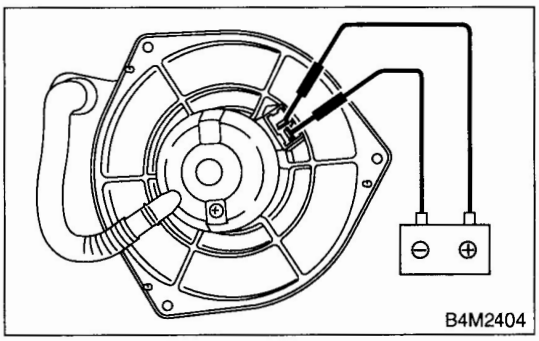


B: INSTALLATION

Install in the reverse order of removal.

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.

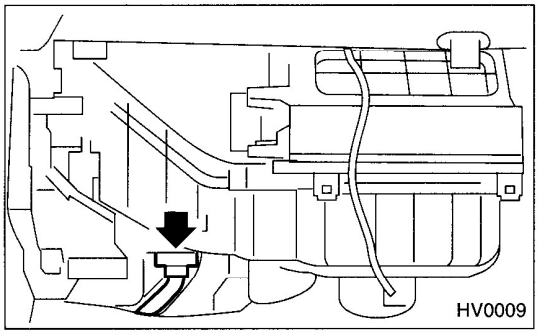


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8. Blower Resistor

A: REMOVAL

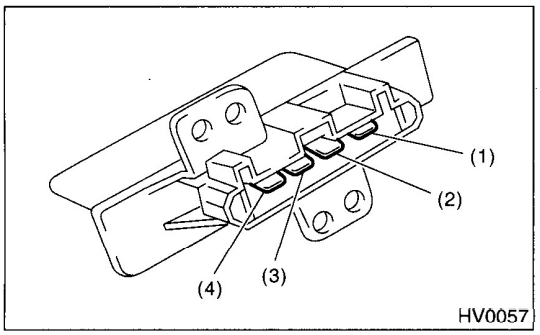
1) Remove the glove box. <Ref. to EI-39, REMOVAL, Glove Box.>
2) Disconnect the blower resistor connector.
3) Loosen two screws to remove the blower resistor.



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

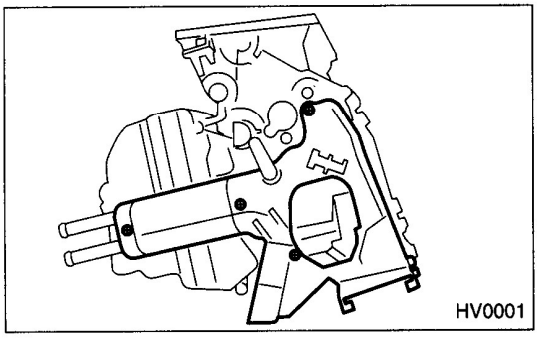
If NG, replace the blower resistor.

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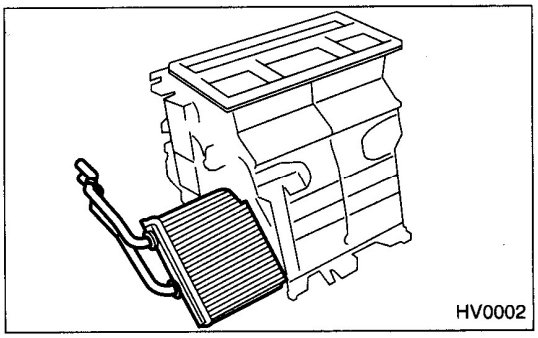
9. Heater Core

A: REMOVAL

1) Remove the heater and cooling unit. <Ref. to AC-28, REMOVAL, Heater and Cooling Unit.>
2) Loosen the screws to remove heater core cover.


HV0001

3) Remove the heater core.


HV0002

B: INSTALLATION

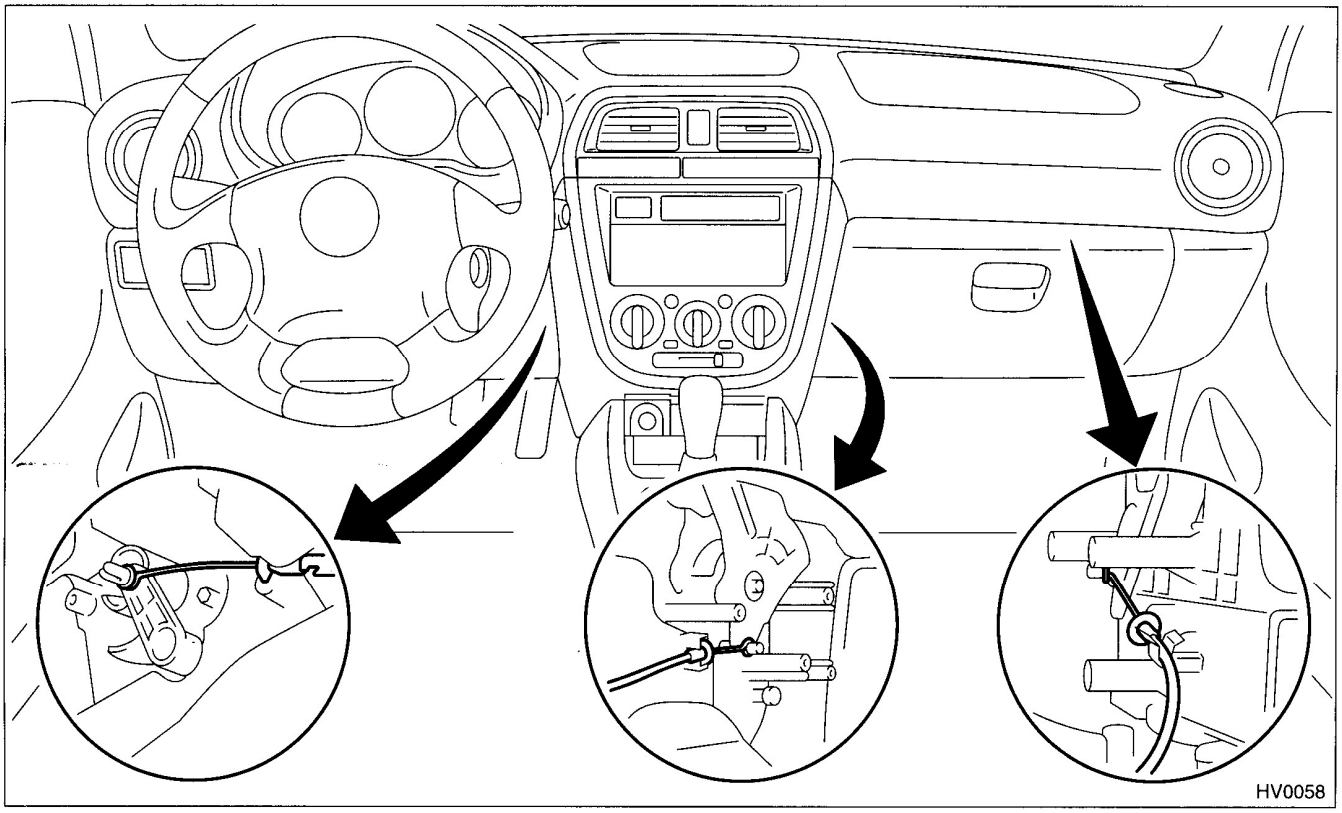
Install in the reverse order of removal.

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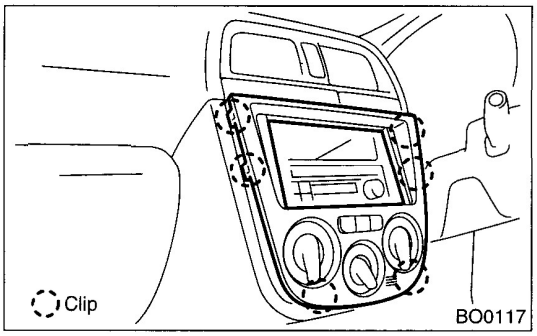
10.Control Unit

A: REMOVAL

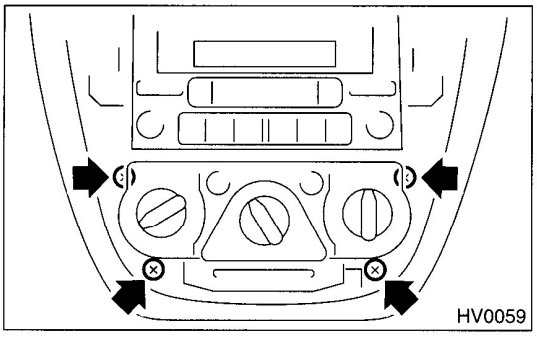
1) Disconnect the ground terminal from battery.
2) Remove the glove box. <Ref. to EI-39, REMOVAL, Glove Box.>
3) Remove the lower panel. <Ref. to EI-42, Instrument Panel Assembly.>
4) Remove the control wires.



5) Remove the center console panel.



6) Remove four screws.



7) Pull out the control unit and disconnect connectors.

B: INSTALLATION

Install in the reverse order of removal.

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11.Compressor

A: INSPECTION

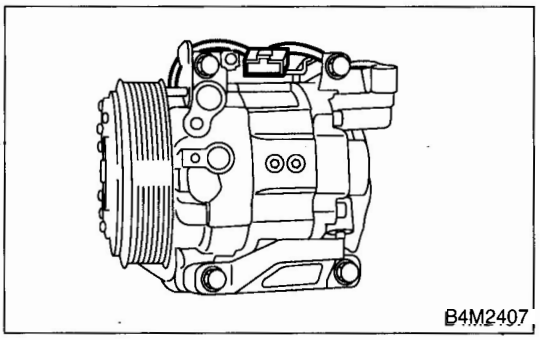
1. MAGNETIC CLUTCH CLEARANCE

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

Standard:
0.45±0.15 mm (0.0177±0.0059 in)

2. MAGNETIC CLUTCH OPERATION

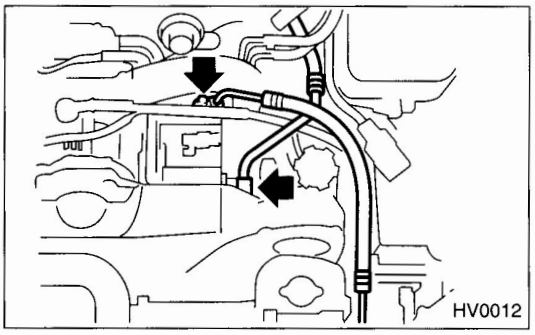
1) Disconnect the compressor connector.
2) Connect the battery positive terminal to the No.3 terminal of the compressor connector.
Ground the negative terminal to the body.



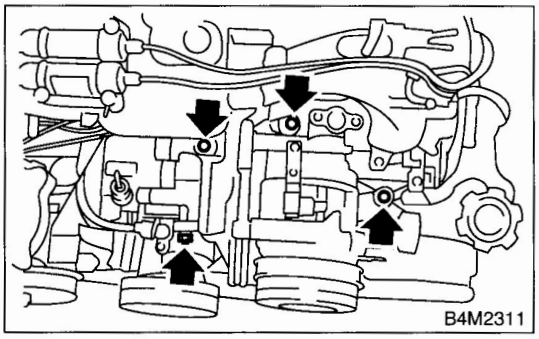
3) Make sure the magnet clutch engages.
If NG, replace the compressor.

B: REMOVAL

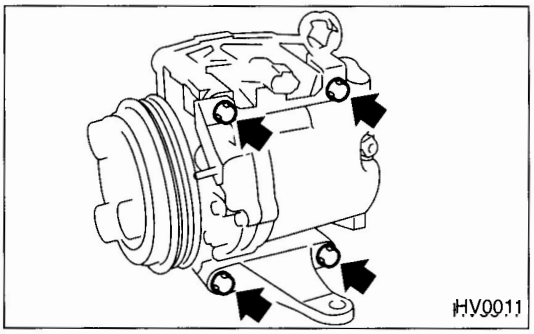
1) Perform the compressor oil return operation. <Ref. to AC-21, OPERATION, Compressor Oil.>
2) Turn A/C switch OFF and stop the engine.
3) Using refrigerant recovery system, discharge refrigerant. <Ref. to AC-16, OPERATION, Refrigerant Recovery Procedure.>
4) Disconnect the ground terminal from battery.
5) Remove the V-belt. <Ref. to ME(SOHC)-43, REMOVAL, V-belt.> or <Ref. to ME(DOHC TURBO)-44, REMOVAL, V-belt.>
6) Remove the generator. <Ref. to SC-13, 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 compressor bracket.



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



C: INSTALLATION

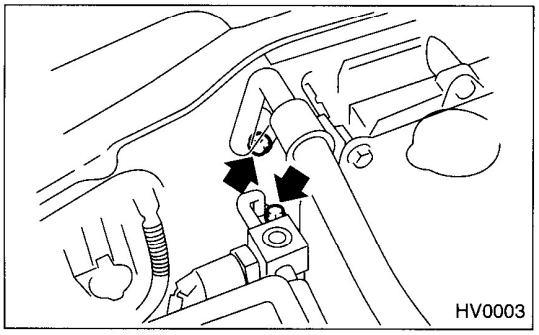
1) Install in the reverse order of removal.
2) Replace the O-rings on low-/high-pressure hoses with new ones, then apply compressor oil.
3) When replacing the compressor, adjust amount of compressor oil. <Ref. to AC-21, OPERATION, Compressor Oil.>
4) Charge refrigerant. <Ref. to AC-17, OPERATION, Refrigerant Charging Procedure.>

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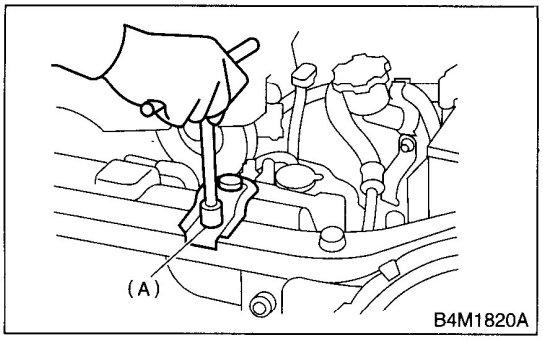
12.Condenser

A: REMOVAL

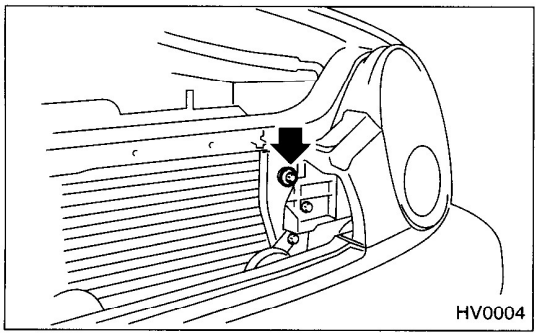
1) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-16, OPERATION, Refrigerant Recovery Procedure.>
2) Disconnect the ground terminal from battery.
3) Disconnect the pressure hose and pipe from condenser.



4) Remove the radiator bracket (A).



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

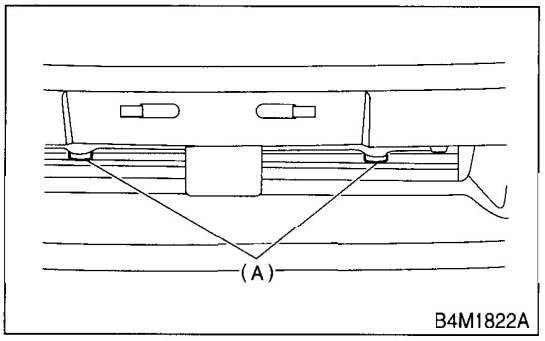


CAUTION:
Be careful not to damage the condenser fins. If a damaged fin is found, repair it using a thin screwdriver.
If the condenser is replaced, add appropriate amount of compressor oil to the compressor. <Ref. to AC-21, REPLACEMENT, Compressor Oil.>

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-17, OPERATION, Refrigerant Charging Procedure.>

C: INSPECTION

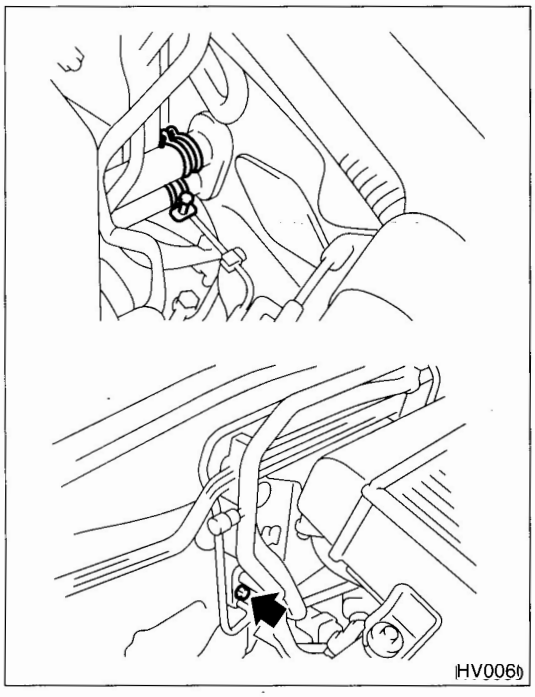
1) Confirm that no dust or insects are found on the condenser fins. Air-blow or flush fins with water as needed.
2) Confirm that no oil leaks from condenser. If a failure is found, replace the condenser with a new one.

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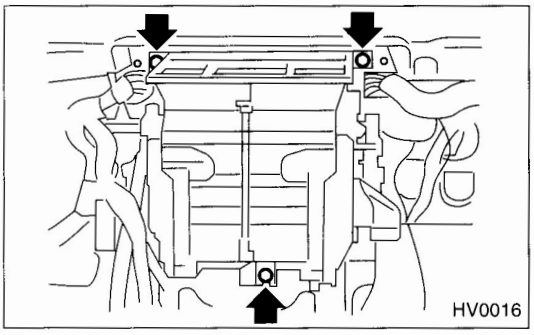
13.Heater and Cooling Unit

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-16, OPERATION, Refrigerant Recovery Procedure.>
3) Drain LLC from the radiator. <Ref. to CO-25, REPLACEMENT, Engine Coolant.>
4) Remove the bolts securing expansion valve and pipe in engine compartment. Release the heater hose clamps in engine compartment to remove the hoses.



5) Remove the instrument panel. <Ref. to EI-42, REMOVAL, Instrument Panel Assembly.>
6) Remove the support beam.
7) Remove the blower motor unit assembly. <Ref. to AC-22, REMOVAL, Blower Motor Unit Assembly.>
8) Loosen the bolt and nuts to remove the heater and cooling unit.



B: INSTALLATION

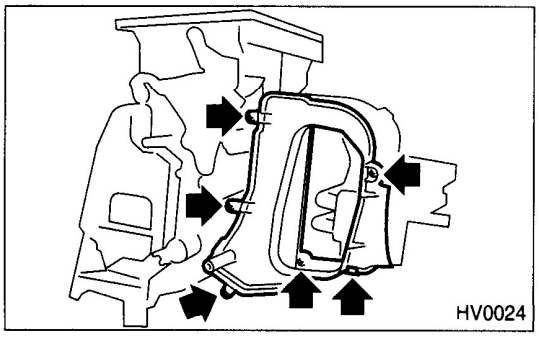
1) Install in the reverse order of removal.
2) Charge refrigerant. <Ref. to AC-17, OPERATION, Refrigerant Charging Procedure.>

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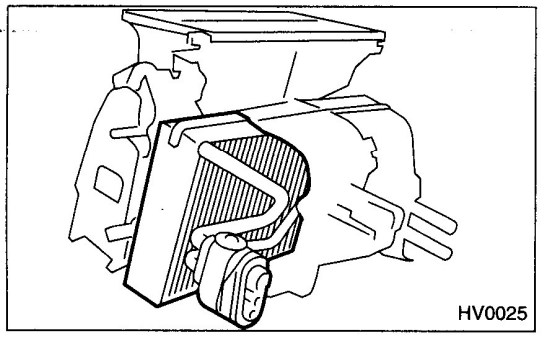
14.Evaporator

A: REMOVAL

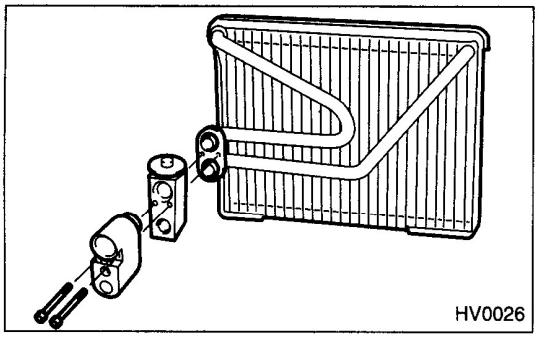
1) Remove the heater and cooling unit. <Ref. to AC-28, REMOVAL, Heater and Cooling Unit.>
2) Loosen the screws and clip to remove the evaporator cover.



3) Remove the evaporator.



4) Loosen two bolts to remove the expansion valve.



CAUTION:
If the evaporator is replaced, add appropriate amount of compressor oil to evaporator. <Ref. to AC-21, REPLACEMENT, Compressor Oil.>

B: INSTALLATION

Install in the reverse order of removal.

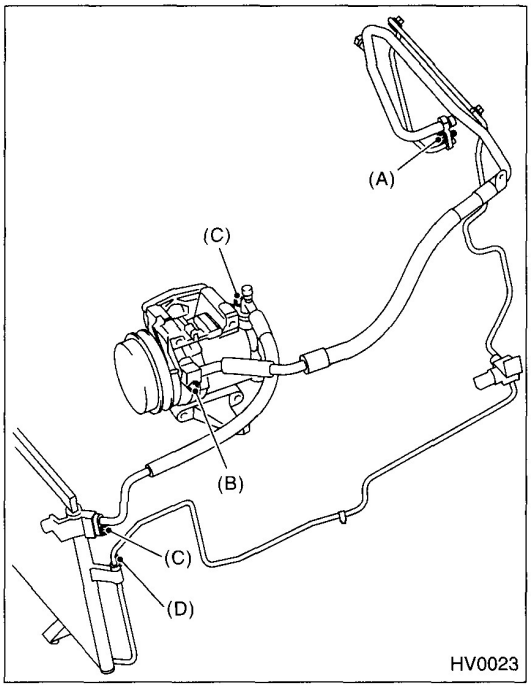
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15.Hose and Tube

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 terminal from battery.
2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-16, OPERATION, 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 the 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 the vehicle.
12) Remove the high-pressure tube attaching bolt (D).
13) Remove the high-pressure tube from the 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-17, OPERATION, Refrigerant Charging Procedure.>

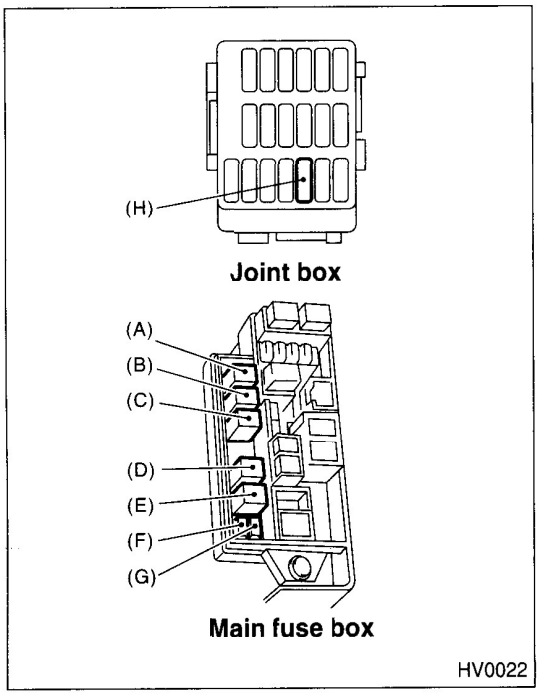
C: INSPECTION

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

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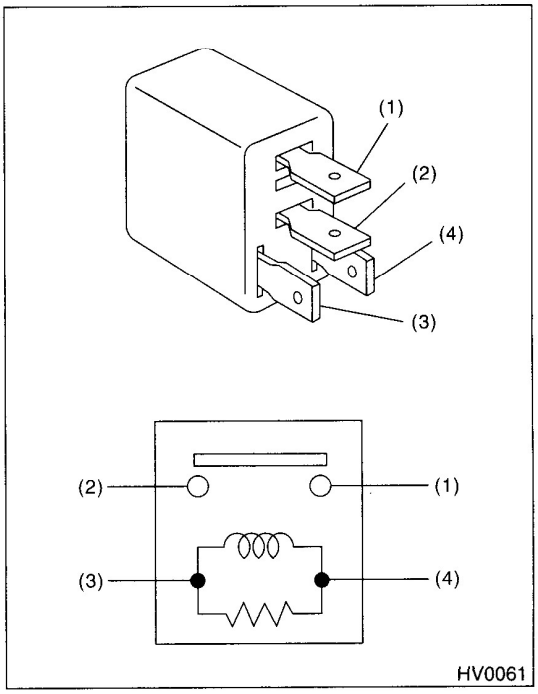
16.Relay and Fuse

A: LOCATION



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

B: INSPECTION



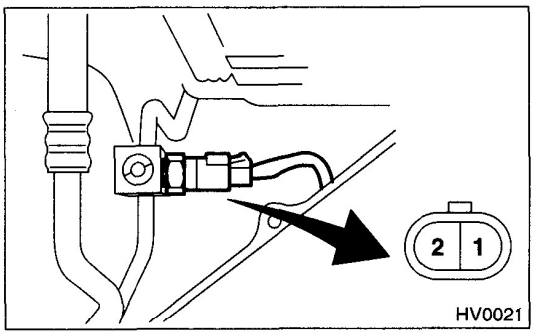
(3) — (4): Continuity exists.
(1) — (2): No continuity
While applying battery voltage to the cable between (3) and (4), check continuity between (1) and (2).
If no continuity exists, replace the relay with a new one.

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17. Pressure Switch (Dual Switch)

A: INSPECTION

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



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

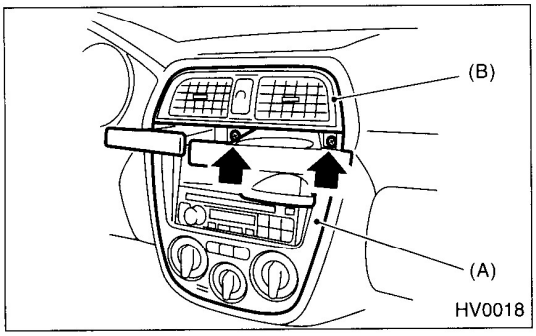
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18. Air Vent Grille

A: REMOVAL

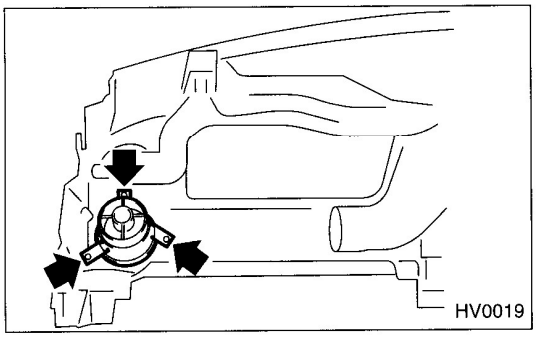
1. CENTER GRILLE

1) Disconnect the ground terminal from battery.
2) Remove the center console panel (A).
3) Loosen two screws to remove the center air vent grille (B).



2. SIDE GRILLE

1) Disconnect the ground terminal from battery.
2) Remove the heater vent duct. <Ref. to AC-35, 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

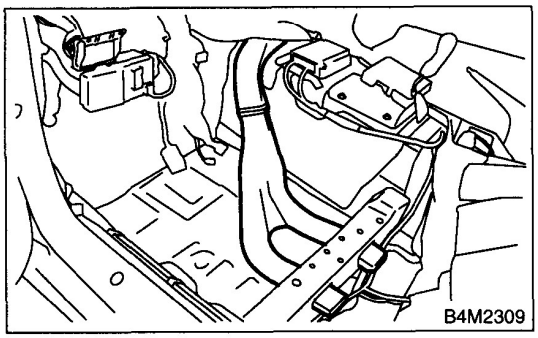
The direction and amount of air should be adjusted smoothly.
The adjustment should be kept in each position.

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19.Heater Duct

A: REMOVAL

1) Remove the heater unit. <Ref. to AC-28, Removal.>
2) Remove the front seat. <Ref. to SE-6, REMOVAL, Front Seat.>
3) Remove the front side sill cover.
4) Pull off the floor mat to remove the heater duct.



B: INSTALLATION

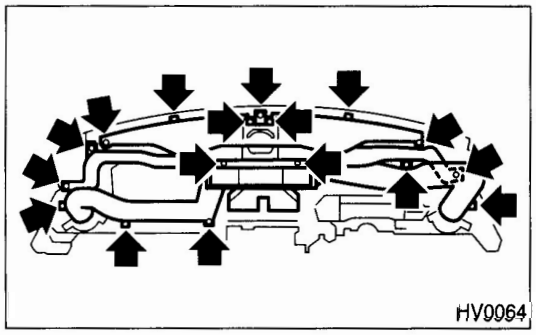
Install in the reverse order of removal.

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20.Heater Vent Duct

A: REMOVAL

1) Remove the instrument panel. <Ref. to EI-42, REMOVAL, Instrument Panel Assembly.>
2) Remove the screws.
3) Remove the heater vent duct.



B: INSTALLATION

Install in the reverse order of removal.

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21.General Diagnostics

A: INSPECTION

Symptom		Repair order
Blower motor	Doesn't move.	Fuse
		Blower motor relay
		Blower motor
		Blower motor resistor
		Blower switch
		Wire harness
	Strange noise.	Blower motor
Compressor	Doesn't move.	Refrigerant
		Fuse
		Air conditioning relay
		Magnet clutch
		Compressor
		Pressure switch
		A/C switch
		Blower switch
		Wire harness
	Strange noise	V-Belt
		Magnet clutch
		Compressor
Cold air not emitted.		Refrigerant
		V-Belt
		Magnet clutch
		Compressor
		Pressure switch
		A/C switch
		Blower switch
		Wire harness
		Heater duct
		Heater vent duct
Warm air not emitted.		Engine coolant
		Blower switch
		Heater core
Temperature of air from vents does not change.		Engine coolant
		Mode actuator
		Wire harness
Unable to switch blow vents.		Mode actuator
		Air flow switch
		Wire harness
Unable to switch suction vents.		Air inlet select switch
		FRESH/RECIRC actuator
		Wire harness

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AIRBAG SYSTEM

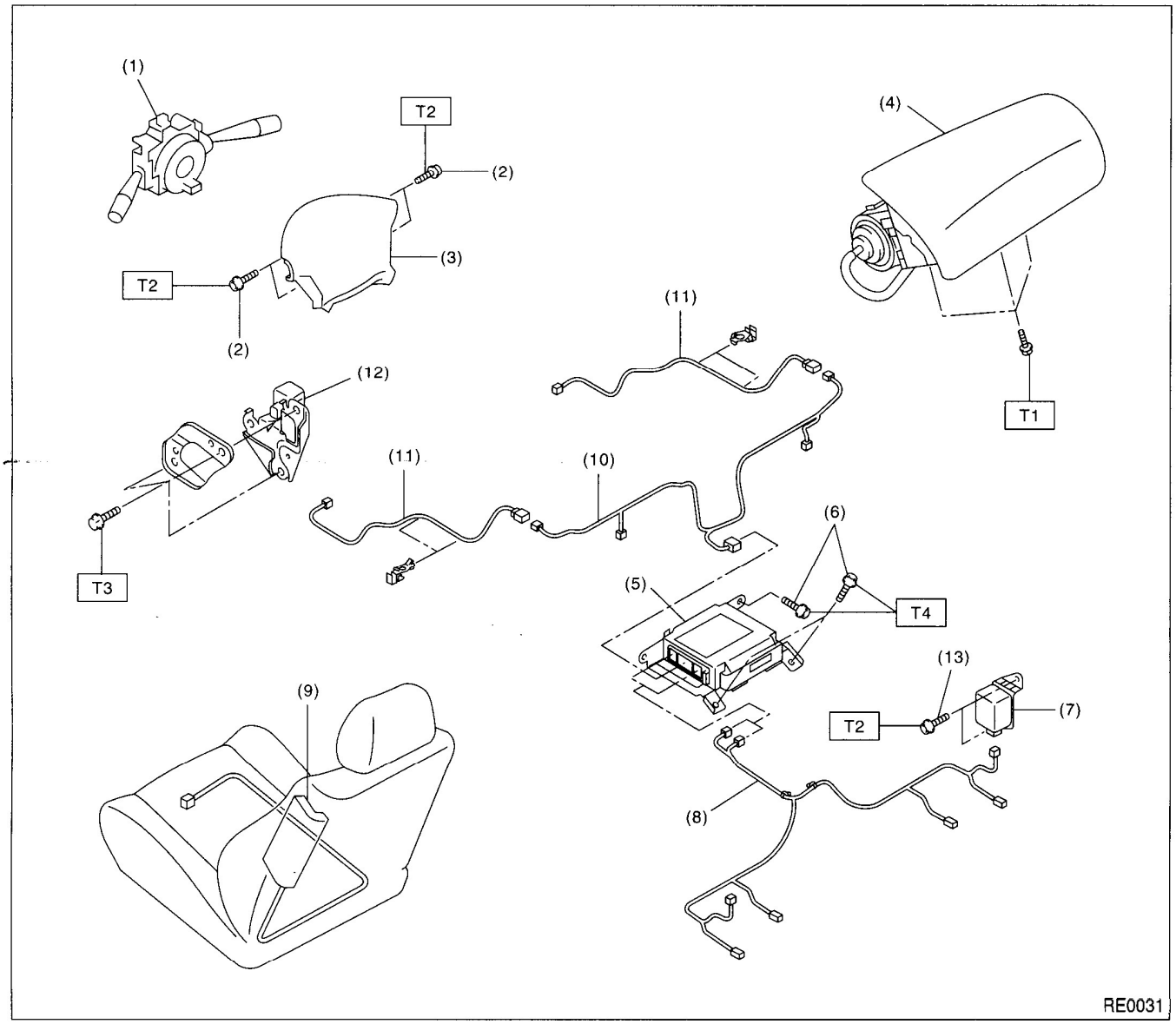
AB

		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	15
8.	Side Airbag Sensor	16
9.	Roll Connector	17
10.	Front Sub Sensor	18

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1. General Description

A: COMPONENT



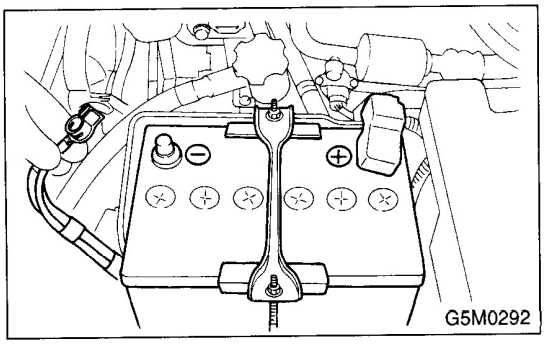
(1) Combination switch ASSY with roll connector
(2) TORX® bolt T30
(3) Airbag module ASSY (Driver)
(4) Airbag module ASSY (Passenger)
(5) Airbag control module
(6) TORX® bolt T40
(7) Side airbag sensor
(8) Side airbag harness
(9) Side airbag module
(10) Airbag main harness
(11) Front sub sensor harness
(12) Front sub sensor
(13) TORX® bolt T30

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

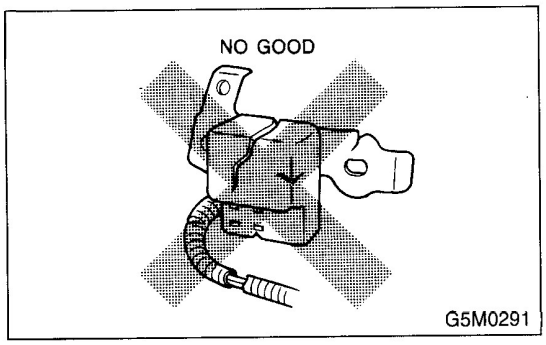
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B: CAUTION

- When servicing a vehicle, be sure to turn the ignition switch OFF, disconnect the ground terminal 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 terminal is disconnected, it may inflate.



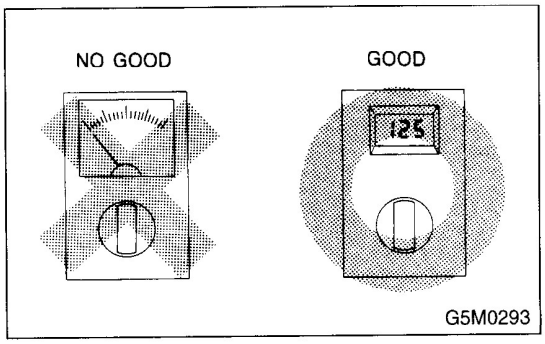
- If the sensors, airbag module, airbag control module, pretensioner and harness are deformed or damaged, replace them with new genuine parts.

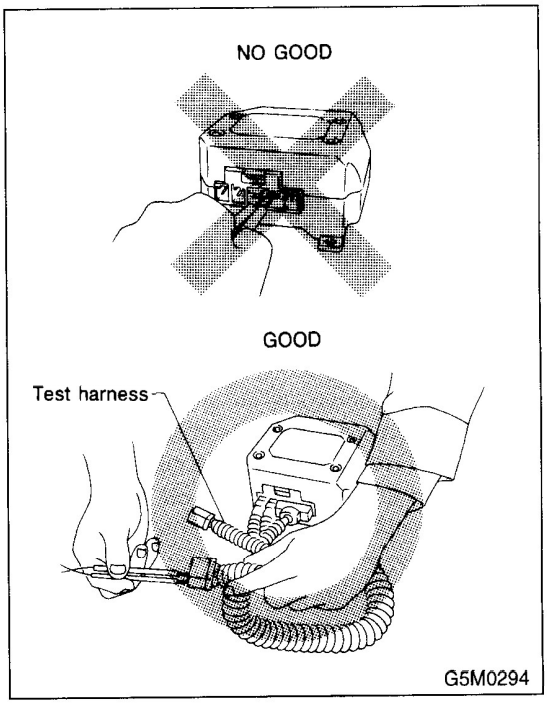


- Do not use the airbag or pretensioner parts from other vehicles. Always replace the defective parts with new parts.
- Never re-use a deployed airbag or pretensioner.
- When checking the system, be sure to use a digital circuit tester.

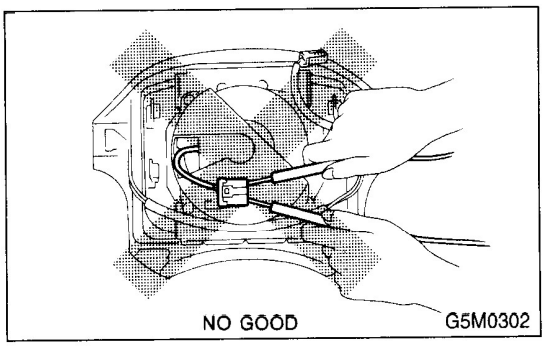
Use of an analog circuit tester may cause the airbag to activate erroneously.

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



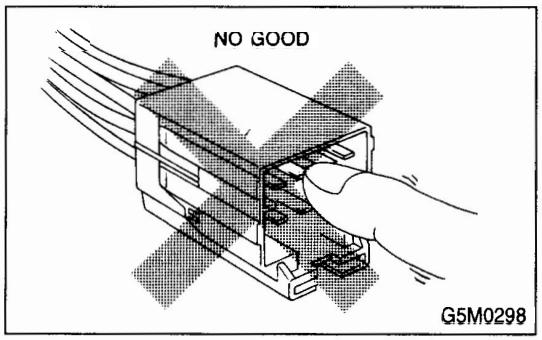


- Do not check continuity of the driver, passenger, side airbag modules and pretensioner.

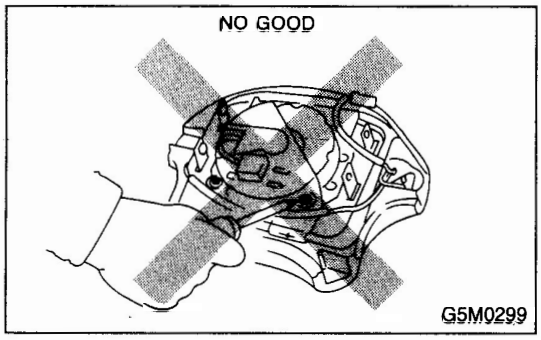


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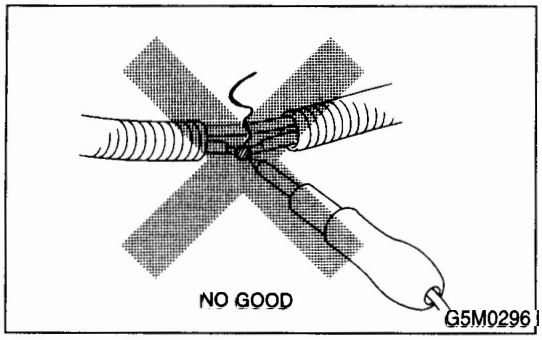
• Do not allow water or oil to come in contact with the connector terminals. Do not touch the connector terminals.



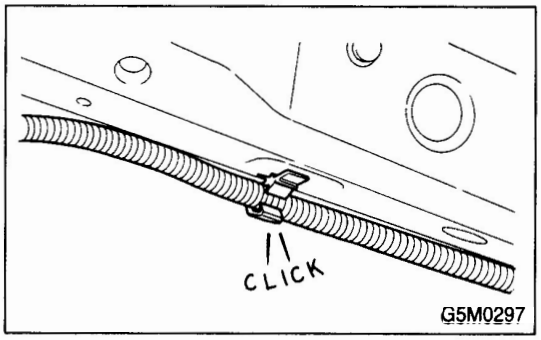
• The airbag module (driver, passenger and side) and pretensioner must not be disassembled.



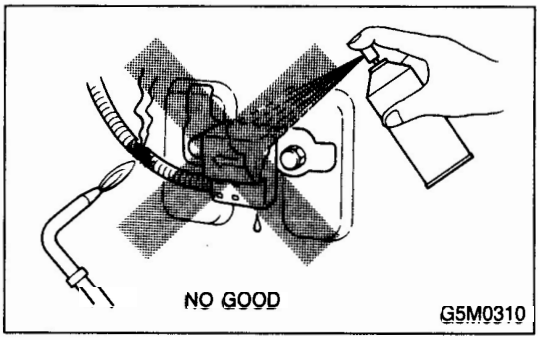
• If any damage, opening, or rust is found on the airbag system wire harness, do not attempt to repair using soldering equipment. Be sure to replace the faulty harness with a new genuine part.



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

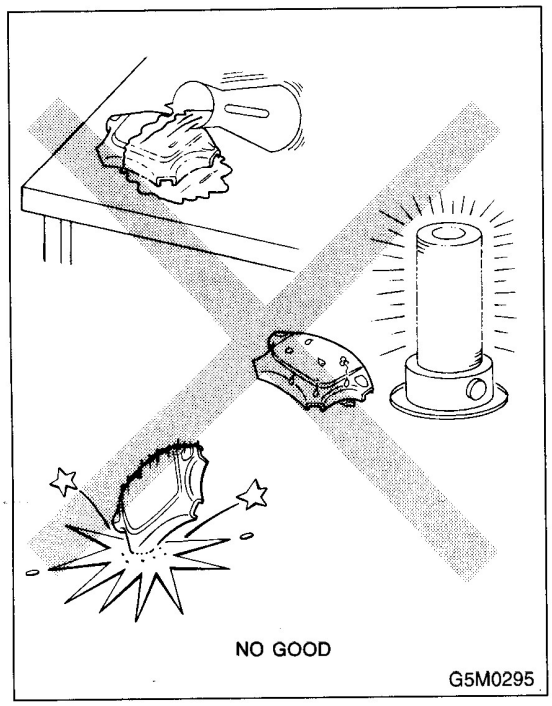


• When painting or performing sheet metal work on the front part of the vehicle, including the front wheel apron, front fender, and front side frame, remove the front sub sensors and wire harness of the airbag system.
• When painting or performing sheet metal work on the side of the vehicle, including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

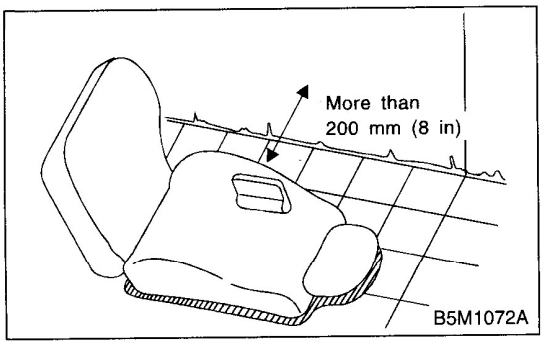


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• Do not drop the airbag modulator parts, subject them to high temperature over 93°C (199°F), or let water, oil, or grease get on them; otherwise, the internal parts may be damaged and reliability greatly lowered.

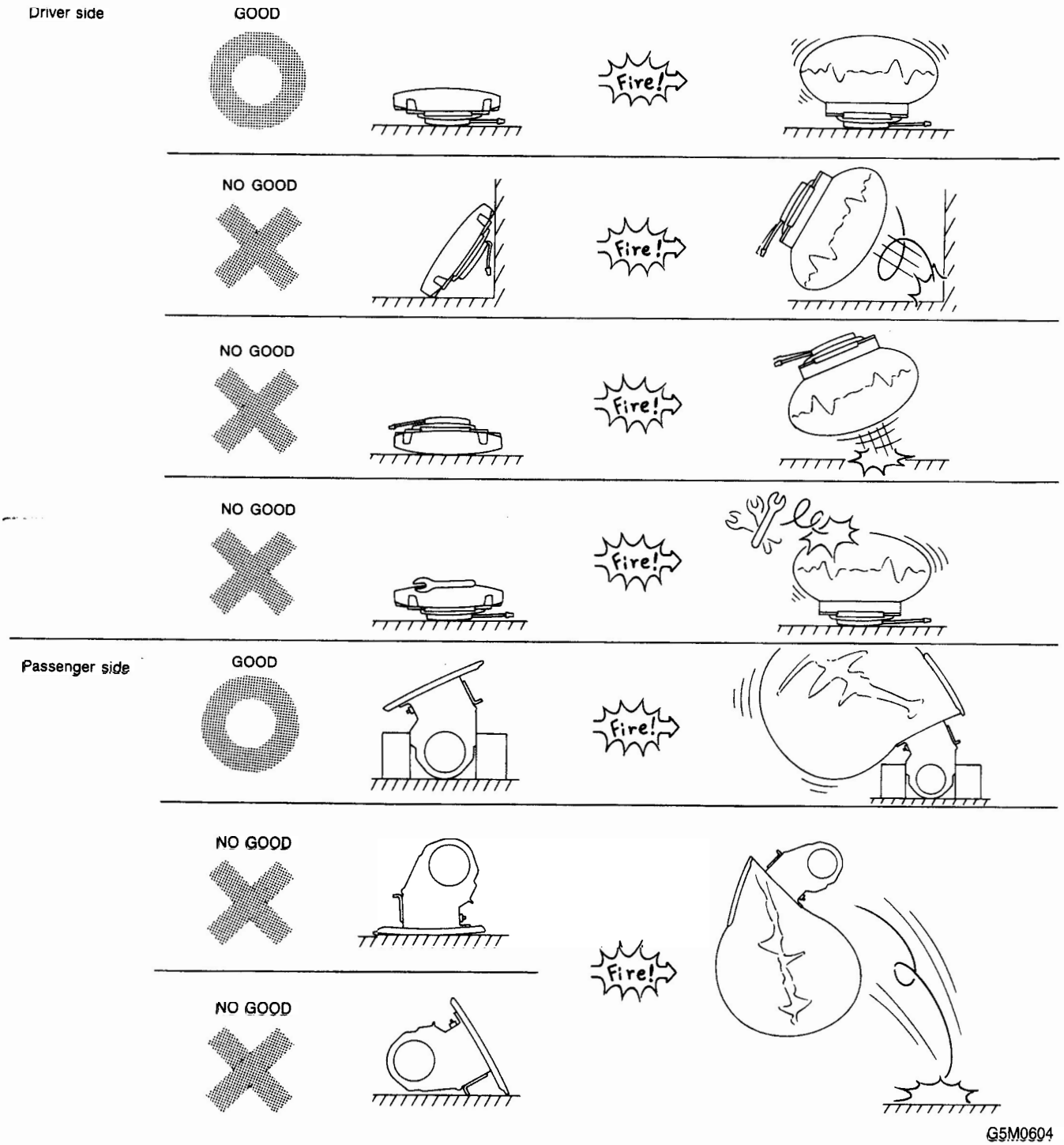


• The removed front seat with the airbag module must be kept at least 200 mm (8 in) away from walls and other objects.



• 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.

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C: PREPARATION TOOL

1. GENERAL TOOL

TOOL NAME	REMARKS
TORX® T30	Used for removal/installation of drivers airbag module
TORX® T40 (Tamper resistant type)	Used for removal/installation of airbag control module
TORX® T30 (Tamper resistant type)	Used for removal of side airbag sensor.

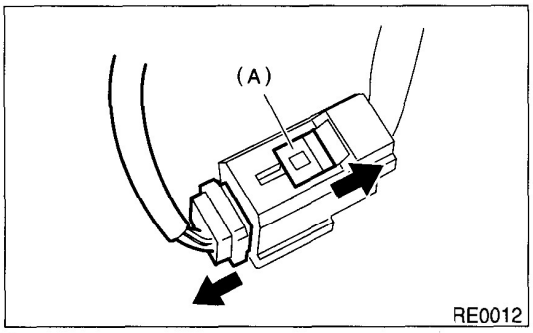
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2. Airbag Connector

A: OPERATION

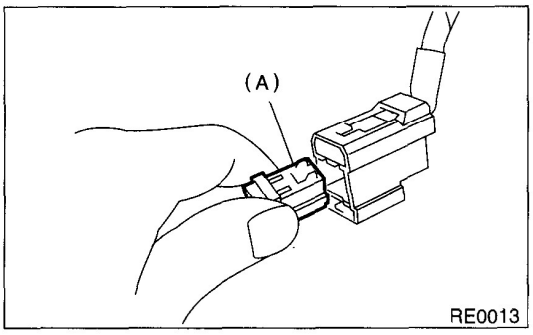
1. POWER SUPPLY

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



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

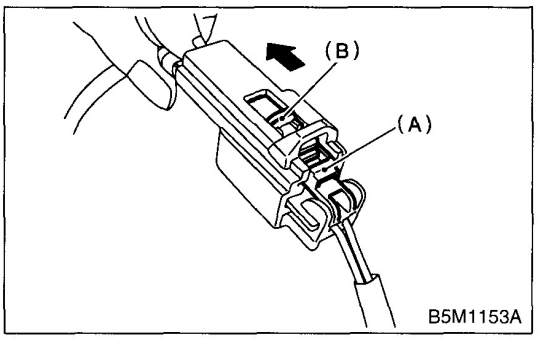
2) How to connect:
Holding the connector (A), and push it in carefully until a connecting sound is heard.



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

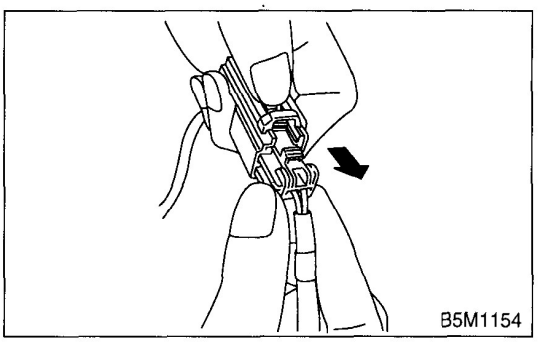
2. DRIVER'S AIRBAG, PASSENGER'S AIRBAG, SIDE AIRBAG

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.



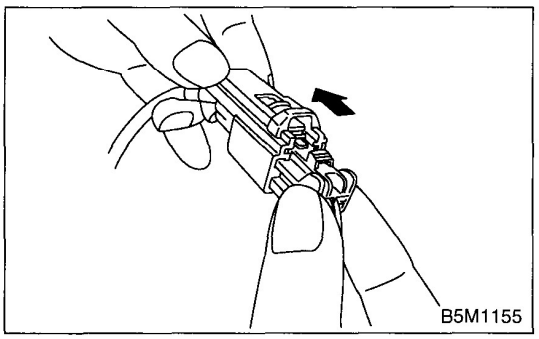
(3) With the slide lock (B) pulled, remove the lock arm (A) to its original position, and then pull in the direction of the arrow and separate the connector.

CAUTION:
When pulling, 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.

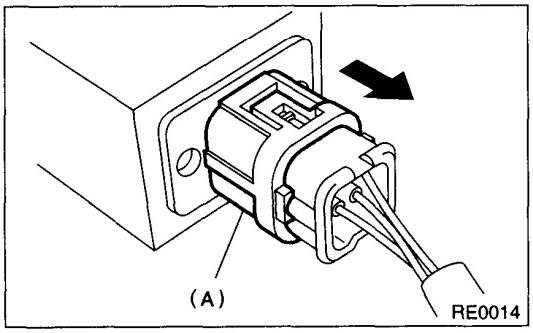


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3. FRONT SUB-SENSOR, SIDE AIRBAG SENSOR

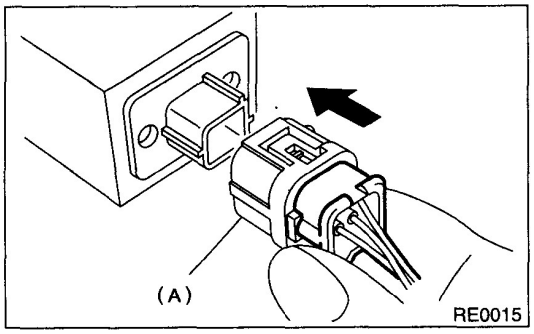
1) How to disconnect:
(1) Holding the outer part (A), pull it in the direction of the arrow.

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



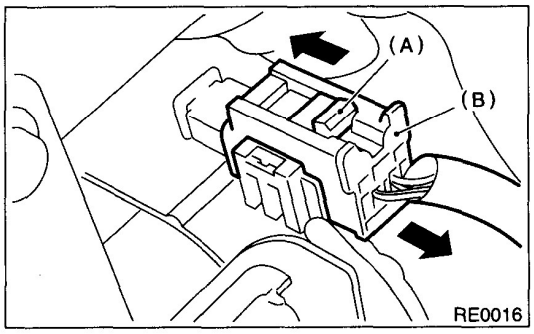
2) How to connect:
Holding the connector, and push it in carefully until a connecting sound is heard.

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.**



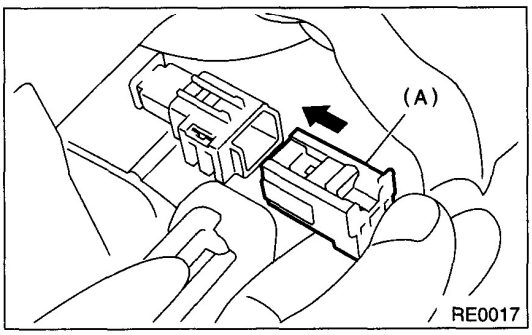
4. PRETENSIONER

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



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

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



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

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3. Inspection Locations After a Collision

A: INSPECTION

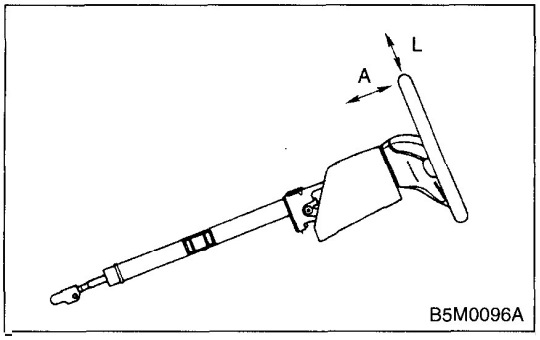
If the vehicle is involved in a collision on any side, even if it is a slight collision, be sure to check the following system parts.

1. AIRBAG MODULE (DRIVER)

1) Check for the following, and replace the 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. If necessary, install a new airbag module and steering wheel.
- The steering wheel is in the way, making it difficult to install the airbag module.
- The clearance between the driver's airbag module and steering wheel is not constant.
- When steering wheel deformation in axial and radial directions exceed limits.

Specifications:
Axial direction play A
Less than 6 mm (0.24 in)
Radial direction play L
Less than 17 mm (0.67 in)



2. AIRBAG MODULE (PASSENGER)

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

3. AIRBAG MODULE (SIDE)

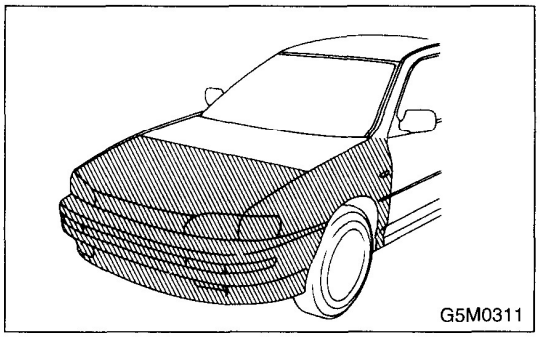
Check for the following, and replace damaged parts with new parts.
- Front seat is damaged or deformed.
- Harness and/or connector is cracked, deformed or open.
- Lead wire is exposed.

4. AIRBAG CONTROL MODULE

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

5. FRONT SUB SENSOR

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



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

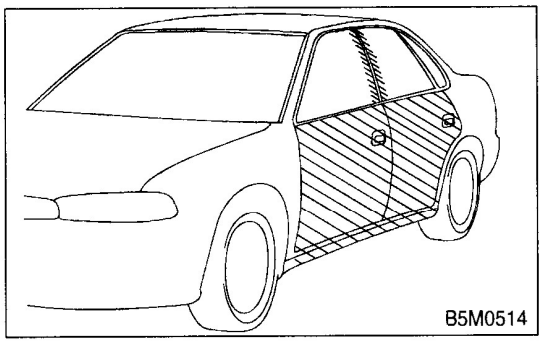
6. FRONT SUB SENSOR HARNESS

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

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7. SIDE AIRBAG SENSOR

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



Check for the following, and replace the damaged parts with new parts.
- Side airbag sensor is cracked or deformed.
- Mounting bracket is cracked or deformed.
- Connector is scratched or cracked.
- Side airbag is deployed. (operating side)

8. SIDE AIRBAG SENSOR HARNESS

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

9. MAIN HARNESS

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

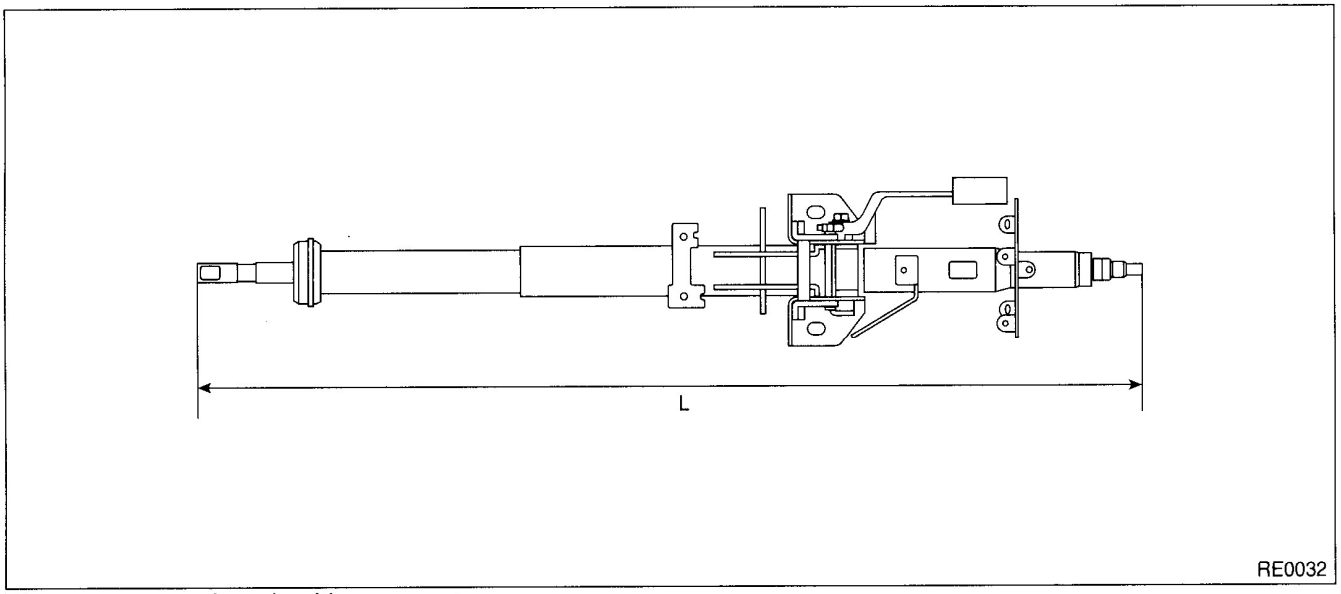
10.ROLL CONNECTOR

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

11.STEERING SHAFT

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

Specifications:
Overall length L
825.7±1.5 mm (32.5±0.06 in)



If necessary, replace it with new part.

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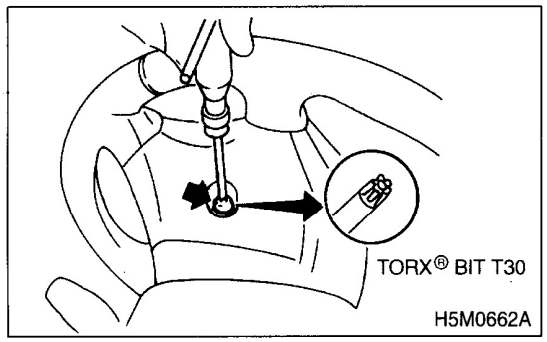
4. Driver's Airbag Module

A: CAUTION

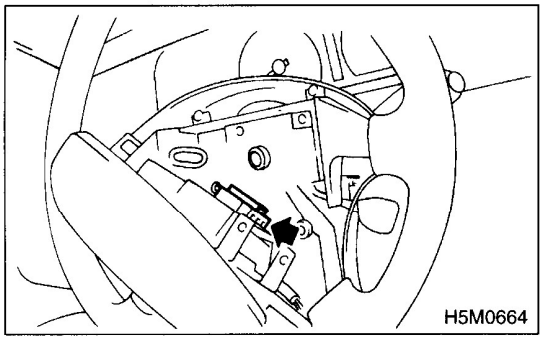
Refer to the "CAUTION" of General Description before handling the airbag module. <Ref. to AB-3, CAUTION, General Description.>

B: REMOVAL

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



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



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

C: INSTALLATION

1) Install in the reverse order of removal.

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

D: INSPECTION

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

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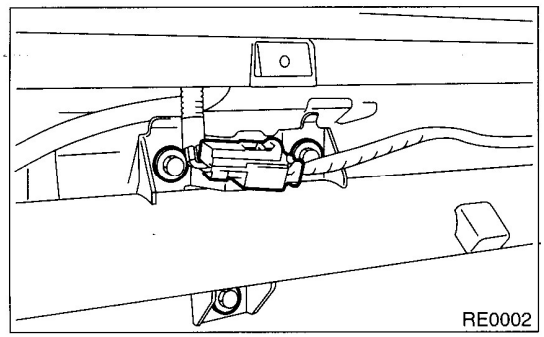
5. Passenger's Airbag Module

A: CAUTION

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

B: REMOVAL

1) Turn the ignition switch OFF.
2) Disconnect the ground terminal from battery, and wait for at least 20 seconds before starting work.
3) Remove the glove box. <Ref. to EI-39, REMOVAL, Glove Box.>
4) Detach the airbag connector from the support beam bracket, and then disconnect the airbag connector.
5) Remove the three bolts, and then carefully remove the airbag module.



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

C: INSTALLATION

Install in the reverse order of removal.

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

D: INSPECTION

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

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6. Side Airbag Module

A: CAUTION

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

B: REMOVAL

CAUTION:
• The side airbag module cannot be detached from the front seat assembly.
• When replacing side airbag module, replace front seat assembly.
<Ref. to SE-6, REMOVAL, Front Seat.>

C: INSTALLATION

<Ref. to SE-6, INSTALLATION, Front Seat.>

D: INSPECTION

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

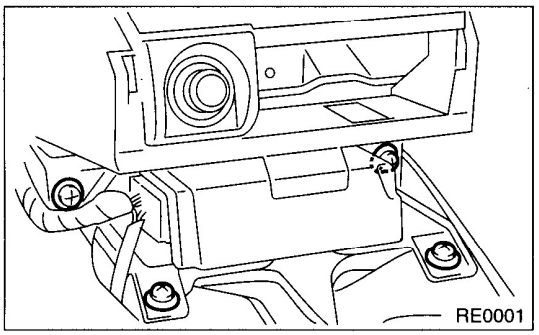
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7. Airbag Control Module

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 OFF.
2) Disconnect the ground terminal from battery, and wait for at least 20 seconds before starting work.
3) Remove the console box. <Ref. to EI-41, REMOVAL, Console Box.>
4) Disconnect the connector from the airbag control module.
5) Using T40® TORX bit (Tamper resistant type), remove the four TORX® bolts.



B: INSTALLATION

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

C: INSPECTION

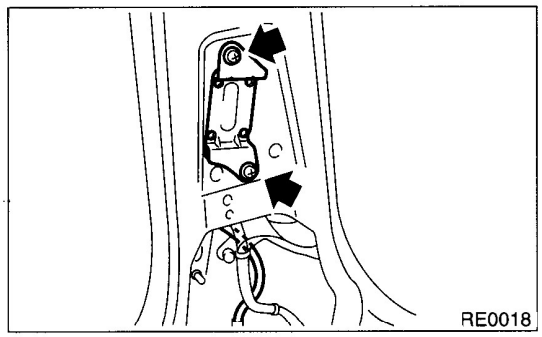
Check for the following, and replace the damaged parts with new parts.
• Control module, connector, and mounting bracket are damaged.
• Airbag is deployed.
• Side airbag is deployed.

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8. Side Airbag Sensor

A: REMOVAL

1) Turn the ignition switch OFF.
2) Disconnect the ground terminal from battery, and wait for at least 20 seconds before starting work.
3) Remove the outer belt (FRONT). <Ref. to SB-8, OUTER BELT (FRONT), REMOVAL, Front Seat Belt.>
4) Using T30 TORX® bit (Tamper resistant type), remove the two TORX® bolts.
5) Detach the side airbag sensor, and then disconnect the airbag connector.



B: INSTALLATION

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

C: INSPECTION

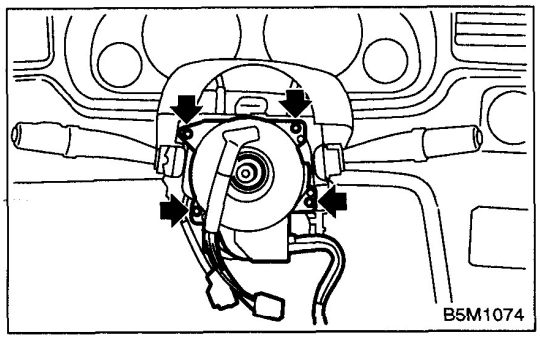
Check for the following, and replace the damaged parts with new parts.
• Bracket connector for side airbag sensor is damaged.

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9. Roll Connector

A: REMOVAL

1) Turn the ignition switch OFF.
2) Disconnect the ground terminal 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-19, REMOVAL, Steering Wheel.>
5) Remove the steering column cover.
6) Remove the screws, and then remove the roll connector.



B: INSTALLATION

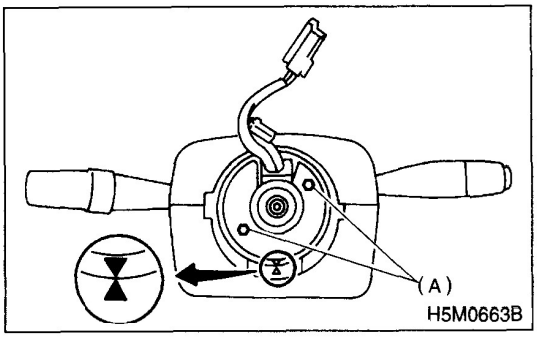
1) Install the roll connector and steering column cover in the reverse order of removal.
2) Before installing steering wheel, be sure the direction of roll connector is adjusted with steering. <Ref. to AB-17, ADJUSTMENT, Roll Connector.>
3) Install the steering wheel and airbag module.

C: INSPECTION

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

D: ADJUSTMENT

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

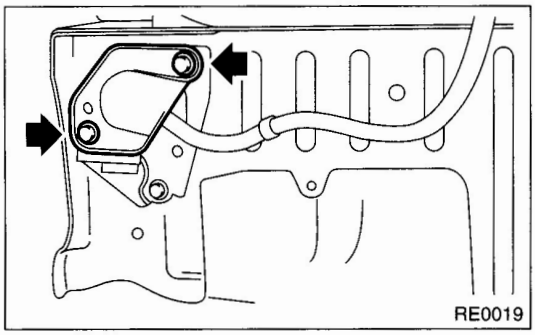


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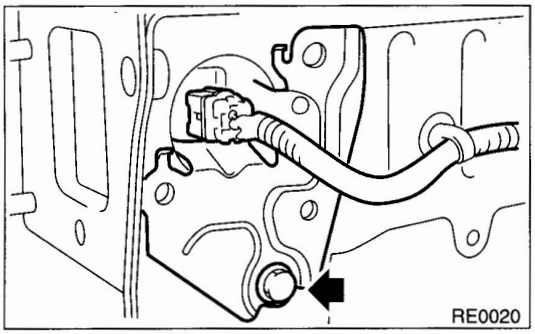
10.Front Sub Sensor

A: REMOVAL

1) Turn the ignition switch OFF.
2) Disconnect the ground cable from the 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 sensor cover.



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



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Check for the following, and replace the damaged parts with new parts.
• Front sub sensor, mounting bracket, and connector are damaged.

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AIRBAG SYSTEM (DIAGNOSTICS)

AB

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1. Basic Diagnostic Procedure

A: PROCEDURE

	Step	Check	Yes	No
1	**Read Diagnostic Trouble Code.** <Ref. to AB-24, Read Diagnostic Trouble Code.>	Is the normal code being detected?	Finish the diagnosis.	Go to step **2.**
2	**Read Diagnostic Trouble Code.** <Ref. to AB-24, Read Diagnostic Trouble Code.>	Is the trouble code being detected?	Go to step **3.**	Go to "Airbag Warning Light Failure".<Ref. to AB-27, Airbag Warning Light Failure.>
3	**Perform the diagnosis.** 1)Judge the possible cause from "List of Diagnostic Trouble Code" <Ref. to AB-32, List of Diagnostic Trouble Code.> . 2)Inspect using "Diagnostic Chart with Trouble Code". (DTC) 3)Repair the cause of the trouble. 4)Perform the clear memory mode. <Ref. to AB-26, Clear Memory Mode.> 5)Perform the inspection mode. <Ref. to AB-25, Inspection Mode.> 6)Read diagnostic trouble code.	Is the trouble code being detected?	Perform the procedure 1) to 5) in step 3.	Finish the diagnosis.

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2. Check List for Interview

A: CHECK

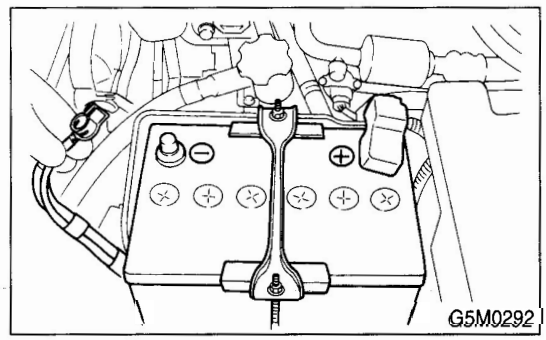
Customer's Name		Inspector's Name	
Date Vehicle Brought In	/ /	Registration No.	
Odometer Reading	Km Miles	Vin No.	
Date Problem Occurred	/ /	Registration Year	/ /
Weather	❑ Fine ❑ Cloudy ❑ Rainy ❑ Snowy ❑ Other:		
Temperature	°C (°F)		
Road Condition	❑ Level road ❑ Uphill ❑ Downhill ❑ Rough road ❑ Others: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

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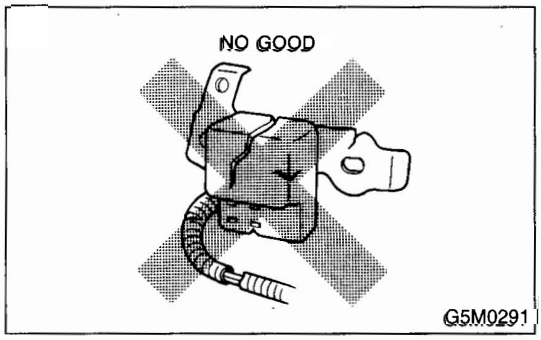
3. General Description

A: CAUTION

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

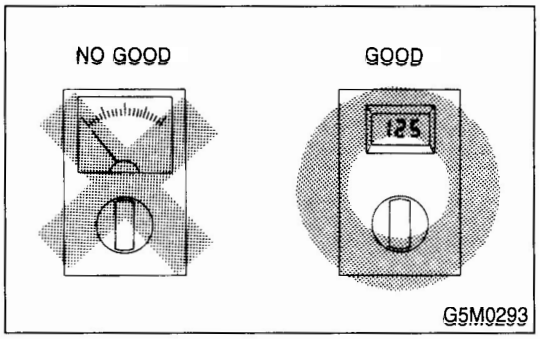

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- If the sensors, airbag module, airbag control module pretensioner and harness are deformed or damaged, replace them with new genuine parts.

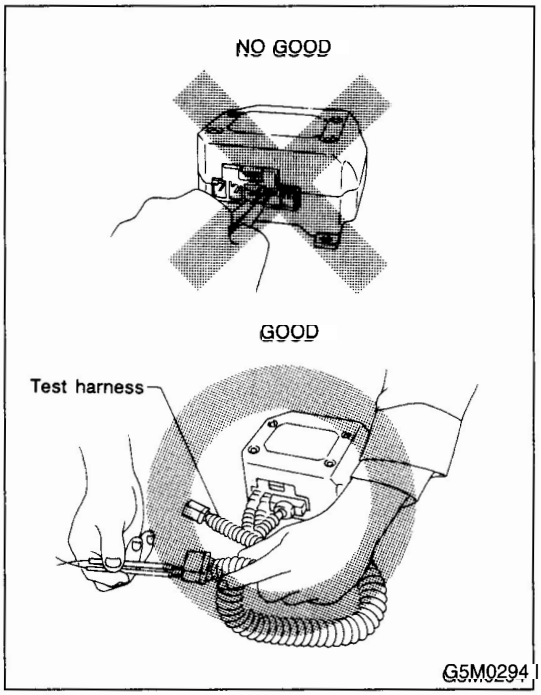


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- Do not use the airbag system and pretensioners on other vehicles. When replacing parts, be sure to replace them with new parts.
- Never re-use a deployed airbag and pretensioner.
- When checking the system, be sure to use a digital circuit tester.
Use of an analog circuit tester may cause the airbag to activate erroneously.
- When checking, use a test harness. Do not directly apply the tester probe to any connector terminal of the airbag.

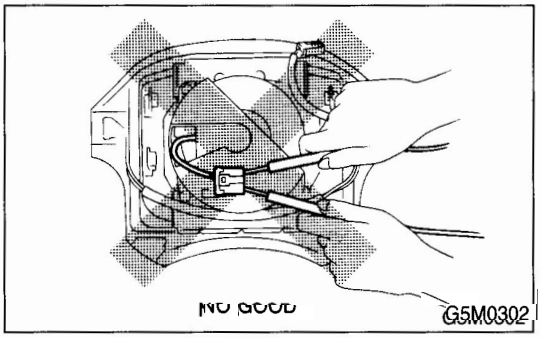


G5M0293



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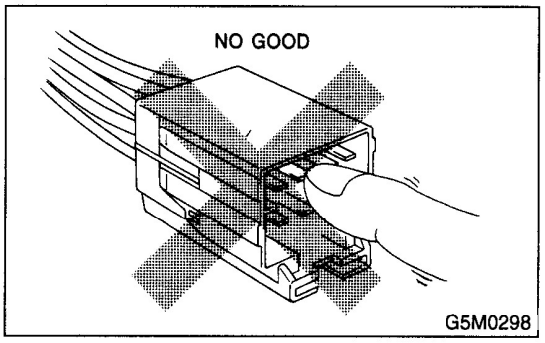
- Do not check continuity of the driver, passenger, side airbag modules and pretensioner.



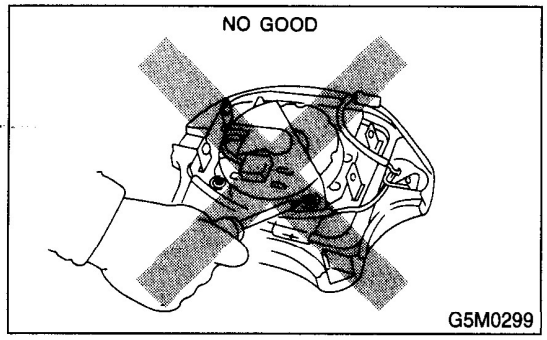
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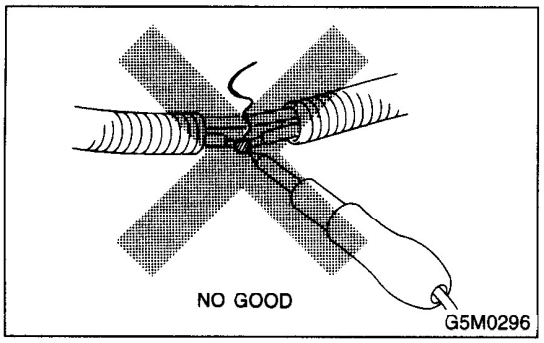
• Do not allow water or oil to come in contact with the connector terminals. Do not touch the connector terminals.



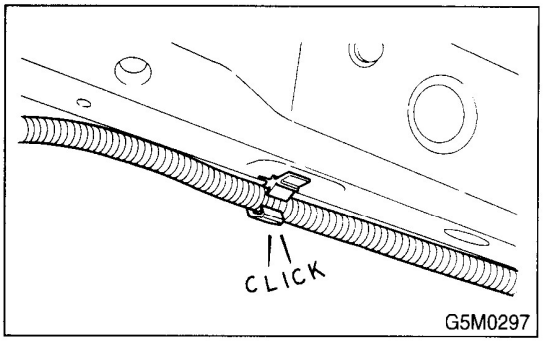
• The airbag module (driver, passenger, side) and pretensioner must not be disassembled.



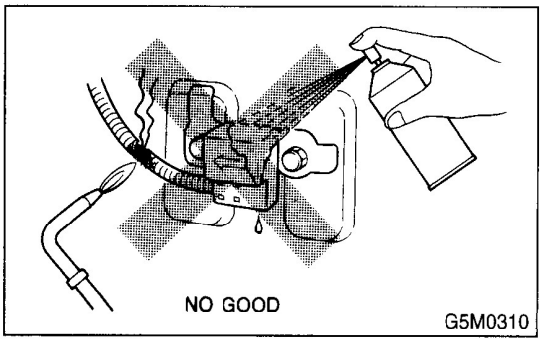
• If any damage, opening or rust is found on the airbag system wire harness, do not attempt to repair using soldering equipment. Be sure to replace the faulty harness with a new genuine part.



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

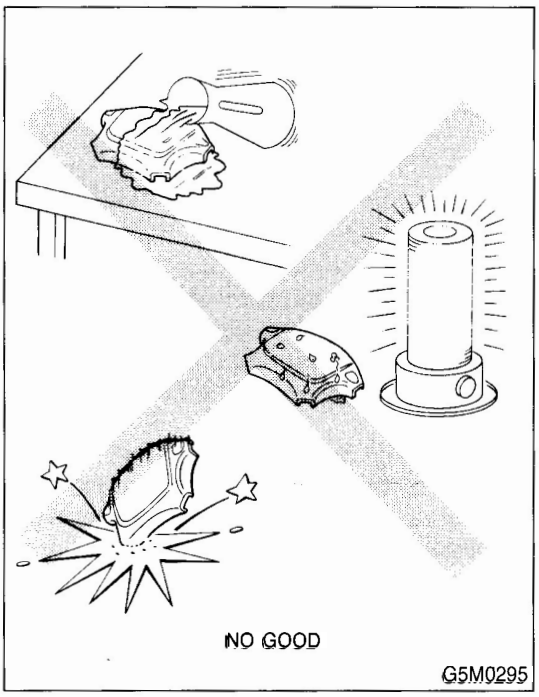


• When painting or performing sheet metal work on the front part of the vehicle, including the front wheel apron, front fender, and front side frame, remove the front sub sensors and wire harness of the airbag system.
• When painting or performing sheet metal work on the side of the vehicle, including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

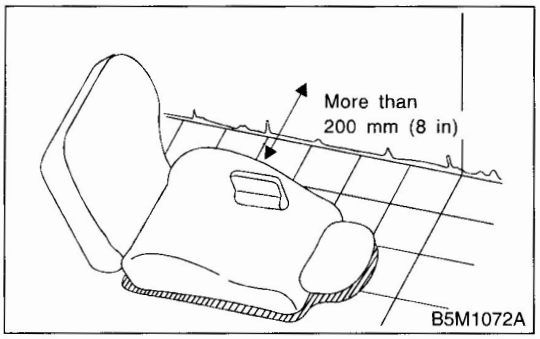


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• Do not drop the airbag modulator parts, subject them to high temperature over 93°C (199°F), or let water, oil, or grease get on them; otherwise, the internal parts may be damaged and reliability greatly lowered.

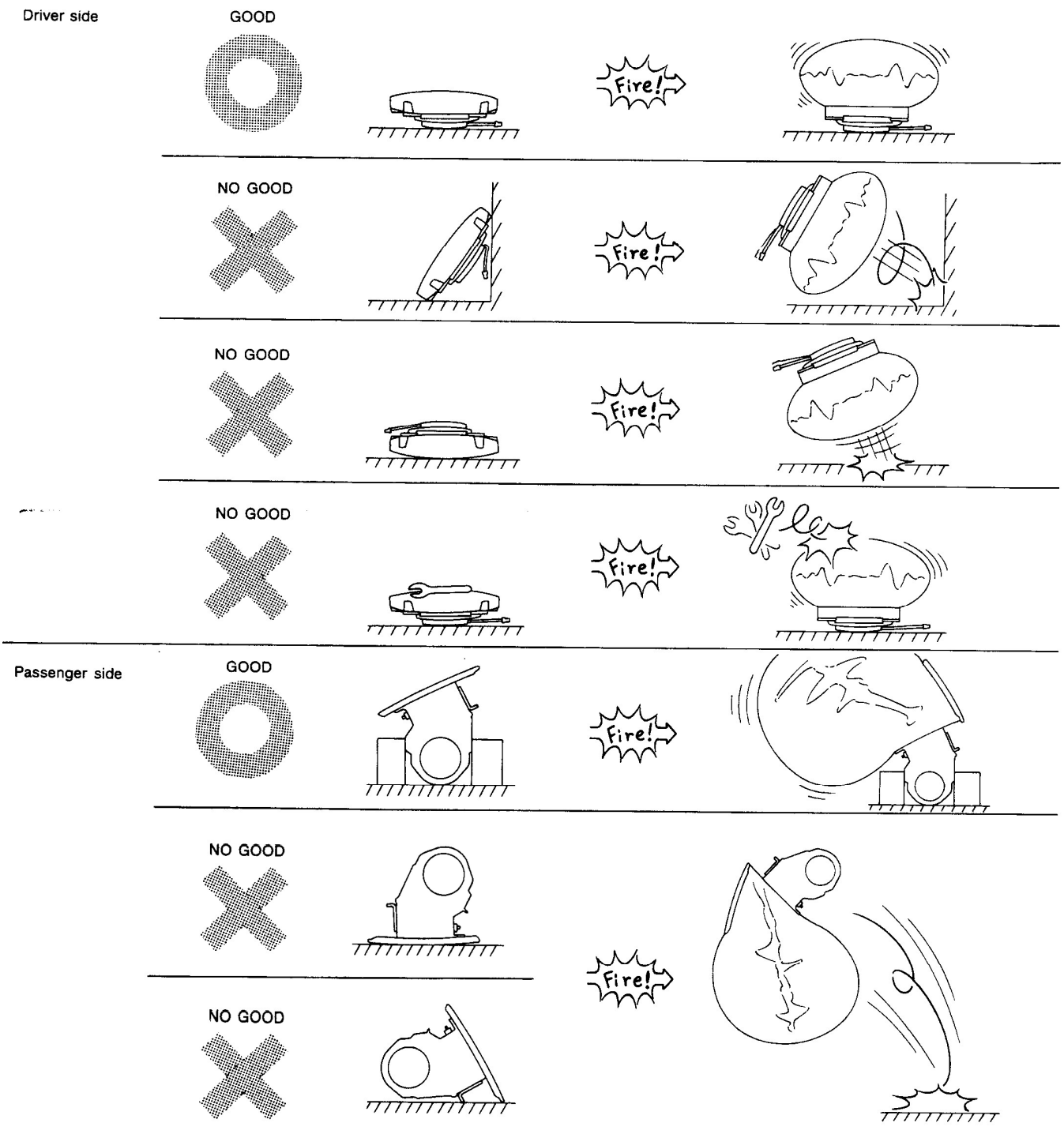


• The removed front seat with the airbag module must be kept at least 200 mm (8 in) away from walls and other objects.



• 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.

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

B: INSPECTION

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

1. BATTERY

Measure the battery voltage and specific gravity of electrolyte.

Standard voltage: 12V

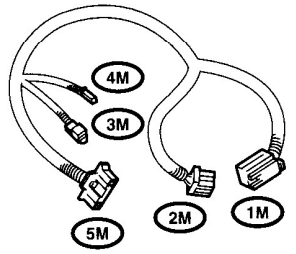
Specific gravity: Above 1.260

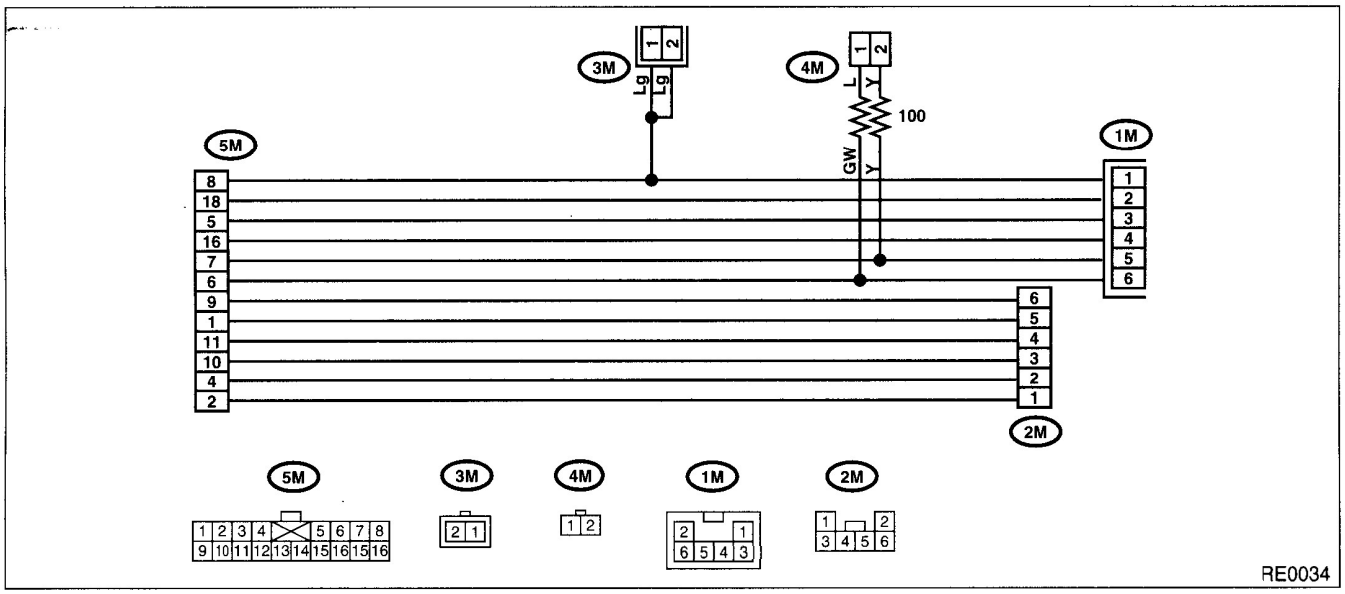
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C: PREPARATION TOOL

1. SPECIAL TOOLS

• TEST HARNESS M

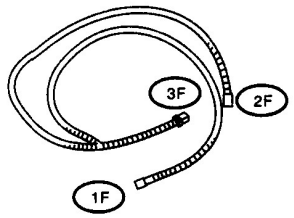
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 RE0033	98299FE020	TEST HARNESS M	Used when measuring voltage, resistance of air-bag system.

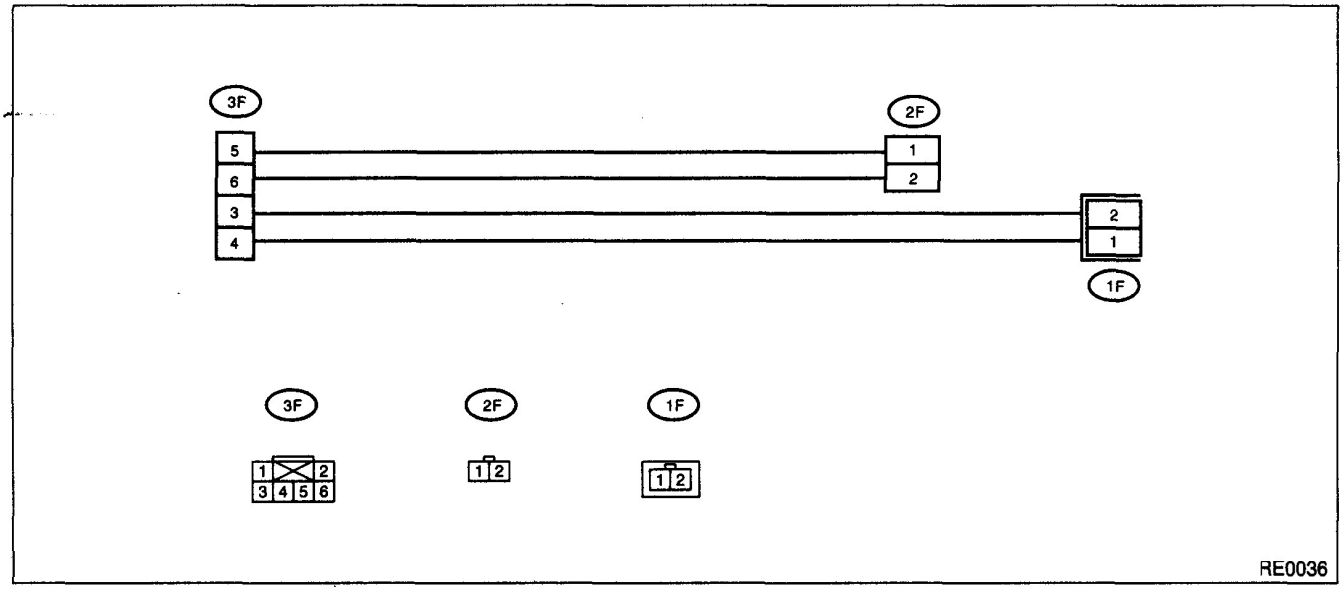


RE0034

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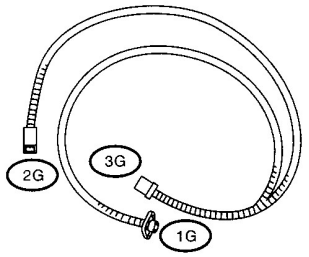
• TEST HARNESS F

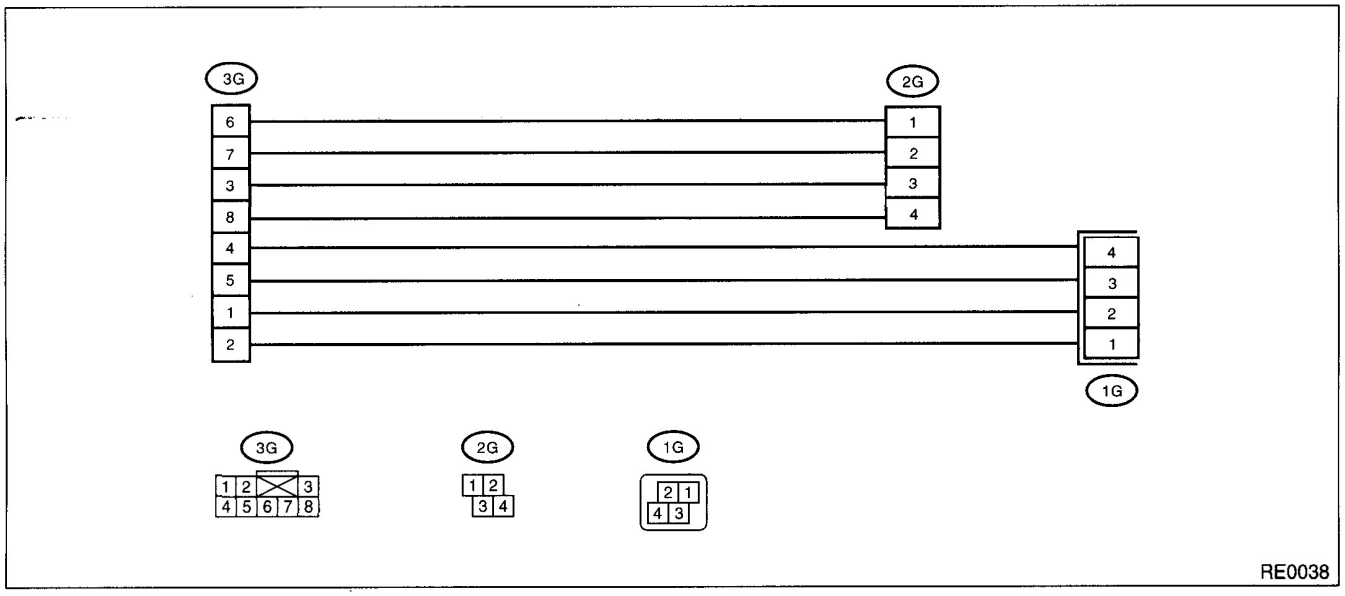
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 RE0035	98299FC010	TEST HARNESS F	Used when measuring voltage, resistance of air-bag module harnesses.



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• TEST HARNESS G

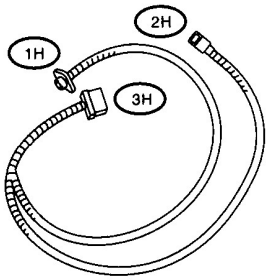
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 RE0037	98299FC020	TEST HARNESS G	Used when measuring voltage, resistance of side airbag sensor.

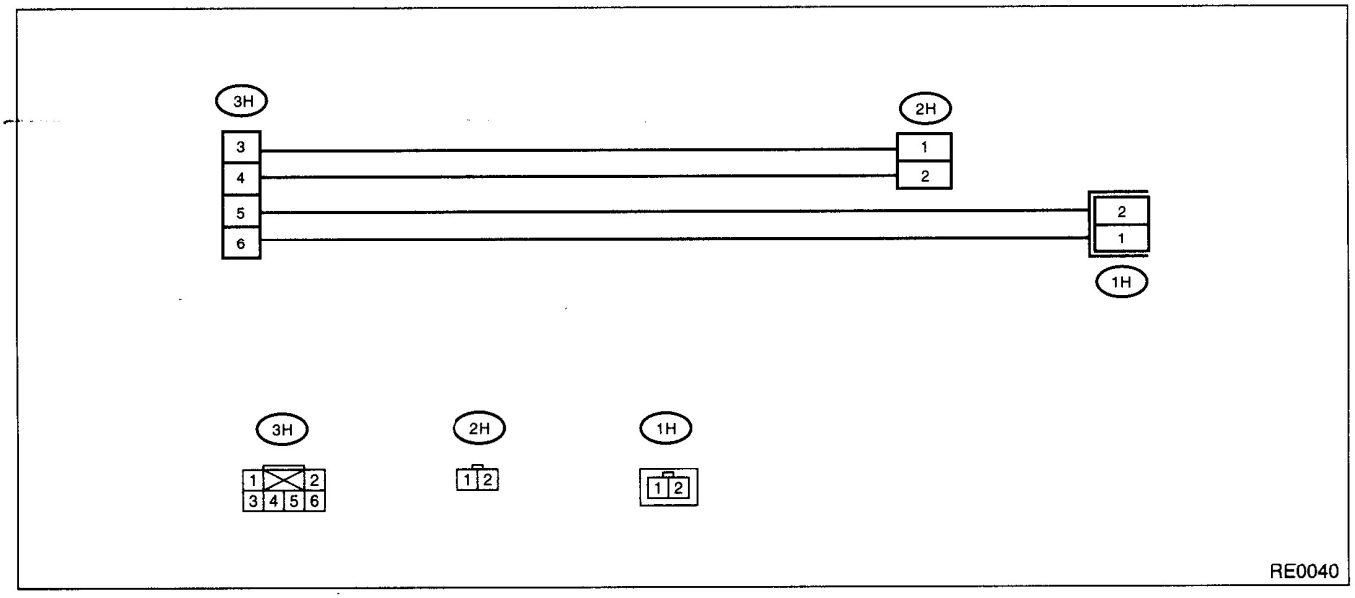


RE0038

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• TEST HARNESS H

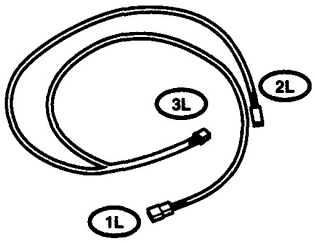
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 RE0039	98299FA030	TEST HARNESS H	Used when measuring voltage, resistance of front sub-sensor.

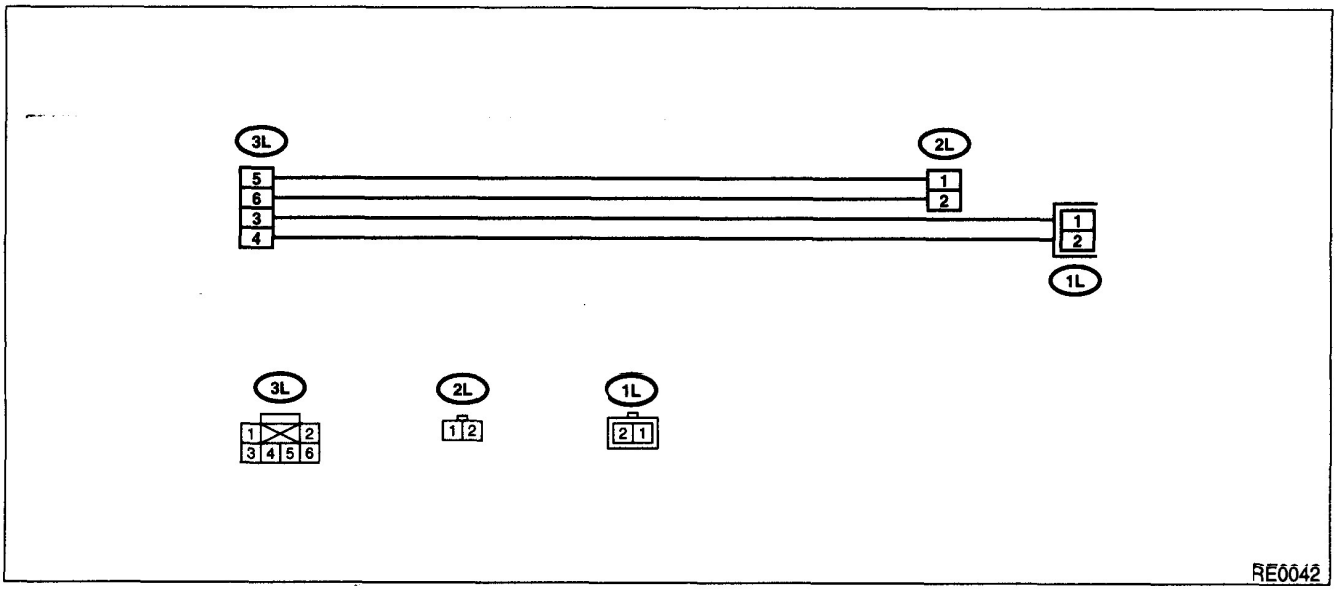


RE0040

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• TEST HARNESS L

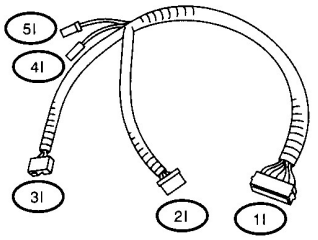
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 RE0041	98299FE000	TEST HARNESS L	Used when measuring voltage, resistance of seat belt pretensioner.

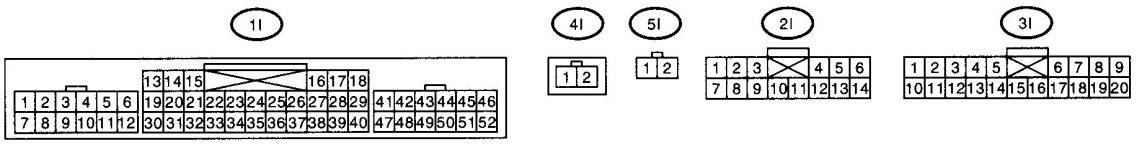


RE0042

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• TEST HARNESS I

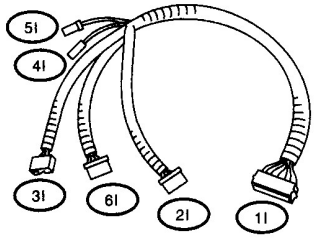
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 RE0043	98299FC040	TEST HARNESS I	Used when measuring voltage, resistance of air-bag control module.

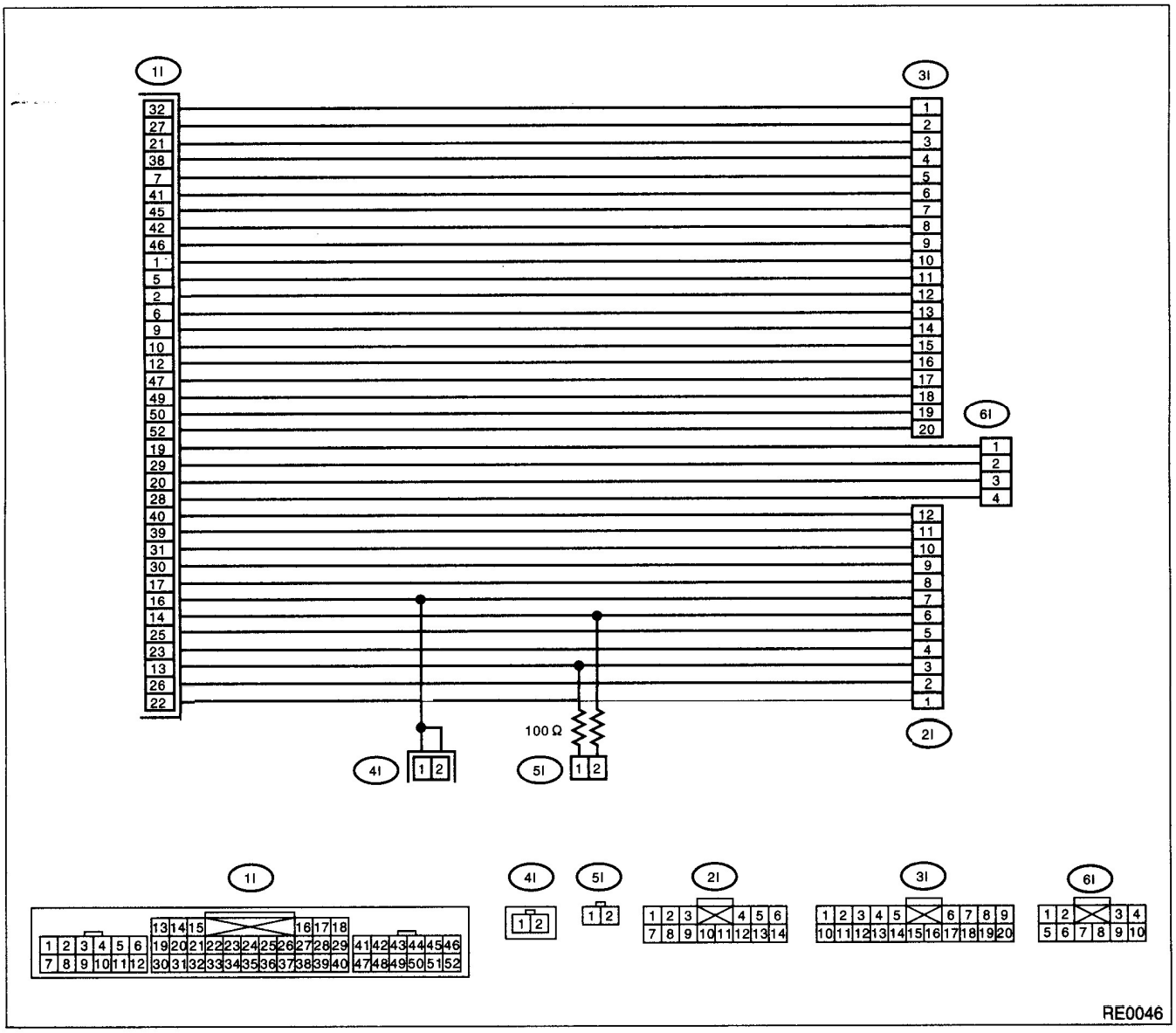


RE0044

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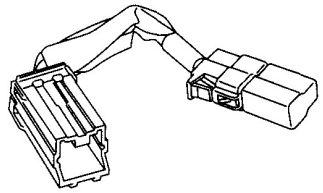
• TEST HARNESS I2

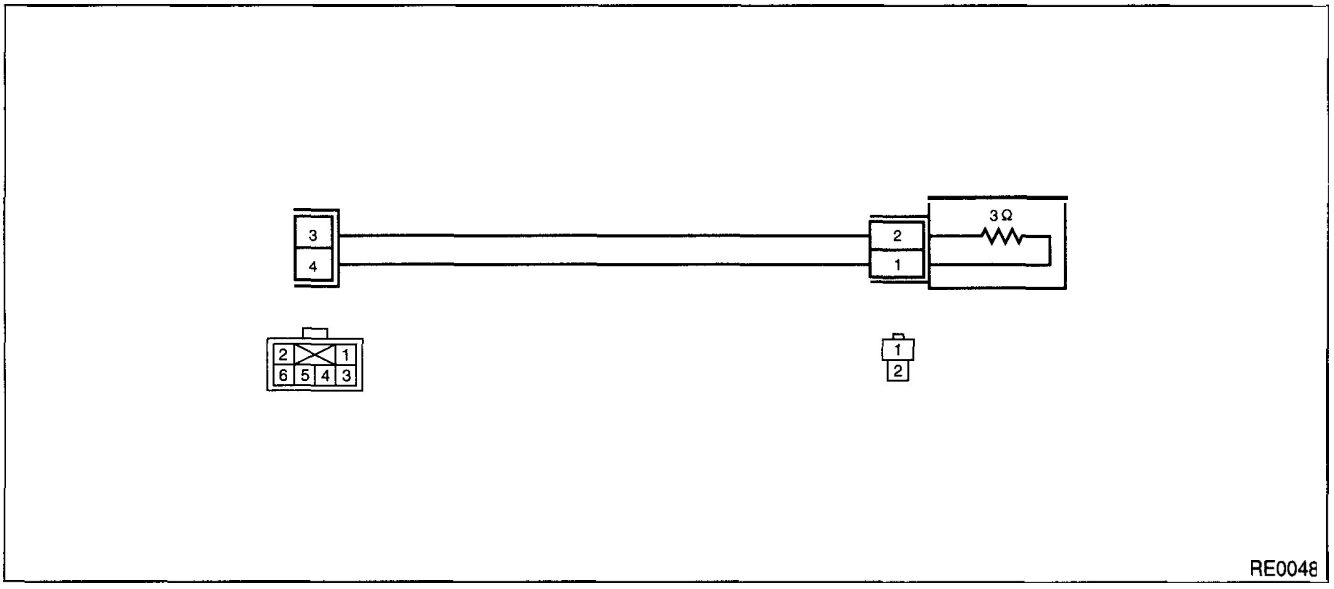
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 RE0045	98299FC041	TEST HARNESS I2	Used when measuring voltage, resistance of air-bag control module.



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• AIRBAG RESISTOR

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 RE0047	98299PA040	AIRBAG RESISTOR	Used in replacement of airbag module which resistance value is same as airbag module.



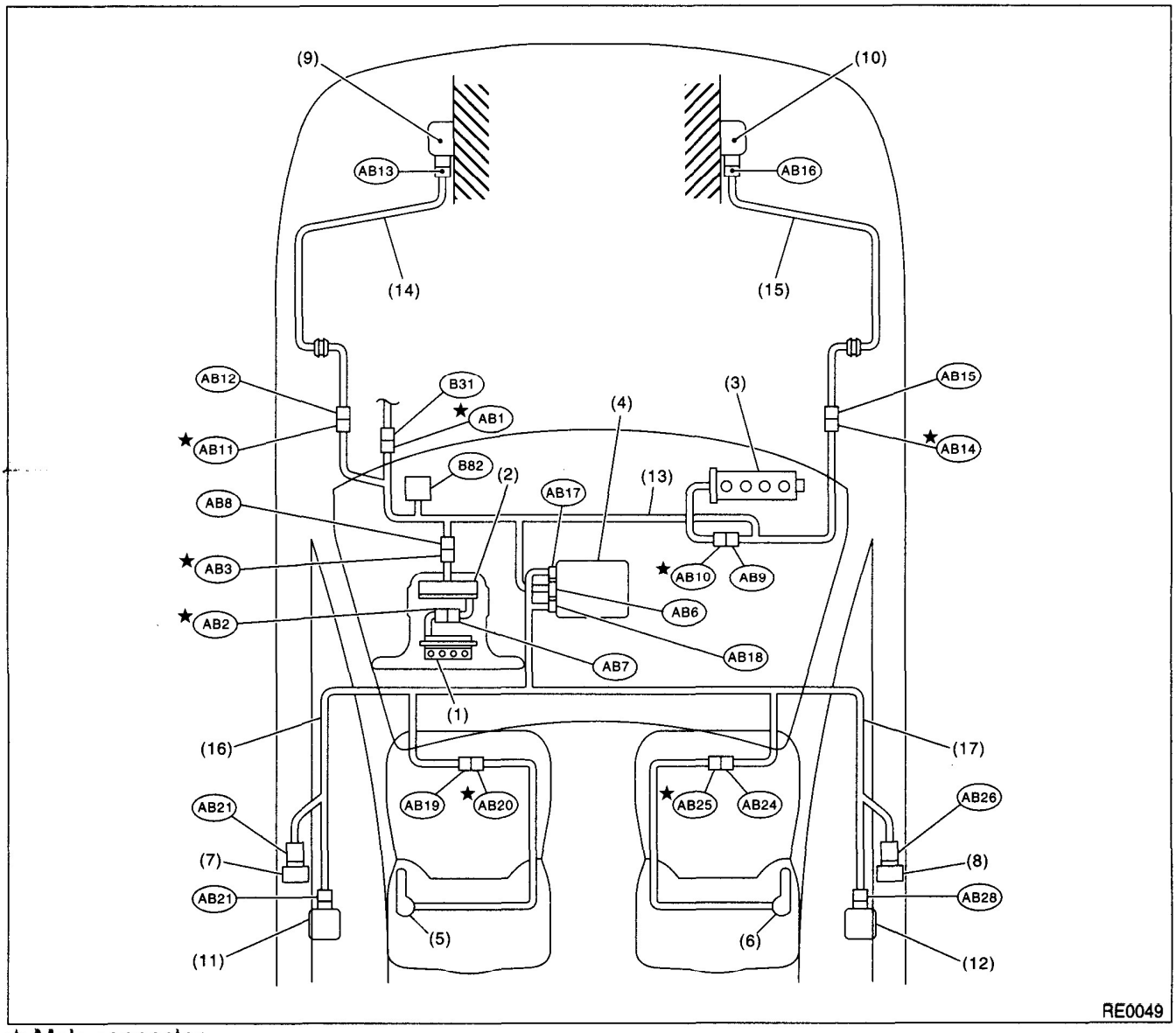
RE0048

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4. Electrical Components Location

A: LOCATION



★ Male connector

Connector No.	(AB1)	(AB2)	(AB3)	(AB6)	(AB7)	(AB8)	(AB9)	(AB10)	(AB11)	(AB12)	(AB13)	(AB14)
Pole	6	2	2	28	2	2	2	2	2	2	2	2
Color	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Blue	Blue	Yellow	Blue

Connector No.	(AB15)	(AB16)	(AB17)	(AB18)	(AB19)	(AB20)	(AB21)	(AB23)	(AB24)	(AB25)	(AB26)	(AB28)
Pole	2	2	12	12	2	2	2	4	2	2	2	4
Color	Blue	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

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(1) Driver's airbag module
(2) Roll connector
(3) Passenger's airbag module
(4) Airbag control module
(5) Side airbag module (LH)
(6) Side airbag module (RH)
(7) Seat belt pretensioner (LH)
(8) Seat belt pretensioner (RH)
(9) Front sub-sensor (LH)
(10) Front sub-sensor (RH)
(11) Side airbag sensor (LH)
(12) Side airbag sensor (RH)
(13) Airbag main harness
(14) Front sub-sensor harness (LH)
(15) Front sub-sensor harness (RH)
(16) Side airbag harness (LH)
(17) Side airbag harness (RH)

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5. A/B Control Module I/O Signal

A: SCHEMATIC

<Ref. to WI-31, Airbag System.>

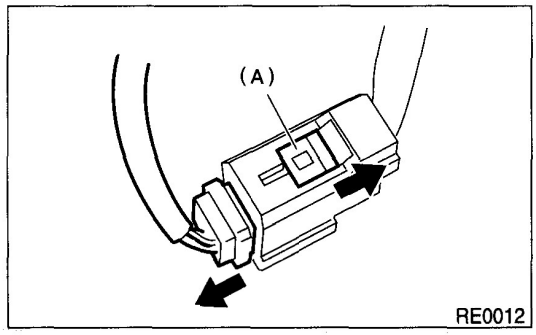
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6. Airbag Connector

A: OPERATION

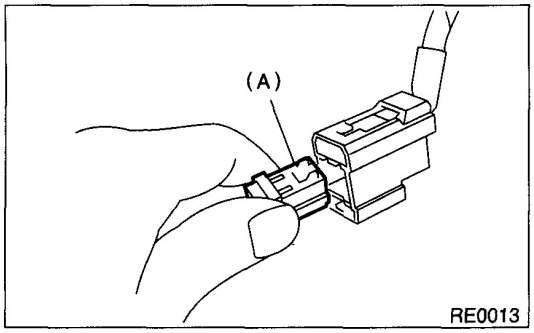
1. POWER SUPPLY

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



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

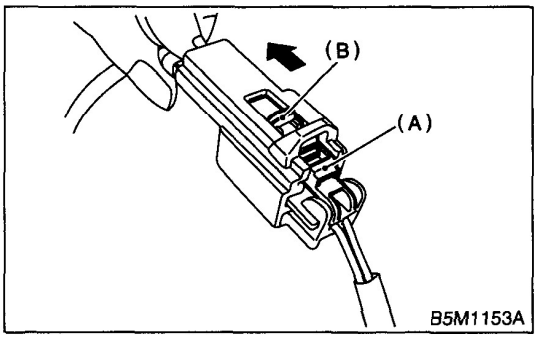
2) How to connect:
Holding the connector (A), and push it in carefully until a connecting sound is heard.



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

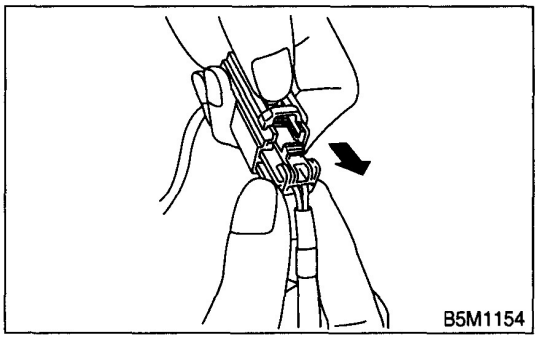
2. DRIVER'S AIRBAG, PASSENGER'S AIRBAG, AND SIDE AIRBAG

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



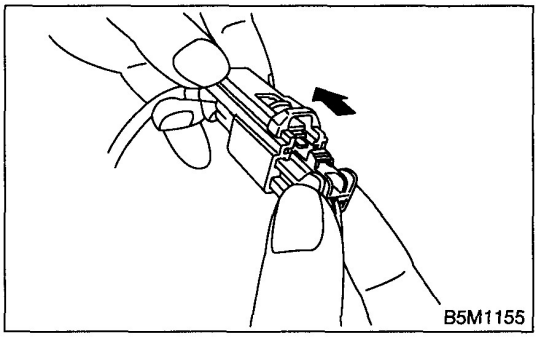
(3) With slide lock (B) pulled, remove the lock arm (A) to its original position, and then pull in the direction of the arrow and separate the connector.

CAUTION:
When pulling, 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.

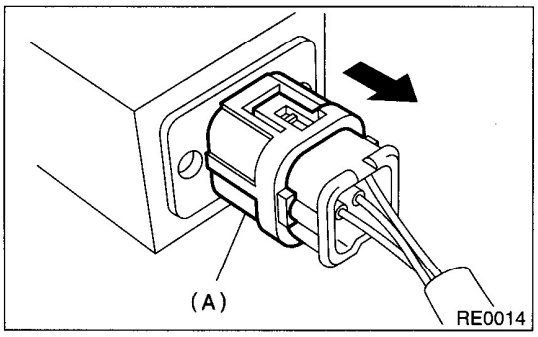


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3. FRONT SUB-SENSOR, SIDE AIRBAG SENSOR

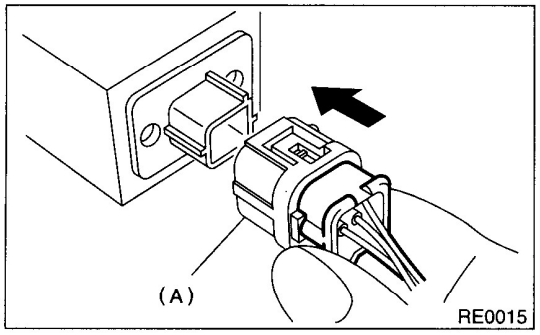
1) How to disconnect:
(1) Holding the outer part (A), pull it in the direction of the arrow.

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



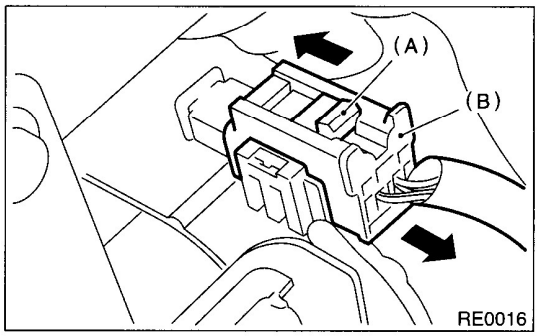
2) How to connect:
Holding the connector, and push it in carefully until a connecting sound is heard.

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.**



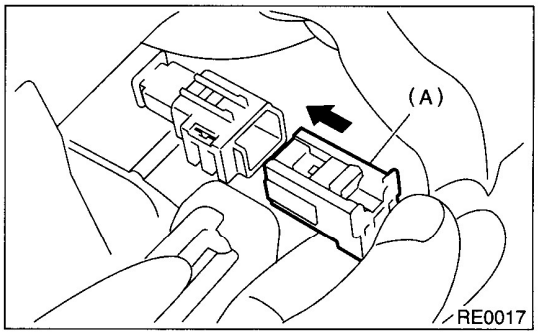
4. PRETENSIONER

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



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

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



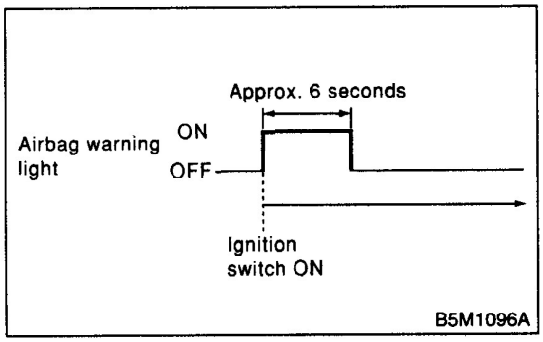
CAUTION:
Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.

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7. Airbag Warning Light Illumination Pattern

A: INSPECTION

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

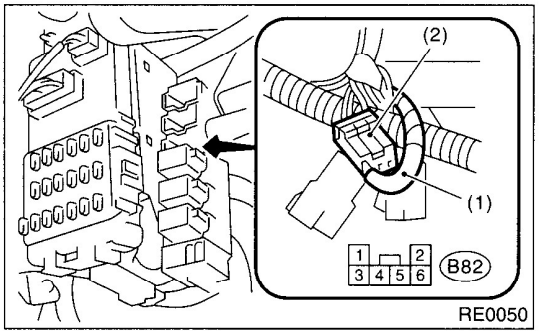


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8. Read Diagnostic Trouble Code

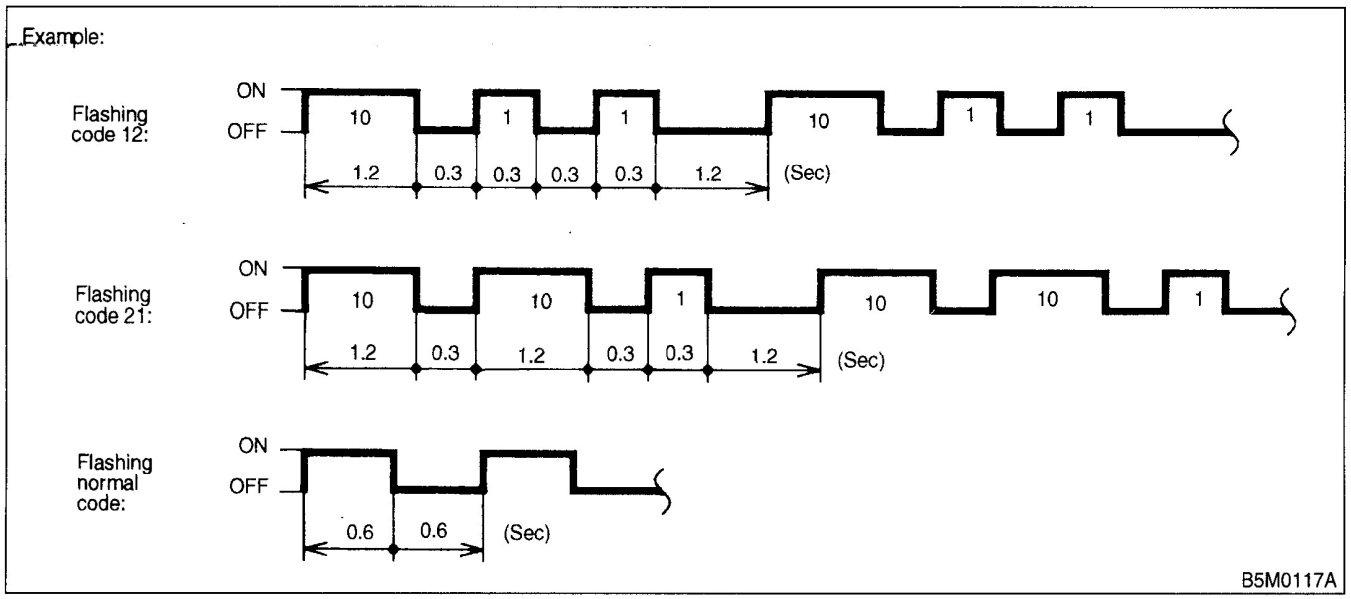
A: OPERATION

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



3) Read trouble code by identifying the way the air bag 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" <Ref. to AB-32, List of Diagnostic Trouble Code.>
• "Airbag Warning Light Failure" <Ref. to AB-27, Airbag Warning Light Failure.>



4) Turn the ignition switch OFF, and disconnect the diagnosis terminal from the diagnosis connector terminal No 1.
5) Wind the tape around the diagnosis terminal and return it to its original position.

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9. Inspection Mode

A: OPERATION

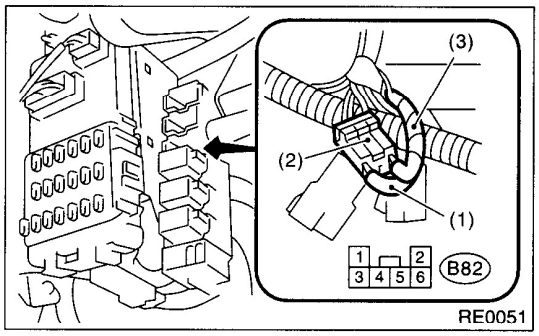
According to the contents of check list, reproduce the condition which problem has occurred as much as possible.

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10.Clear Memory Mode

A: OPERATION

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



3) While the warning light flashes, connect another diagnosis terminal (3) to the diagnosis connector terminal No.2.
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 diagnosis terminal from the diagnosis connector.
6) Wind the tape around the diagnosis terminal and return it to its original position.

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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.
- (AB6) is not connected properly to airbag control module.

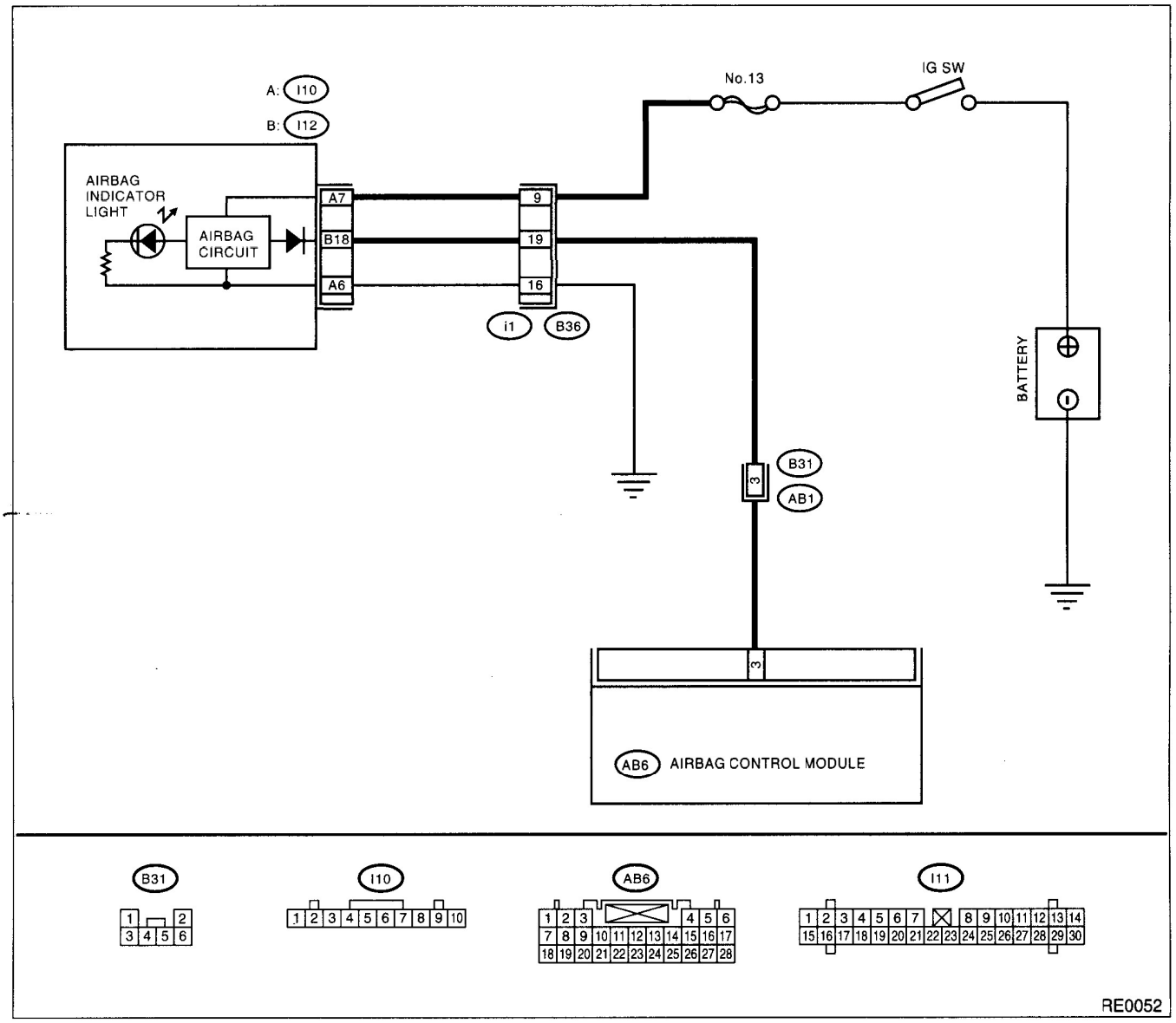
CAUTION:

- **Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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.**

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AIRBAG WARNING LIGHT FAILURE

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT IN CONNECTORS (AB1) AND (B31).** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Remove the side sill cover. (Driver's side) 3)Confirm that firm contact is secured between connectors (AB1) and (B31).	Is the poor contact in connectors (AB1) and (B31)?	Repair the body harness or replace the body harness with airbag main harness.	Go to step **2.**

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	Step	Check	Yes	No
2	**CHECK AIRBAG WARNING LIGHT.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Connect the connector (1M) in the test harness M to the body harness connector (B31). 3)Connect the battery ground terminal and turn the ignition switch ON. 4)Connect two connectors, (3M) and (4M) in the 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 connectors (3M) and (4M).	Is the anything unusual to body harness?	Repair the body harness.	Replace combination meter printed circuit. <Ref. to IDI-11, Combination Meter Assembly.>
4	**CHECK POOR CONTACT.** Confirm that the firm contact is secured between the airbag control module and the connector (AB6). <Ref. to AB-15, Airbag Control Module.>	Is the poor contact in connector (AB6)?	Replace the body harness with airbag main harness or replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Go to step **5.**
5	**CHECK AIRBAG MAIN HARNESS.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Connect the connector (AB1) to (B31). 3)Disconnect the connectors (AB3) and (AB8). 4)Remove the glove box and disconnect the connectors (AB10) and (AB9). 5)Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in the test harness I or I2. <Ref. to AB-15, Airbag Control Module.> 6)Connect the battery ground terminal and turn the ignition switch ON. 7)Connect the connectors (4I) and (5I) in the test harness I or I2. NOTE: After problem has been eliminated, disconnect connectors (4I) and (5I).	Is the airbag warning light turned off?	Go to step **6.**	Replace the body harness with airbag main harness.
6	**CHECK GROUNDING CIRCUIT.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB6) from the airbag control module. 3)Connect the connector (1I) in the test harness I or I2 to body harness connector (AB6). 4)Measure the resistance between connector (2I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(2I) No. 9 — Chassis ground:*** ***(2I) No. 10 — Chassis ground:***	Is the resistance less than 10 Ω?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Repair body-grounding circuit.

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B: AIRBAG WARNING LIGHT REMAINS OFF.

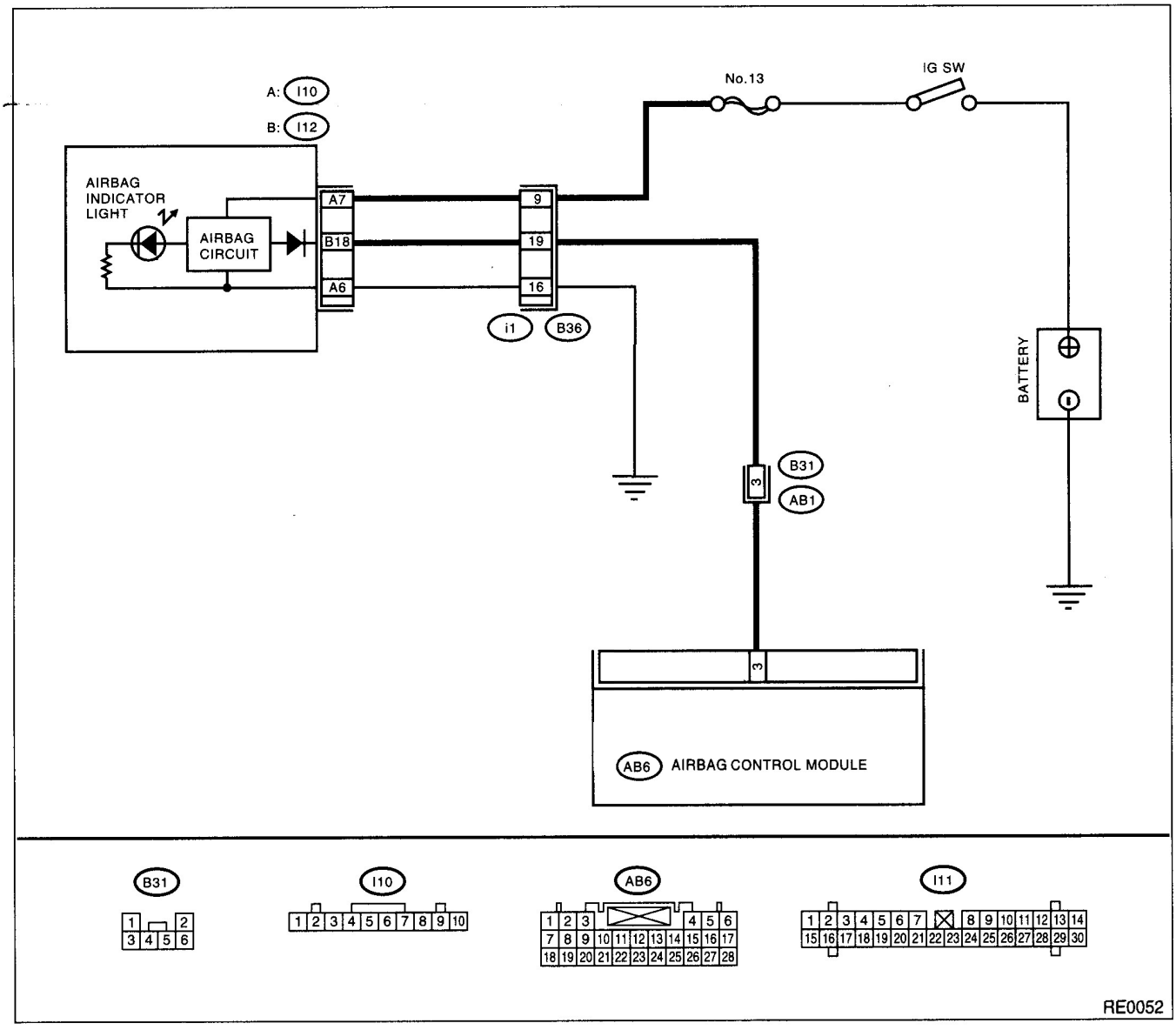
DIAGNOSIS:

- 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 OFF, disconnect the ground terminal from the 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:



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AIRBAG WARNING LIGHT FAILURE

	Step	Check	Yes	No
1	**CHECK COMBINATION METER.** Turn the ignition switch ON, and confirm that warning lights equipped in the combination meter are turned on.	Do warning lights not for the airbag turn on?	Go to step **2.**	Repair the combination meter power supply. <Ref. to IDI-4, 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?	Replace the fuse No. 13. If the fuse No. 13 blows again, go to step 3.	Go to step **3.**
3	**CHECK AIRBAG WARNING LIGHT CIRCUIT (IN COMBINATION METER).** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB1) from (B31). 3)Connect the battery ground terminal and turn the ignition switch 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-11, Combination Meter Assembly.>
4	**CHECK AIRBAG MAIN HARNESS.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Connect the connector (AB1) to (B31). 3)Disconnect the connector (AB6) from the airbag control module. <Ref. to AB-15, Airbag Control Module.> 4)Connect the battery ground terminal and turn the ignition switch ON.	Is the airbag warning light turned on?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with airbag main harness.

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12. List of Diagnostic Trouble Code

A: LIST

Trouble code/ Contents of troubles	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-36, TROUBLE CODE 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-38, TROUBLE CODE 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-40, TROUBLE CODE 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-42, TROUBLE CODE 16, Diagnostic Chart with Trouble Code.>
21	Provided.	Airbag control module is faulty.	<Ref. to AB-43, TROUBLE CODE 21, Diagnostic Chart with Trouble Code.>
22	Provided.	Front airbag module and seat belt pretensioner (LH/RH) are inflated.	<Ref. to AB-44, TROUBLE CODE 22, Diagnostic Chart with Trouble Code.>
23	Not provided.	(AB6), (AB17) and (AB18) are not connected properly to airbag control module.	<Ref. to AB-44, TROUBLE CODE 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-46, TROUBLE CODE 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-48, TROUBLE CODE 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-50, TROUBLE CODE 31, Diagnostic Chart with Trouble Code.>

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LIST OF DIAGNOSTIC TROUBLE CODE

Trouble code/ Contents of troubles	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-54, TROUBLE CODE 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-58, TROUBLE CODE 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-60, TROUBLE CODE 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-62, TROUBLE CODE 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-64, TROUBLE CODE 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-66, TROUBLE CODE 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-68, TROUBLE CODE 52, Diagnostic Chart with Trouble Code.>
53	Provided.	Side airbag sensor (RH) is faulty.	<Ref. to AB-69, TROUBLE CODE 53, Diagnostic Chart with Trouble Code.>
54	Provided.	Side airbag sensor (LH) is faulty.	<Ref. to AB-69, TROUBLE CODE 54, Diagnostic Chart with Trouble Code.>
55	Provided.	Side airbag module is inflated.	<Ref. to AB-70, TROUBLE CODE 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-72, TROUBLE CODE 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-74, Trouble Code 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-76, TROUBLE CODE 65, Diagnostic Chart with Trouble Code.>

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LIST OF DIAGNOSTIC TROUBLE CODE

Trouble code/ Contents of troubles	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-78, TROUBLE CODE 66, Diagnostic Chart with Trouble Code.>

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13.Diagnostic Chart with Trouble Code

A: TROUBLE CODE 11

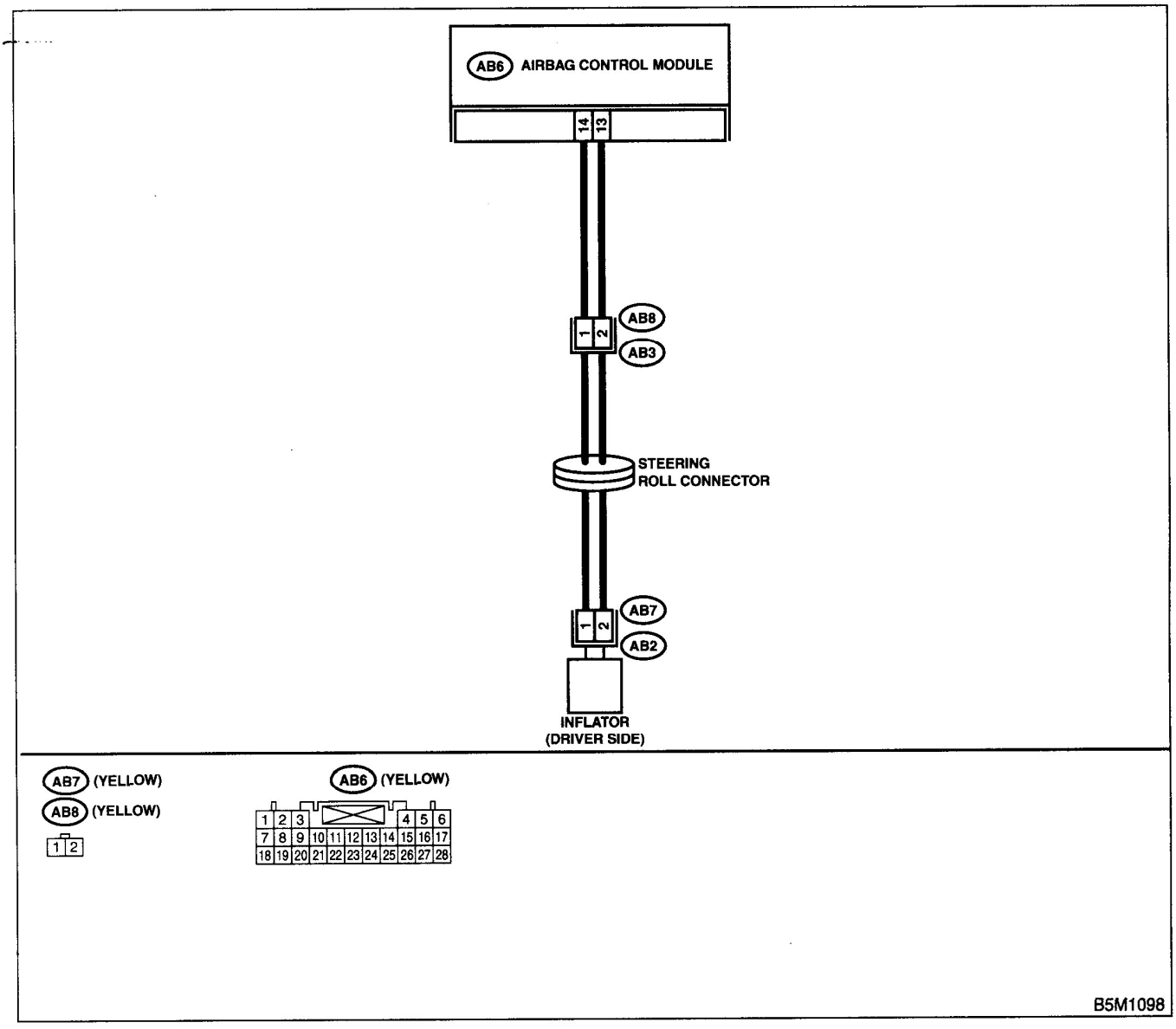
DIAGNOSIS:

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

CAUTION:

- **Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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:



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

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B: TROUBLE CODE 12

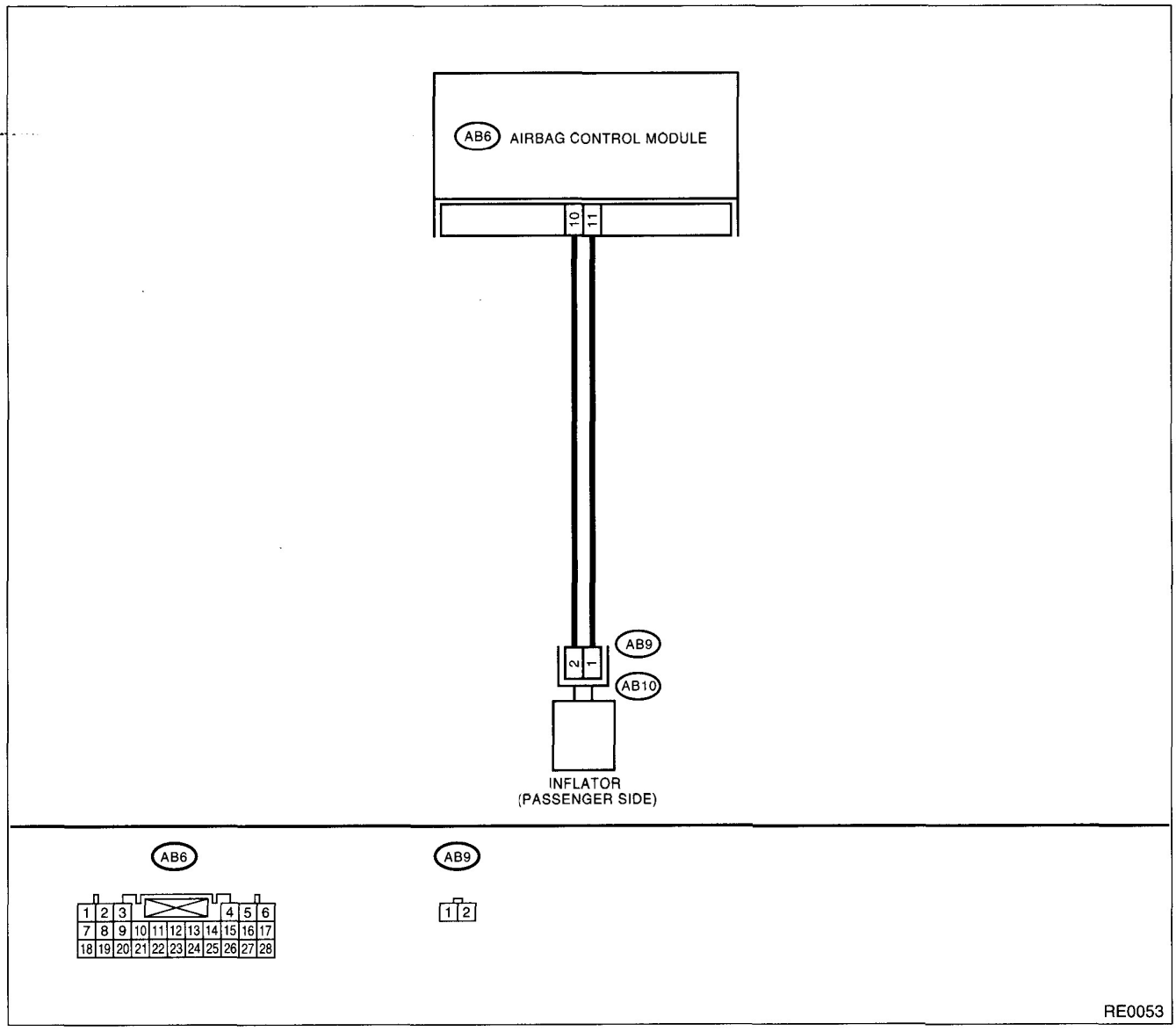
DIAGNOSIS:

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

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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:



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DIAGNOSTIC CHART WITH TROUBLE CODE

	Step	Check	Yes	No
1	**CHECK PASSENGER'S AIRBAG MODULE.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Remove the glove box. 3)Disconnect the connector (AB10) from (AB9). 4)Connect the connector (1F) in the test harness F to connector (AB9). 5)Connect the airbag resistor to connector (3F) in the test harness F. 6)Connect the battery ground terminal and turn the ignition switch 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 OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the airbag resistor from the connector (3F) in test harness F. 3)Remove lower cover and disconnect the connector (AB3) from (AB8). 4)Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in the test harness I or I2. <Ref. to AB-15, Airbag Control Module.> 5)Measure the resistance between connector (2I) in the test harness I or I2 and the connector (3F) in the test harness F. ***Connector & terminal*** ***(2I) No. 2 — (3F) No. 3:*** ***(2I) No. 5 — (3F) No. 4:***	Is the resistance less than 10 Ω?	Go to step **3.**	Replace the body harness with airbag main harness.
3	**CHECK AIRBAG MAIN HARNESS.** Measure the resistance of the connector (2I) in the test harness I or I2. ***Connector & terminal*** ***(2I) No. 2 — No. 5:*** ***(2I) No. 2 — Chassis ground:*** ***(2I) No. 5 — Chassis ground:***	Is the resistance more than 1 MΩ?	Replace airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with airbag main harness.

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C: TROUBLE CODE 15

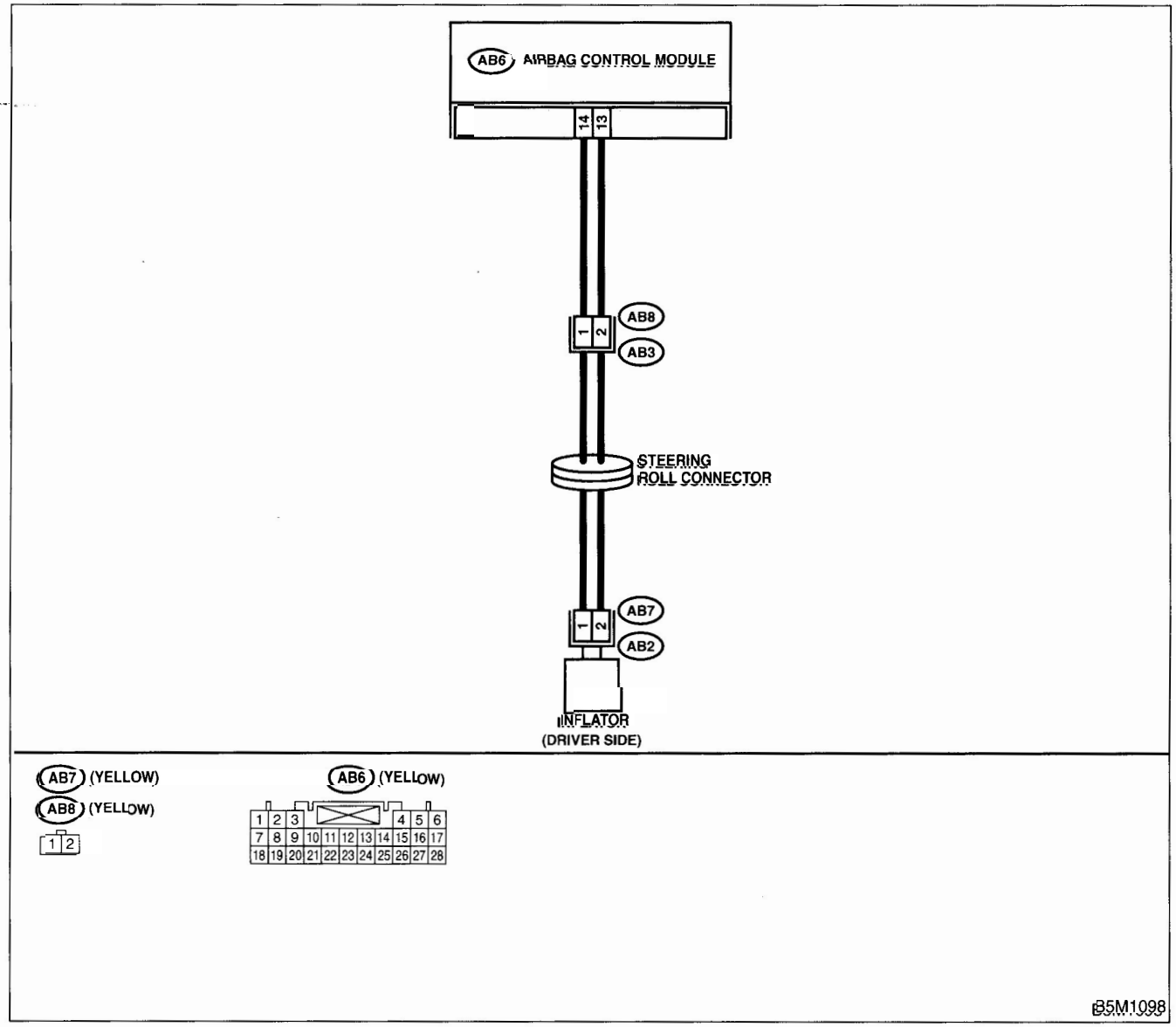
DIAGNOSIS:

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

CAUTION:

- **Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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:



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

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D: TROUBLE CODE 16

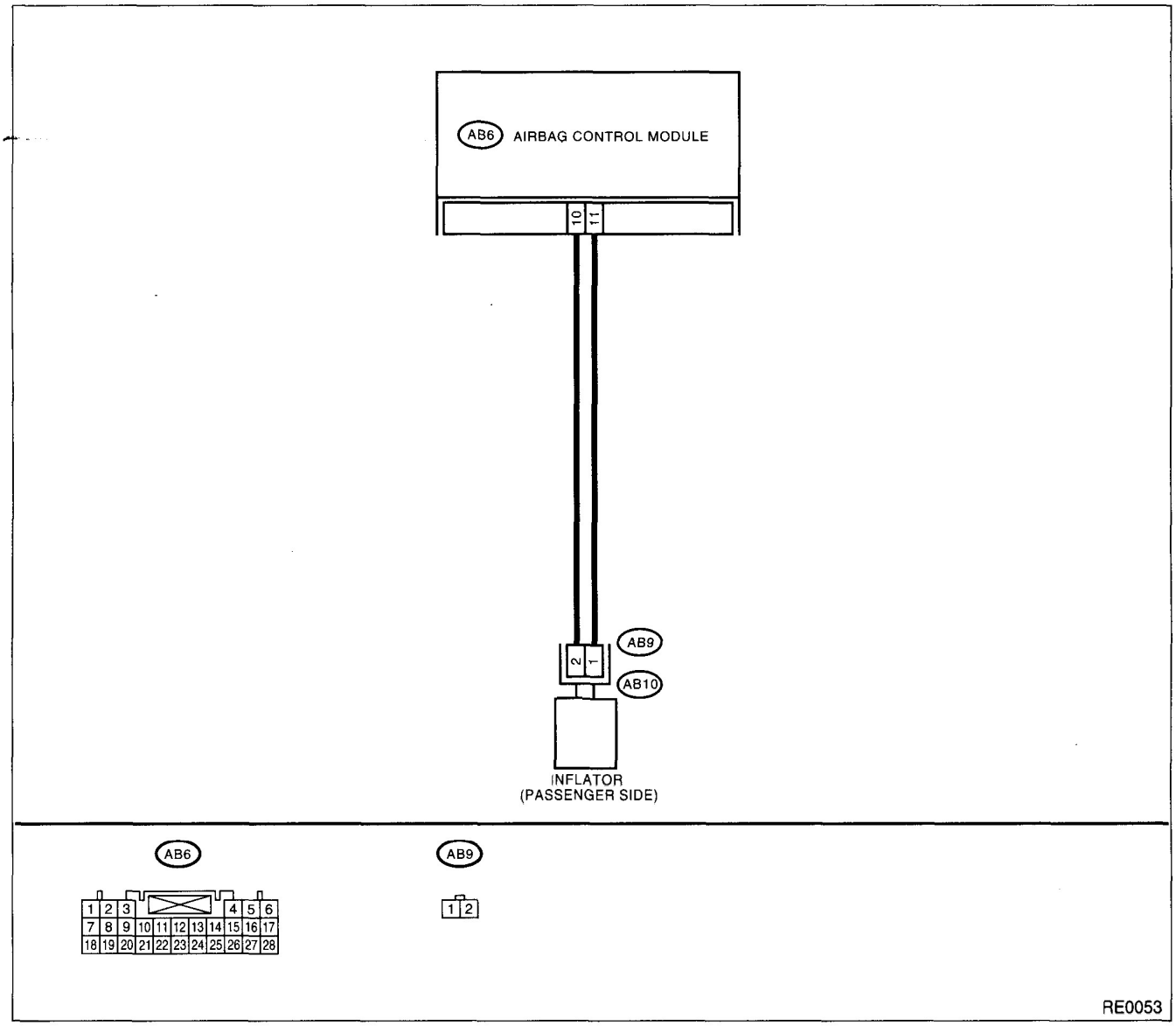
DIAGNOSIS:

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

CAUTION:

- **Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK PASSENGER'S AIRBAG MODULE.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Remve the glove box. 3)Disconnect the connector (AB10) from (AB9) 4)Connect the connector (1F) in the test harness F to the connector (AB9). 5)Connect the airbag resistor to connector (3F) in the test harness F. 6)Connect the battery ground terminal and turn the ignition switch 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 OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the airbag resistor from the connector (3F) in the test harness F. 3)Remove the lower cover and disconnect the connector (AB3) from (AB8). 4)Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in the test harness I or I2. <Ref. to AB-15, Airbag Control Module.> 5)Measure the voltage between connector (2I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(2I) No. 2 — Chassis ground:*** ***(2I) No. 5 — Chassis ground:***	Is the voltage less than 1 V?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with airbag main harness.

E: TROUBLE CODE 21

DIAGNOSIS:

- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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 TROUBLE CODE 21 IS INDICATED.** Read Diagnostic Trouble Code. <Ref. to AB-24, Read Diagnostic Trouble Code.>	Is the airbag warning light trouble code 21 indicated?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Perform clear memory. <Ref. to AB-26, Clear Memory Mode.>

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F: TROUBLE CODE 22

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-15, 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-18, Front Sub Sensor.>
- Front seat belt outer with pretensioner of both sides. <Ref. to SB-8, Front Seat Belt.>

G: TROUBLE CODE 23

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

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

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

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H: TROUBLE CODE 24

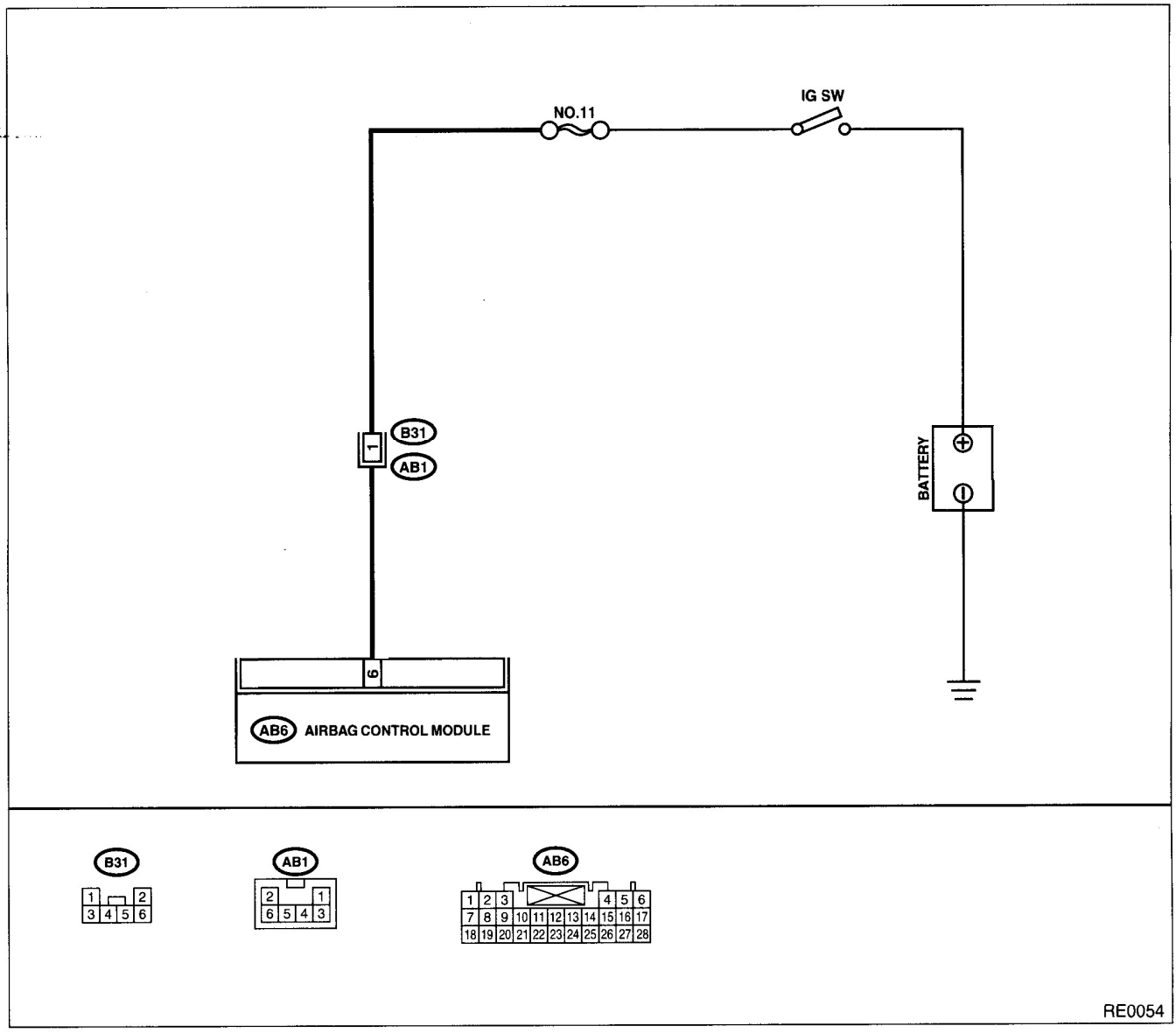
DIAGNOSIS:

- 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 OFF, disconnect the ground terminal from the 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:



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Step	Check	Yes	No
CHECK AIRBAG CONTROL MODULE. 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB6) from the airbag control module. <Ref. to AB-15, Airbag Control Module.> 3)Connect the connector (1I) in the test harness I or I2 to connector (AB6). 4)Connect the battery ground terminal and turn the ignition switch ON. 5)Measure the voltage between connector (2I) in the test harness I or I2 and chassis ground. ***Connector & terminal*** ***(2I) No. 3 (+) — Chassis ground (–):***	s the voltage more than 10 V?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	› to step **2.**
CHECK AIRBAG MAIN HARNESS. 1)While checking control module, turn the ignition switch OFF and disconnect the battery ground terminal. Wait more than 20 seconds before operation. 2)Disconnect the airbag connector (AB1) from the body harness (B31). 3)Connect the connector (2M) in the test harness M to connector (AB1). 4)Measure the resistance between connector (5M) in the test harness M and the connector (2I) in the test harness I or I2. ***Connector & terminal*** ***(5M) No. 2 — (2I) No. 3:***	s the resistance less than 10 Ω?	Go to step **3.**	Replace the body harness with airbag main harness.
CHECK AIRBAG MAIN HARNESS. Measure the following resistance with the above-mentioned condition maintained. ***Connector & terminal*** ***(5M) No. 2 — Chassis ground:*** ***(2I) No. 3 — Chassis ground:***	s the resistance more than 1 MΩ?	Go to step **4.**	Replace the body rness with airg main harness
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.	s fuse No. 11 blown?	Replace fuse No. 11. If fuse No. 11 blows again, repair the body harness.	Repair the body rness.

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I: TROUBLE CODE 25

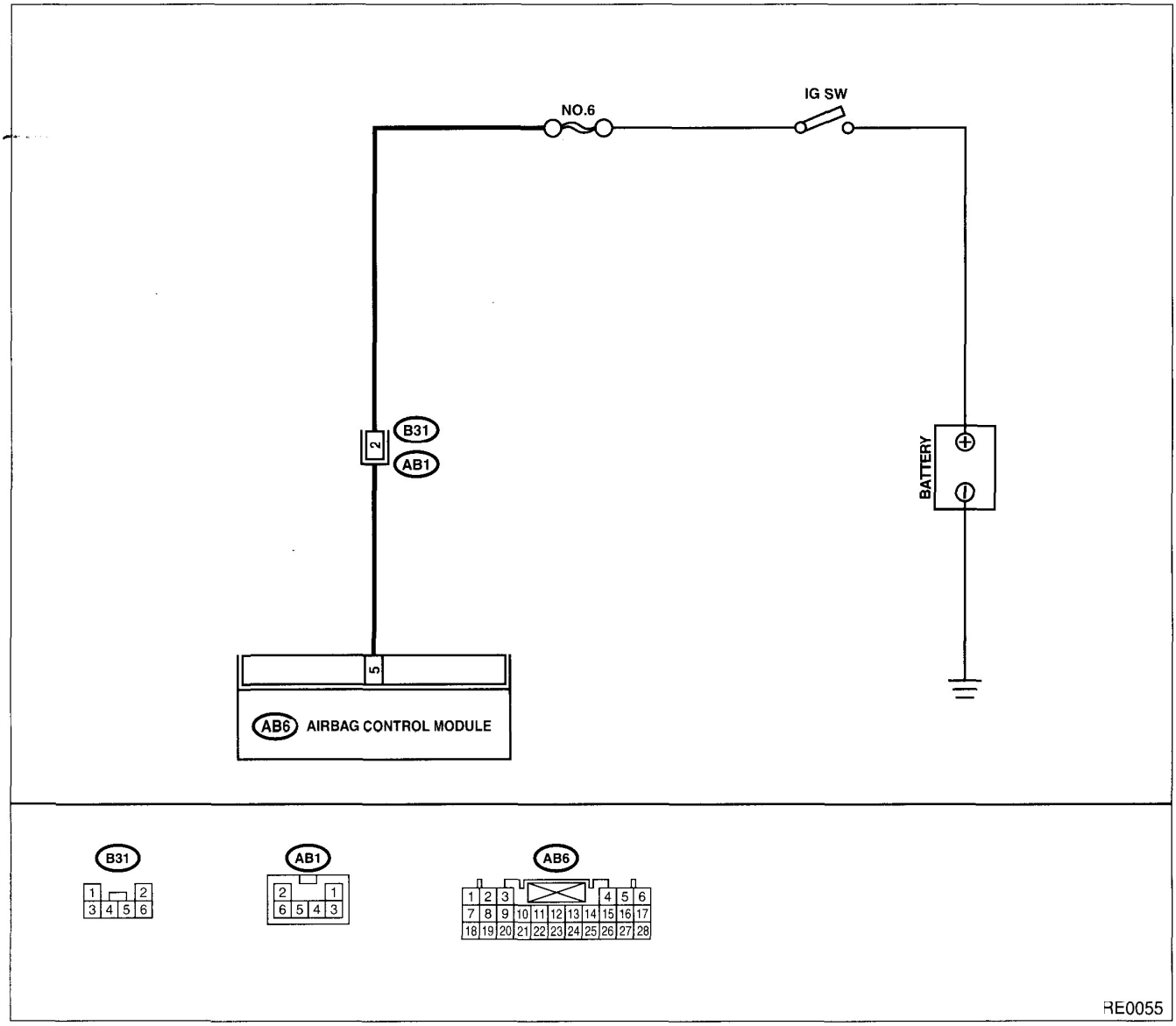
DIAGNOSIS:

- 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 OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK AIRBAG CONTROL MODULE.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB6) from airbag control module. <Ref. to AB-15, Airbag Control Module.> 3)Connect the connector (1I) in the test harness I or I2 to the connector (AB6). 4)Connect the battery ground cable, and turn the ignition switch ON. 5)Measure the voltage between the connector (2I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(2I) No. 6 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Go to step **2.**
2	**CHECK AIRBAG MAIN HARNESS.** 1) While checking control module, turn the ignition switch OFF and disconnect the battery ground terminal. Wait more than 20 seconds before operation. 2)Disconnect the airbag connector (AB1) from the body harness (B31). 3)Connect the connector (2M) in the test harness M to the airbag connector (AB1). 4)Measure the resistance between the connector (5M) in the test harness M and the connector (2I) in the test harness I or I2. ***Connector & terminal*** ***(5M) No. 2 — (2I) No. 6:***	Is the resistance less than 10 Ω?	Go to step **3.**	Replace the body harness with airbag main harness.
3	**CHECK AIRBAG MAIN HARNESS.** Measure the following resistance with the above-mentioned condition maintained. ***Connector & terminal*** ***(5M) No. 2 — Chassis ground:*** ***(2I) No. 6 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **4.**	Replace the body harness with airbag main 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?	Replace the fuse No. 6. If the fuse No. 6 is blown again, repair the body harness.	Repair the body harness.

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J: TROUBLE CODE 31

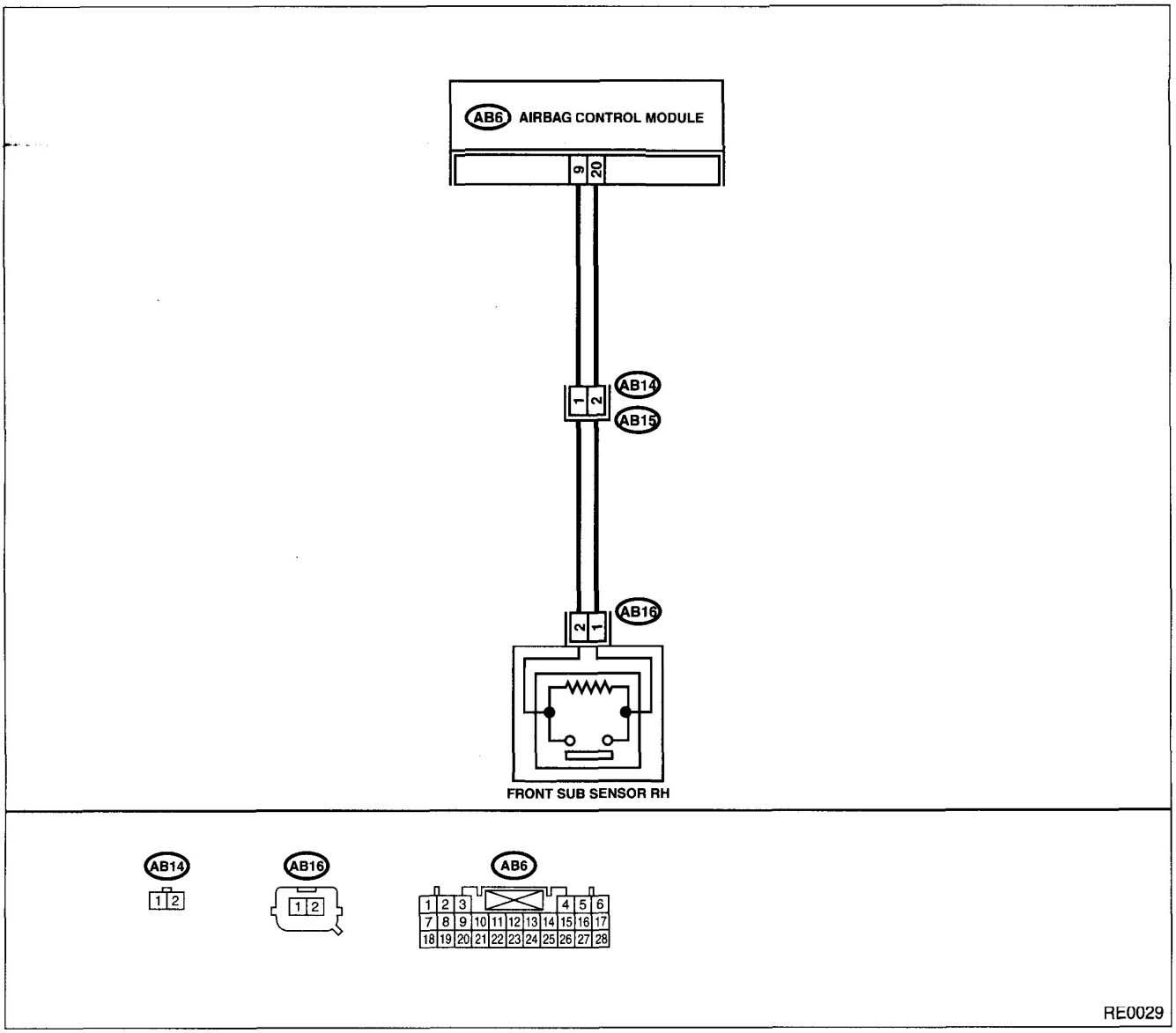
DIAGNOSIS:

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

CAUTION:

- **Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK FRONT SUB-SENSOR (RH) AND FRONT SUB-SENSOR HARNESS (RH).** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB6) from the air-bag control module , and connect the connector (1I) in the test harness I or I2. <Ref. to AB-15, Airbag Control Module.> 3)Measure the resistance of the connector (3I) in the test harness I or I2. ***Connector & terminal*** ***(3I) No. 2 — No. 4:***	Is the resistance between 750Ω and 1 KΩ?	Go to step **2.**	Go to step **3.**
2	**CHECK FRONT SUB-SENSOR (RH) AND FRONT SUB-SENSOR HARNESS (RH).** Measure the resistance between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 2 — Chassis ground:*** ***(3I) No. 4 — Chassis ground:***	Is the resistance more than 1 MΩ?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Go to step **3.**
3	**CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (RH).** 1)Disconnect the connector (AB16) from the front sub-sensor. <Ref. to AB-18, Front Sub Sensor.> 2)Connect the connector (IH) in test harness H to the connector (AB16). 3)Measure the resistance between connector (3I) in test harness I or I2 and connector (3H) in the test harness H. ***Connector & terminal*** ***(3I) No. 2 — (3H) No. 5:*** ***(3I) No. 4 — (3H) No. 6:***	Is the resistance less than 10Ω?	Go to step **4.**	Go to step **5.**
4	**CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (RH).** Measure the resistance between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 2 — Chassis ground:*** ***(3I) No. 4 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **10.**	Go to step **5.**
5	**CHECK AIRBAG MAIN HARNESS** 1)Disconnect the connector (AB15) from (AB14), and connect the connector (1F) in test harness F to the connector (AB14). 2)Measure the resistance between connector (3I) in the test harness I or I2 and connector (3F) in the test harness F. ***Connector & terminal*** ***(3I) No. 2 — (3F) No. 4:*** ***(3I) No. 4 — (3F) No. 3:***	Is the resistance less than 10 Ω?	Go to step **6.**	Replace the body harness with air-bag main harness.
6	**CHECK AIRBAG MAIN HARNESS** Measure the resistance between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 2 — Chassis ground:*** ***(3I) No. 4 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **7.**	Replace the body harness with air-bag main harness.

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	Step	Check	Yes	No
7	**CHECK FRONT SUB-SENSOR HARNESS (RH).** 1)Connect the connector (2F) in the test harness F to the connector (AB15). 2)Measure the resistance between connector (3H) in the 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 body harness with front sub-sensor harness (RH).
8	**CHECK FRONT SUB-SENSOR HARNESS (RH).** Measure the resistance between connector (3H) in the test harness H and connector (3F) in the test harness F. ***Connector & terminal*** ***(3F) No. 6 — (3H) No. 6:*** ***(3F) No. 5 — (3H) No. 5:***	Is the resistance more than 1M Ω?	Go to step **9.**	Replace the body harness with front sub-sensor harness.
9	**CHECK FRONT SUB-SENSOR HARNESS (RH).** Measure the resistance between connector (3F) in the 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 MΩ?	Go to step **10.**	Replace the body harness with front sub-sensor harness (RH).
10	**CHECK FRONT SUB-SENSOR (RH).** 1)Connect the connector (2H) in test harness H to the front sub-sensor (RH). 2)Measure the resistance of the connector (3H) in the test harness H. ***Connector & terminal*** ***(3H) No. 3 — No. 4:***	Is the resistance between 750Ω and 1 KΩ?	Go to step **11.**	Replace the front sub-sensor (RH). <Ref. to AB-18, Front Sub Sensor.>
11	**CHECK FRONT SUB-SENSOR (RH).** Measure the resistance between connector (3H) in the 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 MΩ?	Finish the diagnosis.	Replace the front sub-sensor (RH). <Ref. to AB-18, Front Sub Sensor.>

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K: TROUBLE CODE 32

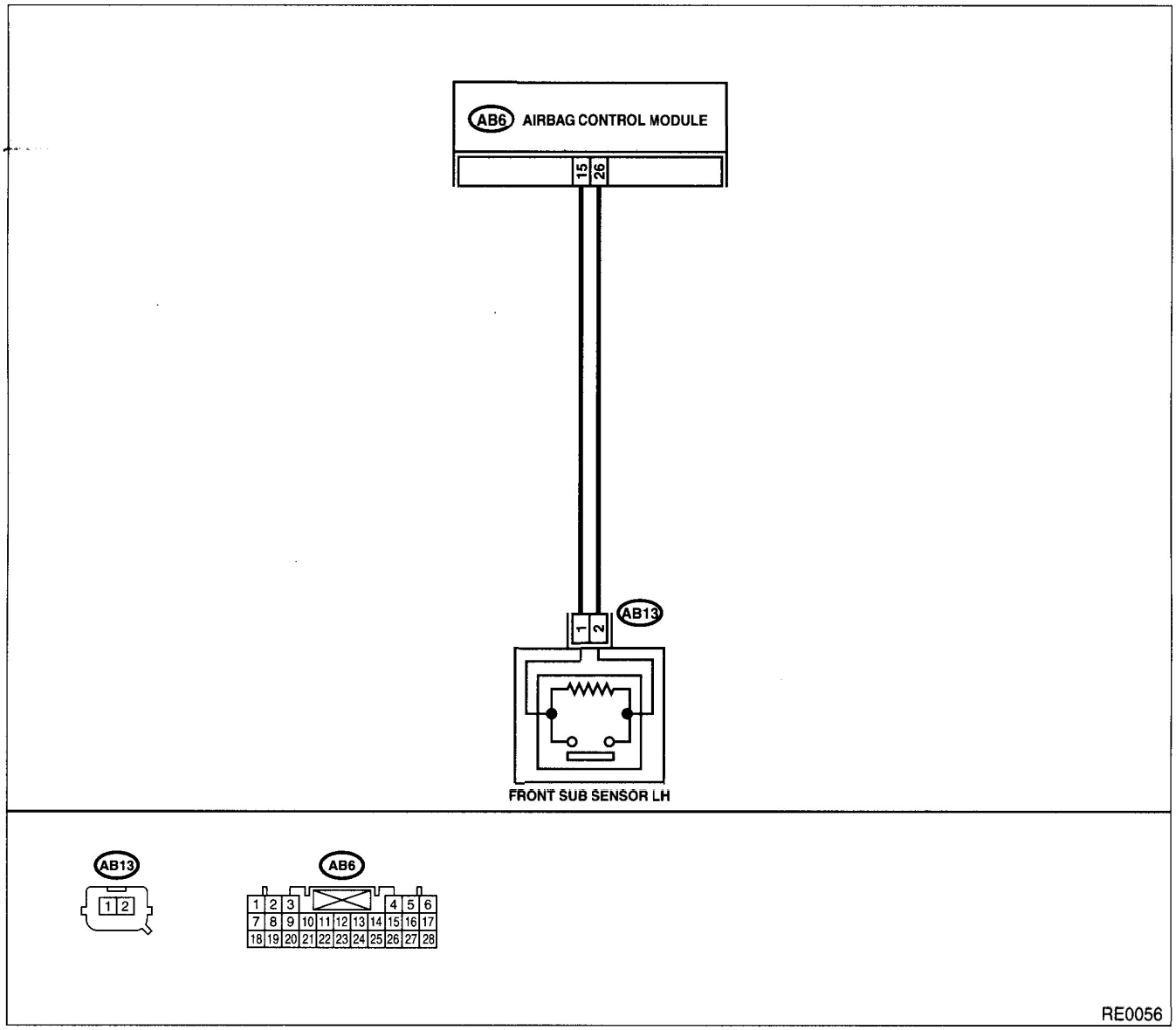
DIAGNOSIS:

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

CAUTION:

- **Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK FRONT SUB-SENSOR (LH) AND FRONT SUB-SENSOR HARNESS (RH).** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB6) from the air-bag control module, and connect connector (1I) in the test harness I or I2 to the connector (AB6). <Ref. to AB-15, Airbag Control Module.> 3)Measure the resistance of the connector (3I) in the test harness I or I2. ***Connector & terminal*** ***(3I) No. 1 — No. 3:***	s the resistance between '50Ω and 1 KΩ?	3o to step **2.**	Go to step **3.**
2	**CHECK FRONT SUB-SENSOR (LH) AND FRONT SUB-SENSOR HARNESS (RH).** Measure the resistance between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 1 — Chassis ground:*** ***(3I) No. 3 — Chassis ground:***	s the resistance more than 1 ΛΩ?	Replace the airbag :ontrol module. :Ref. to AB-15, Airbag Control Module.>	Go to step **3.**
3	**CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (LH).** 1)Disconnect the connector (AB13) from the front sub-sensor. <Ref. to AB-18, Front Sub Sensor.> 2)Connect the connector (1H) in the test harness H to the connector (AB13). 3)Measure the resistance between connector (3I) in the test harness I or I2 and connector (3H) in the test harness H. ***Connector & terminal*** ***(3I) No. 3 — (3H) No. 6:*** ***(3I) No. 1 — (3H) No. 5:***	s the resistance less than 10 Ω?	3o to step **4.**	Go to step **5.**
4	**CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (LH).** Measure the resistance between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 3 — Chassis ground:*** ***(3I) No. 1 — Chassis ground:***	s the resistance more than 1 ΛΩ?	3o to step **10.**	Go to step **5.**
5	**CHECK AIRBAG MAIN HARNESS.** 1)Disconnect the connector (AB11) from (AB12), and connect the connector (1F) in the test harness F to (AB11). 2)Measure the resistance between connector (3I) in the test harness I or I2 and connector (3F) in the test harness F. ***Connector & terminal*** ***(3I) No. 3 — (3F) No. 3:*** ***(3I) No. 1 — (3F) No. 4:***	s the resistance less than 10 Ω?	3o to step **6.**	Replace the body harness with air-bag main harness
6	**CHECK AIRBAG MAIN HARNESS.** Measure the resistance between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 3 — Chassis ground:*** ***(3I) No. 1 — Chassis ground:***	s the resistance more than 1 ΛΩ?	3o to step **7.**	Replace the body harness with air-bag main harness

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	Step	Check	Yes	No
7	**CHECK FRONT SUB-SENSOR HARNESS (LH).** 1)Connect the connector (2F) in the test harness F to the connector (AB12). 2)Measure the resistance between connector (3H) in the 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 body harness with front sub-sensor harness (LH).
8	**CHECK FRONT SUB-SENSOR HARNESS (LH).** Measure the resistance between connector (3H) in the test harness H and connector (3F) in the test harness F. ***Connector & terminal*** ***(3F) No. 6 — (3H) No. 6:*** ***(3F) No. 5 — (3H) No. 5:***	Is the resistance more than 1M Ω?	Go to step **9.**	Replace the body harness with front sub-sensor harness (LH).
9	**CHECK FRONT SUB-SENSOR HARNESS (LH).** Measure the resistance between connector (3F) in the 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 MΩ?	Go to step **10.**	Replace the body harness with front sub-sensor harness (LH).
10	**CHECK FRONT SUB-SENSOR (LH).** 1)Connect connector (2H) in the test harness H to the front sub-sensor (LH). 2)Measure the resistance of the connector (3H) in the test harness H. ***Connector & terminal*** ***(3H) No. 3 — No. 4:***	Is the resistance between 750Ω and 1 KΩ?	Go to step **11.**	Replace the front sub-sensor (LH). <Ref. to AB-18, Front Sub Sensor.>
11	**CHECK FRONT SUB-SENSOR (LH).** Measure the resistance between connector (3H) in the 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 MΩ?	Finish the diagnosis.	Replace the front sub-sensor (LH). <Ref. to AB-18, Front Sub Sensor.>

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L: TROUBLE CODE 41

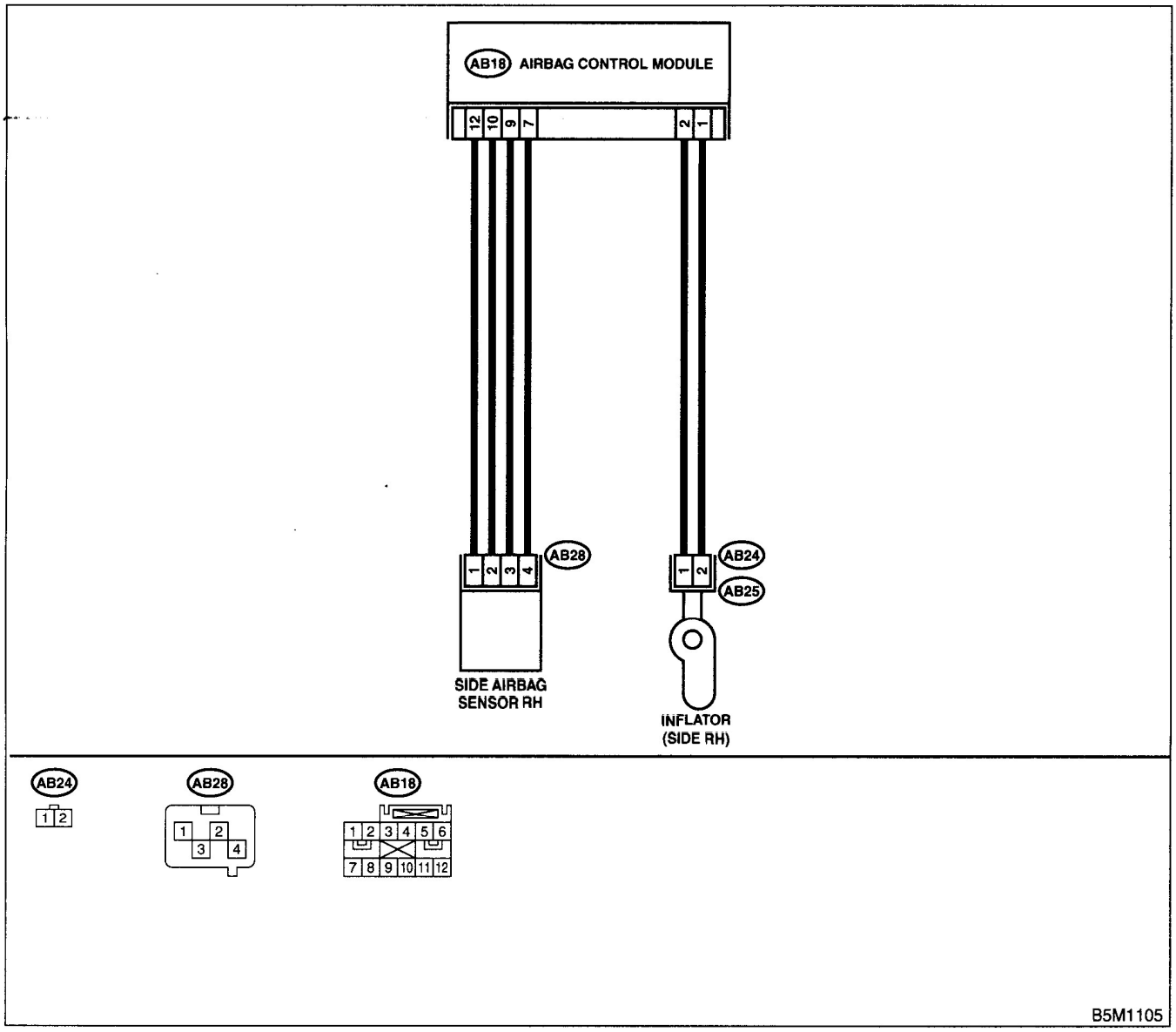
DIAGNOSIS:

- 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 OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK SIDE AIRBAG MODULE.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB26) from the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.> 3)Disconnect the connector (AB25) from (AB24), and connect the connector (1F) in the test harness F to (AB24). 4)Connect the airbag resistor to the connector (3F) in the test harness F. 5)Connect the battery ground terminal, and turn the ignition switch 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 OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the airbag resistor from the test harness F. 3)Disconnect the connector (AB18) from the air bag control module. <Ref. to AB-15, Airbag Control Module.> 4)Connect the connector (1I) in the test harness I or I2 to the connector (AB18). 5)Measure the resistance between connector (3I) in the test harness I or I2 and connector (3F) in the test harness F. ***Connector & terminal*** ***(3I) No. 7 — (3F) No. 4:*** ***(3I) No. 9 — (3F) No. 3:***	Is the resistance less than 10 Ω?	Go to step **3.**	Replace the body harness with side airbag harness.
3	**CHECK SIDE AIRBAG HARNESS (RH).** Measure the resistance of the connector (3I) in the test harness I or I2. ***Connector & terminal*** ***(3I) No. 7 — No. 9:***	Is the resistance more than 1 MΩ?	Go to step **4.**	Replace the body harness with side airbag harness.
4	**CHECK SIDE AIRBAG HARNESS (RH).** Measure the resistance of the connector (3F) in the test harness F. ***Connector & terminal*** ***(3F) No. 3 — No. 4:***	Is the resistance more 1MΩ?	Go to step **5.**	Replace the body harness with side airbag harness.
5	**CHECK SIDE AIRBAG HARNESS (RH).** Measure the resistance between connector (3F) in the 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 MΩ?	Go to step **6.**	Replace the body harness with side airbag harness.
6	**CHECK SIDE AIRBAG HARNESS (RH).** Measure the resistance between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 7 — Chassis ground:*** ***(3I) No. 9 — Chassis ground:***	Is the resistance more than 1 MΩ?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with side airbag harness.

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M: TROUBLE CODE 42

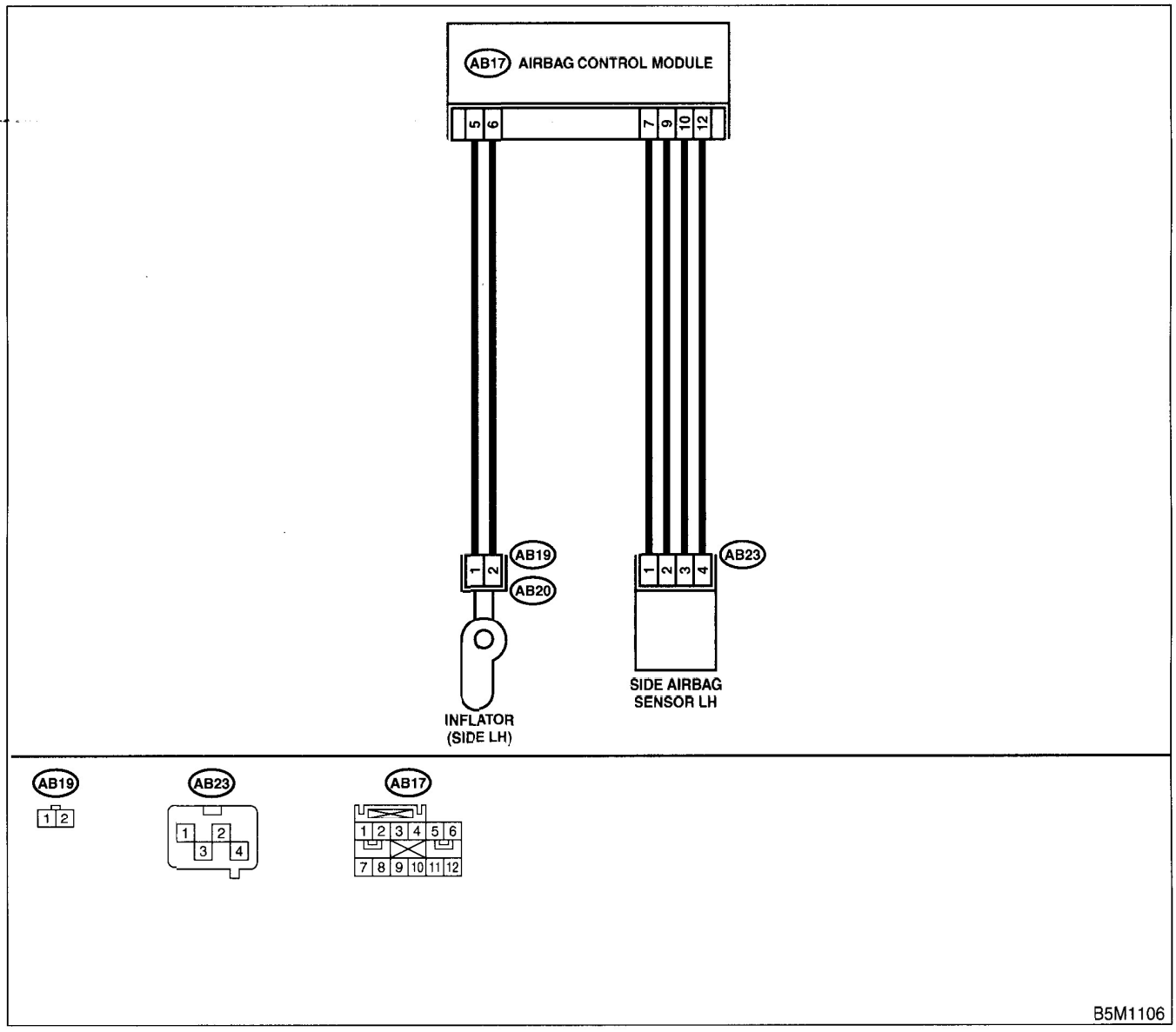
DIAGNOSIS:

- 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 OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK SIDE AIRBAG MODULE.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB21) from the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.> 3)Disconnect the connector (AB20) from (AB19), and connect the connector (1F) in the test harness F to (AB19). 4)Connect the airbag resistor to the connector (3F) in the test harness F. 5)Connect the battery ground terminal, and turn the ignition switch 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 OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the airbag resistor from the test harness F. 3)Disconnect the connector (AB17) from the airbag control module. <Ref. to AB-15, Airbag Control Module.> 4)Connect the connector (1I) in the test harness I or I2 to the connector (AB17). 5)Measure the resistance between connector (3I) in the test harness I or I2 and connector (3F) in the test harness F. ***Connector & terminal*** ***(3I) No. 10 — (3F) No. 3:*** ***(3I) No. 12 — (3F) No. 4:***	Is the resistance less than 10 Ω?	Go to step **3.**	Replace the body harness with side airbag harness.
3	**CHECK SIDE AIRBAG HARNESS (LH).** Measure the resistance of the connector (3I) in the test harness I or I2. ***Connector & terminal*** ***(3I) No. 10 — No. 12:***	Is the resistance more than 1 MΩ?	Go to step **4.**	Replace the body harness with side airbag harness.
4	**CHECK SIDE AIRBAG HARNESS (LH).** Measure the resistance of the connector (3F) in the test harness F. ***Connector & terminal*** ***(3F) No. 3 — No. 4:***	Is the resistance more than 1 MΩ?	Go to step **5.**	Replace the body harness with side airbag harness.
5	**CHECK SIDE AIRBAG HARNESS (LH).** Measure the resistance between connector (3F) in the 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 MΩ?	Go to step **6.**	Replace the body harness with side airbag harness.
6	**CHECK SIDE AIRBAG HARNESS (LH).** Measure the resistance between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 10 — Chassis ground:*** ***(3I) No. 12 — Chassis ground:***	Is the resistance more than 1 MΩ?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with side airbag harness.

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N: TROUBLE CODE 45

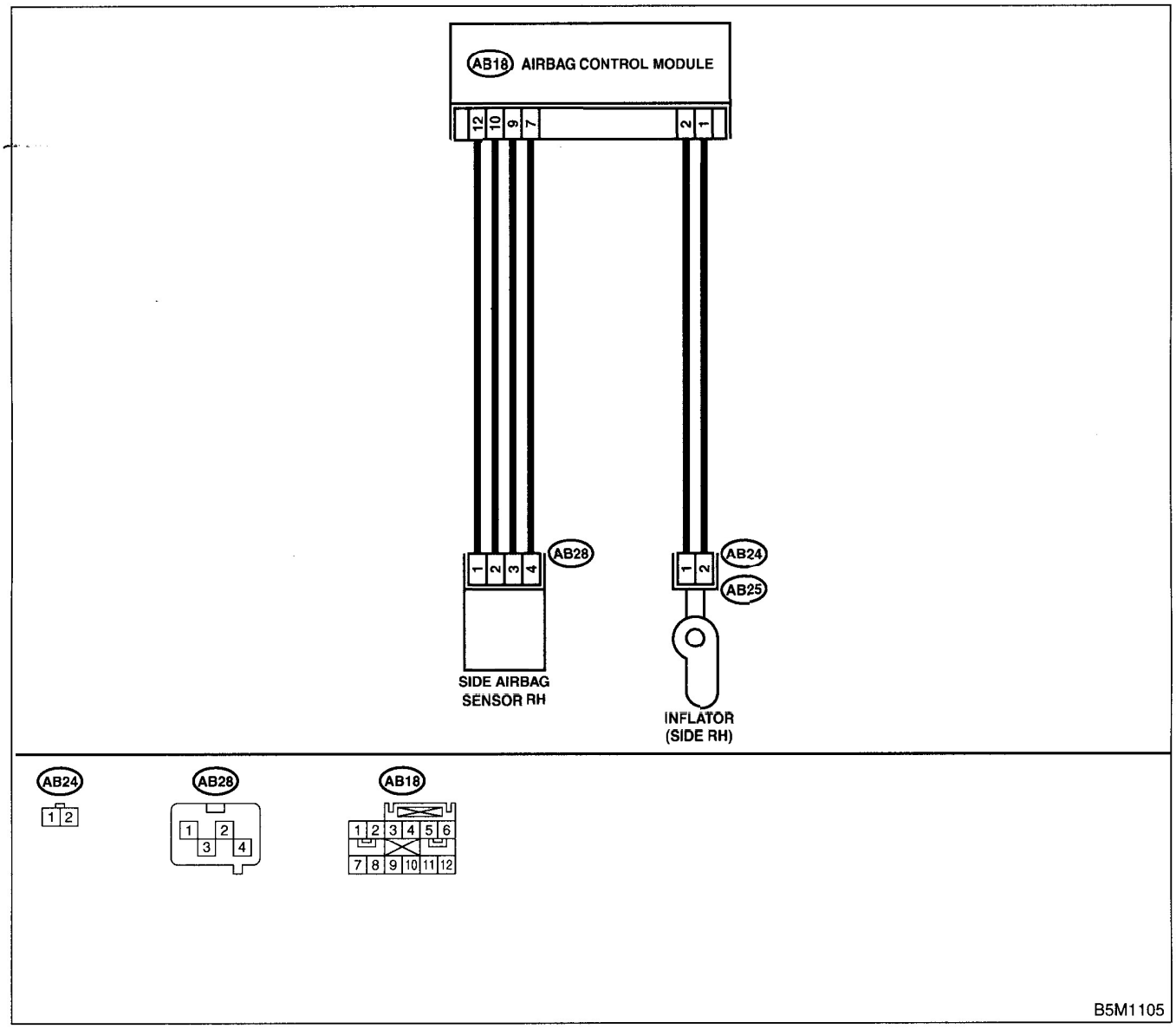
DIAGNOSIS:

- 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 OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK SIDE AIRBAG MODULE.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB26) from the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.> 3)Disconnect the connector (AB25) from (AB24), and connect the connector (1F) in the test harness F to (AB24). 4)Connect the airbag resistor to the connector (3F) in the test harness F. 5)Connect the battery ground terminal, and turn the ignition switch 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 OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the airbag resistor from the test harness F. 3)Disconnect the connector (AB18) from the airbag control module. <Ref. to AB-15, Airbag Control Module.> 4)Connect the connector (1I) in the test harness I or I2 to the connector (AB18). 5)Connect the battery ground terminal, and turn the ignition switch ON. 6)Measure the voltage between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 7 (+) — Chassis ground (–):*** ***(3I) No. 9 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with side airbag harness.

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O: TROUBLE CODE 46

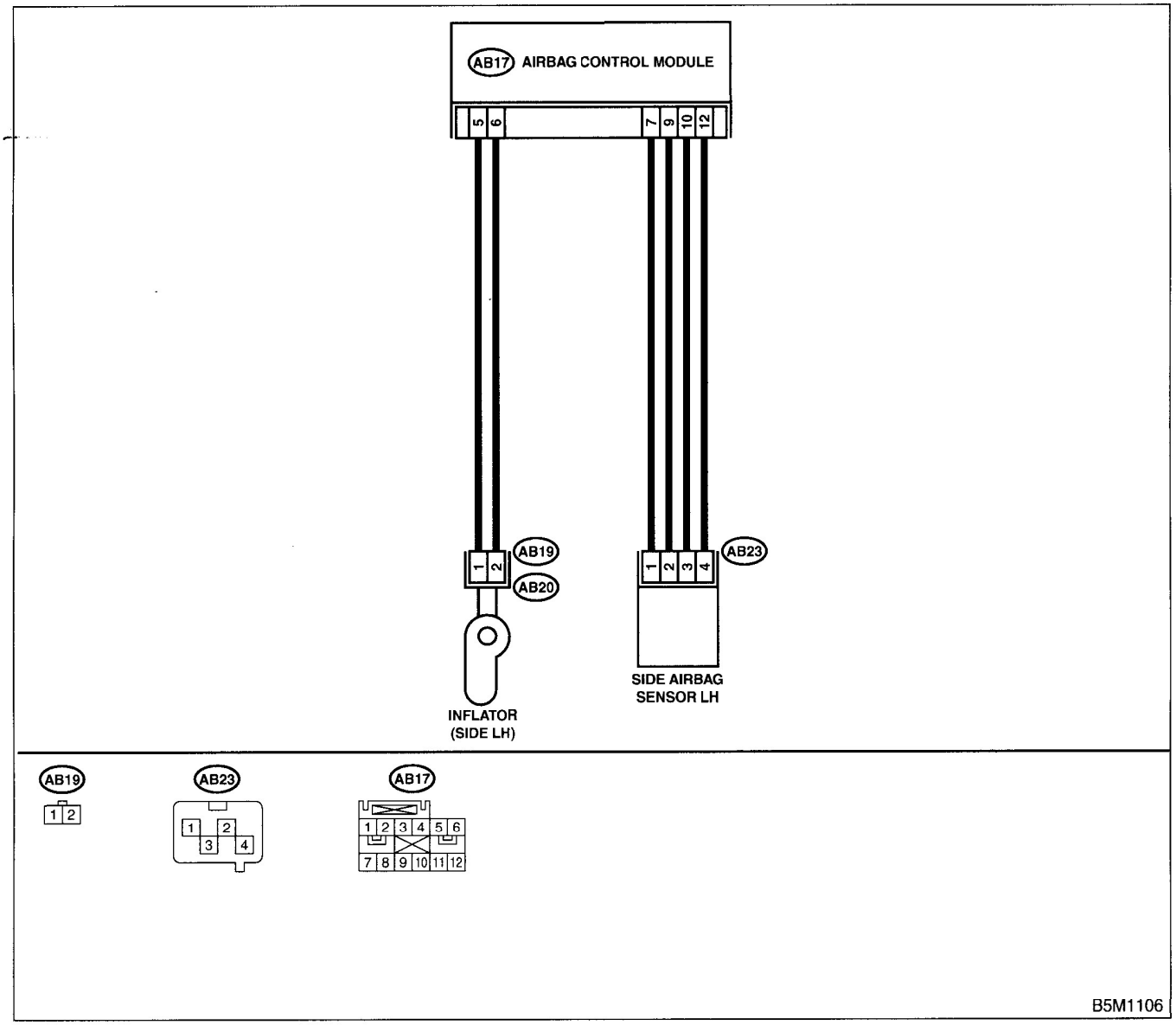
DIAGNOSIS:

- 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 OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK SIDE AIRBAG MODULE.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB21) from the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.> 3)Disconnect the connector (AB20) from (AB19), and connect the connector (1F) in the test harness F to (AB19). 4)Connect the airbag resistor to the connector (3F) in the test harness F. 5)Connect the battery ground terminal and turn the ignition switch 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 OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the airbag resistor from the test harness F. 3)Disconnect the connector (AB17) from the airbag control module. <Ref. to AB-15, Airbag Control Module.> 4)Connect the connector (1I) in the test harness I or I2 to the connector (AB17). 5)Connect the battery ground terminal, and turn the ignition switch ON. 6)Measure the voltage between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 10 (+) — Chassis ground (–):*** ***(3I) No. 12 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with side airbag harness.

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P: TROUBLE CODE 51

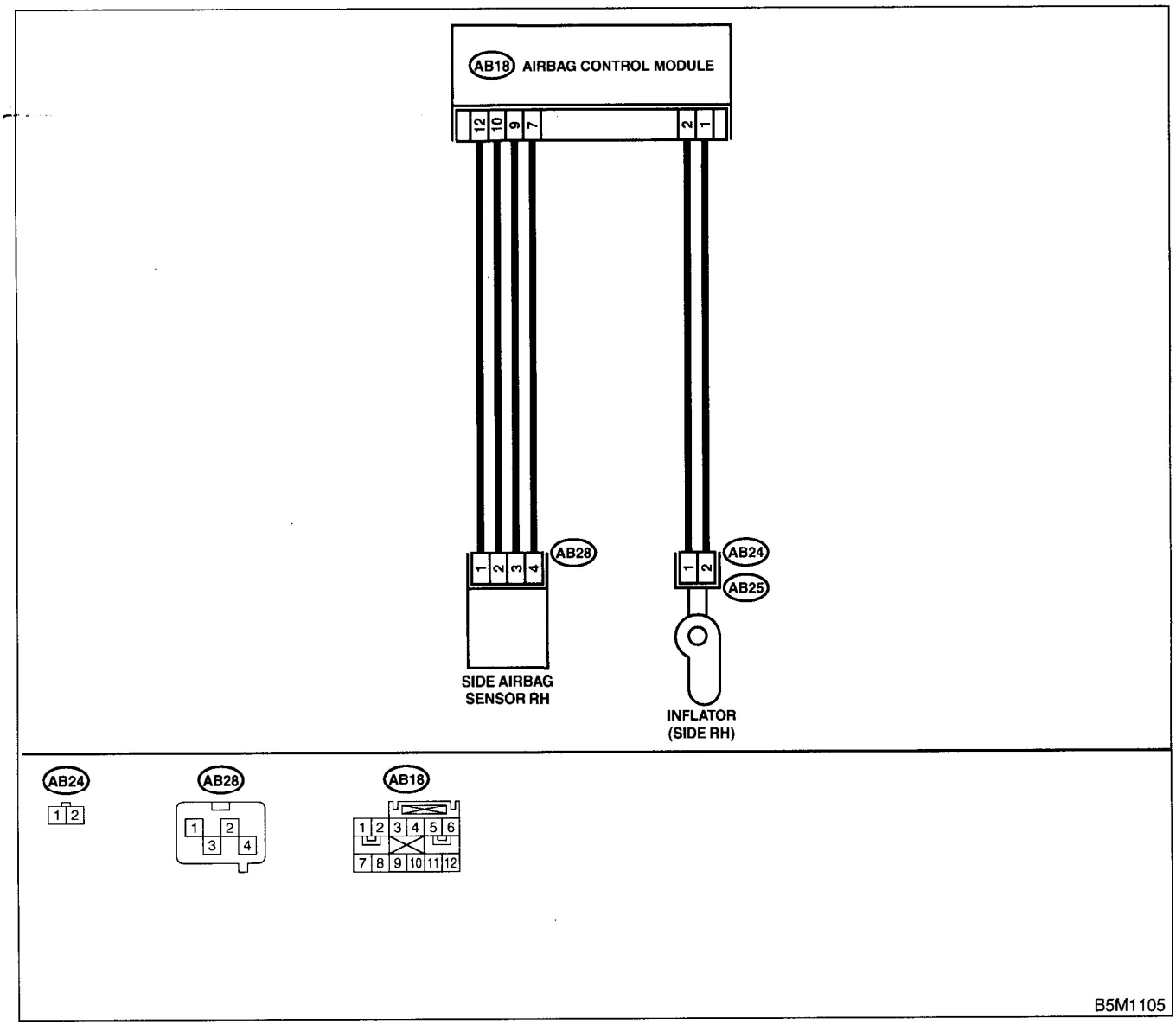
DIAGNOSIS:

- 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 OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK SIDE AIRBAG HARNESS (RH).** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB26) from the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.> 3)Disconnect the connector (AB25) from (AB24). 4)Disconnect the connector (AB18) from the airbag control module. <Ref. to AB-15, Airbag Control Module.> 5)Connect the connector (1I) in the test harness I or I2 to the connector (AB18). 6)Disconnect the connector (AB28) from the side airbag sensor (RH), and connect the connector (1G) in the test harness G to the connector (AB28). 7)Measure the resistance between connector (3I) in the test harness I or I2 and connector (3G) in the test harness G. ***Connector & terminal*** ***(3I) No. 17 — (3G) No. 2:*** ***(3I) No. 18 — (3G) No. 1:*** ***(3I) No. 19 — (3G) No. 5:*** ***(3I) No. 20 — (3G) No. 4:***	Is the resistance less than 10 Ω?	Go to step **2.**	Replace the body harness with side airbag harness.
2	**CHECK SIDE AIRBAG HARNESS (RH).** Measure the resistance between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 17 — Chassis ground:*** ***(3I) No. 18 — Chassis ground:*** ***(3I) No. 19 — Chassis ground:*** ***(3I) No. 20 — Chassis ground:***	Is the resistance more than 1 MΩ?	Replace the side airbag sensor (RH). <Ref. to AB-16, Side Airbag Sensor.> When the sensor replacement is not OK, replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with side airbag harness.

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Q: TROUBLE CODE 52

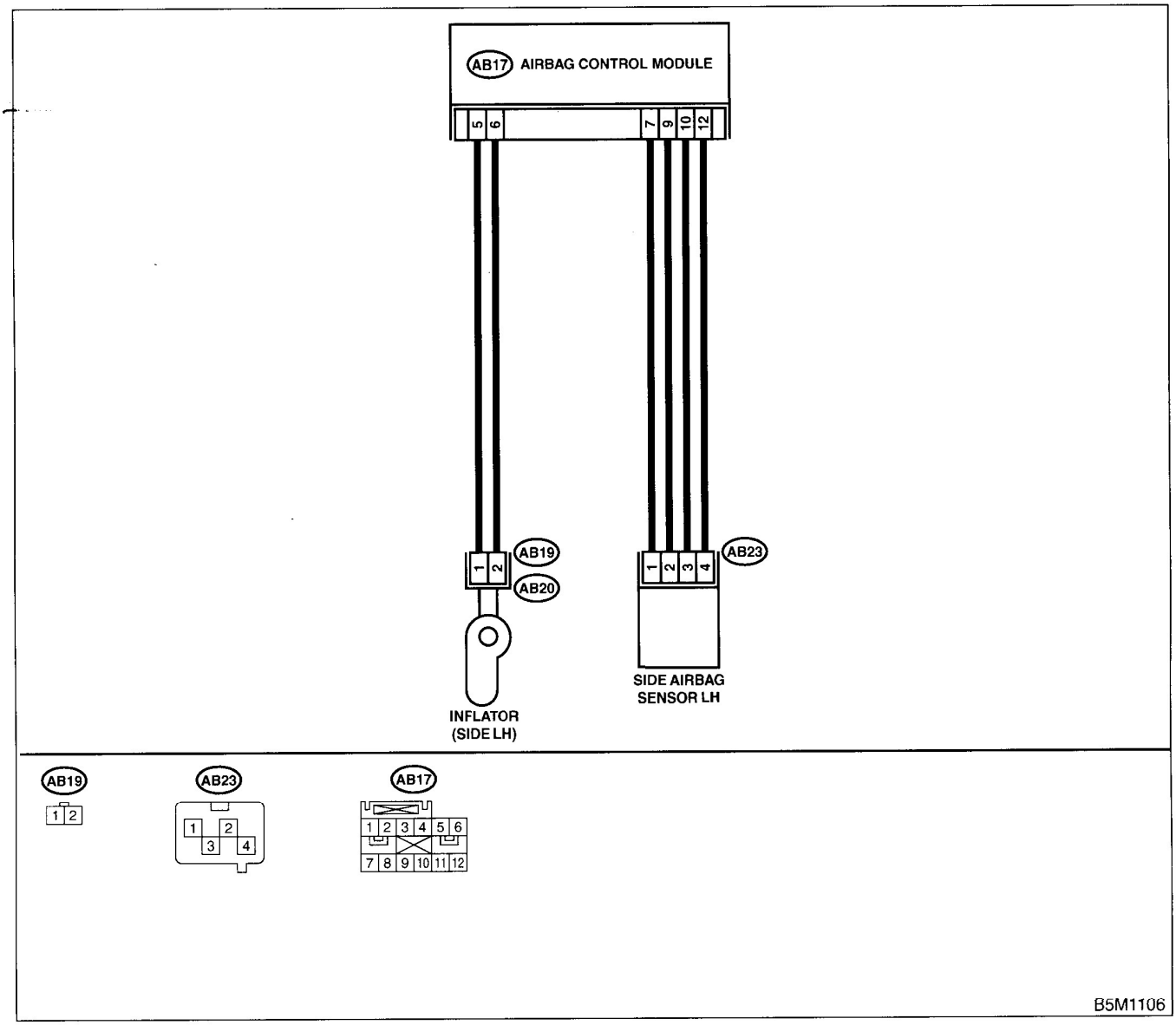
DIAGNOSIS:

- 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 OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK SIDE AIRBAG HARNESS (LH).** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB21) from the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.> 3)Disconnect the connector (AB20) from (AB19). 4)Disconnect the connector (AB17) from the airbag control module. <Ref. to AB-15, Airbag Control Module.> 5)Connect the connector (1I) in the test harness I or I2 to the connector (AB17). 6)Disconnect the connector (AB23) from the side airbag sensor (LH), and connect the connector (1G) in the test harness G to the connector (AB23). 7)Measure the resistance between connector (3I) in the test harness I or I2 and connector (3G) in the test harness G. ***Connector & terminal*** ***(3I) No. 5 — (3G) No. 4:*** ***(3I) No. 14 — (3G) No. 5:*** ***(3I) No. 15 — (3G) No. 1:*** ***(3I) No. 16 — (3G) No. 2:***	Is the resistance less than 10 Ω?	Go to step **2.**	Replace the body harness with side airbag harness.
2	**CHECK SIDE AIRBAG HARNESS (RH).** Measure the resistance between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 5 — Chassis ground:*** ***(3I) No. 14 — Chassis ground:*** ***(3I) No. 15 — Chassis ground:*** ***(3I) No. 16 — Chassis ground:***	Is the resistance more than 1 MΩ?	Replace the side airbag sensor (LH). <Ref. to AB-16, Side Airbag Sensor.> When the sensor replacement is not OK, replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with side airbag harness.

R: TROUBLE CODE 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-16, Side Airbag Sensor.>

S: TROUBLE CODE 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-16, Side Airbag Sensor.>

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T: TROUBLE CODE 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-15, Airbag Control Module.>
- Front seat assembly with side airbag module. (Operating side) <Ref. to SE-6, Front Seat.>
- Side airbag sensor. (Operating side) <Ref. to AB-16, Side Airbag Sensor.>

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U: TROUBLE CODE 61

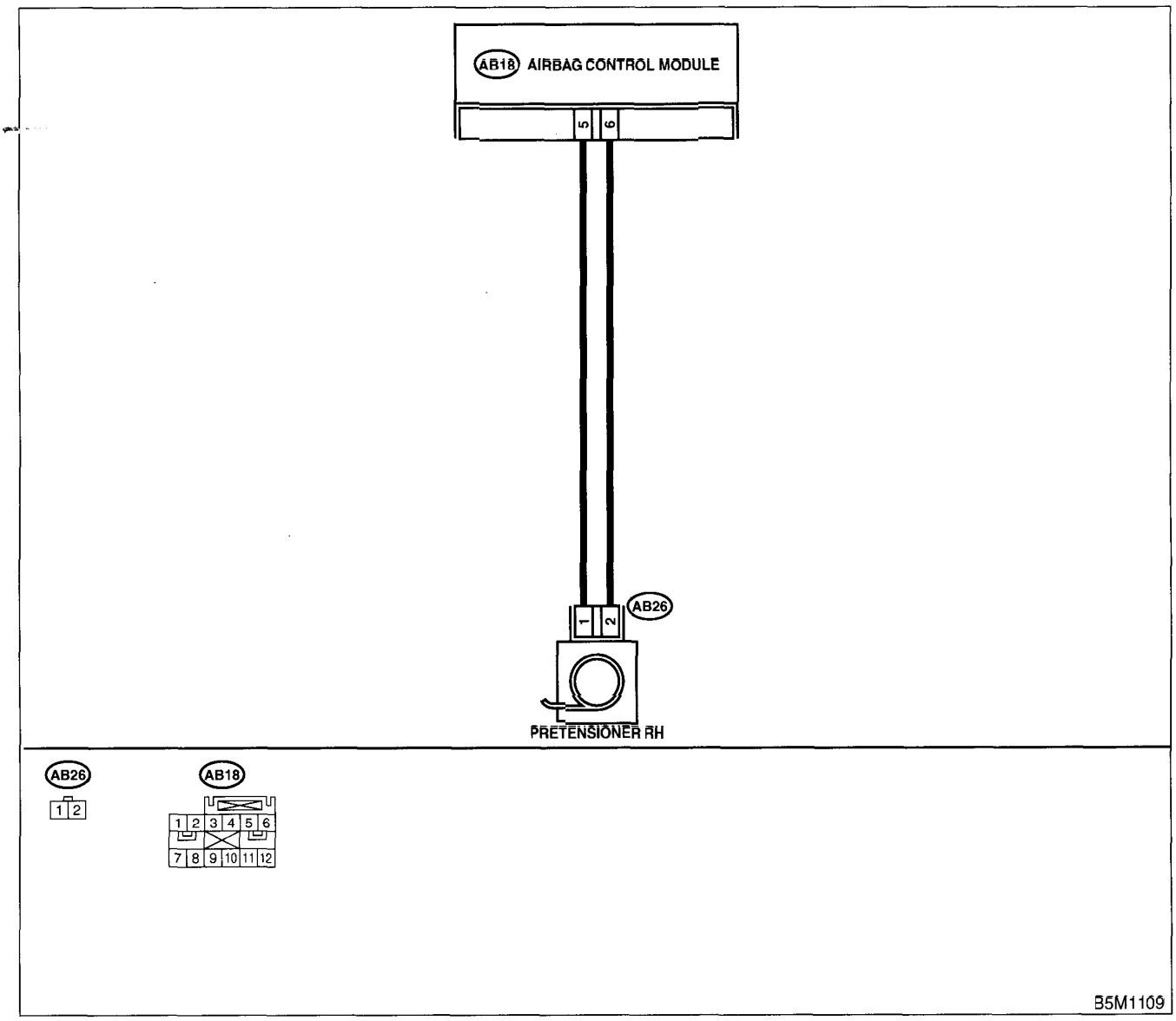
DIAGNOSIS:

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

CAUTION:

- **Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK SEAT BELT PRETENSIONER.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB26) from the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.> 3)Connect the connector (1L) in the test harness L to (AB26). 4)Connect the airbag resistor to the connector (3L) in the test harness L. 5)Connect the battery ground terminal and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.>	Go to step **2.**
2	**CHECK SIDE AIRBAG HARNESS (RH).** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the airbag resistor from the test harness L. 3)Disconnect the connector (AB25) from (AB24). 4)Disconnect the connectors (AB17) and (AB18) from the airbag control module. <Ref. to AB-15, Airbag Control Module.> 5)Connect the connector (1I) in the test harness I or I2 to the connector (AB18). 6)Measure the resistance between connector (3I) in the test harness I or I2 and connector (3L) in the test harness L. ***Connector & terminal*** ***(3I) No. 8 — (3L) No. 6:*** ***(3I) No. 6 — (3L) No. 5:***	Is the resistance less than 10 Ω?	Go to step **3.**	Replace the body harness with side airbag harness.
3	**CHECK SIDE AIRBAG HARNESS (RH).** Measure the resistance of the connector (3I) in the test harness I or I2. ***Connector & terminal*** ***(3I) No. 6 — No. 8:***	Is the resistance more than 1 MΩ?	Go to step **4.**	Replace the body harness with side airbag harness.
4	**CHECK SIDE AIRBAG HARNESS (RH).** Measure the resistance between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 6 — Chassis ground:*** ***(3I) No. 8 — Chassis ground:***	Is the resistance more than 1 MΩ?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with side airbag harness.

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V: TROUBLE CODE 62

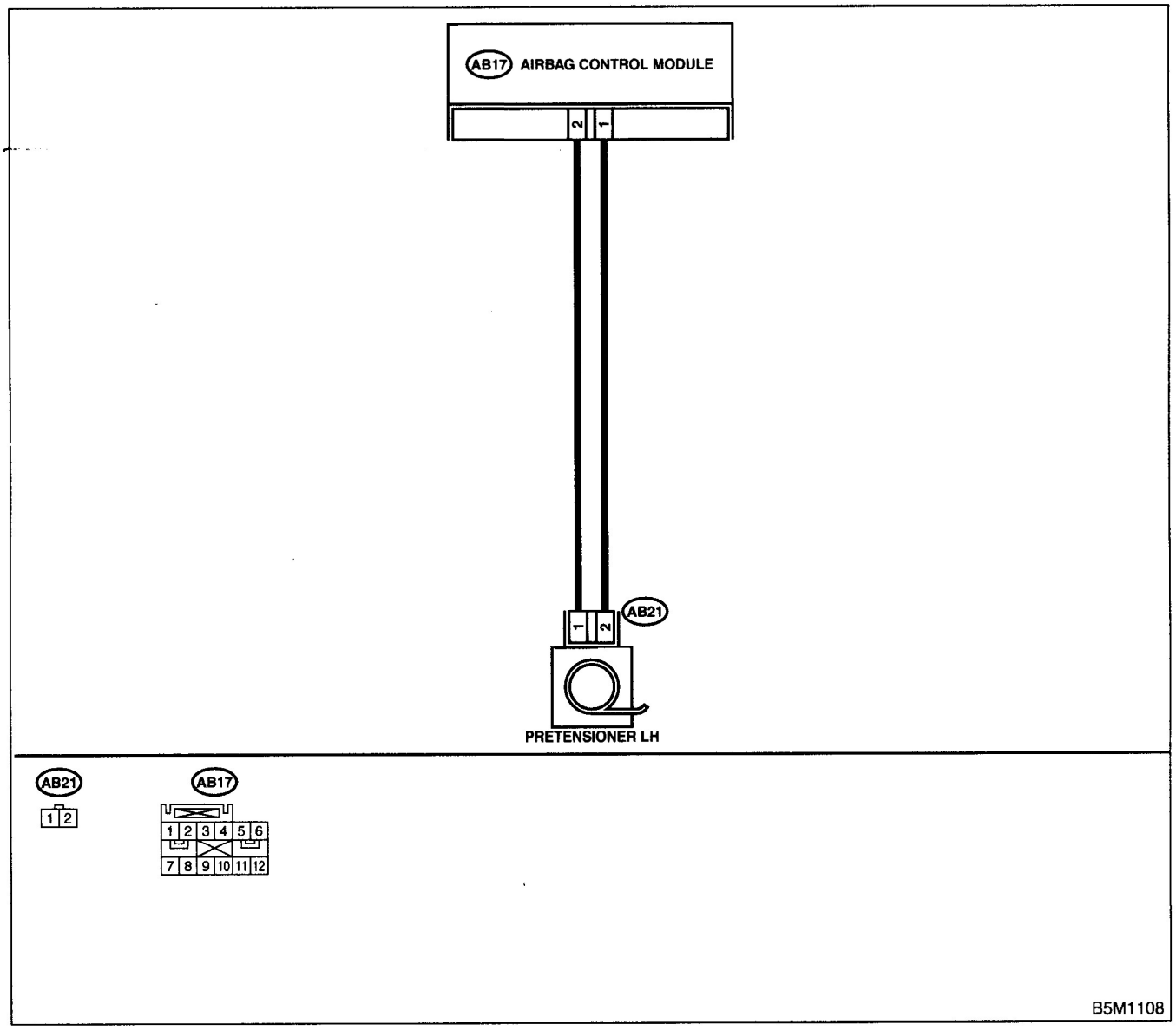
DIAGNOSIS:

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

CAUTION:

- **Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
	CHECK SEAT BELT PRETENSIONER. 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB21) from the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.> 3)Connect the connector (1L) in the test harness L to (AB21). 4)Connect the airbag resistor to the connector (3L) in the test harness L. 5)Connect the battery ground terminal and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.>	Go to step **2.**
	CHECK SIDE AIRBAG HARNESS (LH). 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the airbag resistor from the test harness L. 3)Disconnect the connector (AB20) from (AB19). 4)Disconnect the connectors (AB17) and (AB18) from the airbag control module. <Ref. to AB-15, Airbag Control Module.> 5)Connect the connector (1I) in the test harness I or I2 to the connector (AB17). 6)Measure the resistance between connector (3I) in the test harness I or I2 and the connector (3L) in the test harness L. ***Connector & terminal*** ***(3I) No. 11 — (3L) No. 6:*** ***(3I) No. 13 — (3L) No. 5:***	Is the resistance less than 10 Ω?	Go to step **3.**	Replace the body harness with side airbag harness.
	CHECK SIDE AIRBAG HARNESS (LH). Measure the resistance of the connector (3I) in the test harness I or I2. ***Connector & terminal*** ***(3I) No. 11 — No. 13:***	Is the resistance more than 1 MΩ?	Go to step **4.**	Replace the body harness with side airbag harness.
	CHECK SIDE AIRBAG HARNESS (LH). Measure the resistance between the connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 11 — Chassis ground:*** ***(3I) No. 13 — Chassis ground:***	Is the resistance more than 1 MΩ?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with side airbag harness.

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W: TROUBLE CODE 65

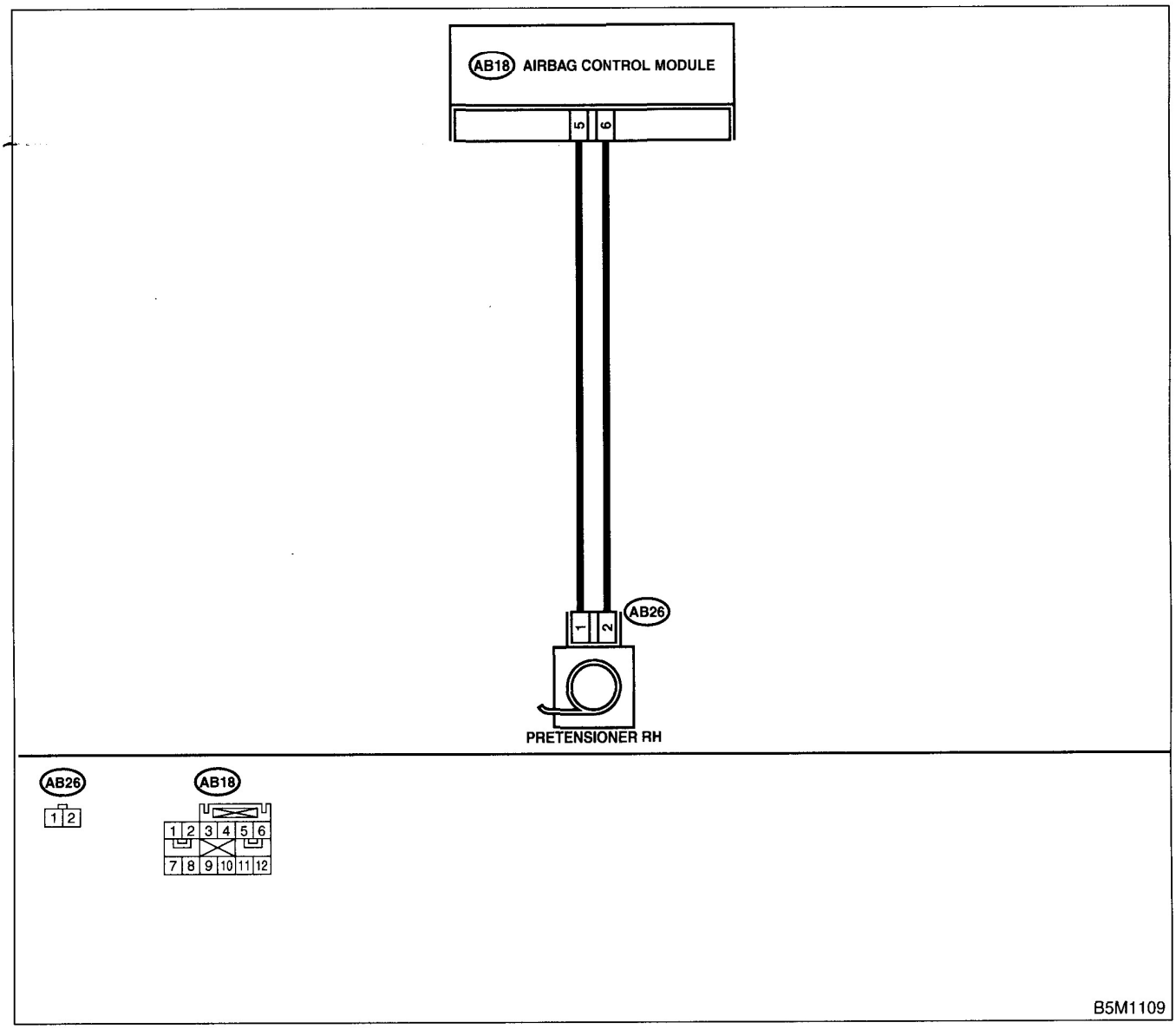
DIAGNOSIS:

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

CAUTION:

- **Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK SEAT BELT PRETENSIONER.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB26) from the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.> 3)Connect the connector (1L) in the test harness L to (AB26). 4)Connect the airbag resistor to the connector (3L) in the test harness L. 5)Connect the battery ground terminal, and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.>	Go to step **2.**
2	**CHECK SIDE AIRBAG HARNESS (RH).** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the airbag resistor from the test harness L. 3)Disconnect the connector (AB25) from (AB24). 4)Disconnect the connectors (AB17) and (AB18) from the airbag control module. <Ref. to AB-15, Airbag Control Module.> 5)Connect the connector (1I) in the test harness I or I2 to the connector (AB18). 6)Connect the battery ground cable and turn the ignition switch ON. 7)Measure the voltage between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 6 (+) — Chassis ground (–):*** ***(3I) No. 8 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with side airbag harness.

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X: TROUBLE CODE 66

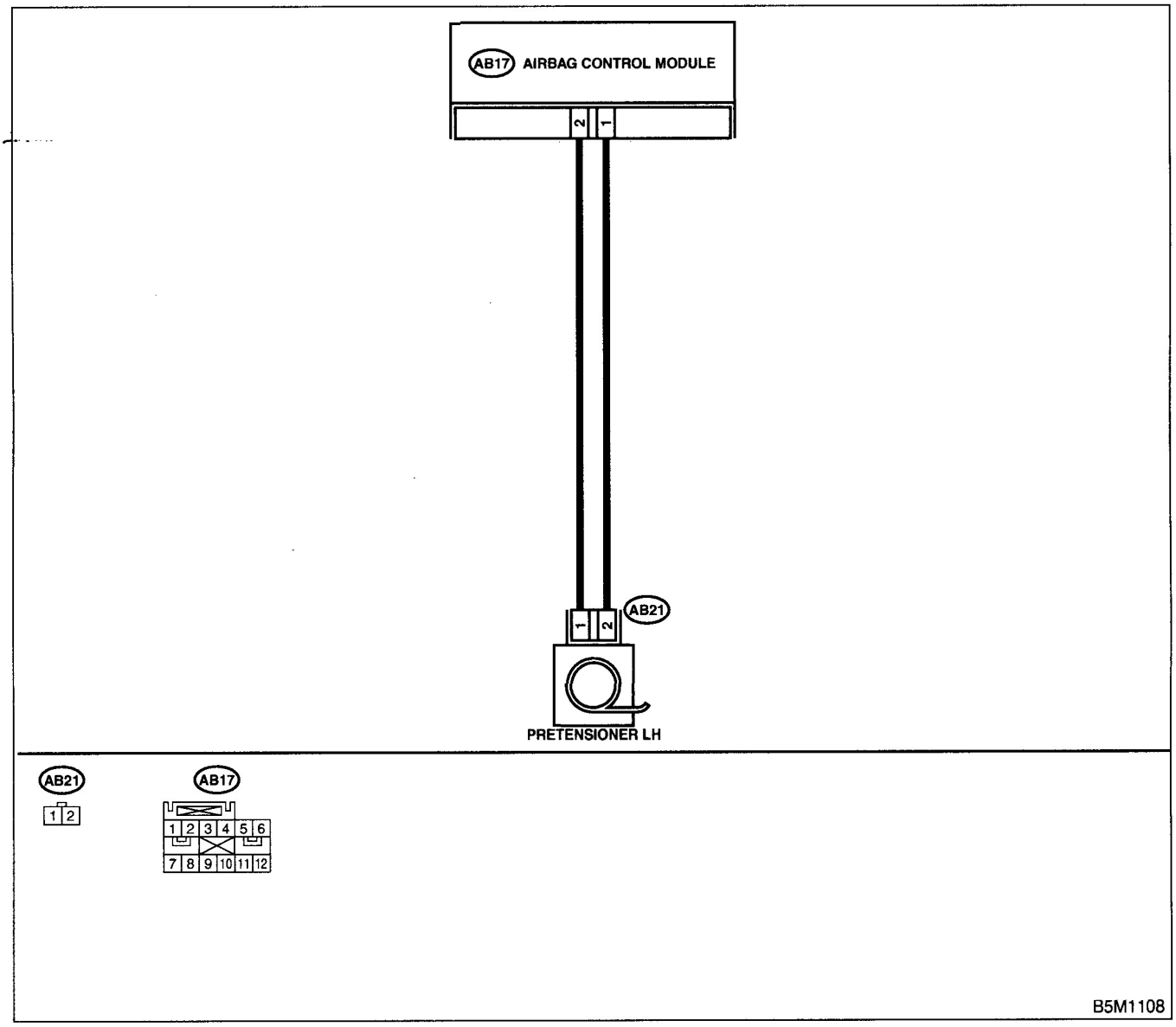
DIAGNOSIS:

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

CAUTION:

- **Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground terminal from the 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:



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	Step	Check	Yes	No
1	**CHECK SEAT BELT PRETENSIONER.** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the connector (AB21) from the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.> 3)Connect the connector (1L) in the test harness L to (AB21). 4)Connect the airbag resistor to the connector (3L) in the test harness L. 5)Connect the battery ground terminal and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the seat belt pre-tensioner (LH). <Ref. to SB-8, Front Seat Belt.>	Go to step **2.**
2	**CHECK SIDE AIRBAG HARNESS (LH).** 1)Turn the ignition switch OFF, disconnect the battery ground terminal, and wait more than 20 seconds. 2)Disconnect the airbag resistor from the test harness L. 3)Disconnect the connector (AB20) from (AB19). 4)Disconnect the connectors (AB17) and (AB18) from the airbag control module. <Ref. to AB-15, Airbag Control Module.> 5)Connect the connector (1I) in the test harness I or I2 to the connector (AB17). 6)Connect the battery ground terminal and turn the ignition switch ON. 7)Measure the voltage between connector (3I) in the test harness I or I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 11 (+) — Chassis ground (–):*** ***(3I) No. 13 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Replace the airbag control module. <Ref. to AB-15, Airbag Control Module.>	Replace the body harness with side airbag harness.

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SEAT BELT SYSTEM

SB

Page

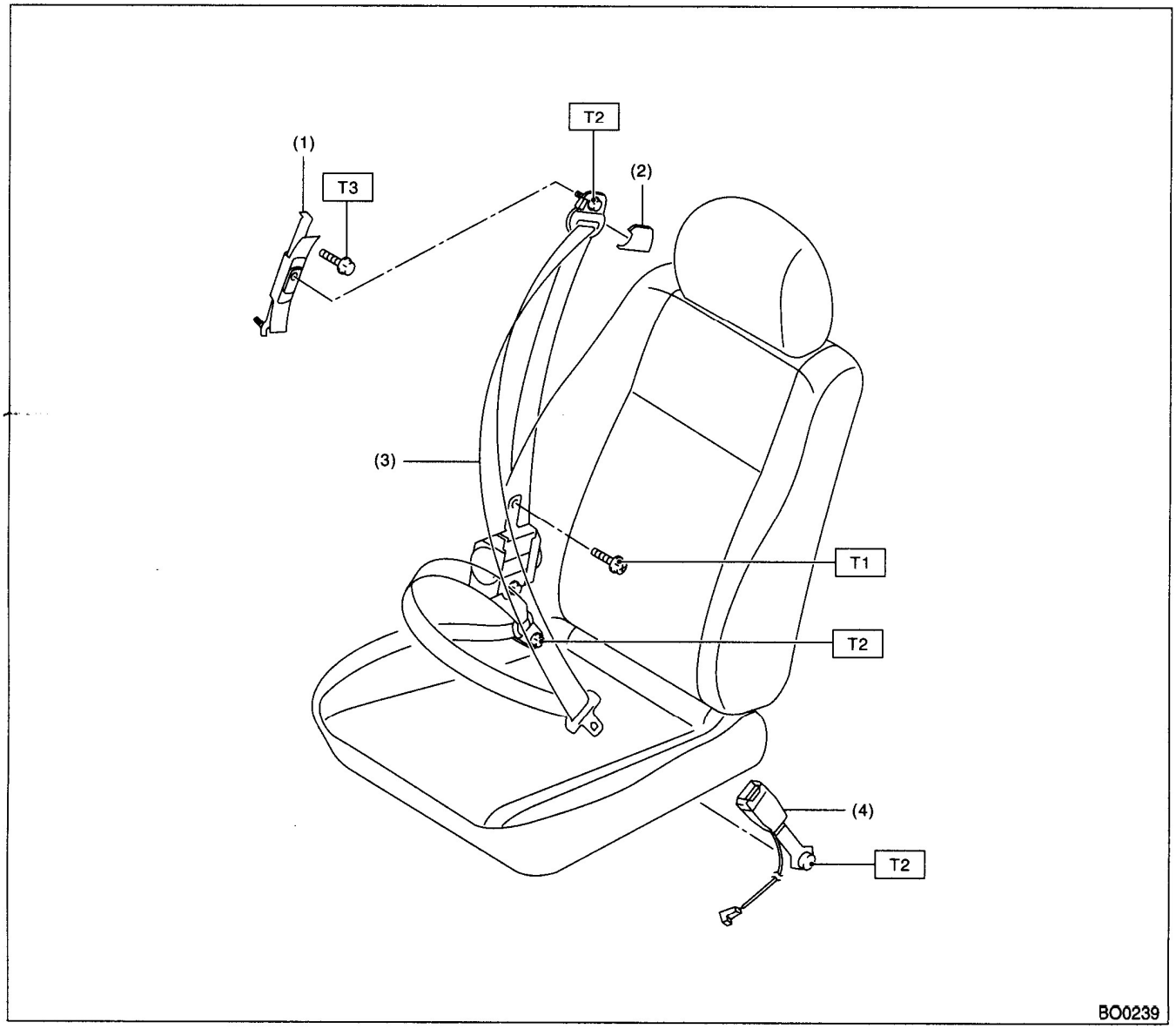
1. General Description 2
2. Pretensioner Connector 6
3. Inspection Locations After a Collision 7
4. Front Seat Belt 8
5. Rear Seat Belt 10

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1. General Description

A: COMPONENT

1. FRONT SEAT BELT

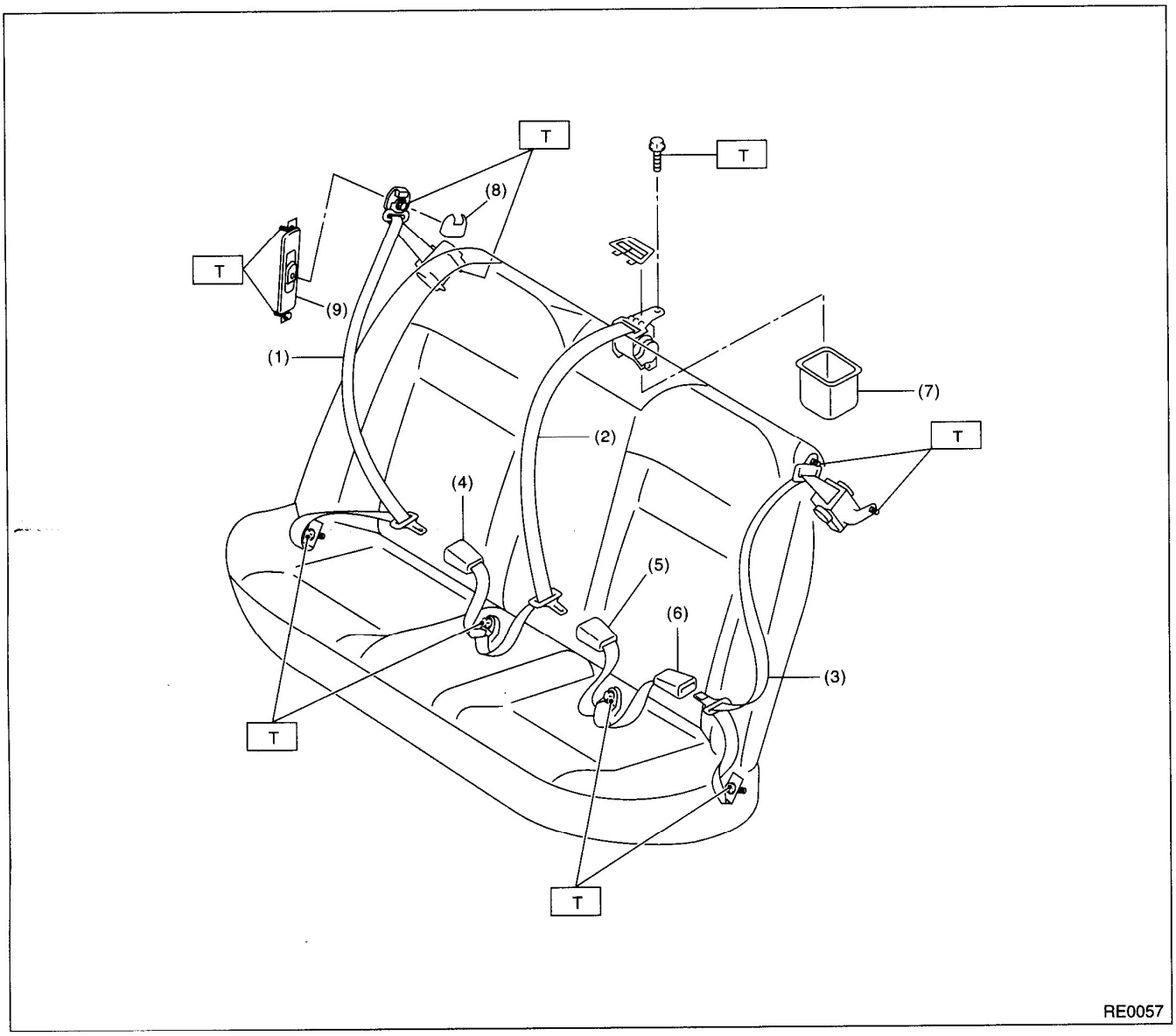


(1) Adjuster anchor ASSY
(2) Anchor cover
(3) Outer belt ASSY
(4) Inner belt ASSY

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)

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2. REAR SEAT BELT (SEDAN)

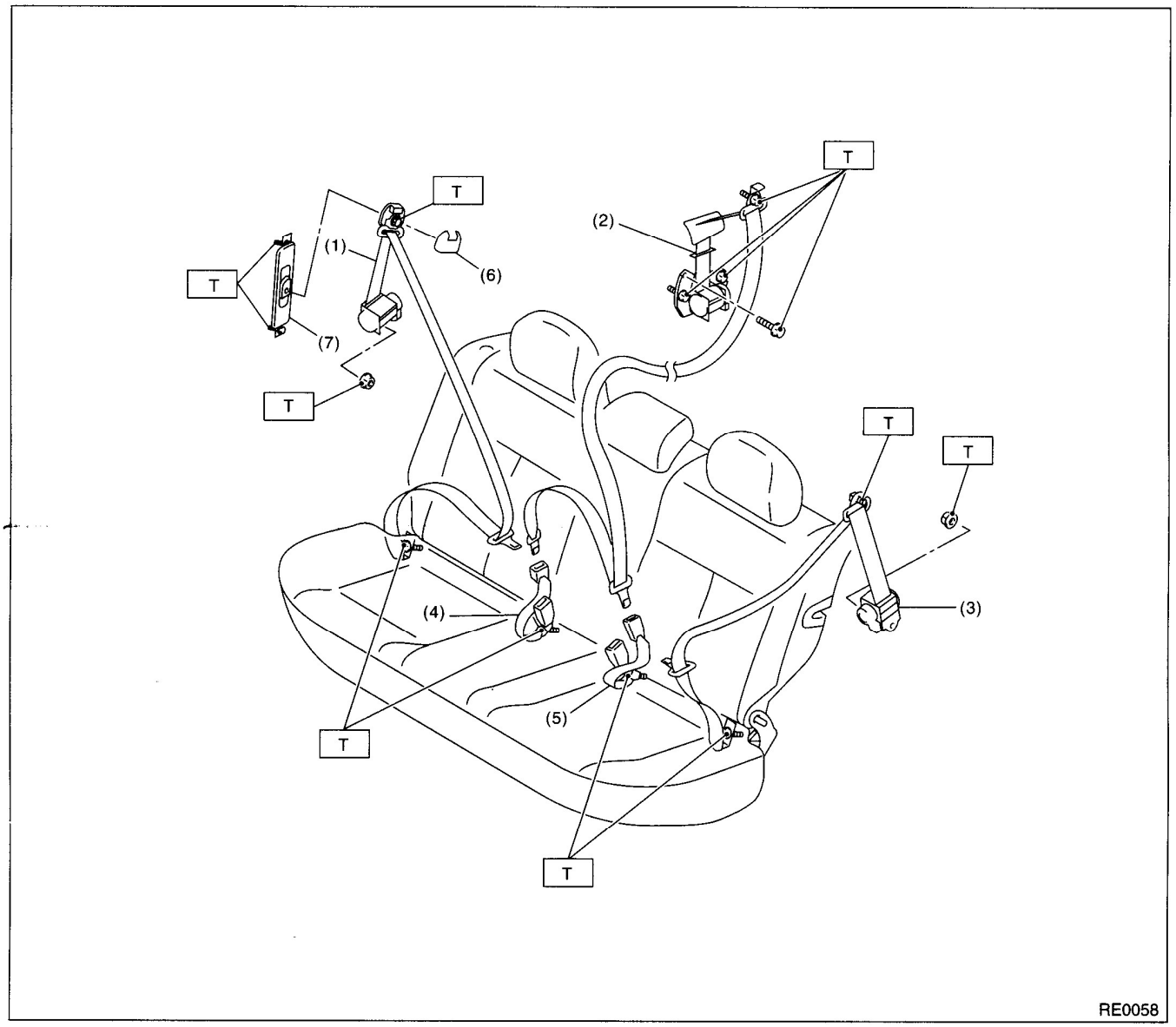


(1) Outer seat belt RH
(2) Outer seat belt CENTER
(3) Outer seat belt LH
(4) Inner seat belt RH
(5) Inner seat belt CENTER
(6) Inner seat belt LH
(7) Case center ELR
(8) Anchor cover
(9) Adjustable anchor ASSY

Tightening torque: N·m (kgf-m, ft-lb)
T: 30 (3.1, 22)

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3. REAR SEAT BELT (WAGON)



(1) Outer seat belt RH
(2) Outer seat belt CENTER
(3) Outer seat belt LH
(4) Inner seat belt RH
(5) Inner seat belt LH
(6) Anchor cover
(7) Adjustable anchor ASSY

Tightening torque: N·m (kgf-m, ft-lb)
T: 30 (3.1, 22)

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B: CAUTION

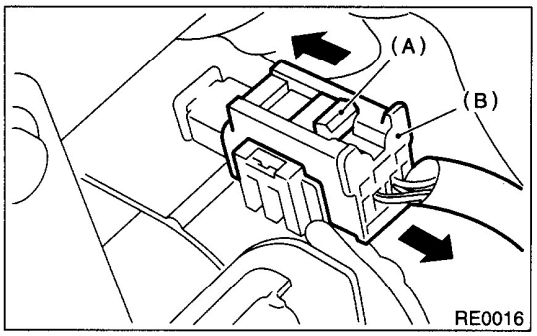
- Before starting, turn the ignition switch OFF, disconnect the battery ground cable and wait for 20 seconds or more.
- The pretension system has a backup power source. The pretensioner might deploy if you do not wait for 20 seconds or more before starting work.
- Do not drop or apply any impact to the 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 the parts with new parts.
- When handling a seat belt with a deployed pretensioner, wear gloves and goggles. Wash your hands afterwards.
- Do not re-use a seat belt with a deployed pretensioner again.
- If the material gets in your eyes or on your skin during deployment, wash it away with clean water, and then consult a doctor.

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2. Pretensioner Connector

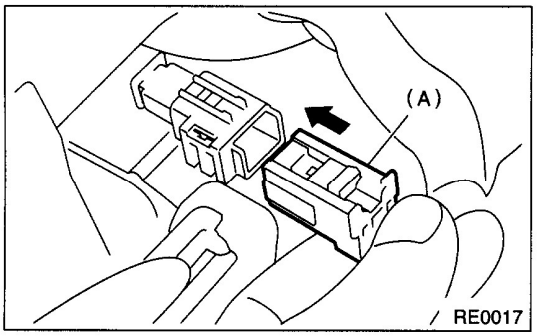
A: OPERATION

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



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

2) How to connect:
Holding 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.**

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3. Inspection Locations After a Collision

A: INSPECTION

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

- Center pillar lower garnish is discolored or cracked.
- Wire harness and/or connector is damaged.

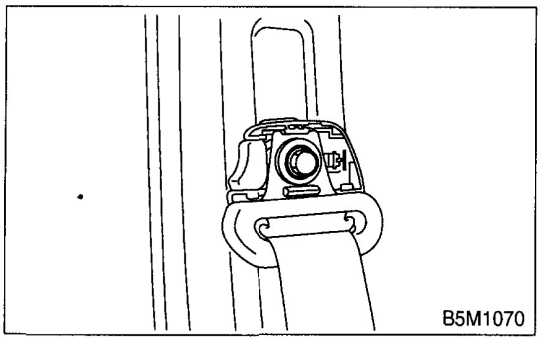
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4. Front Seat Belt

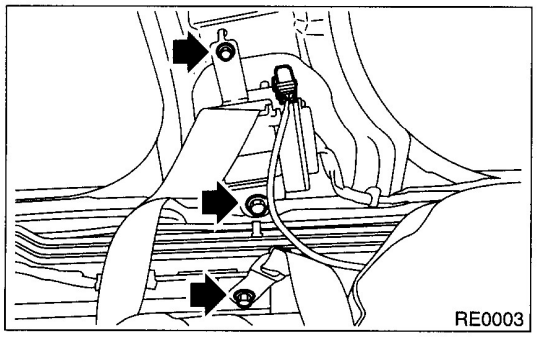
A: REMOVAL

1. OUTER BELT (FRONT)

1) Fold backrest all the way forward, and then move the front seat all the way forward.
2) Turn the ignition switch 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-46, REMOVAL, Lower Inner Trim.>
4) Remove the anchor cover. Loosen the shoulder anchor bolt, and then detach the shoulder anchor from center pillar.


B5M1070

5) Turn over the floor mat to remove the bolts.

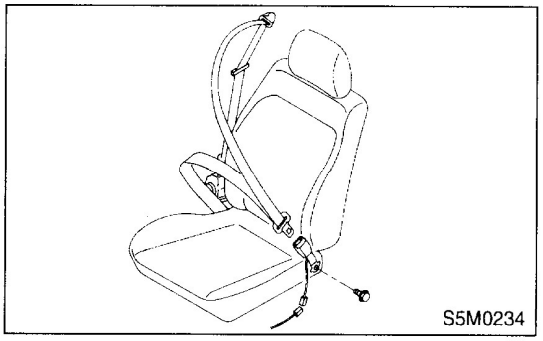

RE0003

6) Disconnect the yellow connector of pretensioner harness, and remove the outer belt (front).

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 BELT (FRONT)

1) Disconnect the connector.
2) Remove the anchor bolt, and then detach the inner belt.


S5M0234

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B: INSTALLATION

1. OUTER BELT (FRONT)

Install in the reverse order of removal.

CAUTION:
• The parts on right and left are not identical. Before installation, make sure that the correct part is used.
• Be careful not to twist the belts during installation.

2. INNER BELT (FRONT)

Install in the reverse order of removal.

C: INSPECTION

1. OUTER BELT (FRONT)

Check for the following, and replace with new parts if necessary.
• Pretensioner is cracked or deformed.
• Seat belt is slackened, bent, or frayed. Seat belt is abnormally wound or extended.

2. INNER BELT (FRONT)

Check for the following, and replace with new parts if necessary.
• Inner belt is deformed or damaged.
• Seat belt buckle is engaged improperly.

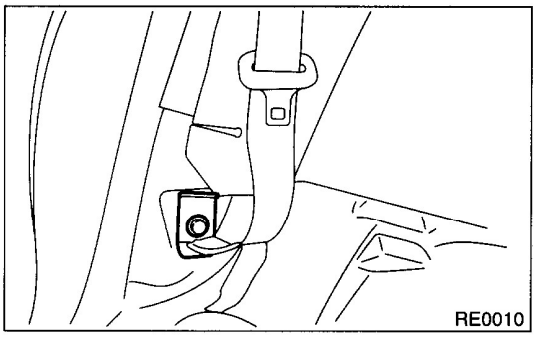
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5. Rear Seat Belt

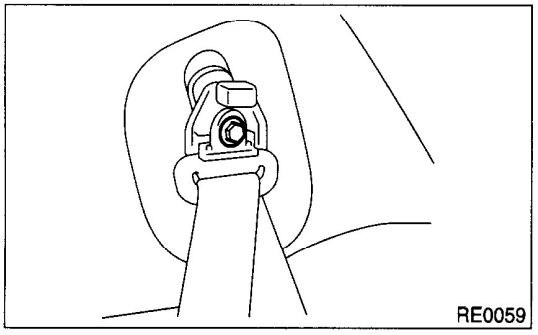
A: REMOVAL

1. OUTER BELT SIDE (SEDAN)

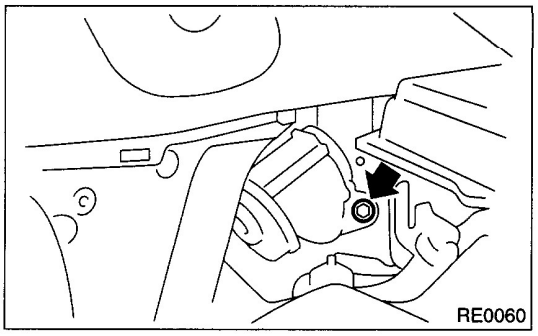
1) Remove the rear seat. <Ref. to SE-11, REMOVAL, Rear Seat.>
2) Remove the side sill rear lower cover. <Ref. to EI-46, REMOVAL, Lower Inner Trim.>
3) Remove the seat belt lower anchor bolt.



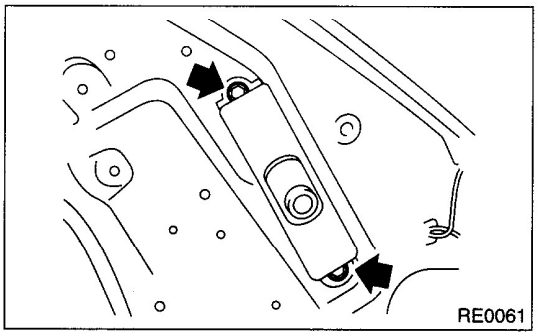
4) Remove the anchor cover. Remove the bolt and shoulder anchor from pillar.



5) Remove the quarter pillar trim. <Ref. to EI-47, REMOVAL, Rear Quarter Trim.>
6) Remove the bolts, and then detach the seat belt.

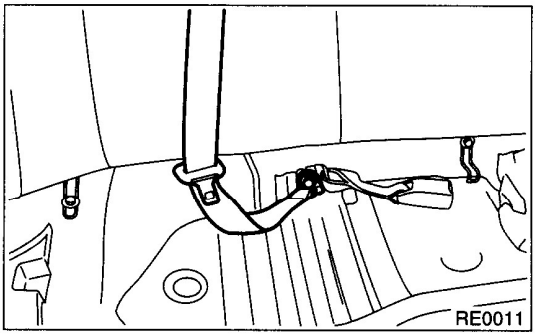


7) Remove the two bolts and adjustable anchor ASSY.

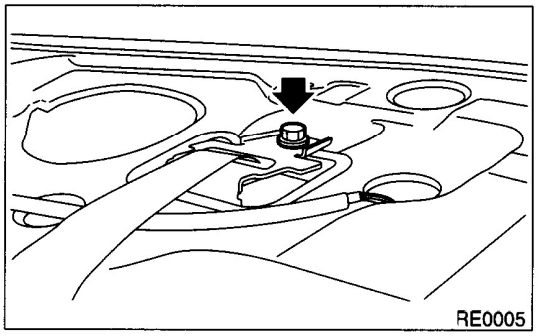


2. OUTER BELT CENTER (SEDAN)

1) Remove the rear seat. <Ref. to SE-11, REMOVAL, Rear Seat.>
2) Remove the seat belt lower anchor bolt.



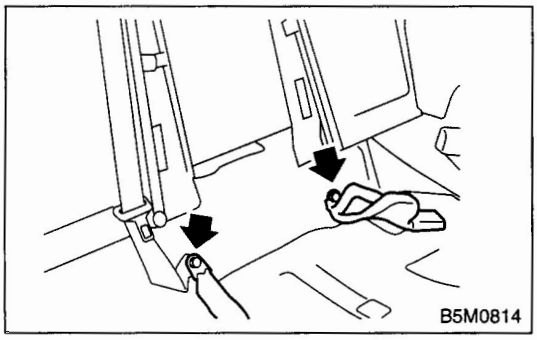
3) Remove the quarter pillar trim. <Ref. to EI-47, Removal, Rear Quarter Trim.>
4) Remove the rear shelf trim. <Ref. to EI-53, REMOVAL, Rear Shelf Trim.>
5) Remove the bolts, and then detach the seat belt.



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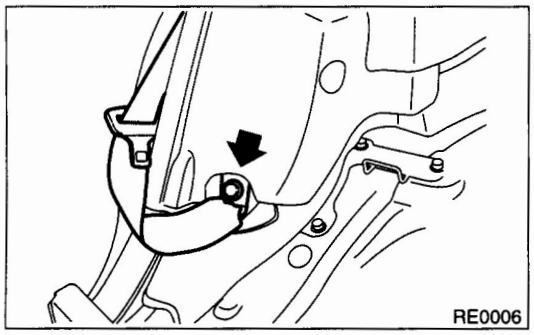
3. INNER BELT (SEDAN)

1) Remove the rear cushion. <Ref. to SE-11, REMOVAL, Rear Seat.>
2) Remove the bolts, and then detach the inner belt.

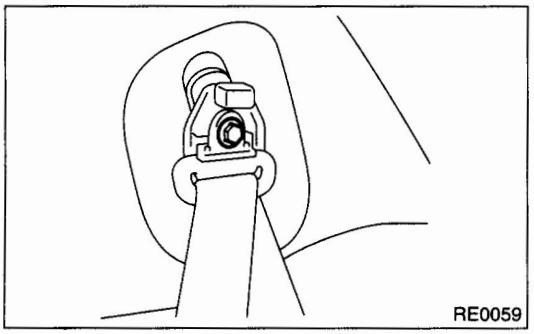


4. OUTER BELT SIDE (WAGON)

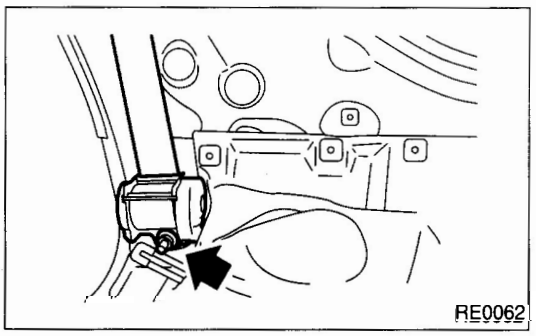
1) Remove the luggage floor mat. <Ref. to EI-56, REMOVAL, Luggage Floor Mat.>
2) Remove the rear seat. <Ref. to SE-11, REMOVAL, Rear Seat.>
3) Remove the side sill rear lower cover. <Ref. to EI-46, REMOVAL, Lower Inner Trim.>
4) Remove the seat belt lower anchor bolt.



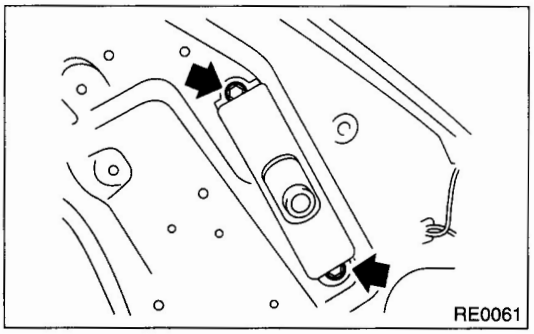
5) Remove the anchor cover. Remove the bolt and shoulder anchor from pillar.



6) Remove the rear quarter trim. <Ref. to EI-47, REMOVAL, Rear Quarter Trim.>
7) Remove the bolts, and then detach the outer belt side.



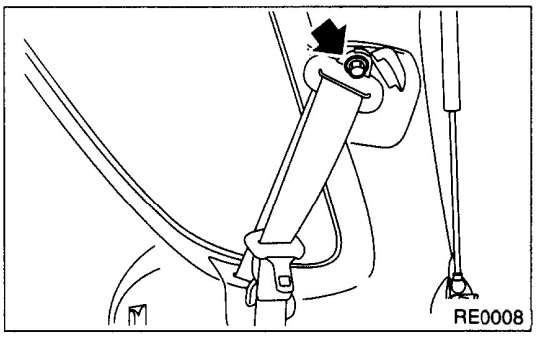
8) Remove the two bolts and adjustable anchor ASSY.



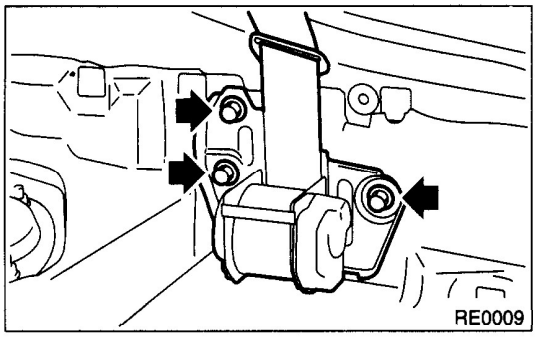
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5. OUTER BELT CENTER (WAGON)

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

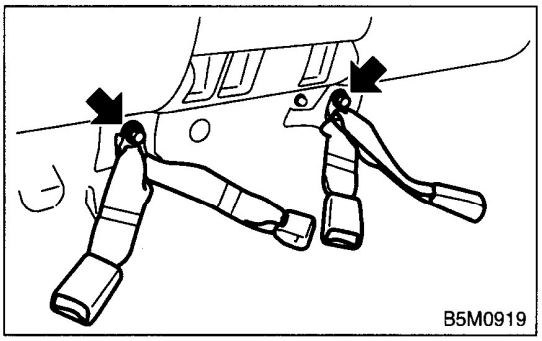


2) Remove the quarter trim. <Ref. to EI-47, REMOVAL, Rear Quarter Trim.>
3) Remove the three bolts, and then detach the outer belt center.



6. INNER BELT (WAGON)

1) Remove the rear cushion.
2) Remove the bolt, and then detach the inner belt.



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B: INSTALLATION

1. OUTER BELT SIDE (SEDAN)

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. OUTER BELT CENTER (SEDAN)

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. INNER BELT (SEDAN)

Install in the reverse order of removal.

CAUTION:
During installation, make sure that the seat belts are not twisted.

4. OUTER BELT SIDE (WAGON)

Install in the reverse order of removal.

CAUTION:
• During installation, make sure that the seat belts are not twisted.
• After installation, make sure that the seat belts can be smoothly extended and wound.

5. OUTER BELT CENTER (WAGON)

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. INNER BELT (WAGON)

Install in the reverse order of removal.

CAUTION:
During installation, make sure that the seat belts are not twisted.

C: INSPECTION

1. OUTER BELT SIDE (SEDAN)

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. OUTER BELT CENTER (SEDAN)

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. INNER BELT (SEDAN)

Check for the following, and replace with new parts if necessary.
• Inner belt is deformed or damaged.
• Seat belt buckle is engaged improperly.

4. OUTER BELT SIDE (WAGON)

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. OUTER BELT CENTER (WAGON)

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. INNER BELT (WAGON)

Check for the following, and replace with new parts if necessary.
• Inner belt is deformed or damaged.
• Seat belt buckle is engaged improperly.

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REAR SEAT BELT

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LIGHTING SYSTEM

LI

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1. General Description

A: SPECIFICATIONS

Headlight			12 V — 55 W/65 W (Halogen)
Front turn signal light			12 V — 21 W
Side marker light			12 V — 5 W
Parking light			12 V — 5 W
Front fog light			12 V — 55 W (Halogen)
Rear combination light	Sedan	Tail/Stop light	12 V — 21 W/5 W
		Tail light	12 V — 21 W/5 W
		Stop light	12 V — 21 W
		Turn signal light	12 V — 21 W
		Back-up light	12 V — 21 W
	Wagon	Tail/Stop light	12 V — 21 W/5 W
		Turn signal light	12 V — 21 W
		Back-up light	12 V — 21 W
		Side marker light	12 V — 5 W
License plate light			12 V — 5 W
High-mounted stop light	Sedan		12 V — 21 W
	Wagon		12 V — 13 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: PRECAUTIONS

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

WARNING:

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

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2. Headlight and Tail Light System

A: SCHEMATIC

1. HEADLIGHT

<Ref. to WI-98, SCHEMATIC, Headlight System.>

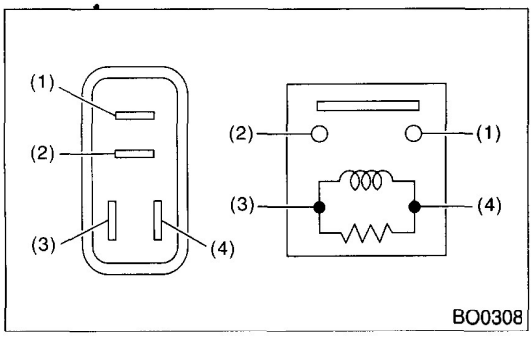
2. CLEARANCE LIGHT AND ILLUMINATION LIGHT

<Ref. to WI-94, SCHEMATIC, Clearance Light and Illumination Light System.>

B: INSPECTION

1. HEADLIGHT RELAY

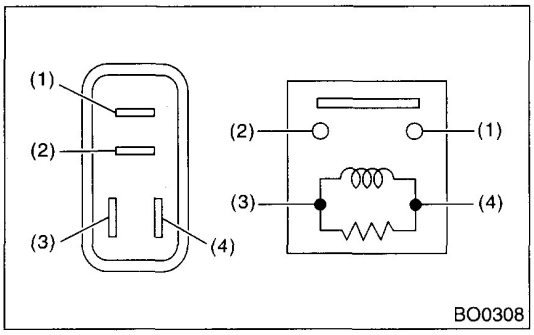
Measure the headlight relay resistance between terminals when connecting terminal No. 4 to battery positive terminal and terminal No. 3 to battery ground terminal.



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

2. 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 1Ω
No flow		More than 1MΩ

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3. Front Fog Light System

A: SCHEMATIC

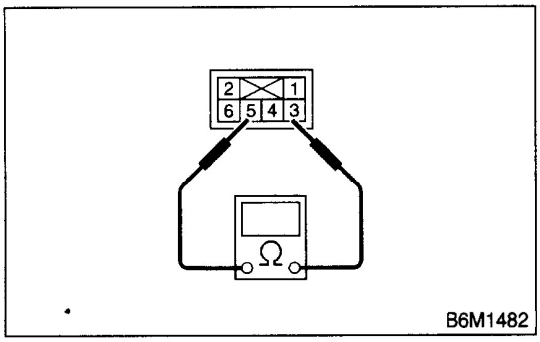
1. FRONT FOG LIGHT

<Ref. to WI-97, SCHEMATIC, Front Fog Light System.>

B: INSPECTION

1. FRONT FOG LIGHT SWITCH

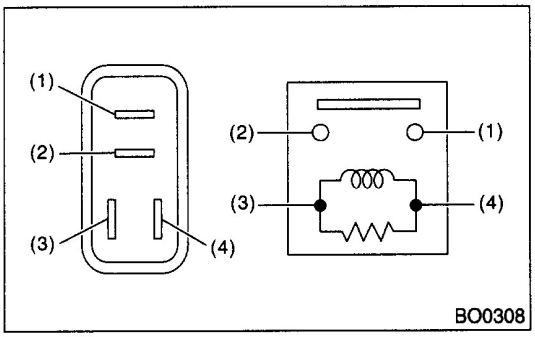
Measure the front fog light switch resistance.



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

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 1Ω
No flow		More than 1MΩ

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4. Turn Signal and Hazard Light System

A: SCHEMATIC

1. TURN SIGNAL LIGHT AND HAZARD LIGHT

<Ref. to WI-104, SCHEMATIC, Turn Signal Light and Hazard Light System.>

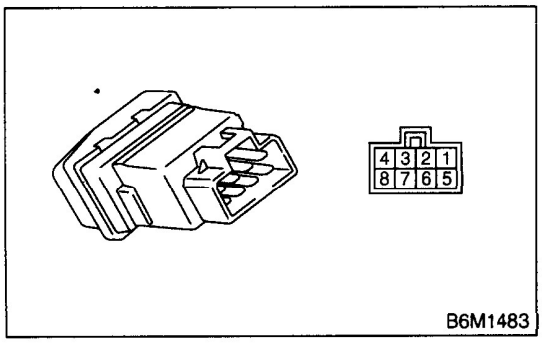
B: INSPECTION

1. TURN SIGNAL SWITCH

<Ref. to LI-9, INSPECTION, Combination Switch (Light).>

2. HAZARD SWITCH

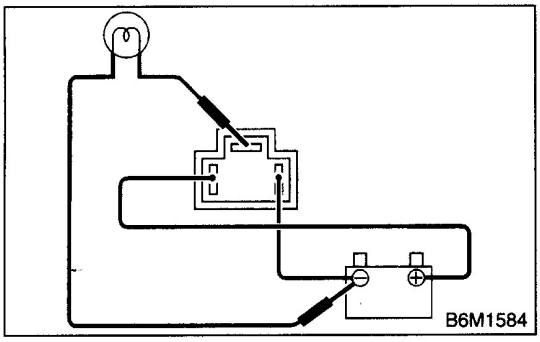
Measure the hazard switch resistance.



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

3. TURN SIGNAL & 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.



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5. Back-up Light System

A: SCHEMATIC

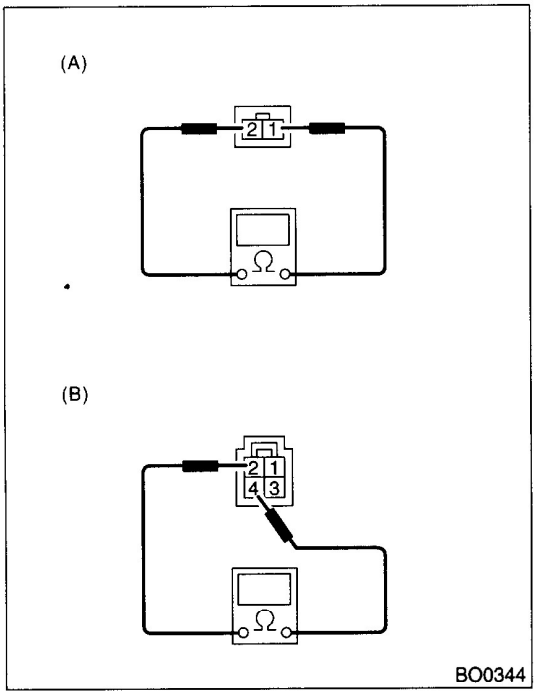
1. BACK-UP LIGHT

<Ref. to WI-93, SCHEMATIC, Back-up Light System.>

B: INSPECTION

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

Measure the back-up light switch resistance.

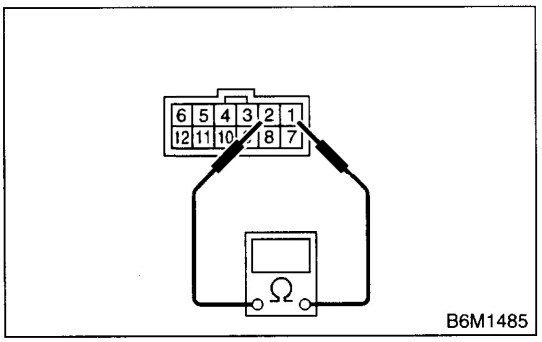


(A) Non-turbo model
(B) Turbo model

Switch position	Terminal No.	Standard
When shift lever is set in reverse position	Turbo model: 2 and 4 Non-turbo model: 1 and 2	Less than 1Ω
Other positions		More than 1MΩ

2. INHIBITOR SWITCH (A/T)

Measure the inhibitor switch resistance.



Switch position	Terminal No.	Standard
When select lever is set in "R" position	1 and 2	Less than 1Ω
Other positions		More than 1MΩ

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6. Stop Light System

A: SCHEMATIC

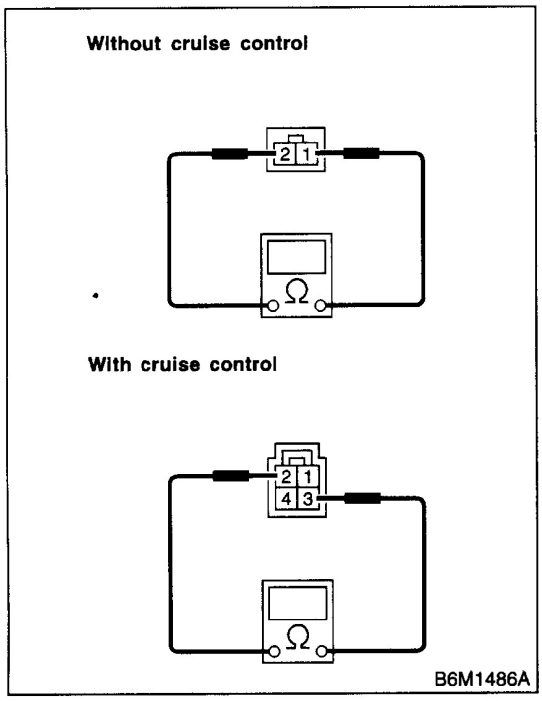
1. STOP LIGHT

<Ref. to WI-103, SCHEMATIC, Stop Light System.>

B: INSPECTION

1. STOP LIGHT SWITCH

Measure the stop light switch resistance.



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

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7. Interior Light System

A: SCHEMATIC

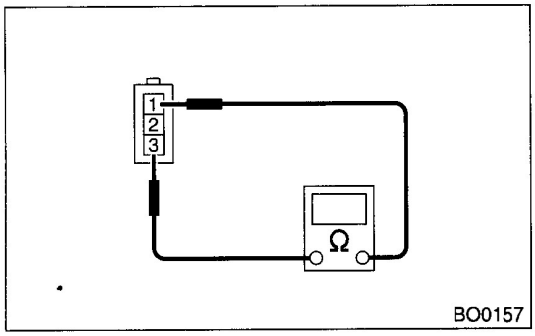
1. INTERIOR LIGHT

<Ref. to WI-101, SCHEMATIC, In Compartment 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 1Ω
When door is closed		More than 1MΩ

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 1Ω
When rear gate is closed		More than 1MΩ

3. TRUNK ROOM LIGHT SWITCH

Measure the trunk room light switch resistance.

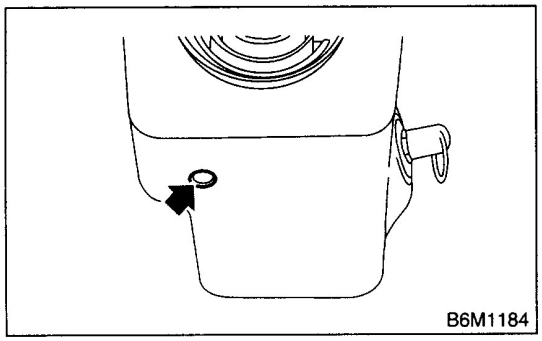
Switch position	Terminal No.	Standard
When trunk lid is opened	1 and 2	Less than 1Ω
When trunk lid is closed		More than 1MΩ

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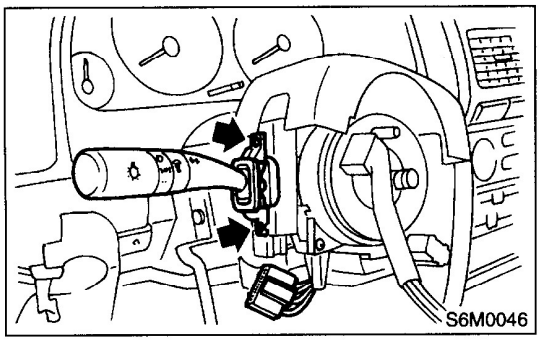
8. Combination Switch (Light)

A: REMOVAL

1) Remove the instrument panel lower cover. <Ref. to EI-42, REMOVAL, Instrument Panel Assembly.>
2) Remove the screws which secure upper column cover to lower column cover.



3) Disconnect the connector from combination switch.
4) Remove the screws which secure switch and remove the switch.

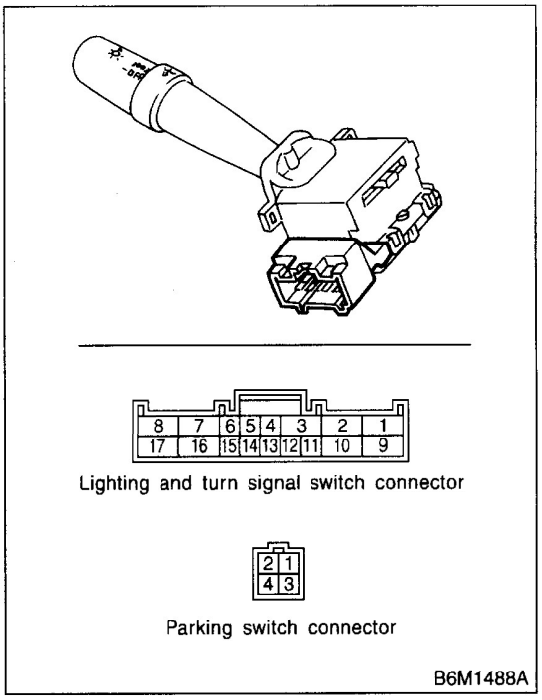


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the combination switch resistance.



1. LIGHTING SWITCH

Switch position	Terminal No.	Standard
OFF	—	More than 1MΩ
Tail	14 and 16	Less than 1Ω
Head	13, 14 and 16	Less than 1Ω

2. DIMMER AND PASSING SWITCH

Switch position	Terminal No.	Standard
Passing	7, 8 and 16	Less than 1Ω
Low beam	16 and 17	Less than 1Ω
High beam	7 and 16	Less than 1Ω

3. TURN SIGNAL SWITCH

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

4. PARKING SWITCH

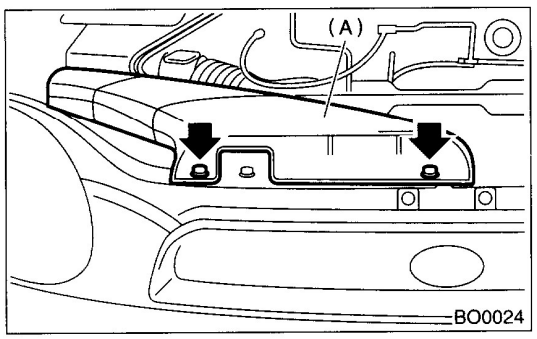
Switch position	Terminal No.	Standard
OFF	2 and 4	Less than 1Ω
ON	1 and 4	Less than 1Ω

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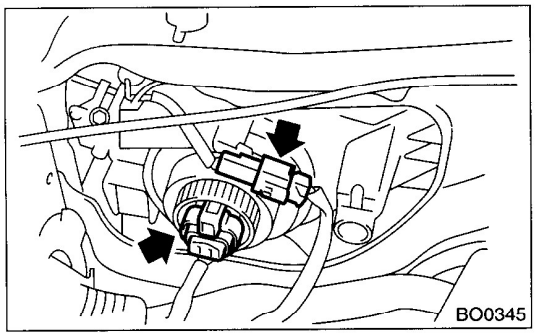
9. Headlight Assembly

A: REMOVAL

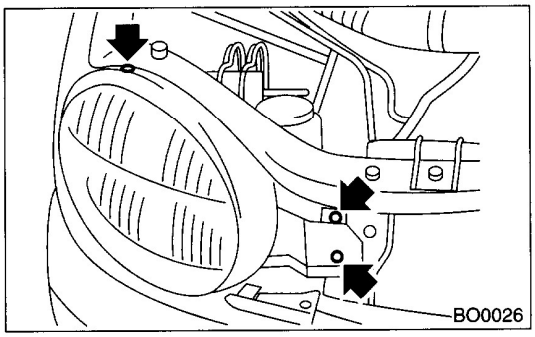
1) Disconnect the ground terminal from battery.
2) Remove the duct (A) (when right side headlight is removed).



3) Remove the front grille and headlight side cover. <Ref. to EI-18, REMOVAL, Front Grille.> and <Ref. to EI-23, REMOVAL, Front Bumper.>
4) Disconnect the headlight bulb connector.



5) Remove three bolts and disconnect the connectors, and then detach the headlight assembly.



B: INSTALLATION

Install in the reverse order of removal.

C: ADJUSTMENT

1. HEADLIGHT AIMING

NOTE:
As this headlignt is the "VISUAL AIMING TYPE", it is possible to adjust aiming only in the vertical direction. It cannot be adjusted in the horizontal direction.

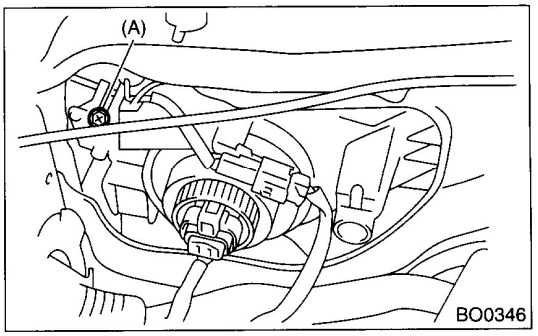
CAUTION:
Turn off the light before adjusting headlight aiming. If the light is necessary to check aiming, do not turn on for more than two minutes.

NOTE:
Before checking the headlight aiming, be sure of the following:

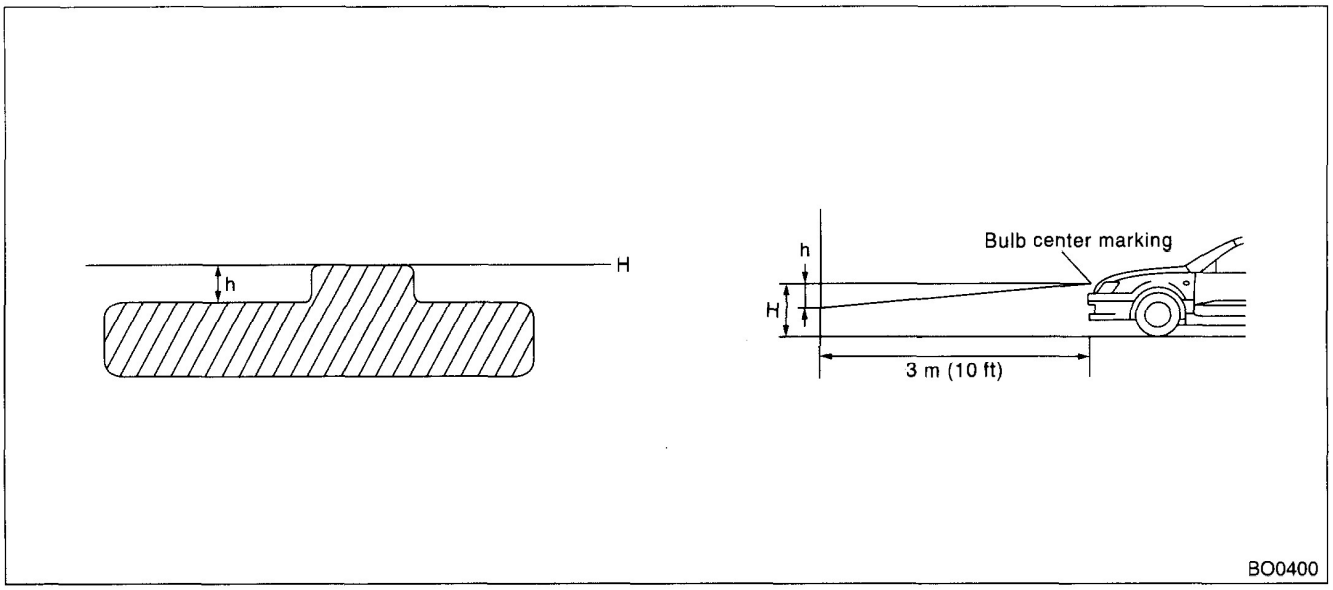
- The area around the headlight has not sustained any accident, damage or other type of deformation.
- Vehicle is parked on level ground.
- The inflation pressure of tires is correct.
- Vehicle's fuel tank is fully filled.
- Bounce the vehicle several times to normalize the suspension.
- Make certain that someone is seated in the driver's seat.

Turn the headlight on and then adjust the low beam pattern to the following positions on the screen.

NOTE:
Adjust the headlight aiming by turning the adjusting screw (A).



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H mm (in)			h mm (in) at 3 m (10 ft)
Sedan	Wagon		
RŠ, WRX	TS, WRX	Outback	
620 (24.41)	620 (24.41)	630 (24.80)	21 (0.83)

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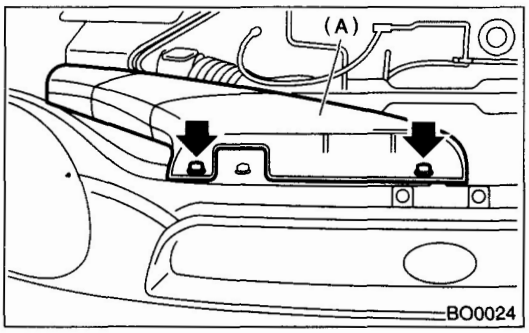
10.Headlight Bulb

A: REMOVAL

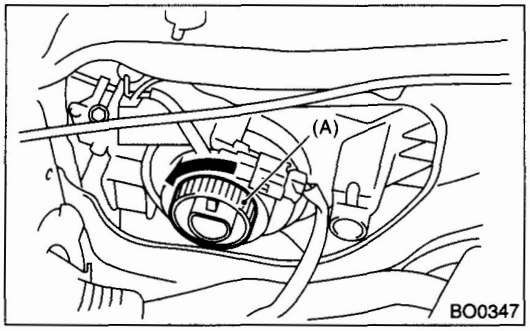
CAUTION:

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

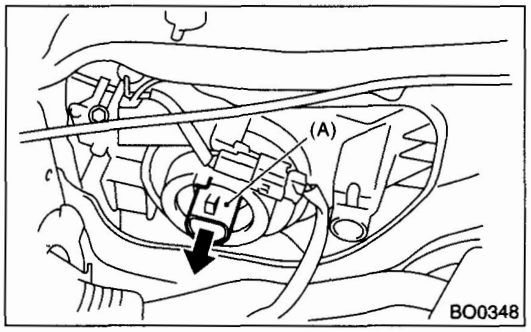
1) Disconnect the ground terminal from battery.
2) Remove the duct (A) (when right side headlight is removed).



3) Disconnect the harness connector.
4) Remove the cap (A).



5) Remove the headlight bulb (A).



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

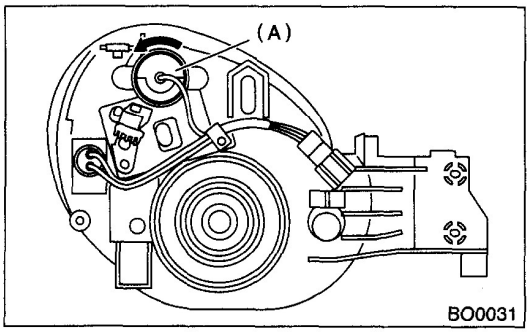
1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

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11.Front Turn Signal Light Bulb

A: REMOVAL

1) Remove the headlight assembly. <Ref. to LI-10, REMOVAL, Headlight Assembly.>
2) Turn the socket (A) and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

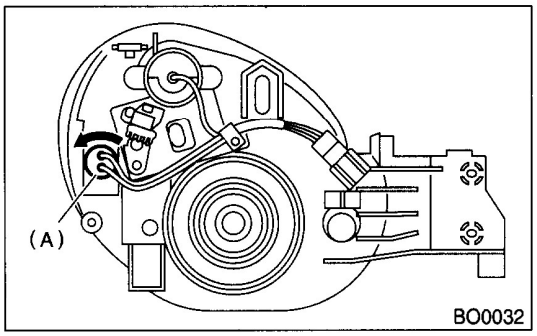
1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

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12.Clearance/Parking Light Bulb

A: REMOVAL

1) Remove the headlight assembly. <Ref. to LI-10, REMOVAL, Headlight Assembly.>
2) Turn the socket (A) and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

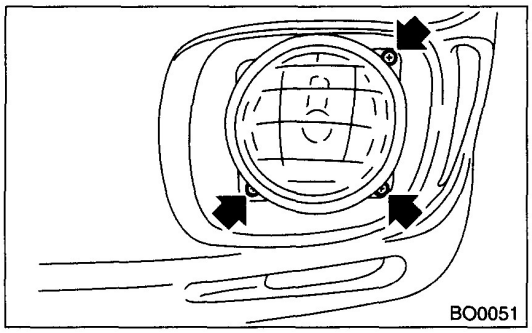
1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

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13.Front Fog Light Assembly

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the mounting bolts, and then detach the fog light assembly.



3) Disconnect the harness connector.

B: INSTALLATION

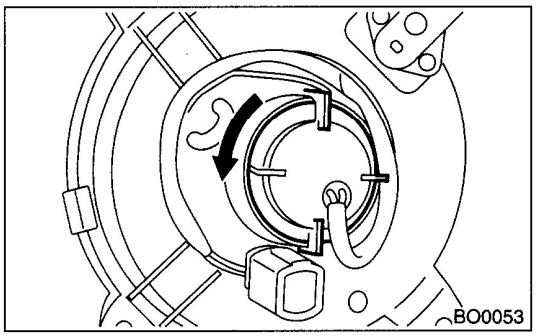
Install in the reverse order of removal.

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14.Front Fog Light Bulb

A: REMOVAL

1) Remove the front fog light assembly. <Ref. to LI-15, REMOVAL, Front Fog Light Assembly.>
2) Remove the back cover.



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

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

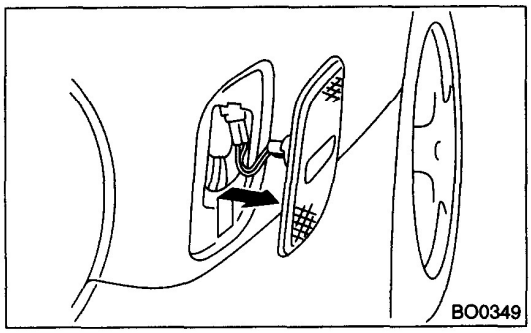
1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

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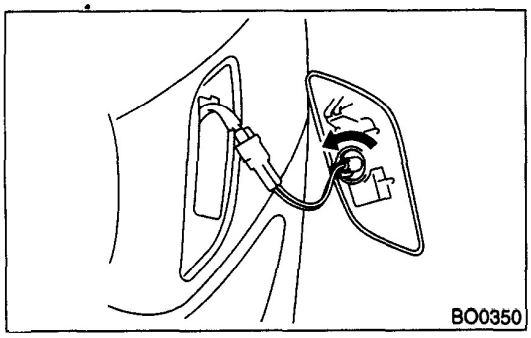
15.Front Side Marker Light Assembly

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Pull out the light from body while pushing it up.



3) Disconnect the harness connector and remove the light.
4) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

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

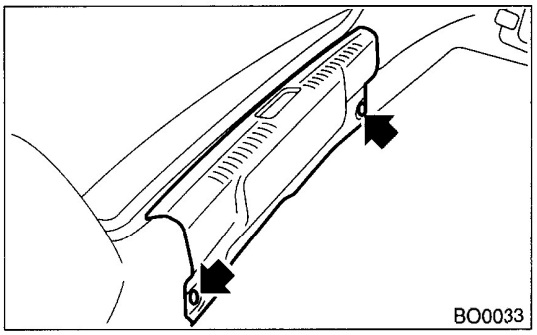
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16. Rear Combination Light Assembly

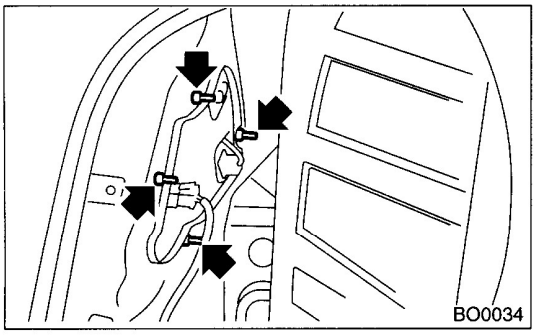
A: REMOVAL

1. SEDAN

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

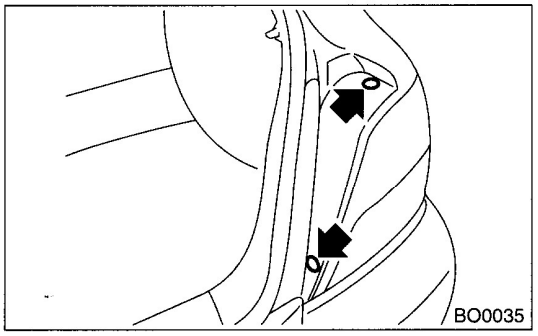


3) Remove the trunk side trim of rear portion.
4) Remove four nuts and then detach the rear combination light while disconnecting the connector.

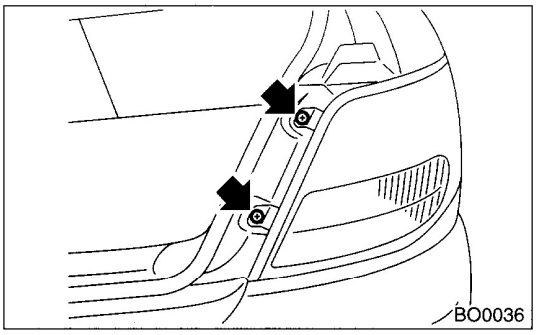


2. WAGON

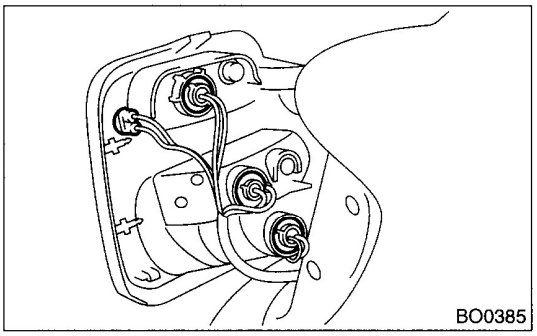
1) Disconnect the ground terminal from battery.
2) Remove the clips and then detach the rear combination light covers.



3) Remove two bolts.



4) Remove the rear quarter trim.
<Ref. to EI-47, WAGON, REMOVAL, Rear Quarter Trim.>
5) Disconnect the connector and then detach the rear combination light assembly.



B: INSTALLATION

Install in the reverse order of removal.

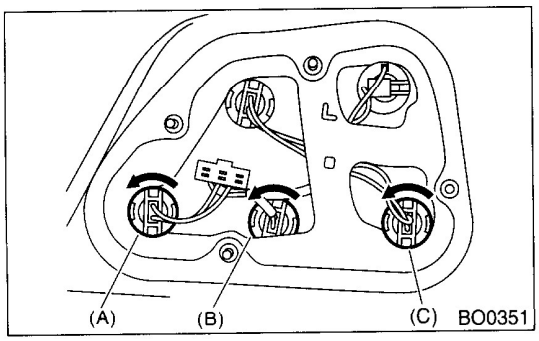
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17.Stop/Tail Light Bulb

A: REMOVAL

1. SEDAN

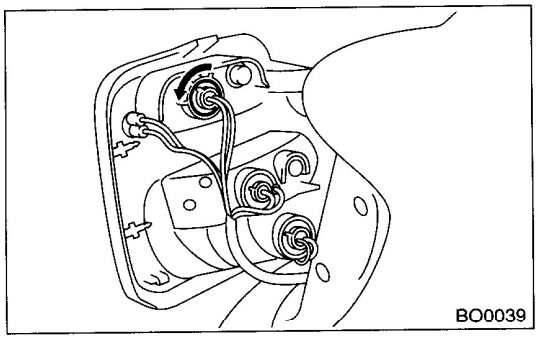
1) Remove the trunk side trim of rear portion.
2) Turn the socket and remove the bulb.



(A) Stop light
(B) Tail light
(C) Tail/stop light

2. WAGON

1) Remove the rear combination light assembly. <Ref. to LI-18, WAGON, 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, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

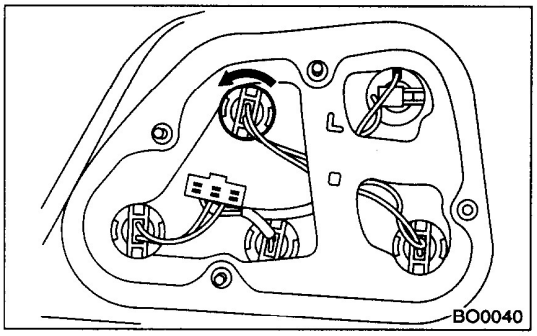
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18.Back-up Light Bulb

A: REMOVAL

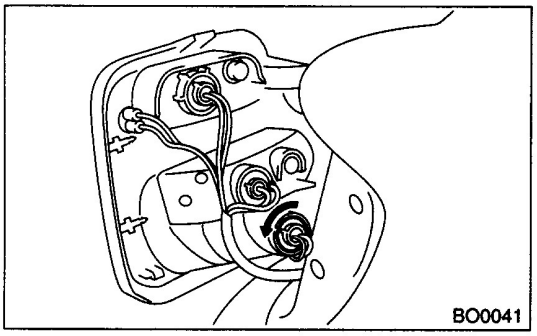
1. SEDAN

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



2. WAGON

1) Remove the rear combination light assembly. <Ref. to LI-18, WAGON, 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, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

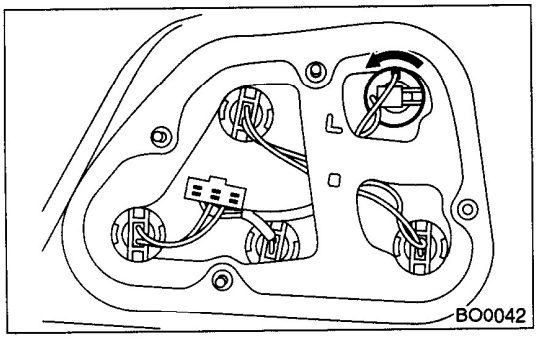
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19.Rear Turn Signal Light Bulb

A: REMOVAL

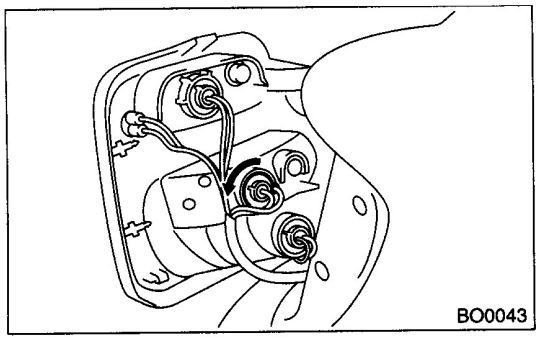
1. SEDAN

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



2. WAGON

1) Remove the rear combination light assembly. <Ref. to LI-18, WAGON, REMOVAL, Rear Combination Light Assembly.>
2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

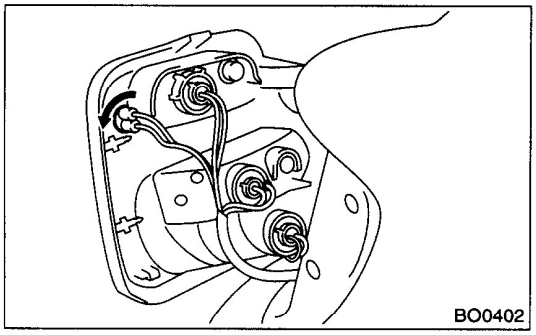
1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

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20.Rear Side Marker Light Bulb

A: REMOVAL

1) Remove the rear combination light assembly. <Ref. to LI-18, WAGON, REMOVAL, Rear Combination Light Assembly.>
2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

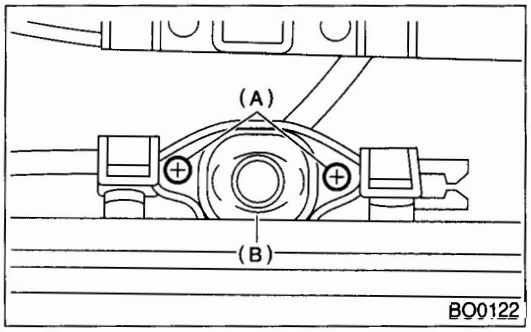
1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

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21.License Plate Light

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the license plate light mounting screw (A) and then remove the lens (B)



3) Remove the bulb.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

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

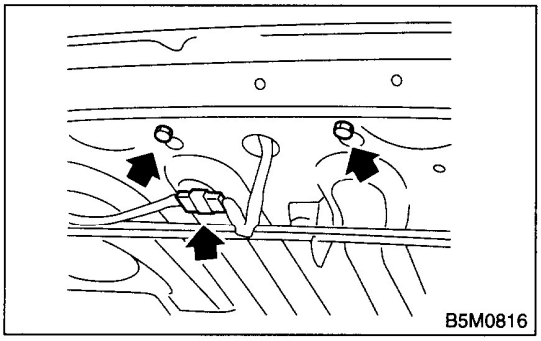
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22.High-mounted Stop Light

A: REMOVAL

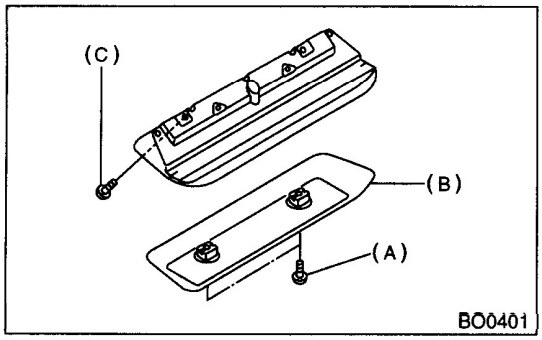
1. SEDAN

1) Disconnect the ground terminal 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. WAGON

1) Disconnect the ground terminal from battery.
2) Remove the screws (A) and then detach the cover (B).
3) Remove the screws (C) and then detach the high-mounted stop light while disconnecting the connector.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

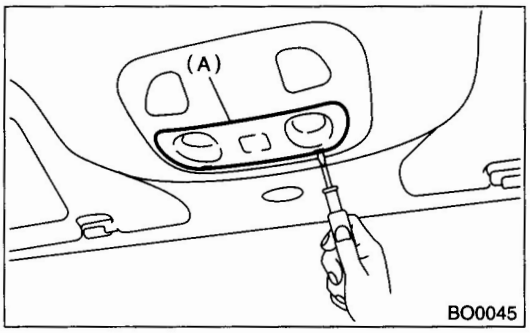
1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

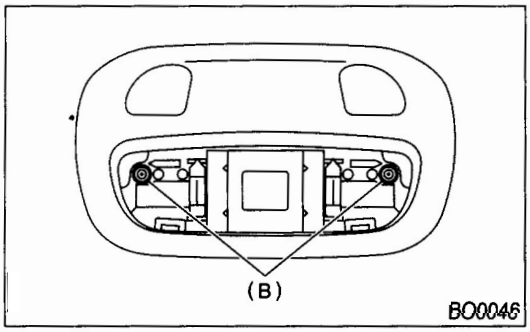
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23.Spot Light

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the lens (A) and spot light mounting screw (B).





3) Disconnect the harness connectors and remove the spot light.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. SPOT LIGHT BULB

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

2. SPOT LIGHT SWITCH

Measure the spot light resistance.

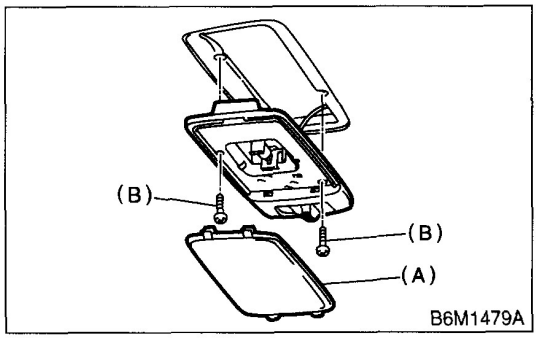
Switch position	Terminal No.	Standard
OFF	—	More than 1MΩ
ON	1 and 2	1.5 ± 0.5Ω

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24. Room Light

A: REMOVAL

1) Disconnect the ground terminal 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.

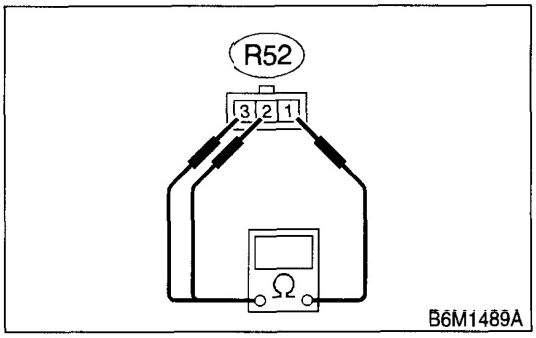
C: INSPECTION

1. ROOM LIGHT BULB

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

2. ROOM LIGHT SWITCH

Measure the room light resistance.



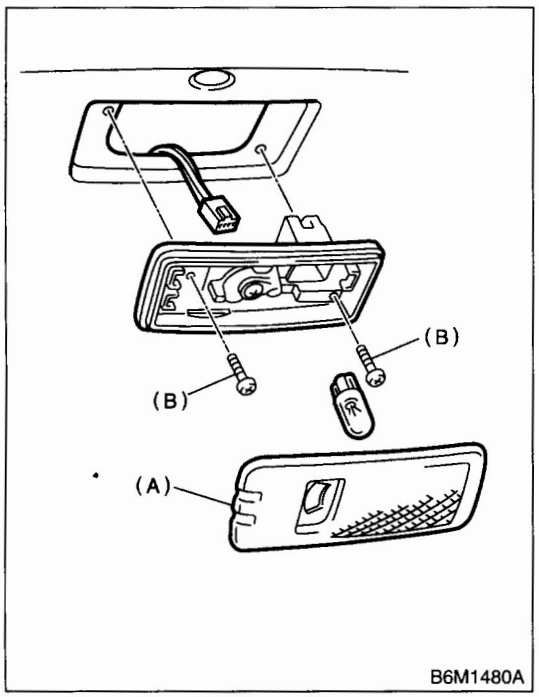
Switch position	Terminal No.	Standard
OFF	—	More than 1MΩ
ON	1 and 3	1.5 ± 0.5Ω
DOOR	1 and 2	1.5 ± 0.5Ω

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25.Luggage Room Light

A: REMOVAL

1) Disconnect the ground terminal 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.

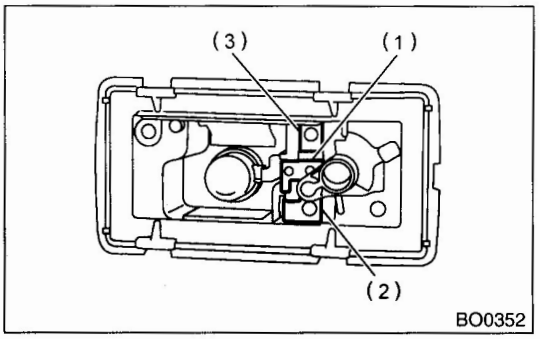
C: INSPECTION

1. LUGGAGE ROOM LIGHT BULB

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

2. LUGGAGE ROOM LIGHT SWITCH

Measure the luggage room light resistance.



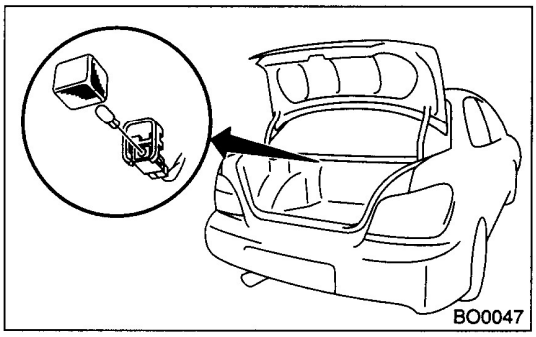
Switch position	Terminal No.	Standard
OFF	—	More than 1MΩ
ON	1 and 3	1.5 ± 0.5Ω
DOOR	1 and 2	1.5 ± 0.5Ω

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26.Trunk Room Light

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Disconnect the harness connectors and remove the trunk room light.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

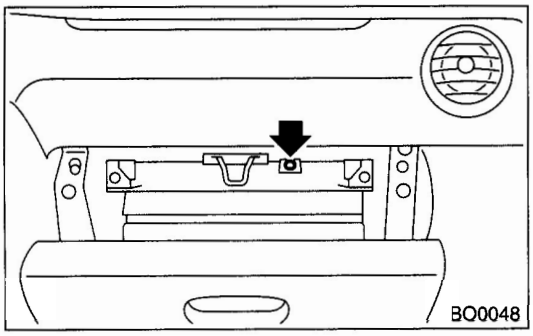
1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

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27.Glove Box Light

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the glove box. <Ref. to EI-39, 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, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

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GLOVE BOX LIGHT

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WIPER AND WASHER SYSTEMS

WW

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9.	Rear Wiper Arm	16
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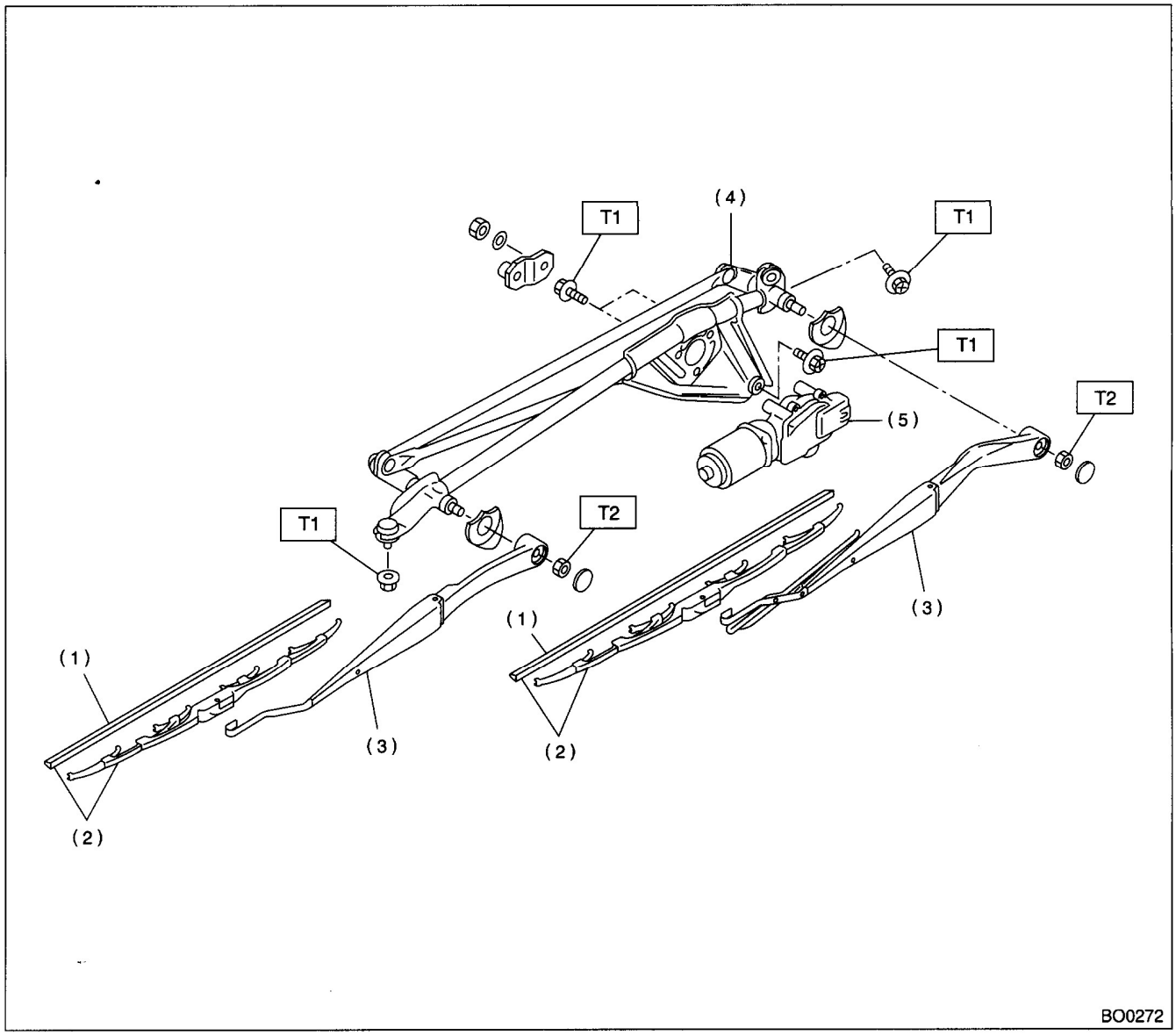
1. General Description

A: SPECIFICATIONS

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

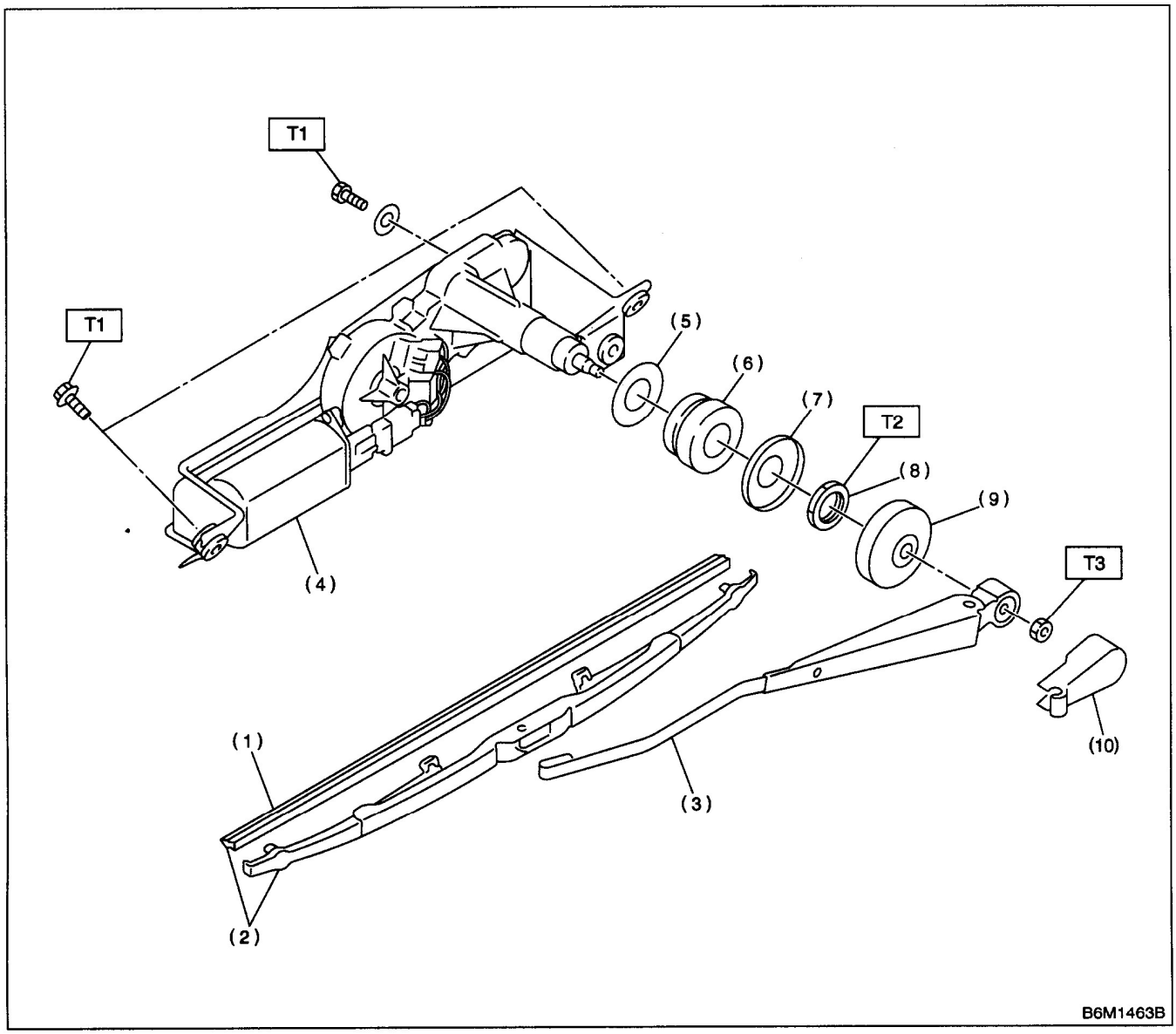


(1) Wiper rubber
(2) Wiper blade ASSY
(3) Wiper arm
(4) Wiper link
(5) Wiper motor

Tightening torque: N·m (kgf-m, ft-lb)
T1: 6.0 (0.61, 4.4)
T2: 20 (2.0, 14.5)

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2. REAR WIPER

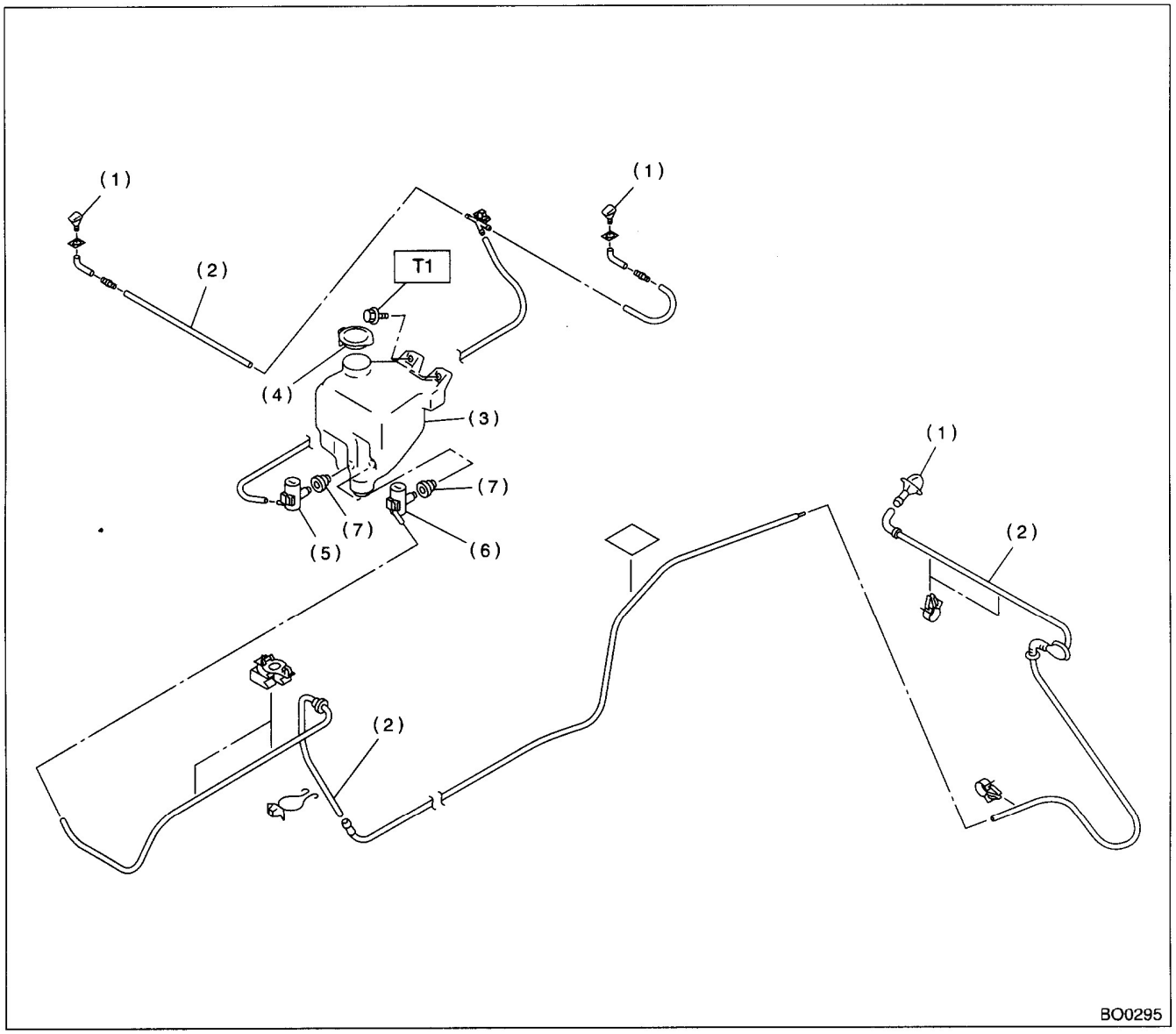


(1) Wiper rubber
(2) Wiper blade ASSY
(3) Wiper arm
(4) Wiper motor
(5) Spacer A
(6) Cushion
(7) Spacer B
(8) Nut
(9) Cap
(10) Wiper arm cover

Tightening torque: N·m (kgf-m, ft-lb)
T1: 6.0 (0.61, 4.4)
T2: 7.5 (0.76, 5.5)
T3: 8.0 (0.82, 5.9)

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3. WASHER TANK



(1) Washer nozzle
(2) Washer hose
(3) Washer tank
(4) Washer tank cap
(5) Front washer motor
(6) Rear washer motor
(7) Grommet

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 the wire harnesses of airbag system pass near electrical parts and switches.
- 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.

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2. Wiper and Washer System

A: SCHEMATIC

1. WIPER AND WASHER (FRONT)

<Ref. to WI-127, SCHEMATIC, Wiper and Washer System (Front).>

2. WIPER AND WASHER (REAR)

<Ref. to WI-128, SCHEMATIC, Wiper and Washer System (Rear).>

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B: INSPECTION

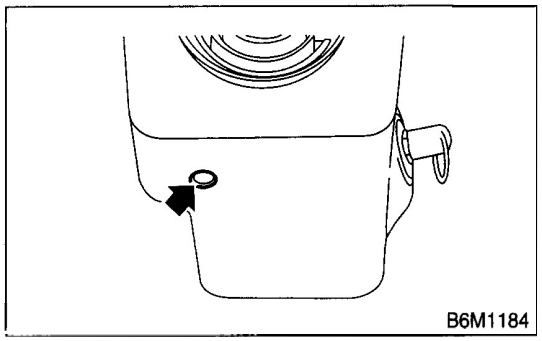
Symptom	Repair order
Wiper and washers do not operate.	(1) Wiper fuse (F/B No. 14, 15) (2) Combination switch (3) Wiper motor (4) Wire harness
Wipers do not operate in LO or HI.	(1) Combination switch (2) Wiper motor (3) Wire harness
Wipers do not operate in INT.	(1) Combination switch (2) Wiper motor (3) Wire harness
Washer motor does not operate.	(1) Washer switch (2) Washer motor (3) Wire harness
Wipers do not operate when washer switch is ON.	(1) Washer motor (2) Wire harness
Washer fluid spray does not operate.	(1) Washer hose and nozzle

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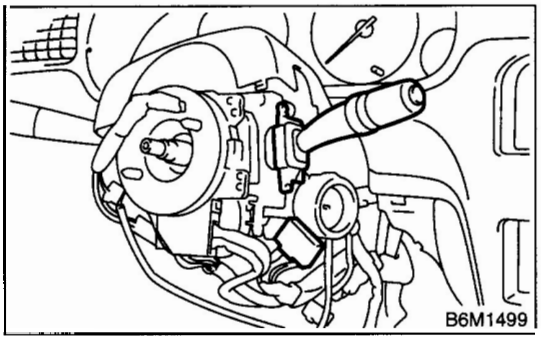
3. Combination Switch (Wiper)

A: REMOVAL

1) Loosen the screw to remove a steering column cover.



2) Disconnect the connectors from combination switches.
3) Loosen the screw to remove combination switch.

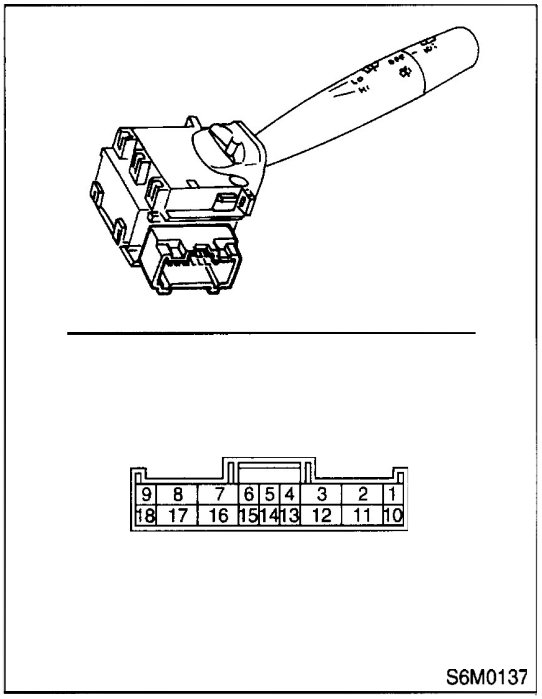


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

- Measure the combination switch.



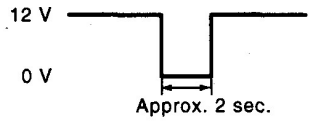
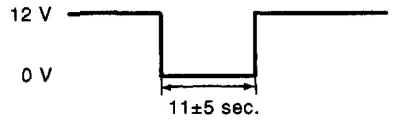
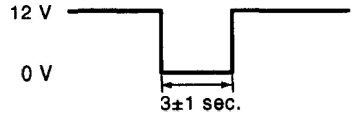
	Switch position	Terminal No.	Standard
FRONT	OFF	7 and 16	less than 1Ω
	INT	7 and 16	less than 1Ω
	LO	7 and 17	less than 1Ω
	HI	8 and 17	less than 1Ω
	Washer ON	2 and 11	less than 1Ω
REAR	Washer ON	2 and 10 2 and 12 10 and 12	less than 1Ω
	OFF	—	more than 1MΩ
	ON	2 and 10	less than 1Ω
	Washer ON	2 and 10 2 and 12 10 and 12	less than 1Ω

If continuity is not as specified, replace the switch.

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- 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, and inspect the voltage of terminals 7 and 2. (Measure the voltage from after the second time the wiper stops.)

Switch position	Voltage
MIN.	
MAX.	
Non variable type	

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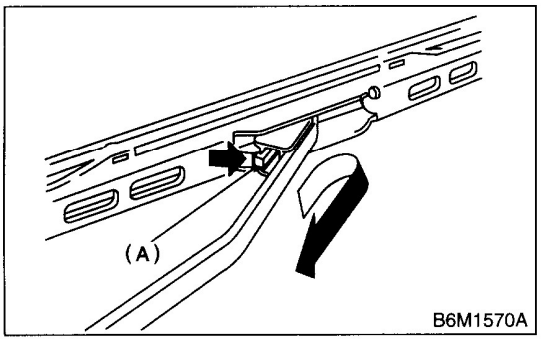
If operation is not as specified, replace the switch.

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4. Wiper Blade

A: REMOVAL

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



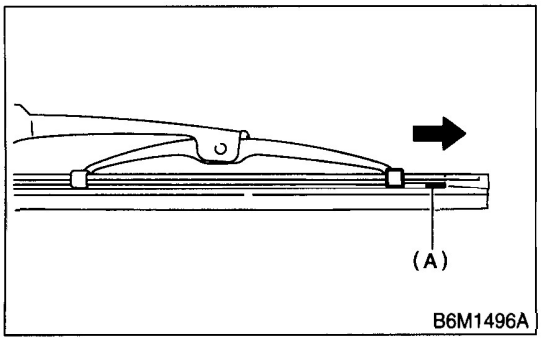
B: INSTALLATION

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

C: DISASSEMBLY

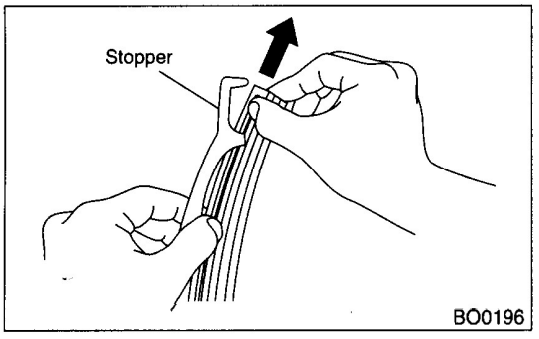
1. METAL TYPE

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



2. RESIN TYPE

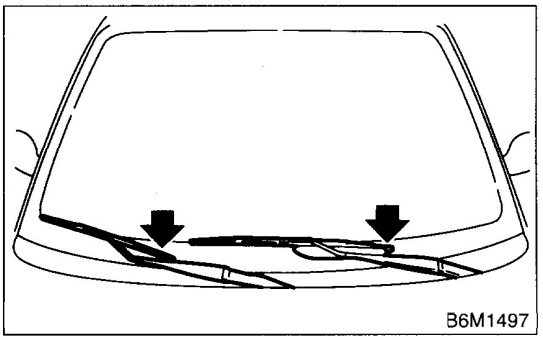
Pull the wiper rubber top slightly from the stopper and pull out fully.



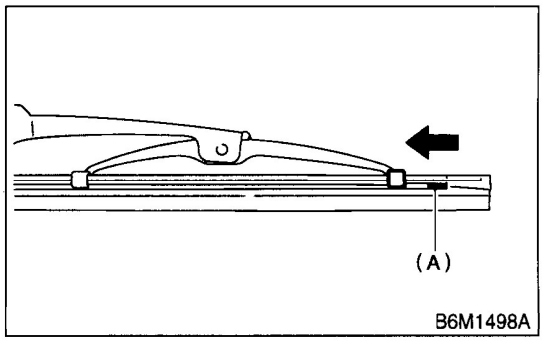
D: ASSEMBLY

1. METAL TYPE

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

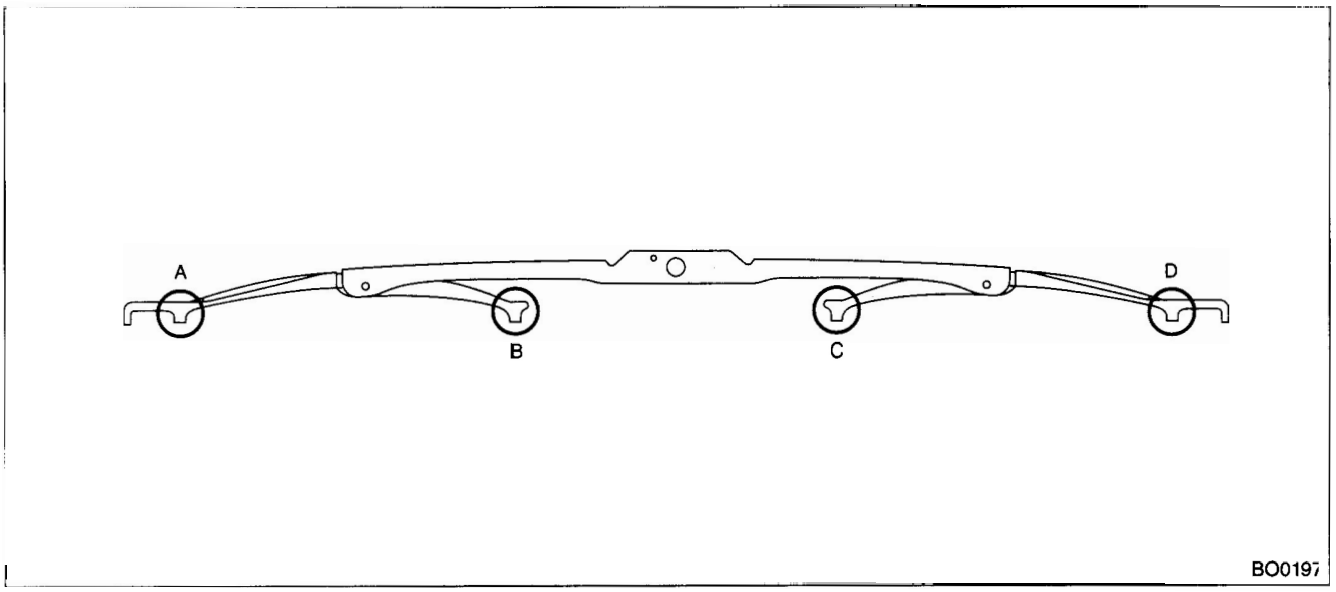


2) Make sure the wiper rubber is securely fastened to the pull stopper (A).

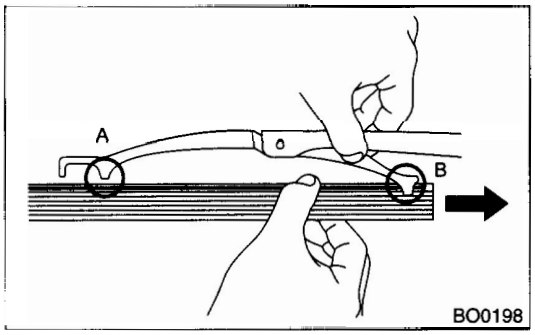


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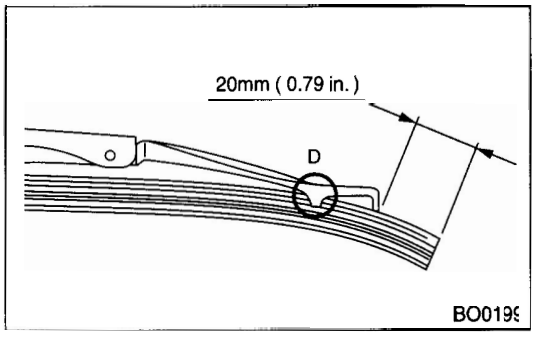
2. RESIN TYPE



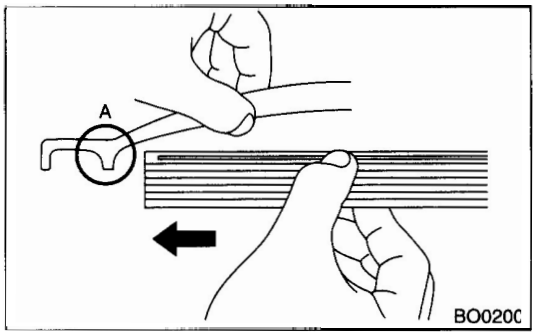
1) Insert the wiper rubber through the claw (B).



2) Insert the wiper rubber top until it protrudes about 20mm (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.

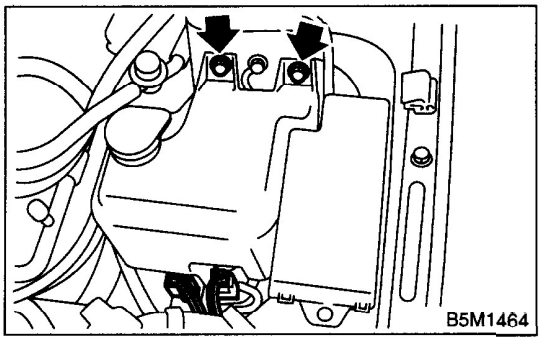
2) Replace with a new part if damage is found.

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5. Washer Tank and Motor

A: REMOVAL

1) Open the hood.
2) Disconnect the ground terminal from battery.
3) Remove the two bolts, hose and connector and then remove the tank.

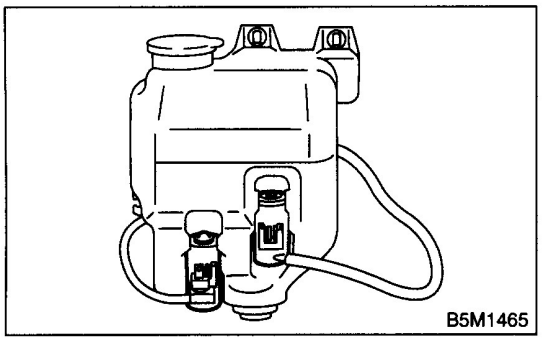


B: INSTALLATION

Install in the reverse order of removal.

C: DISASSEMBLY

Pull out the washer motor from tank.

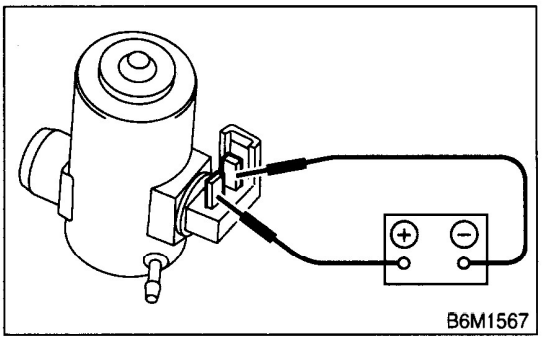


D: ASSEMBLY

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.

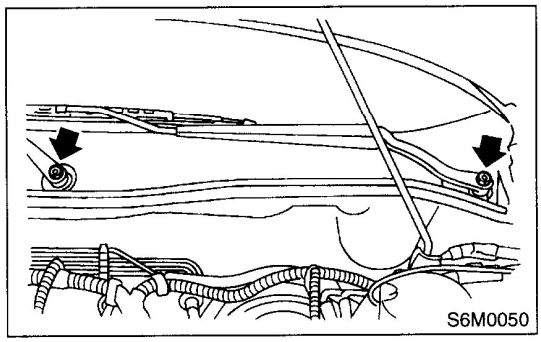


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6. Front Wiper Arm

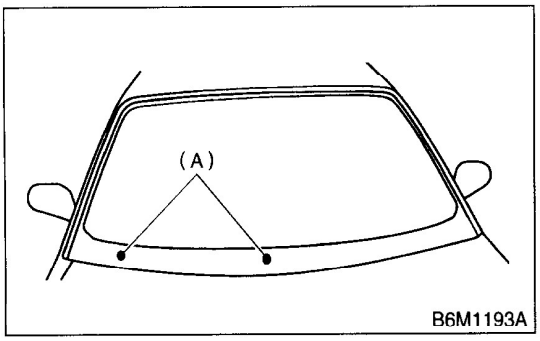
A: REMOVAL

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



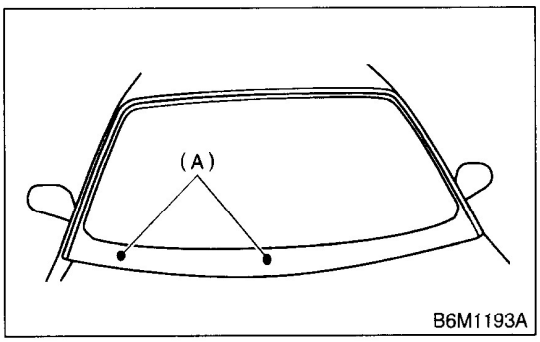
B: INSTALLATION

1) Install in the reverse order of removal.
2) Operate the wiper once.
3) Align the wiper blade to ceramic print point mark (A) of front window pane.



C: ADJUSTMENT

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

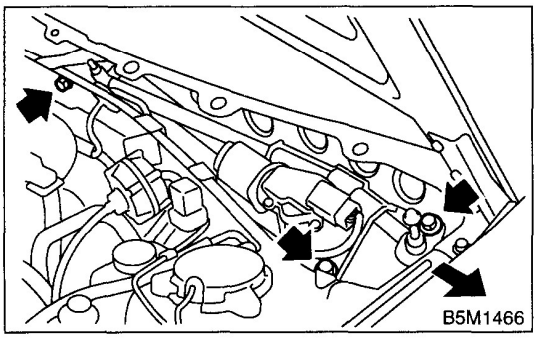


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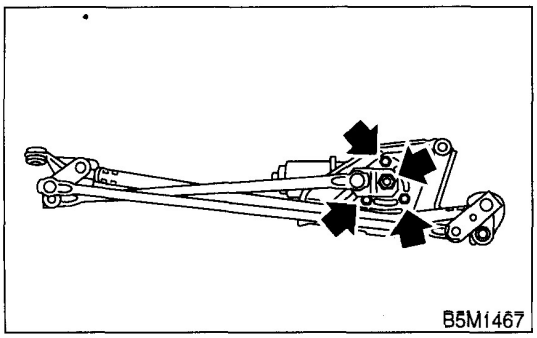
7. Front Wiper Motor and Link

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the cowl panel. <Ref. to EI-33, REMOVAL, Cowl Panel.>
3) Disconnect the connector of motor.
4) Loosen the bolts and nuts to remove wiper link.

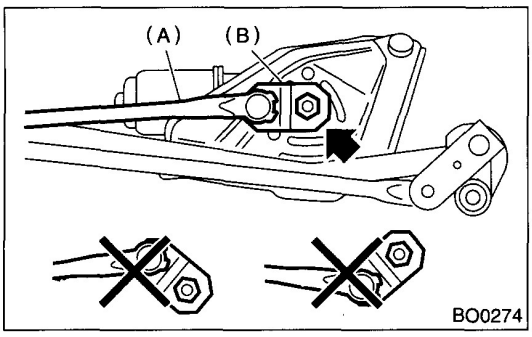


5) Loosen the bolts and nuts to remove motor.



B: INSTALLATION

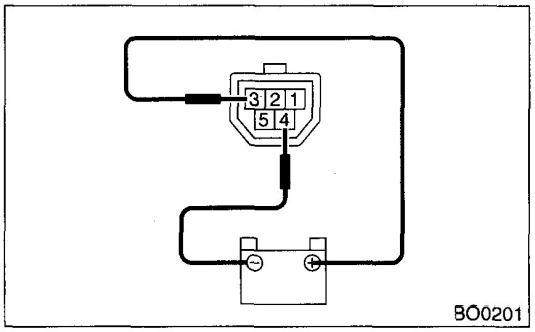
1) Connect the battery ground terminal to battery.
2) To confirm that the motor is at auto stop position, connect the harness to motor and turn the wiper switch ON/OFF once.
3) Disconnect the ground terminal from battery.
4) Tighten the nut where rod (A) and link plate (B) is aligned in a straight line.



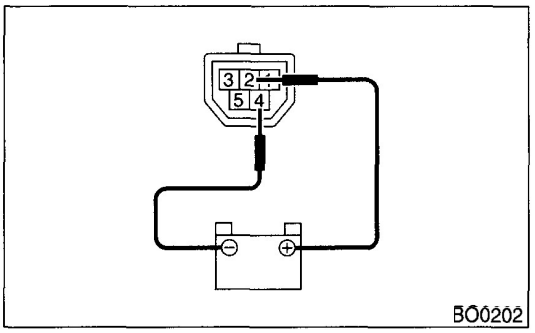
5) Install in the reverse order of removal.

C: INSPECTION

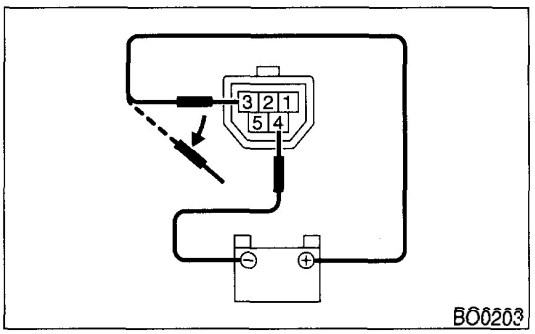
1) When the battery is connected to the terminal of connectors, confirm that motor operates at low speed.



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

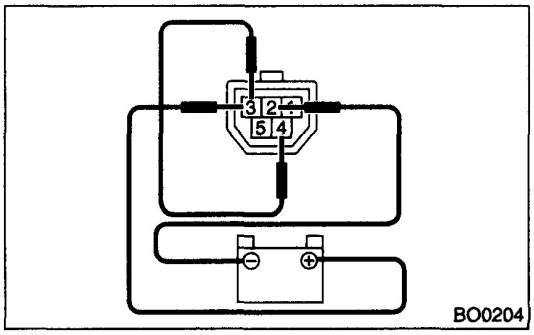


3) Connect the battery to terminals of connector, and remove the terminal connection with motor rotated at low speed, and stop the wiper motor through operation.



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

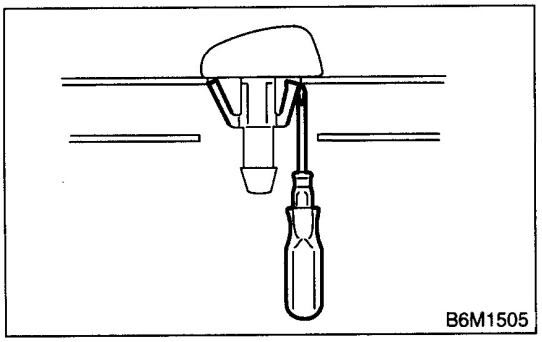


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8. Front Washer Nozzle

A: REMOVAL

1) Remove the washer hose from the washer nozzle.
2) Open the clips on the underside of the hood with a thin screwdriver or other tool, and remove the washer nozzle.



B: INSTALLATION

1) Install in the reverse order of removal.
2) Adjust the position of the washer liquid sprayer. <Ref. to WW-15, ADJUSTMENT, Front Washer Nozzle.>

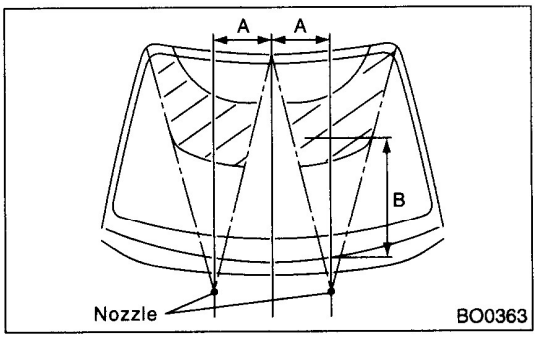
C: INSPECTION

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

D: ADJUSTMENT

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

Injection position:
A: 257 mm (10.12 in)
B: 512 mm (20.16 in)

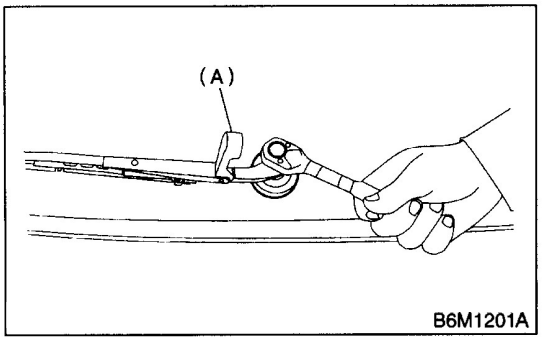


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9. Rear Wiper Arm

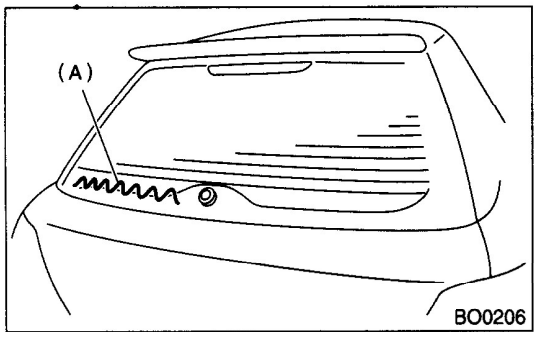
A: REMOVAL

1) Raise the wiper arm cover (A).
2) Loosen the nut to remove wiper arm.



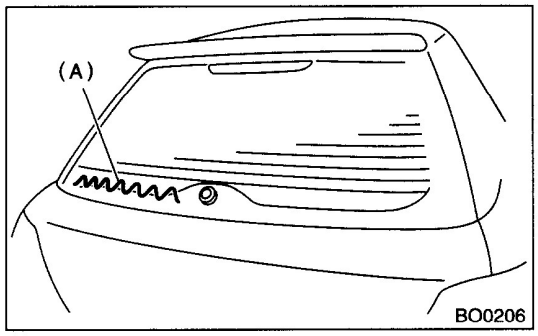
B: INSTALLATION

1) Install in the reverse order of removal.
2) Operate the rear wiper once.
3) Align the blade to rear defogger heat wire (A).



C: ADJUSTMENT

1) Operate the rear wiper once.
2) Align the blade to rear defogger heat wire (A).

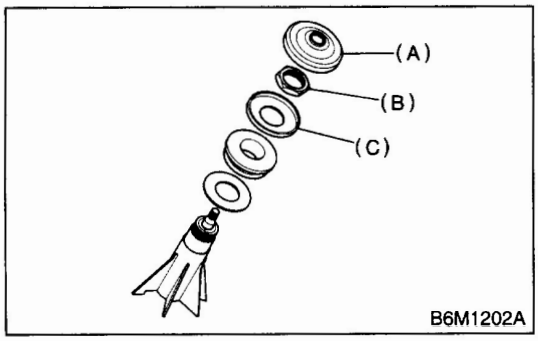


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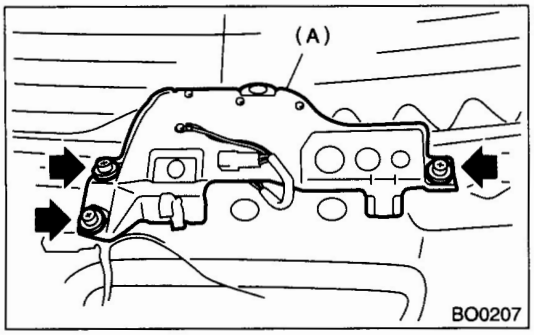
10.Rear Wiper Motor

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the rear wiper arm.
3) Remove the cap (A), nut (B), and spacer (C) from rear wiper shaft.

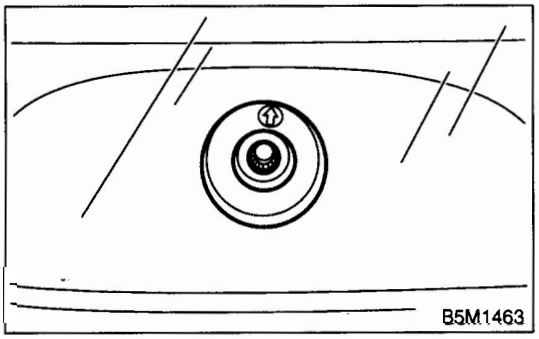


4) Remove the rear gate lower trim. <Ref. to EI-52, REMOVAL, Rear Gate Trim.>
5) Unclip the clip of harness and disconnect connector of wiper motor.
6) Loosen the bolts to remove wiper motor assembly (A).



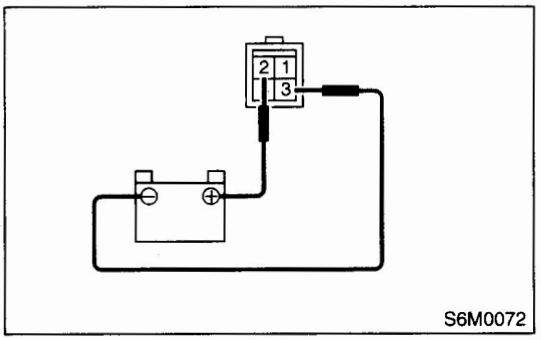
B: INSTALLATION

1) Install in the reverse order of removal.
2) Install the rear wiper cushion with the arrow mark facing up, as shown in the figure.

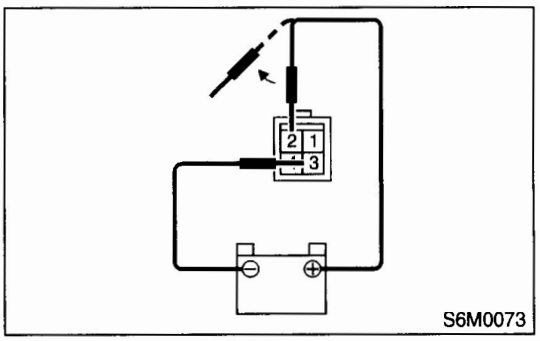


C: INSPECTION

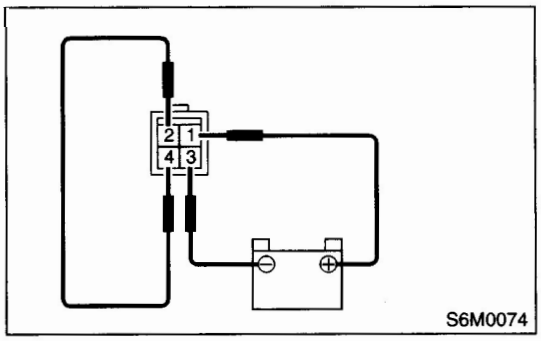
1) Connect the battery to wiper motor connector and confirm that wiper motor operates.



2) Connect the battery to terminal of connector and 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.

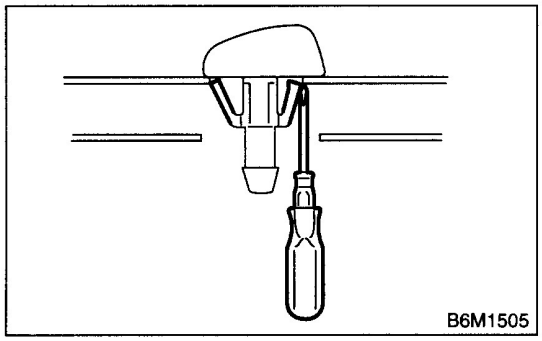


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11.Rear Washer Nozzle

A: REMOVAL

1) Remove the high-mount stop light. <Ref. to LI-24, REMOVAL, High-mounted Stop Light.>
2) Remove the washer hose from the washer nozzle.
3) Open the clips on the underside of the hood with a thin screwdriver or other tool, and remove the washer nozzle.



B: INSTALLATION

1) Install in the reverse order of removal.
2) Adjust the position of the washer liquid sprayer. <Ref. to WW-18, ADJUSTMENT, Rear Washer Nozzle.>

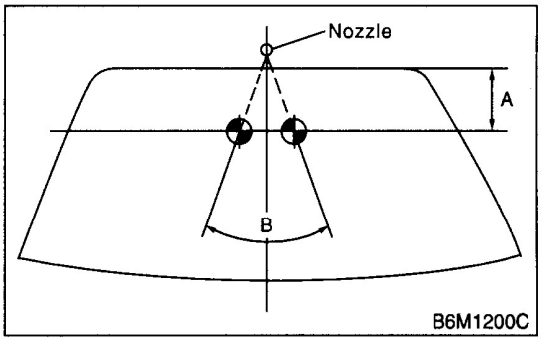
C: INSPECTION

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

D: ADJUSTMENT

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

Injection position:
A: 39 mm (1.54 in)
B: 72°

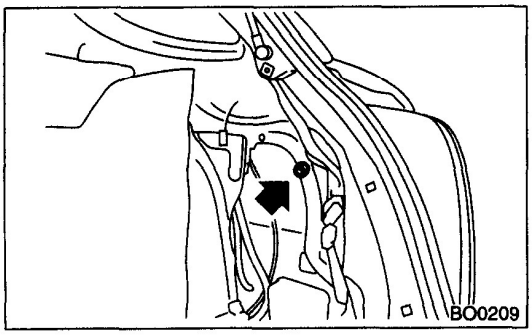


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12.Wiper Control Relay

A: REMOVAL

1) Disconnect the ground terminal from battery.
Remove the right quarter lower trim. <Ref. to EI-47, REMOVAL, Rear Quarter Trim.>
2) Loosen the nut to remove control unit.

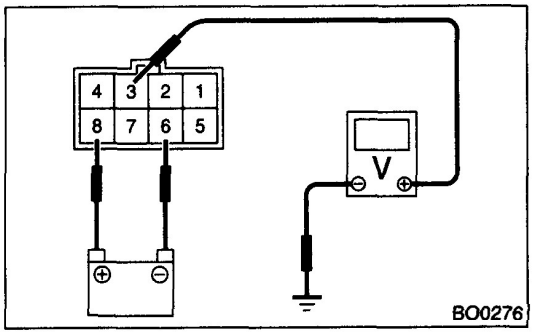


B: INSTALLATION

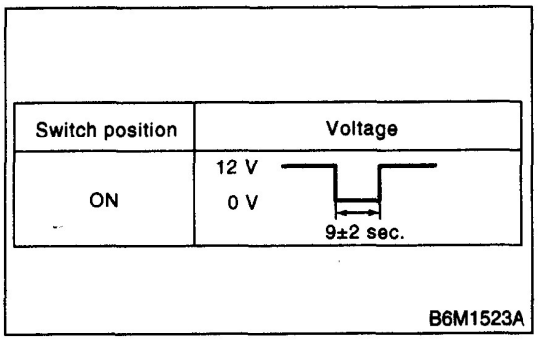
Install in the reverse order of removal.

C: INSPECTION

1) Disconnect the connector from the wiper control relay.
2) Connect the positive (+) 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 negative lead to ground.



3) Measure the voltage when the wiper relay is operated.



If operation is not as specified, replace the switch.

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WIPER CONTROL RELAY

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ENTERTAINMENT

ET

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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 the 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.

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2. Radio System

A: SCHEMATIC

1. RADIO

<Ref. to WI-52, SCHEMATIC, Audio System.>

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B: INSPECTION

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

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3. Cigarette Lighter System

A: SCHEMATIC

1. CIGARETTE LIGHTER

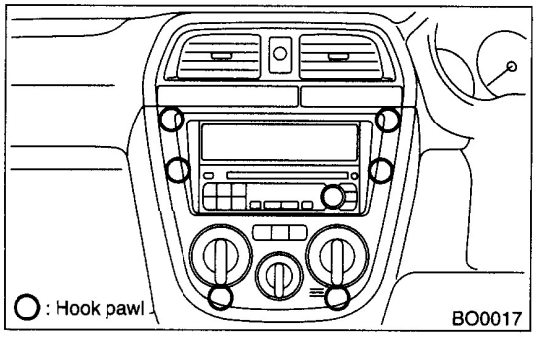
<Ref. to WI-88, SCHEMATIC, Front Accessory Power Supply System.>

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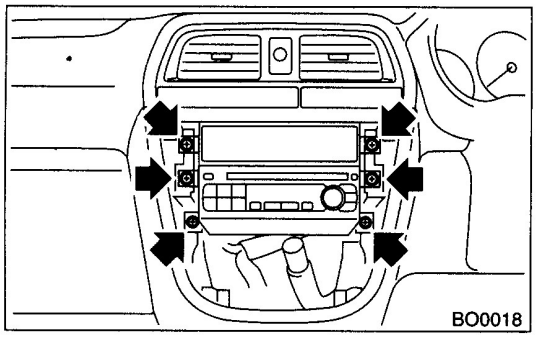
4. Radio Body

A: REMOVAL

1) Disconnect the battery ground cable.
2) Remove the center panel while disconnecting connector.



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



4) Disconnect the electric connectors and antenna feeder cord.

B: INSTALLATION

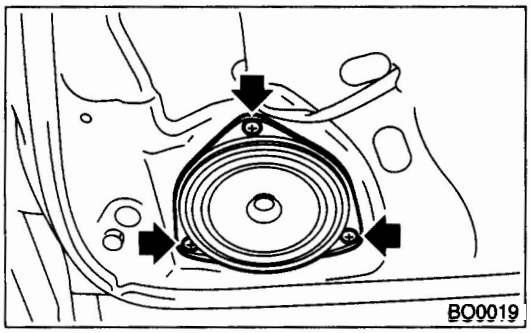
Install in the reverse order of removal.

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5. Front Speaker

A: REMOVAL

1) Disconnect the battery ground cable.
2) Remove the front door trim. <Ref. to EI-37, REMOVAL, Front Door Trim.>
3) Remove the front speaker mounting screws.



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

B: INSTALLATION

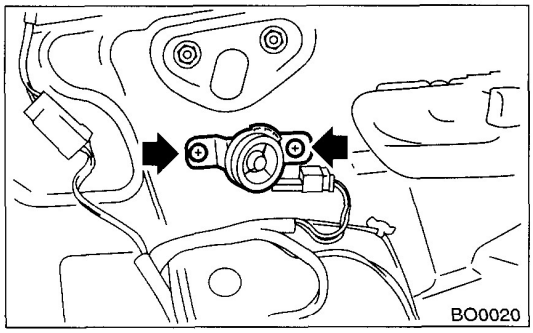
Install in the reverse order of removal.

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6. Tweeter

A: REMOVAL

1) Disconnect the battery ground cable.
2) Remove the front door trim. <Ref. to EI-37, REMOVAL, Front Door Trim.>
3) Remove the tweeter mounting screws.



4) Disconnect the harness connector and remove the tweeter.

B: INSTALLATION

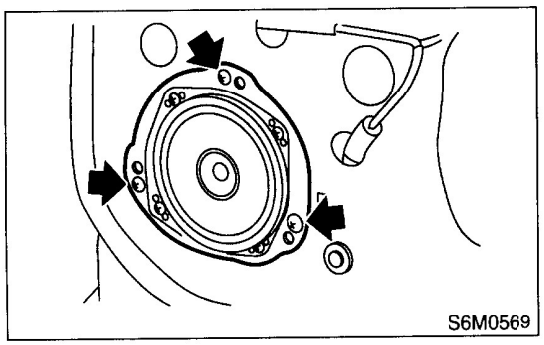
Install in the reverse order of removal.

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7. Rear Speaker

A: REMOVAL

1) Disconnect the battery ground cable.
2) Remove the rear door trim. <Ref. to EI-38, REMOVAL, Rear Door Trim.>
3) Remove the rear speaker mounting screws.



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

B: INSTALLATION

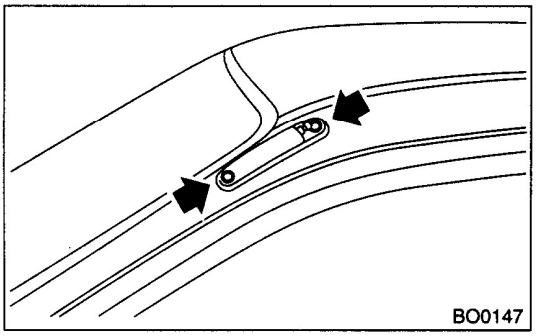
Install in the reverse order of removal.

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8. Antenna

A: REMOVAL

1) Remove the mounting screws and detach antenna.
2) Disconnect the harness connector.



B: INSTALLATION

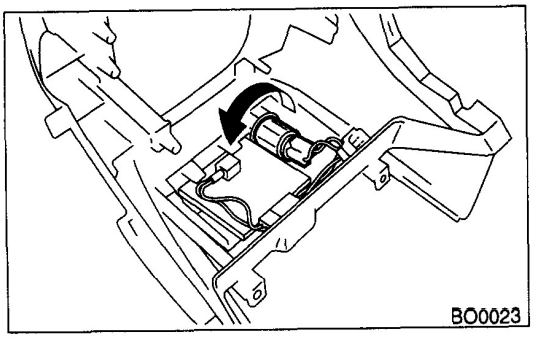
Install in the reverse order of removal.

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9. Cigarette Lighter

A: REMOVAL

1) Disconnect the battery ground cable.
2) Remove the center panel. <Ref. to ET-6, REMOVAL, Radio Body.>
3) Disconnect the harness connectors and remove the cigarette lighter.



B: INSTALLATION

Install in the reverse order of removal.

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CIGARETTE LIGHTER

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COMMUNICATION SYSTEM

COM

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3. Horn 4
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1. General Description

A: PREPARATION TOOL

1. GENERAL TOOLS

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

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2. Horn System

A: SCHEMATIC

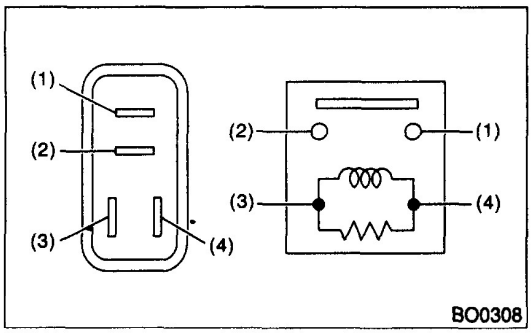
1. HORN

<Ref. to WI-89, SCHEMATIC, Horn System.>

B: INSPECTION

1. HORN RELAY

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



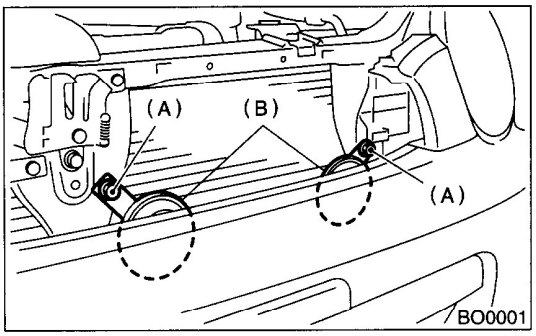
Current	Terminal No.	Standard
Flow	1 and 2	Less than 1Ω
No Flow		More than 1MΩ

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3. Horn

A: REMOVAL

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

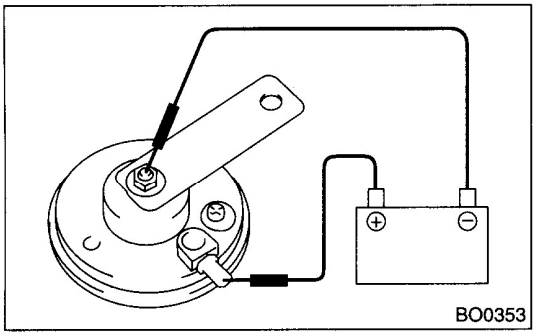


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

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



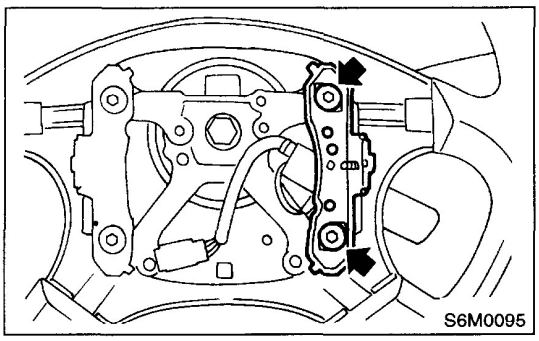
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4. Horn Switch

A: REMOVAL

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

1) Disconnect the battery ground cable.
2) Remove the driver's airbag module. <Ref. to AB-12, Driver's Airbag Module.>
3) Remove the horn switch from the steering wheel as shown.

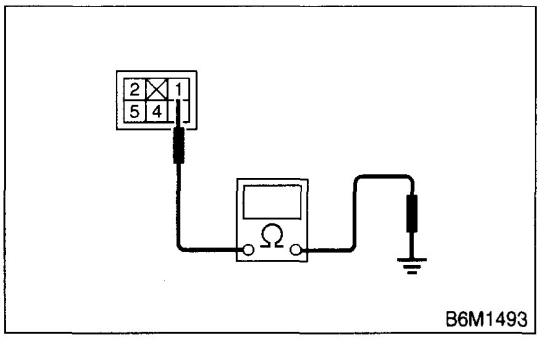

S6M0095

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the horn switch resistance.



B6M1493

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

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HORN SWITCH

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GLASS/WINDOWS/MIRRORS

GW

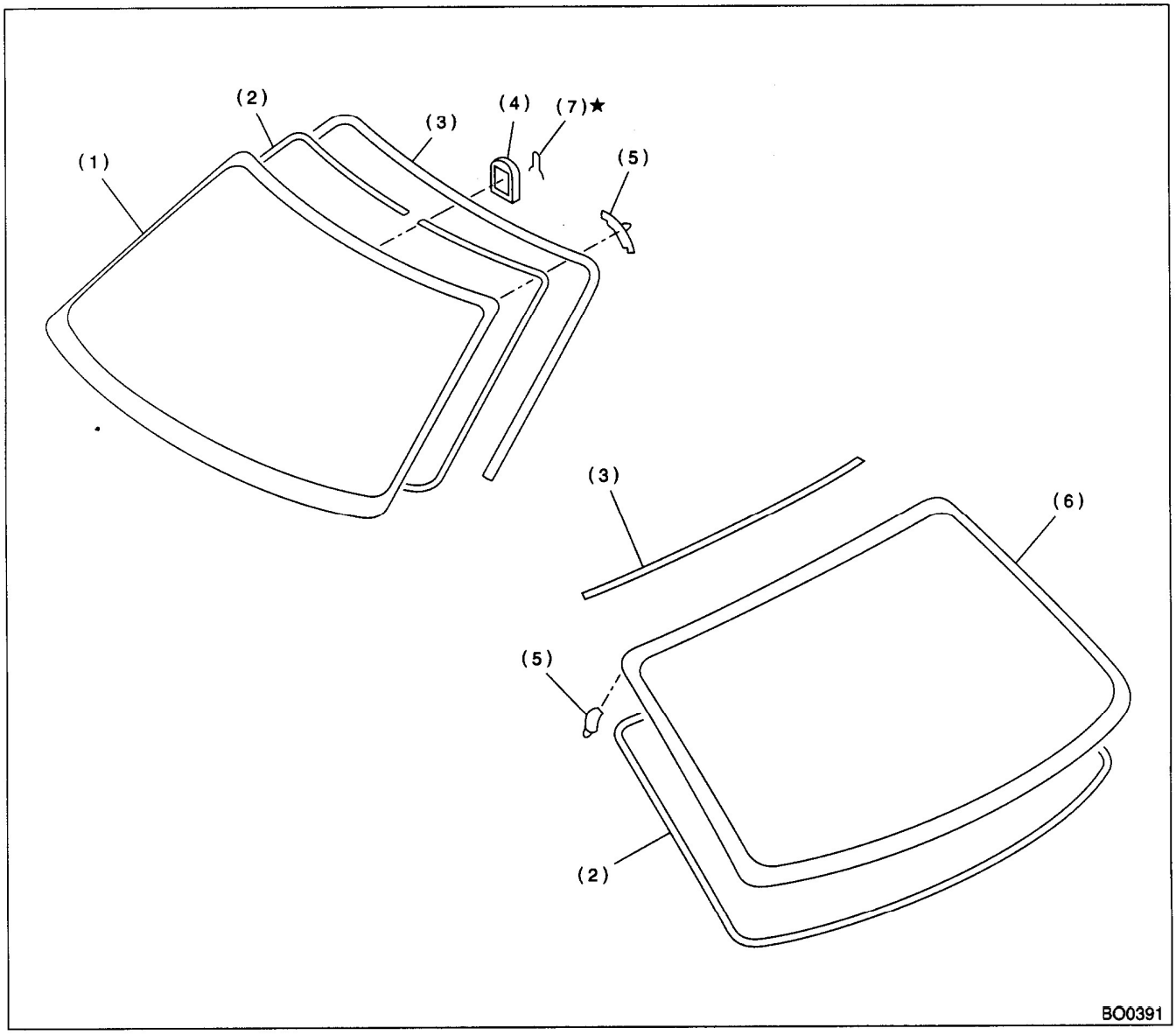
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1. General Description

A: COMPONENT

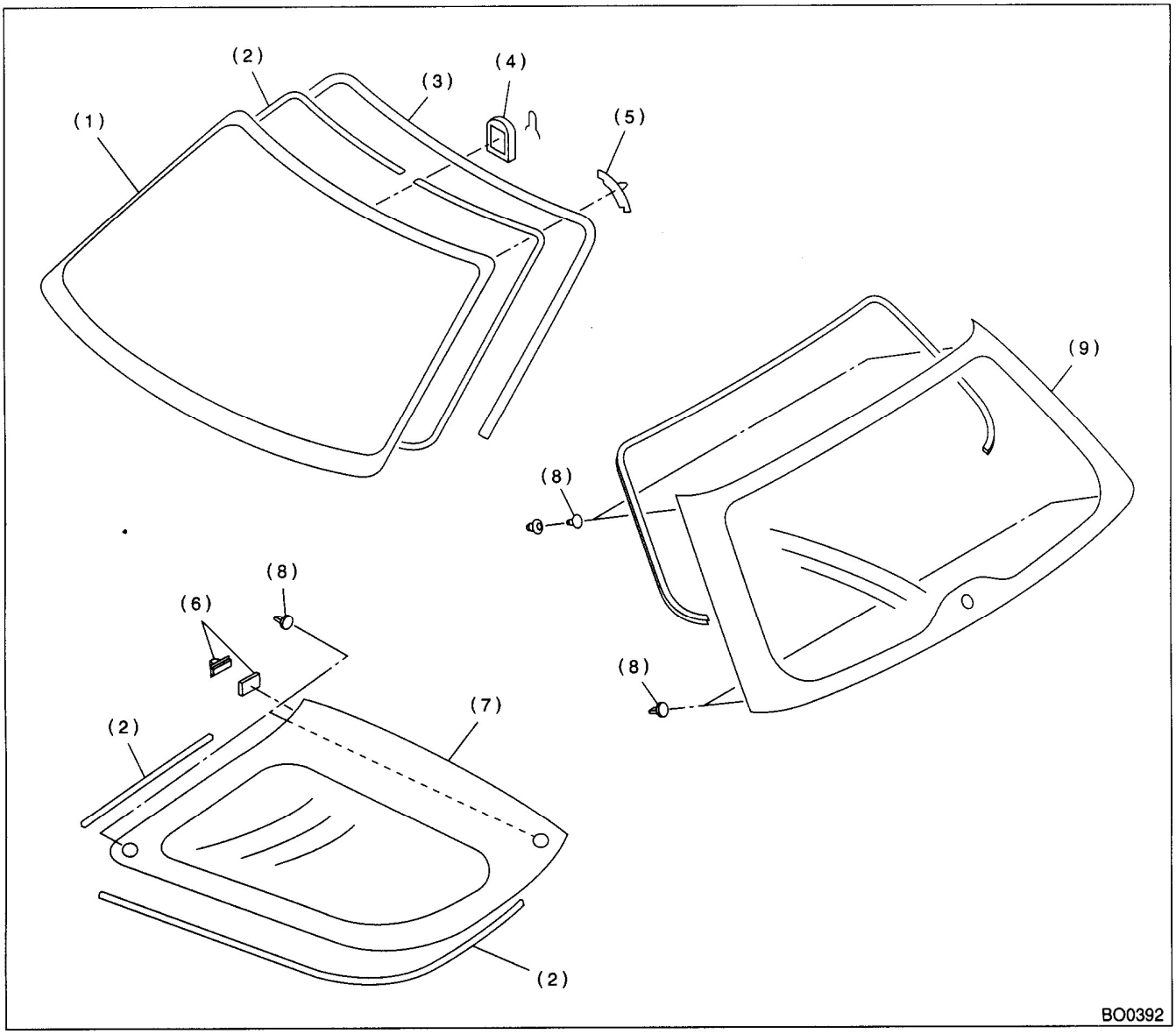
1. FIXED GLASS (SEDAN)



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

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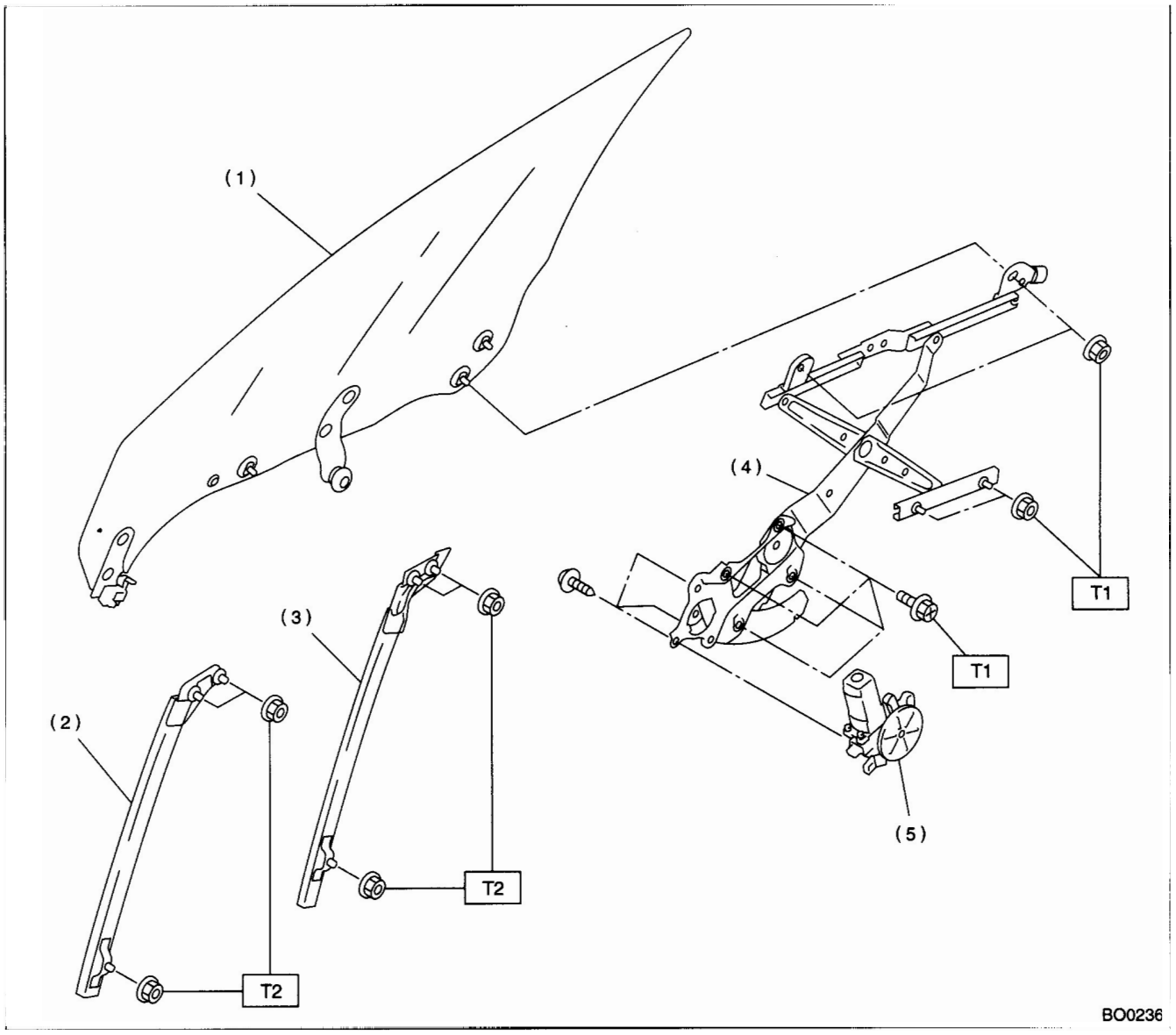
2. FIXED GLASS (WAGON)



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

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3. FRONT DOOR GLASS

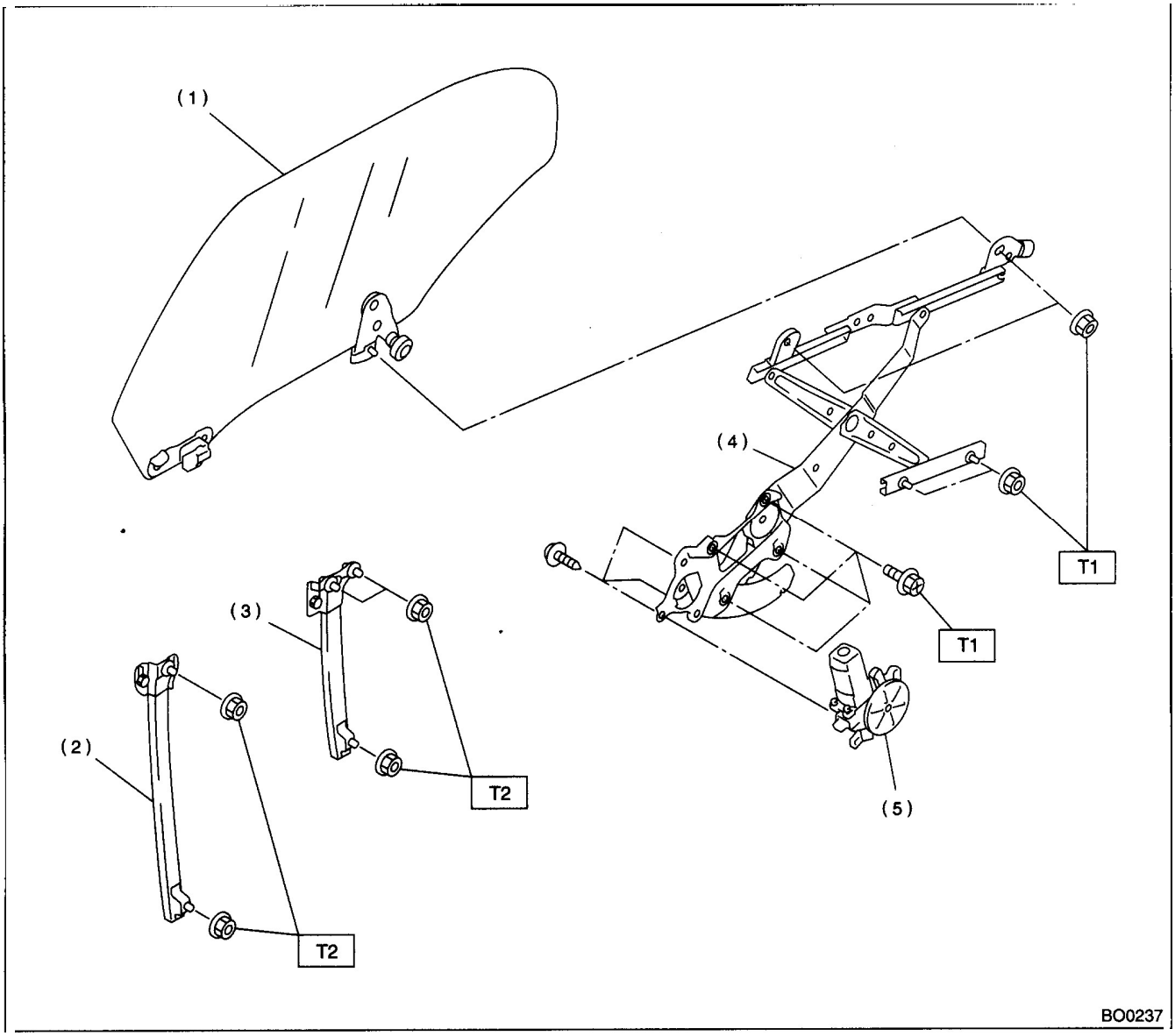


(1) Glass
(2) Door sash (Front)
(3) Door sash (Rear)
(4) Regulator ASSY
(5) Motor ASSY

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.4 (0.75, 5.5)
T2: 13.7 (1.4, 10.1)

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4. REAR DOOR GLASS

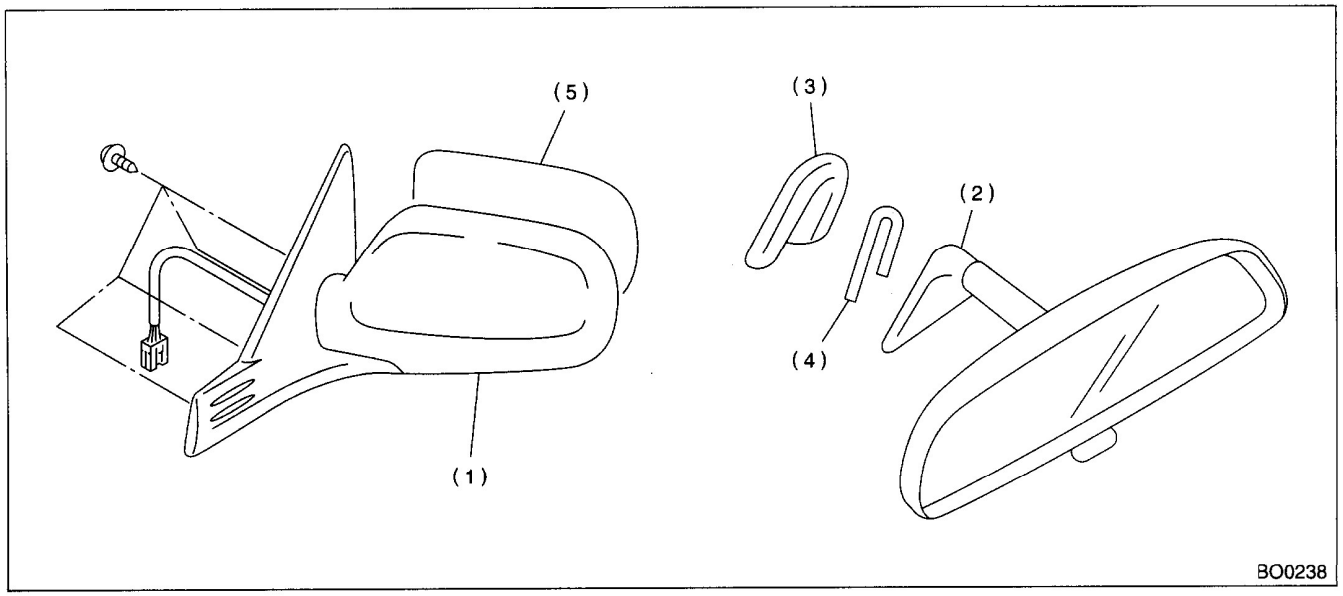


(1) Glass
(2) Door sash (Front)
(3) Door sash (Rear)
(4) Regulator ASSY
(5) Motor ASSY

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.4 (0.75, 5.5)
T2: 13.7 (1.4, 10.1)

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5. MIRRORS



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

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B: CAUTION

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

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C: PREPARATION TOOL

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

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2. Power Window System

A: SCHEMATIC

<Ref. to WI-109, Power Window System.>

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B: INSPECTION

Symptom	Repair order
All power windows does not operate.	(1) Fuse (SBF-6) (2) Power window circuit breaker (3) Power window relay (4) Wire harness
One window does not operate.	(1) Power window main switch (2) Power window sub switch (3) Power window motor (4) Wire harness
"Window Lock" does not operate.	(1) Power window main switch

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3. Rear Window Defogger System

A: SCHEMATIC

<Ref. to WI-117, Rear Window Defogger System.>

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B: INSPECTION

Symptom	Repair order
Rear window defogger does not operate.	(1) Fuse (M/B No. 1) (F/B No. 11) (2) Rear defogger relay (3) Rear defogger timer (4) Defogger switch (5) Rear defogger condenser (6) Deffogger wire (7) Wire harness

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4. Remote Control Mirror System

A: SCHEMATIC

<Ref. to WI-118, Remote Controlled Rearview Mirror System.>

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B: INSPECTION

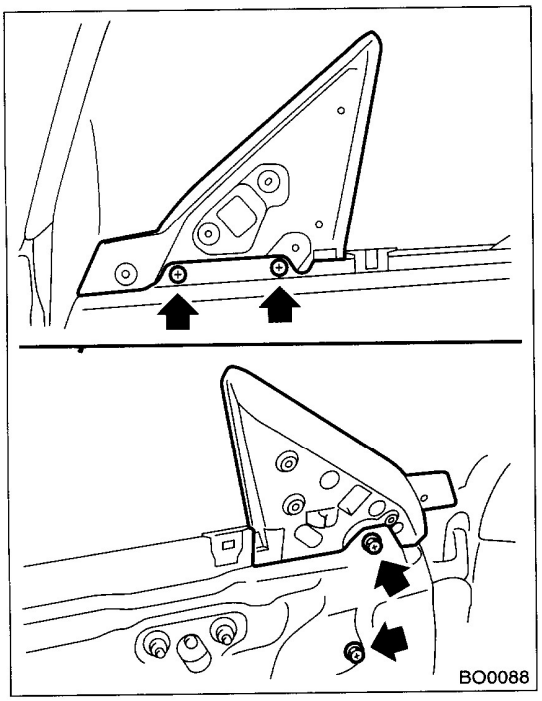
Symptom	Repair order
All function does not operate.	(1) Fuse (F/B No. 1) (F/B No. 4) (F/B No. 19) (2) Mirror switch (3) Wire harness
One side of the mirror motor does not operate.	(1) Mirror switch (2) Mirror motor (3) Wire harness
Mirror heater does not operate.	(1) Mirror switch (2) Mirror heater (3) Wire harness

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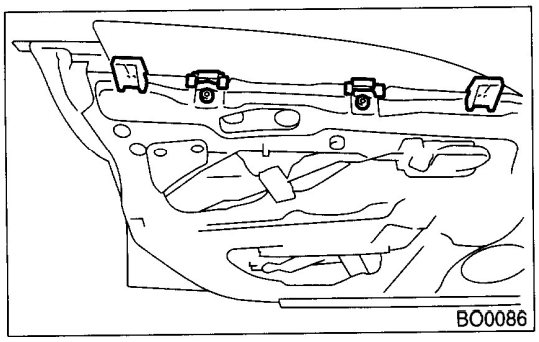
5. Front Door Glass

A: REMOVAL

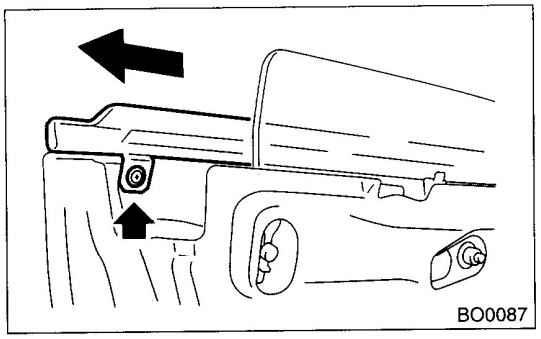
1) Remove the front door trim. <Ref. to EI-37, REMOVAL, Front Door Trim.>
2) Remove the sealing cover. <Ref. to EB-14, REMOVAL, Front Sealing Cover.>
3) Remove the outer mirror assembly. <Ref. to GW-33, REMOVAL, Outer Mirror Assembly.>
4) Remove the gusset.



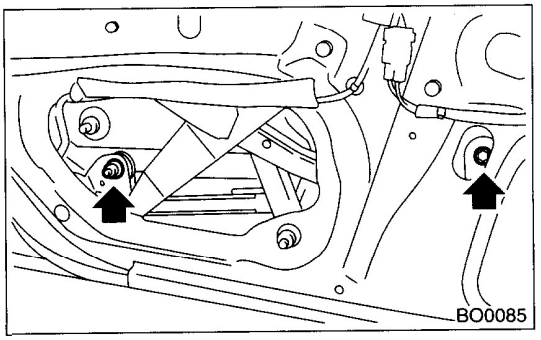
5) Remove the stabilizers and trim hooks.



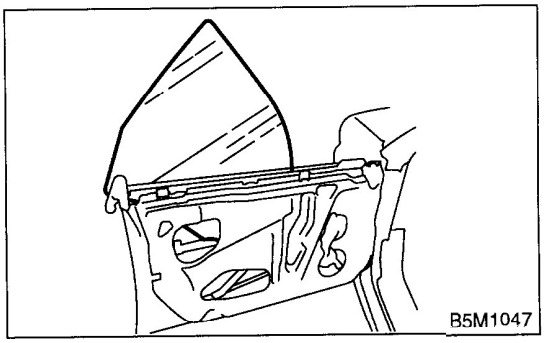
6) Remove the rear end of door weather strip and weather strip outer.



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



8) Remove the door glass.



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

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B: INSTALLATION

1) Install in the reverse order of removal.

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

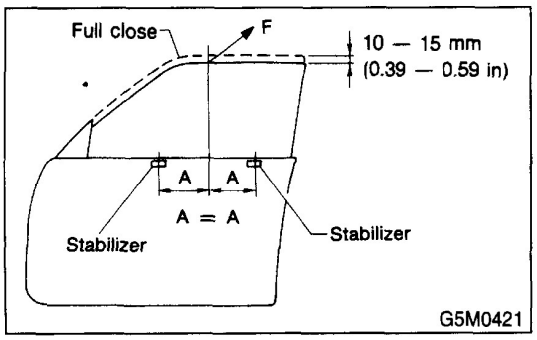
2) Adjust the front door glass. <Ref. to GW-17, ADJUSTMENT, Front Door Glass.>

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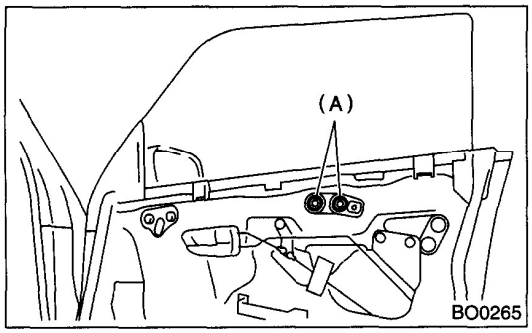
C: ADJUSTMENT

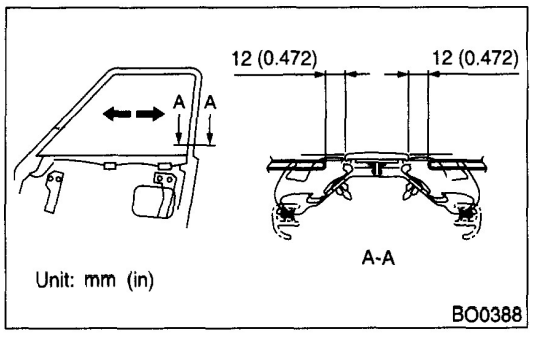
NOTE:
Before adjustment, ensure that all adjusting bolts of stabilizer, upper stopper, and sash are loose and door glass is raised so that it is in contact with weatherstrip.

1) Temporarily tighten one adjusting bolt on one side of rear sash at the midpoint of slotted hole in the inner panel.
2) Temporarily tighten 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±4.9 N (4.6±0.5 kg, 11.0±1.1 lb) (F) to upper edge of glass above midpoint of two outer stabilizers, press the inner stabilizer at pressure of 10±5 N (1.0±0.5 kg, 0.2±0.1 lb) to the glass, then secure it.

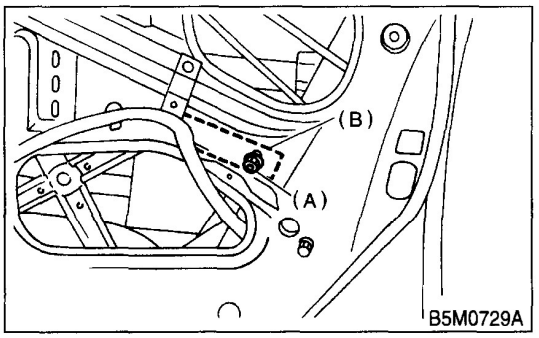


4) For adjustment of clearance between front glass and center pillar cover, loosen the nuts (A), and move the glass sash back and forward until clearance becomes the value shown.

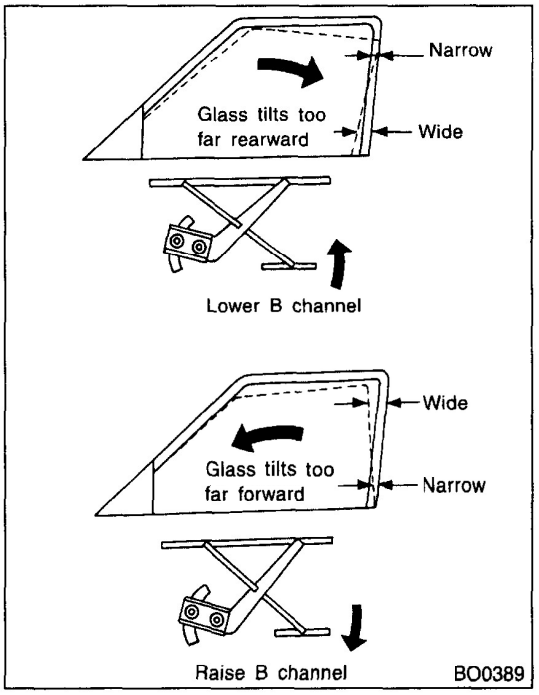




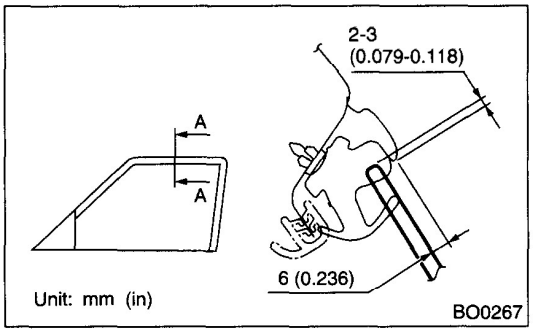
5) For adjustment of upper and lower ends of center pillar, loosen the adjusting nut (A) of B-channel (B).



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

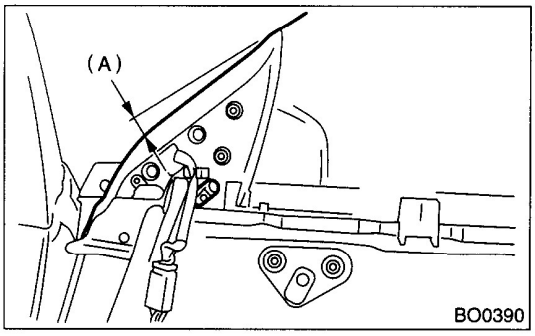


7) For glass stroke adjustment, close door, raise glass until positional relationship between glass and weatherstrip becomes as shown. And secure the glass so that the upper stopper lightly touches the glass holder.



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

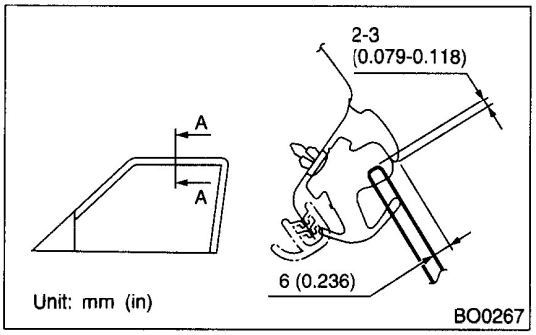


(A) 0-1.5 mm (0-0.059 in)

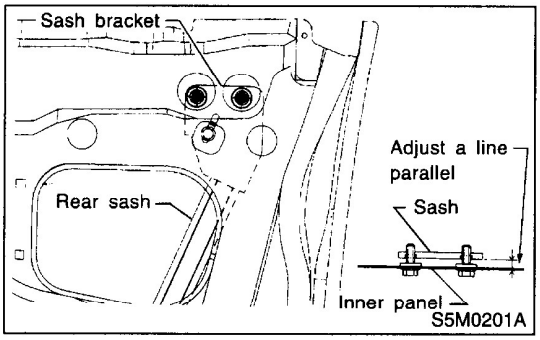
8) After stabilizer adjustment, carry out glass crimp adjustment. First, visually ensure positional relationship between retainer & molding and glass of the roof side, and then begin with rear sash adjustment. Adjust two adjusting bolts alternately step by step to obtain dimensions shown below (cross-section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

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

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



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



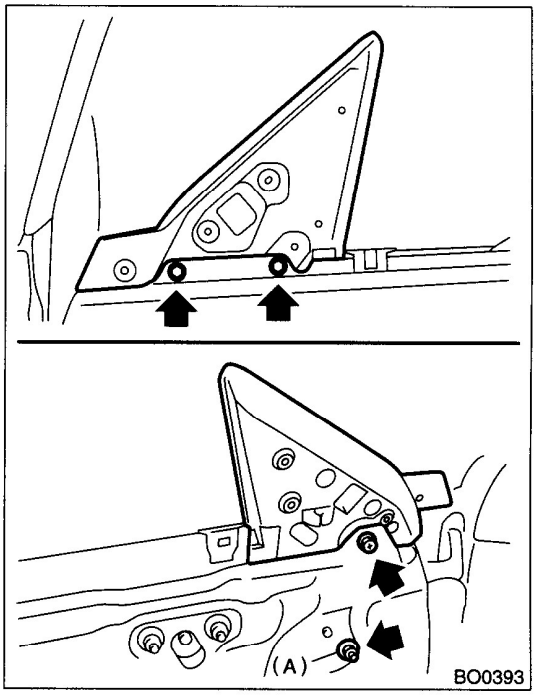
10) Make adjustment of front sash in the same manner as that of rear sash.

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

13) During adjustments, loosen other three clamping bolts.



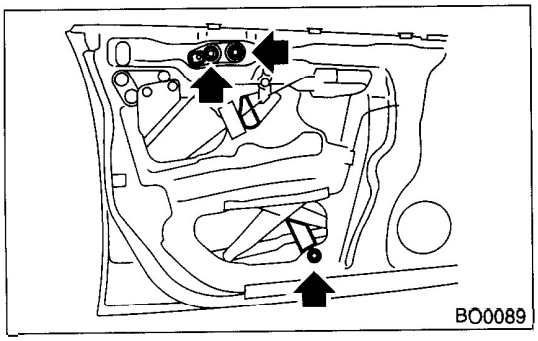
14) After adjustment, tighten the bolts and nuts.

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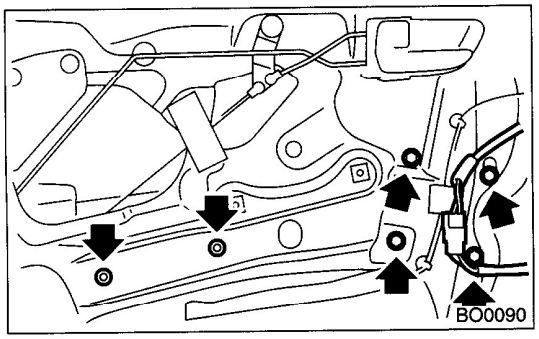
6. Front Regulator and Motor Assembly

A: REMOVAL

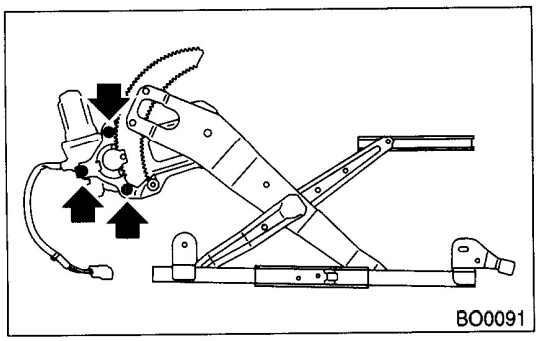
1) Remove the door glass. <Ref. to GW-15, REMOVAL, Front Door Glass.>
2) Loosen the nuts to remove the rear sash.



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



5) Loosen the screw to remove motor assembly.



B: INSTALLATION

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

C: INSPECTION

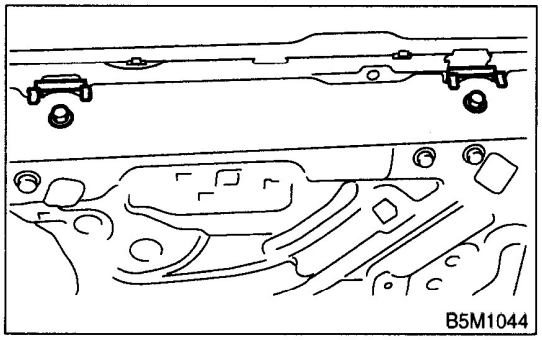
1) Make sure that the power window motor rotates properly when the battery voltage is applied to the terminals of motor connector.
2) Change the polarity of battery connections to terminals to ensure that the motor rotates in reverse direction.

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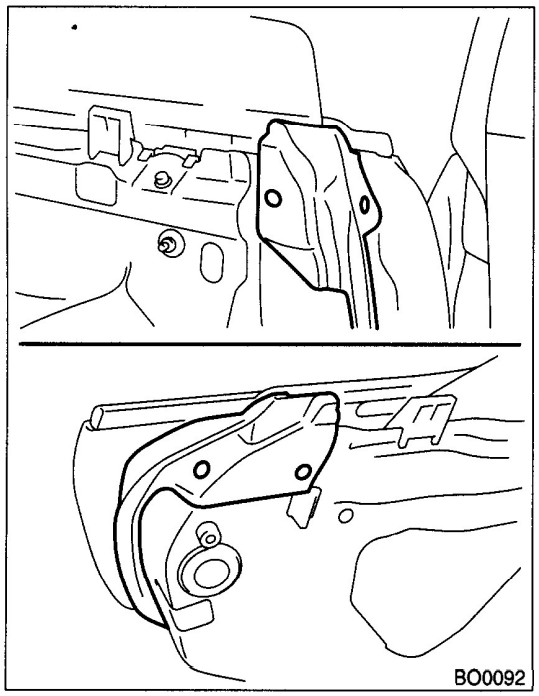
7. Rear Door Glass

A: REMOVAL

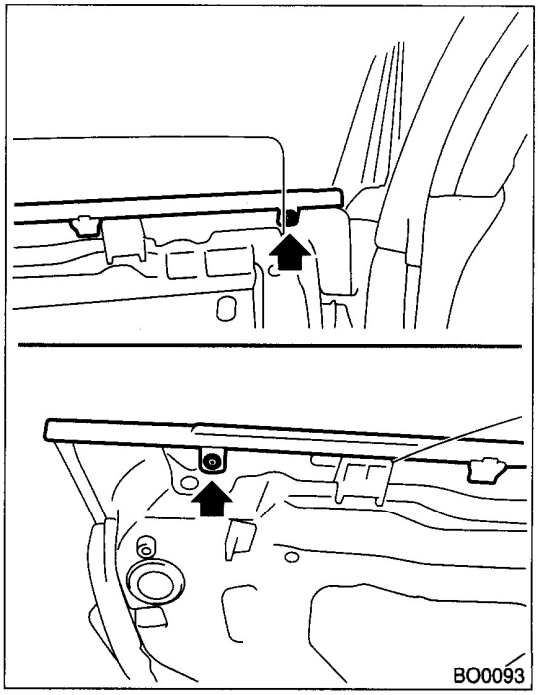
1) Remove the rear door trim. <Ref. to EI-38, REMOVAL, Rear Door Trim.>
2) Remove the sealing cover. <Ref. to EB-17, REMOVAL, Rear Sealing Cover.>
3) Remove the stabilizer.



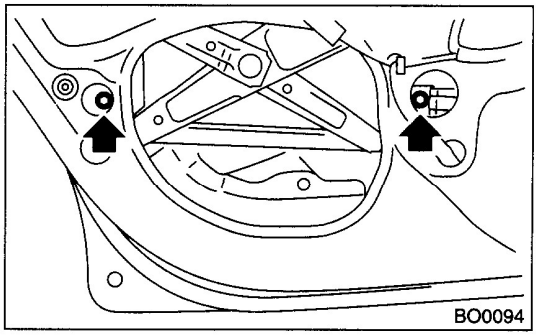
4) Remove the door weather strip.



5) Loosen two screw to remove weather strip outer.



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



7) Loosen two rear sash installation nuts, and move the rear sash backward.
8) Remove the glass.

CAUTION:
Avoid impact and damage to the glass.

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B: INSTALLATION

1) Install in the reverse order of removal.

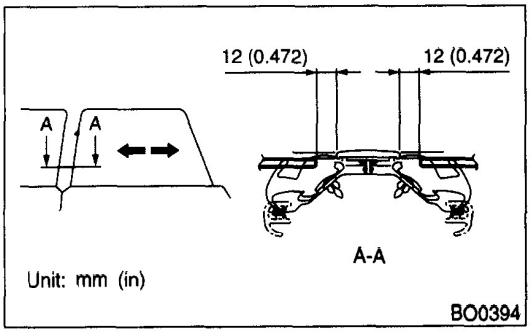
CAUTION:
Make sure that glass stay is placed securely in sash.

2) Adjust rear door glass. <Ref. to GW-21, ADJUSTMENT, Rear Door Glass.>

C: ADJUSTMENT

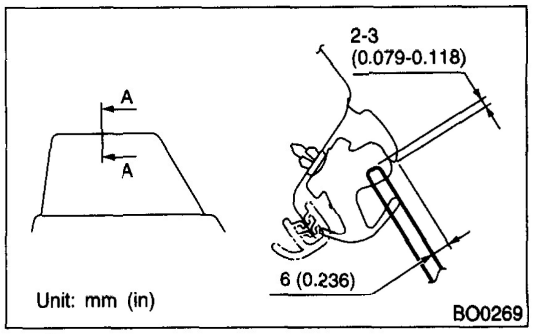
NOTE:
The rear door glass, as a rule, should be adjusted in the same manner as front glass, although they are different in dimension. Special notes for rear glass are given below.

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



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

2) Adjust the crimp of glass using the following dimensions as a guide line.



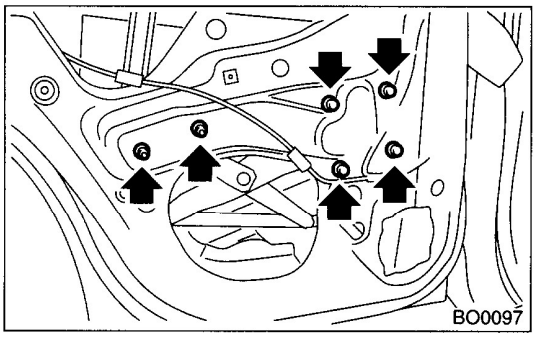
CAUTION:
• If crimp of rear glass is higher than necessary, glass may get caught in weatherstrip of center pillar corner, resulting in early wear of weatherstrip. Be careful when adjusting.
• After adjustment, move glass up and down to check whether it is caught.

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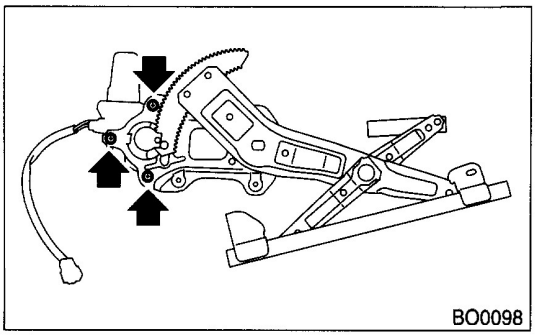
8. Rear Regulator and Motor Assembly

A: REMOVAL

1) Remove the door glass. <Ref. to GW-20, REMOVAL, Rear Door Glass.>
2) Remove the front sash.
3) Disconnect the motor connector.
4) Loosen four bolts and two nuts to remove regulator assembly.



5) Loosen screws to remove motor assembly.



B: INSTALLATION

1) Install in the reverse order of removal.
2) Adjust the rear door glass. <Ref. to GW-21, ADJUSTMENT, Rear Door Glass.>

C: INSPECTION

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

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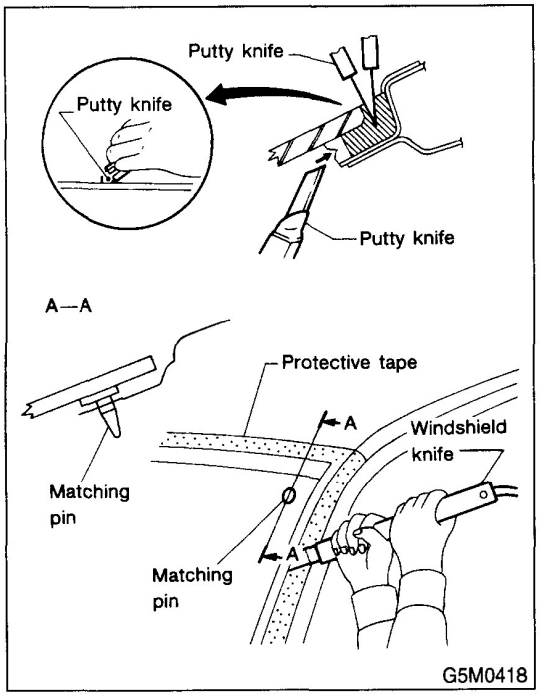
9. Windshield Glass

A: REMOVAL

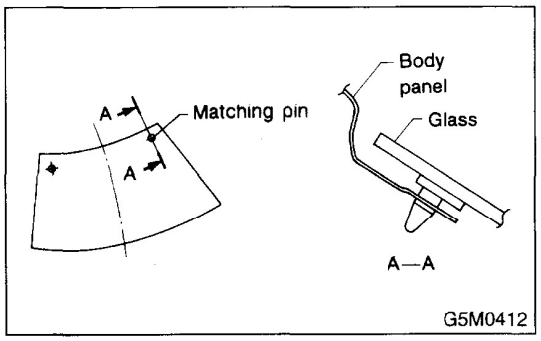
1. USING WINDSHIELD KNIFE

1) Remove the cowl panel. <Ref. to EI-33, REMOVAL, Cowl Panel.>
2) Remove the glass molding.
3) Tape the body side of the circumference of windshield glass for protection.
4) Apply the 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.

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

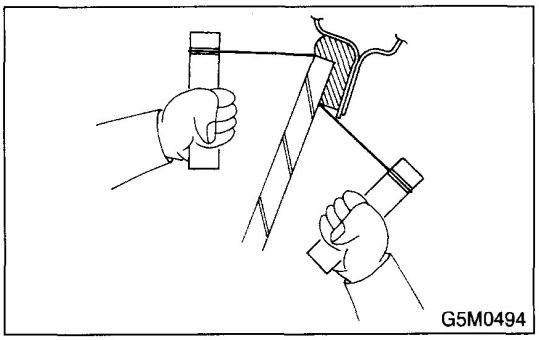


NOTE:
Because the matching pins are bonded to the corners of glass, use piano wire to cut the pin.



2. USING PIANO WIRE

1) Remove the cowl panel. <Ref. to EI-33, REMOVAL, Cowl Panel.>
2) Remove the roof molding and upper front molding.
3) Tape the body side of the circumference of windshield glass for protection.
4) Make a hole in the adhesive layer using drill or knife.
5) Pass the piano wire through the hole, and attach securely both the wire ends to pieces of wood.



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

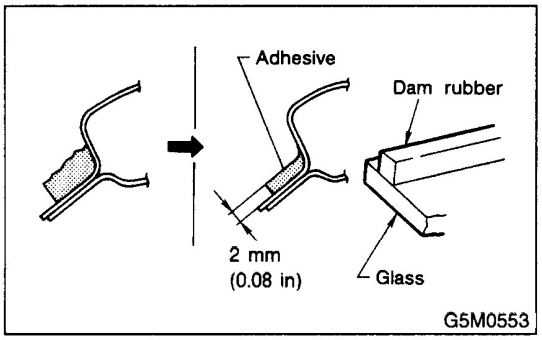
CAUTION:
- **Do not tightly pull the piano wire against the windshield glass edge.**
- **Be careful not to damage interior and exterior parts.**
- **When removal is made with area close to instrument panel, place a protection plate over it. Pay particular attention to the removal.**
- **Do not cross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

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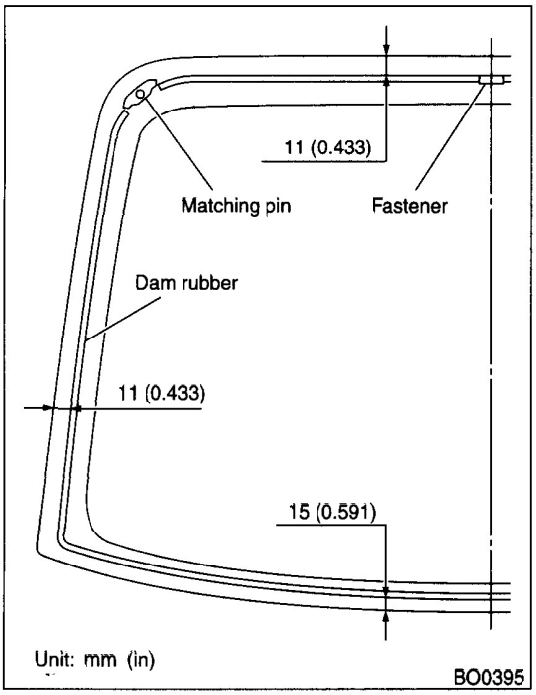
B: INSTALLATION

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.

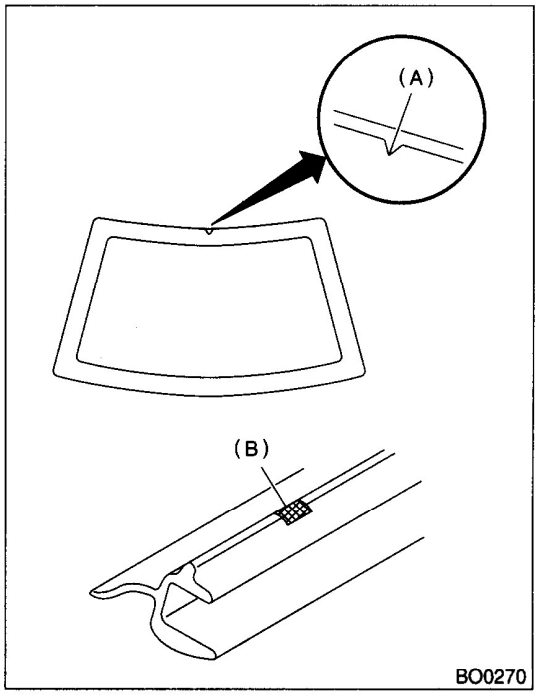
CAUTION:
Be careful not to damage the body and paint surface.



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

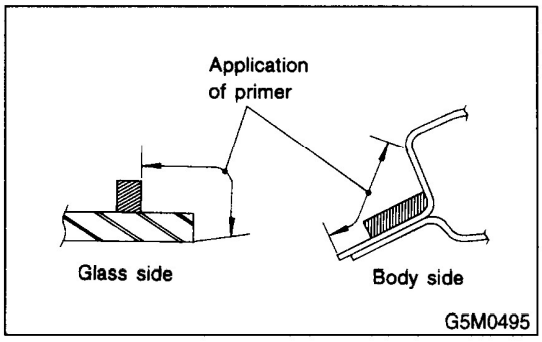


7) Remove the glass from body.
8) Fit the molding mark (B) to notch (A).



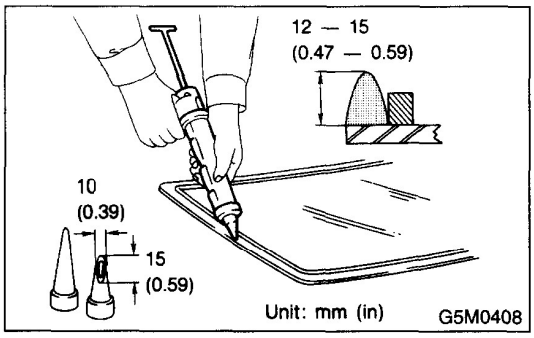
9) Apply the primer to the adhesive layer of glass using sponge.
10) Apply the primer to the adhesive layer of body.

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

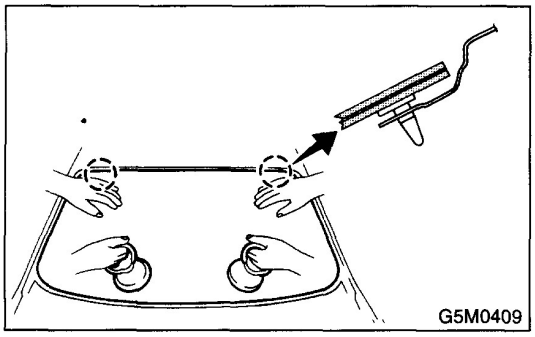


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11) Cut off the cartridge nozzle tip and set it in sealant gun as shown.



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



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

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

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

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

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

CAUTION:
When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

18) Install the cowl panel. <Ref. to EI-33, INSTALLATION, Cowl Panel.>

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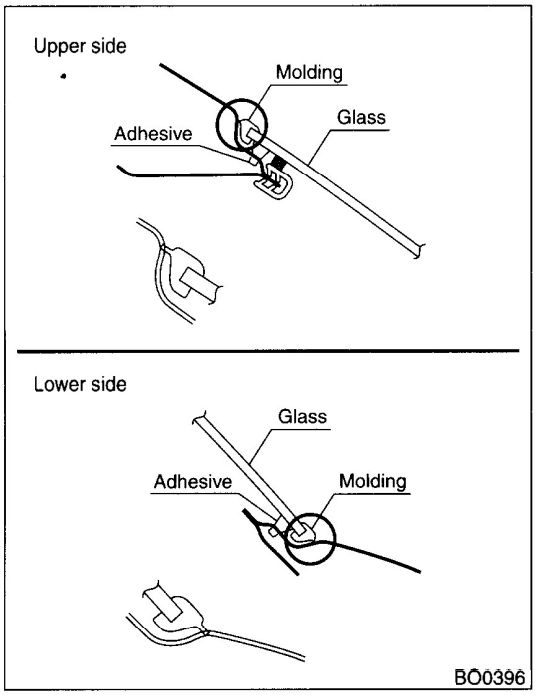
10.Rear Gate Glass

A: REMOVAL

1) Remove the rear wiper motor. <Ref. to WW-17, REMOVAL, Rear Wiper Motor.>
2) Remove the electrical connector from the rear defogger terminal.
3) Remove the glass in the same procedure as for windshield glass. <Ref. to GW-23, REMOVAL, Windshield Glass.>

B: INSTALLATION

1) Apply the adhesive evenly to the glass attachment area.
2) Insert the glass clip pin into the rear gate hole, and after pushing on the area around the clip pin to secure it, push lightly all around the area to seal it.
3) About one hour after installation, conduct a leak test.



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

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

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

CAUTION:
When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

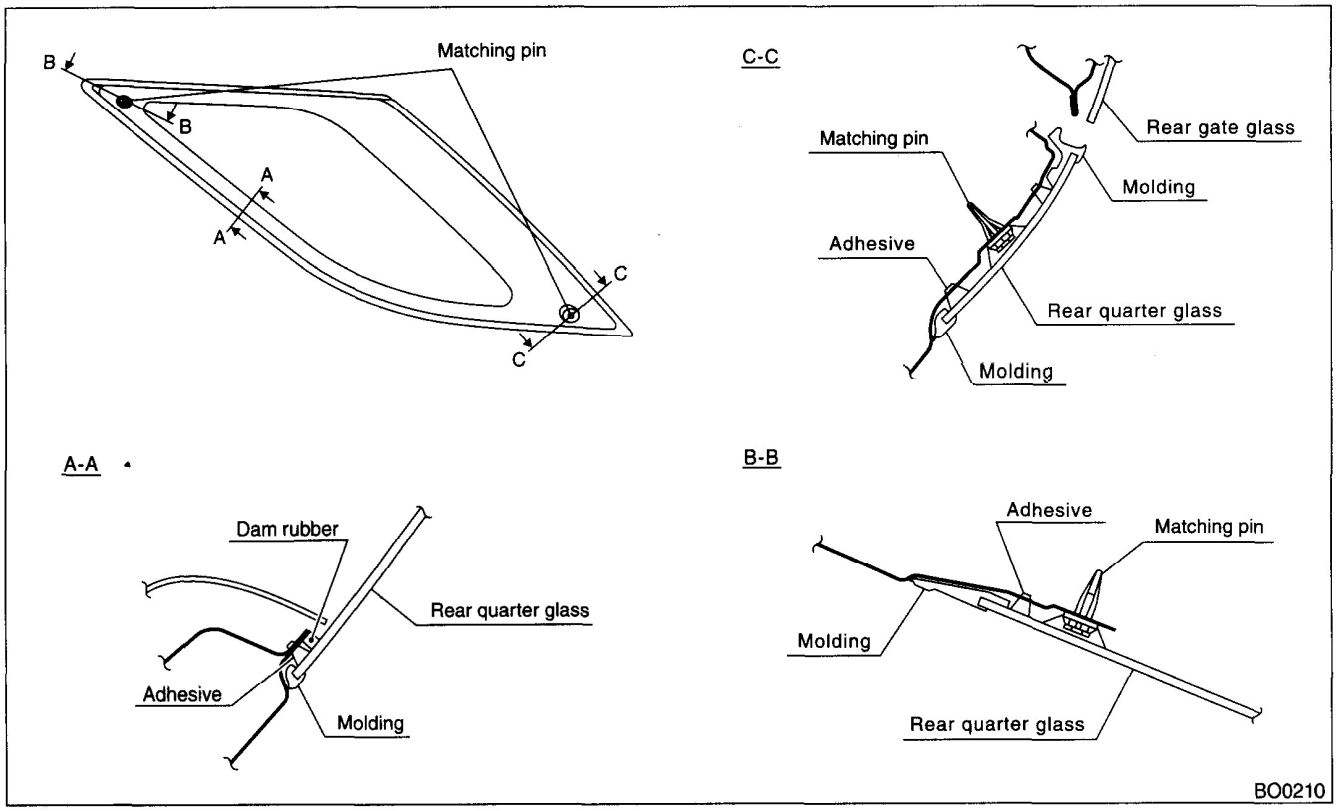
5) Connect the rear defogger terminals.
6) Install the rear wiper. <Ref. to WW-17, INSTALLATION, Rear Wiper Motor.>

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11.Rear Quarter Glass

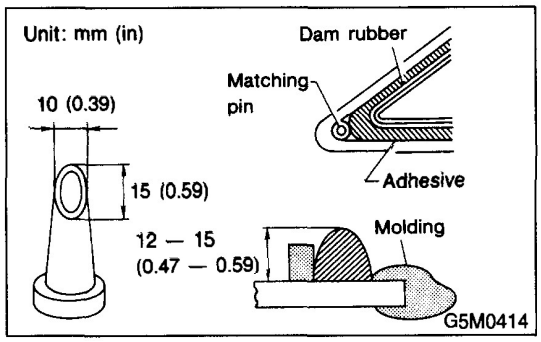
A: REMOVAL

Remove the glass in the same procedure as for windshield glass. <Ref. to GW-23, REMOVAL, Windshield Glass.>



B: INSTALLATION

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



2) Install the glass in the same procedure as for windshield the glass. <Ref. to GW-24, INSTALLATION, Windshield Glass.>

CAUTION:

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

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

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

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

CAUTION:
When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

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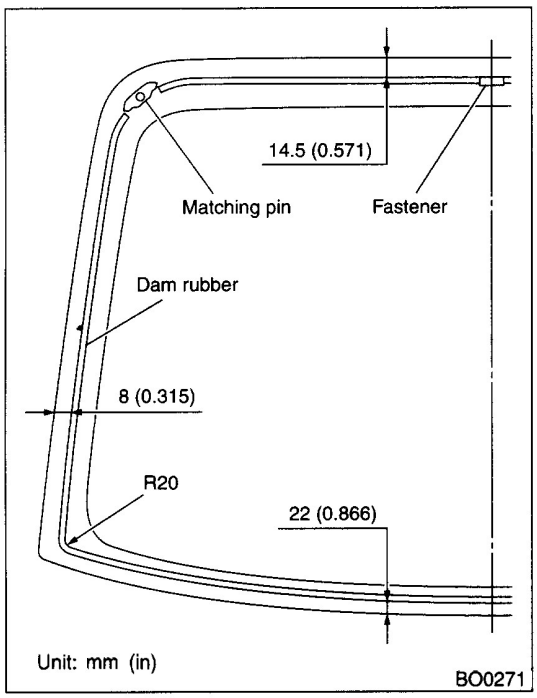
12. Rear Window Glass

A: REMOVAL

1) Disconnect the electrical connectors from the rear defogger terminals.
2) Remove the glass in the same procedure as for windshield glass. <Ref. to GW-23, REMOVAL, Windshield Glass.>

B: INSTALLATION

1) Bond the dam rubber and matching pin.



2) Install the glass in the same procedure as for windshield glass. <Ref. to GW-24, INSTALLATION, Windshield Glass.>
3) Connect the rear defogger terminals.

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

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

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

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

CAUTION:
When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

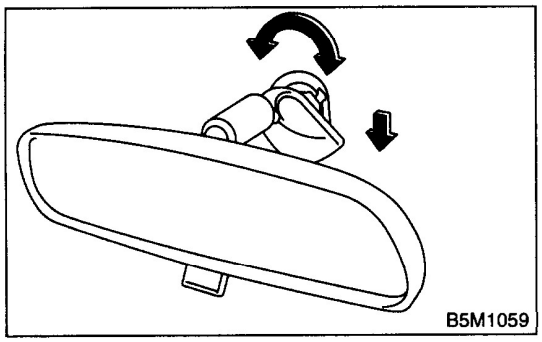
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13.Inner Rearview Mirror

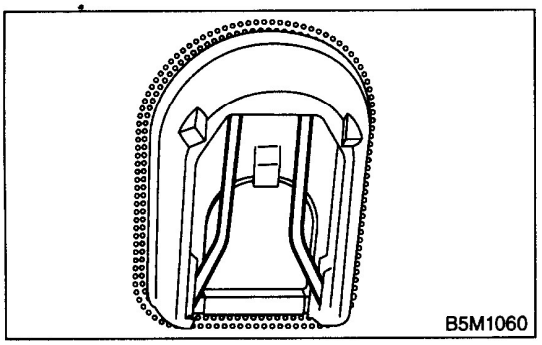
A: REMOVAL

NOTE:
The spring cannot be reused. Prepare a new spring before removal.

1) Turn the mirror base 90 degrees clockwise or counterclockwise to remove it.



2) Remove the spring from the mirror base.



CAUTION:
Be careful not to damage the mirror surface.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Do not let mirror be damaged.
Do not let spring deteriorate.

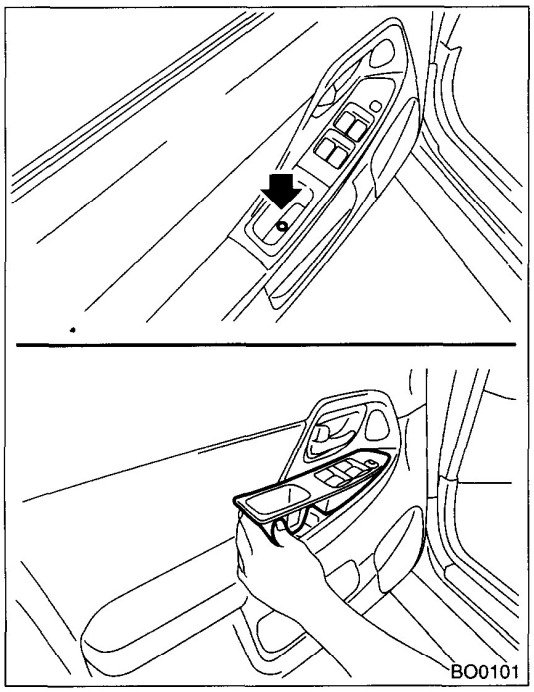
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14.Power Window Control Switch

A: REMOVAL

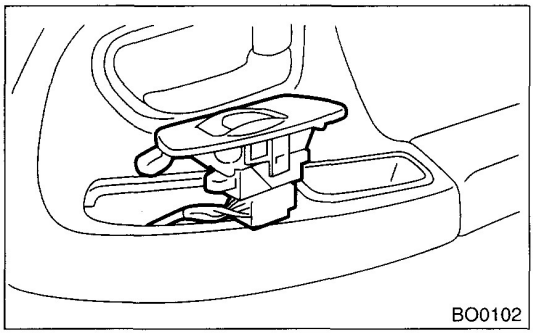
1. MAIN SWITCH

1) Disconnect the ground terminal from battery.
2) Loosen the screw to remove power window main switch.
3) Disconnect the connector.



2. SUB-SWITCH

1) Disconnect the ground terminal from battery.
2) Remove the switch panel.
3) 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.

C: INSPECTION

1. MAIN SWITCH

Measure switch resistance.

Driver's switch:

Switch position	Terminal No.	Standard
UP	13 and 2, 1 and 5	less than 1Ω
OFF	1 and 2 1 and 5 2 and 5	less than 1Ω
DOWN	13 and 1, 2 and 5	less than 1Ω
AUTO DOWN	13 and 1, 2 and 5	less than 1Ω

Front passenger's switch:

Switch position	Terminal No.	Standard
UP	13 and 6, 7 and 5	less than 1Ω
OFF	6 and 7 and 5	less than 1Ω
DOWN	13 and 7, 6 and 5	less than 1Ω

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Rear left switch:

Switch position	Terminal No.	Standard
UP	10 and 13, 9 and 5	less than 1Ω
OFF	10 and 9 10 and 5 9 and 5	less than 1Ω
DOWN	13 and 9, 10 and 5	less than 1Ω

Rear right switch:

Switch position	Terminal No.	Standard
UP	13 and 16, 15 and 5	less than 1Ω
OFF	16 and 15 16 and 5 5 and 15	less than 1Ω
DOWN	13 and 15, 16 and 5	less than 1Ω

If NG, replace the main switch.

2. SUB-SWITCH

Measure switch resistance.

Front passenger's door switch and rear door switch:

Switch position	Terminal No.	Standard
UP	8 and 5, 6 and 7	less than 1Ω
OFF	4 and 5, 6 and 7	less than 1Ω
DOWN	8 and 7, 4 and 5	less than 1Ω

If NG, replace the sub-switch.

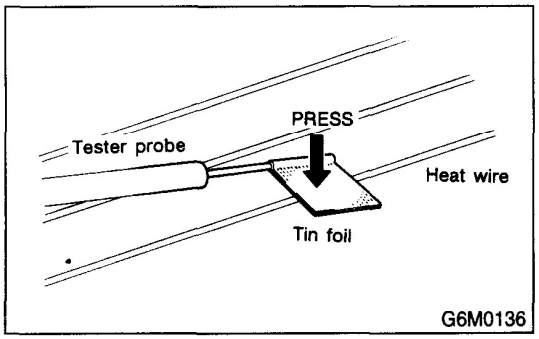
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15.Rear Window Defogger

A: INSPECTION

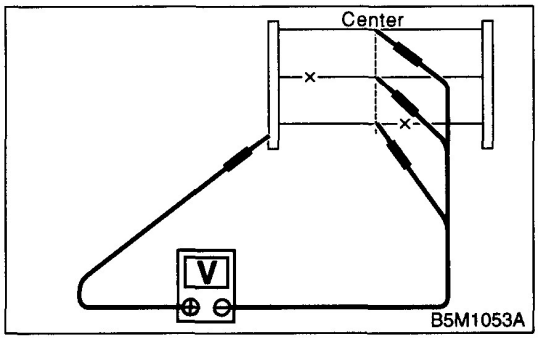
CAUTION:
When wiping stain on glass off with cloth, use a dry and soft cloth and move it in the direction of the heat wire extension to avoid damage to the heat wire.

1) Turn 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.



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

Standard voltage:
Approx. 6 volts



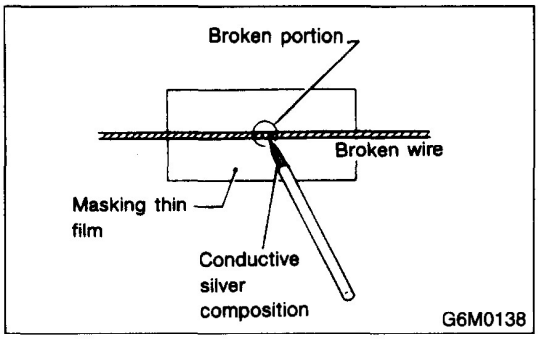
Voltage	Criteria
Approx. 6 V	OK
Approx. 12 V or 0 V	Broken

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

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

B: REPAIR

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



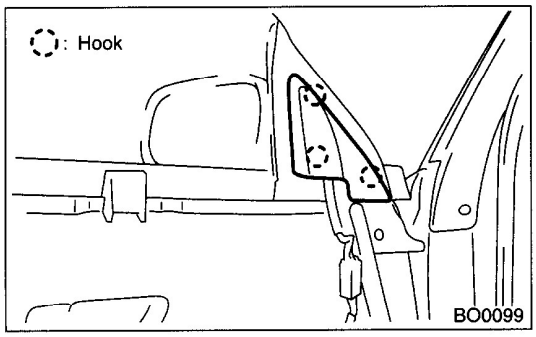
4) After repair, check wire.

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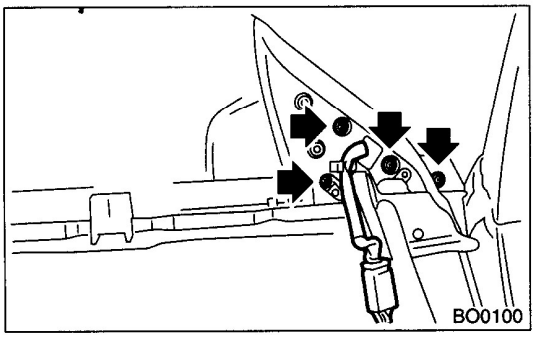
16.Outer Mirror Assembly

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the door trim. <Ref. to EI-37, REMOVAL, Front Door Trim.>
3) Remove the mirror gusset cover.



4) Disconnect the mirror connector.
5) Loosen the screws to remove mirror assembly.



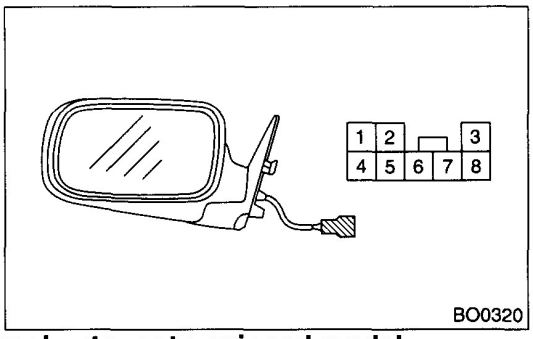
B: INSTALLATION

Install in the reverse order of removal.

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C: INSPECTION

Check to ensure that the rearview mirror moves properly when the 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 (–)

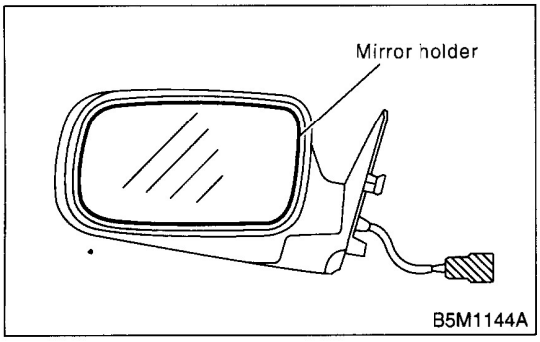
If NG, replace the mirror.

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17.Outer Mirror

A: REPLACEMENT

1) Remove the door mirror assembly. <Ref. to GW-33, REMOVAL, Outer Mirror Assembly.>
2) 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.)
3) Use a flat-bladed screwdriver without sharp edges to lift the mirror out of the mirror holder. (Also remove the connector from the back of mirrors with heaters.)



4) 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.)
5) Remove the backing of the new two-sided tape, and push the mirror in to install it.

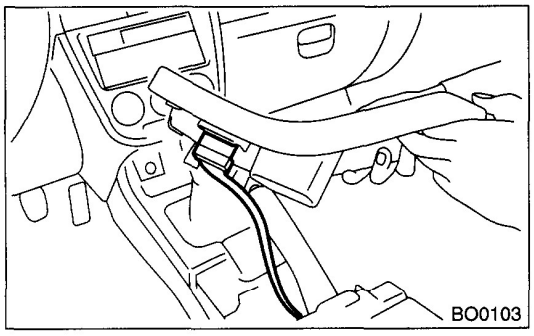
CAUTION:
Unless the mirror holder is warmed sufficiently, the mirror holder edges may be damaged or the mirror cracked.

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18. Remote Control Mirror Switch

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the console cover.
3) Disconnect the connector.



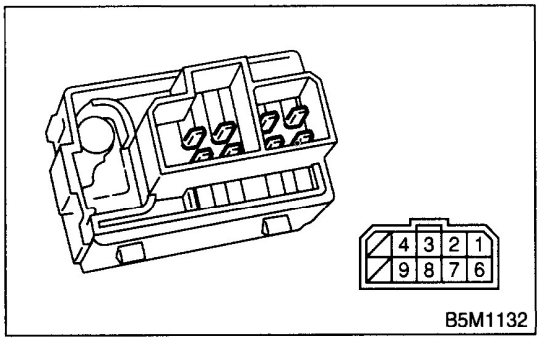
B: INSTALLATION

Install in the reverse order of removal.

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C: INSPECTION

Move the rearview mirror switch to each position and measure switch resistance.



Change over switch left position:

Switch position	Terminal No.	Standard
OFF	All terminal	more than 1MΩ
UP	4 and 6, 2 and 1	less than 1Ω
DOWN	6 and 2, 4 and 1	less than 1Ω
LEFT	4 and 8, 2 and 1	less than 1Ω
RIGHT	8 and 2, 4 and 1	less than 1Ω

Change over switch right position:

Switch position	Terminal No.	Standard
OFF	All terminal	more than 1MΩ
UP	4 and 7, 2 and 1	less than 1Ω
DOWN	7 and 2, 4 and 1	less than 1Ω
LEFT	4 and 9, 2 and 1	less than 1Ω
RIGHT	9 and 2, 4 and 1	less than 1Ω

If NG, replace the switch.

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BODY STRUCTURE

BS

Page

Refer to G1831BE SUPPLEMENT for this section.

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BODY STRUCTURE

BS

Page

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

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1. General Description

A: PREPARATION TOOL

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

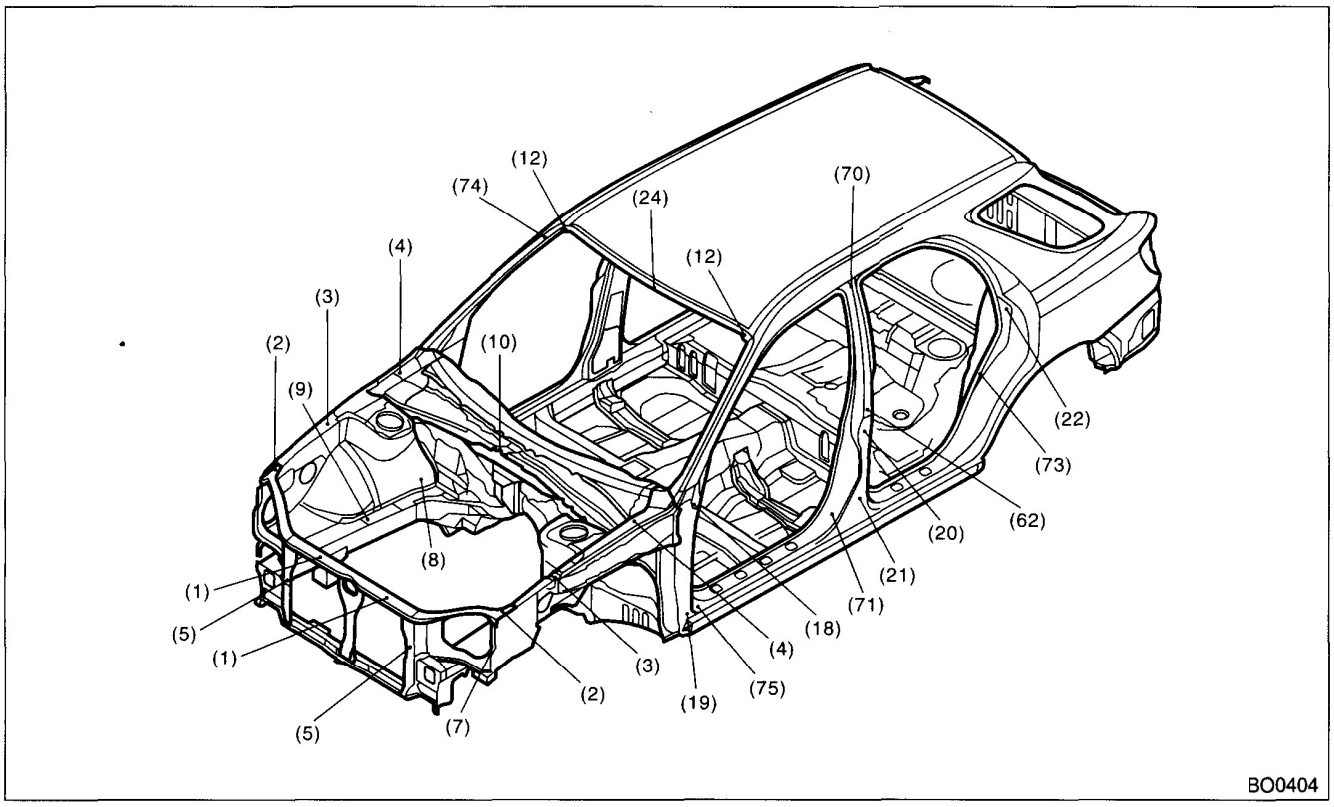
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2. Datum Points

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/SEDAN

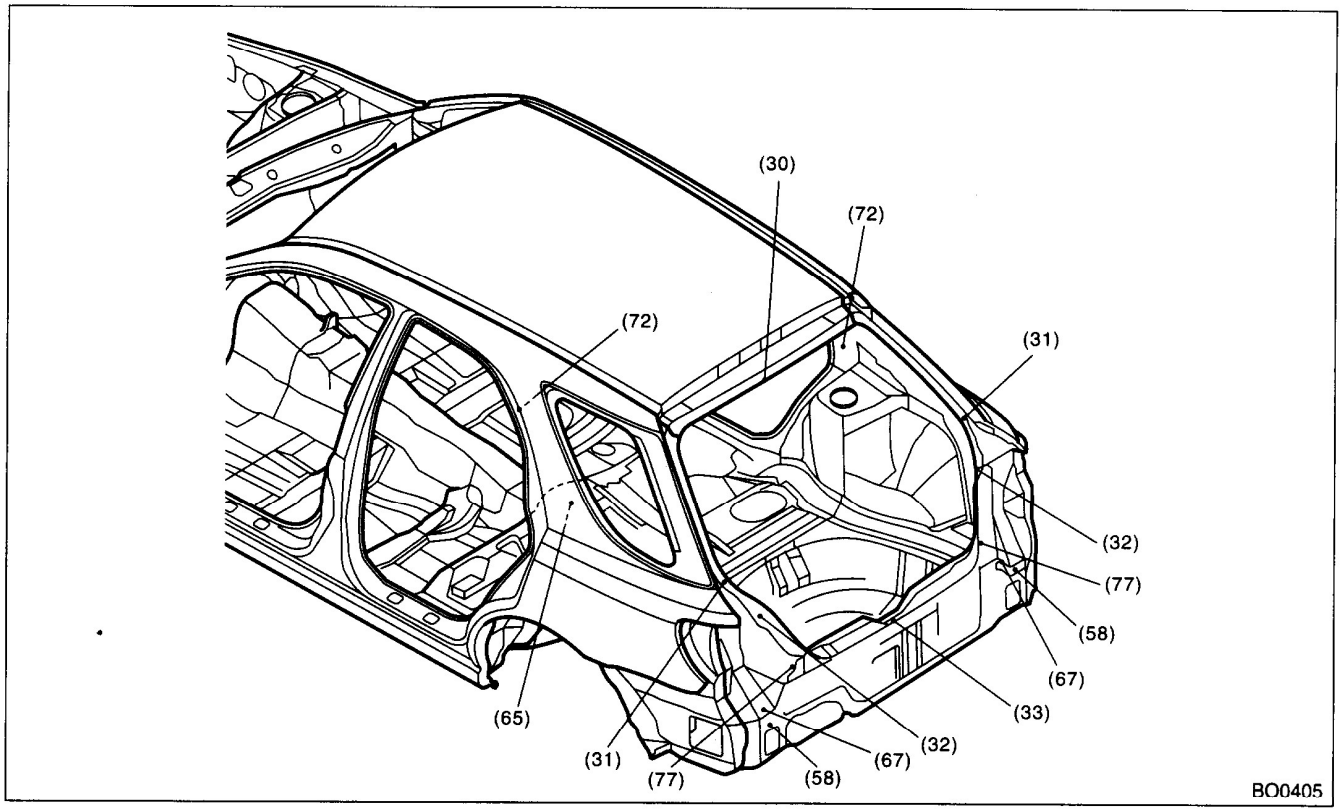


(1) Radiator attaching hole 12 mm (0.47 in) dia. (Symmetrical)
(2) Fender attaching hole 7 mm (0.28 in) dia. (Symmetrical)
(3) Fender attaching hole 10 mm (0.39 in) dia. (Symmetrical)
(4) Hood hinge attaching hole 12 mm (0.47 n) dia. (Symmetrical)
(5) Radiator panel side gauge hole 20 mm (0.79 in) dia.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

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DATUM POINTS

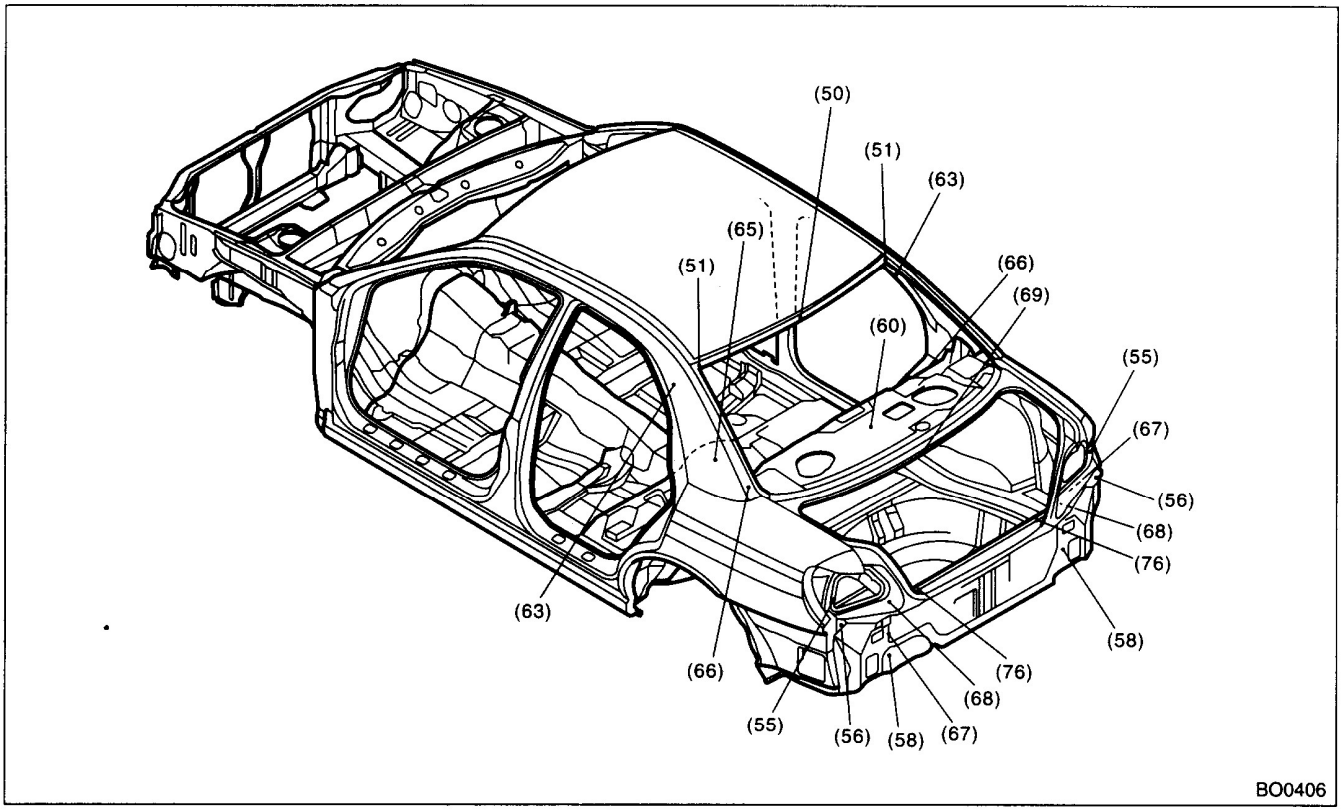
2. WAGON (REAR SECTION)



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

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3. SEDAN (REAR SECTION)

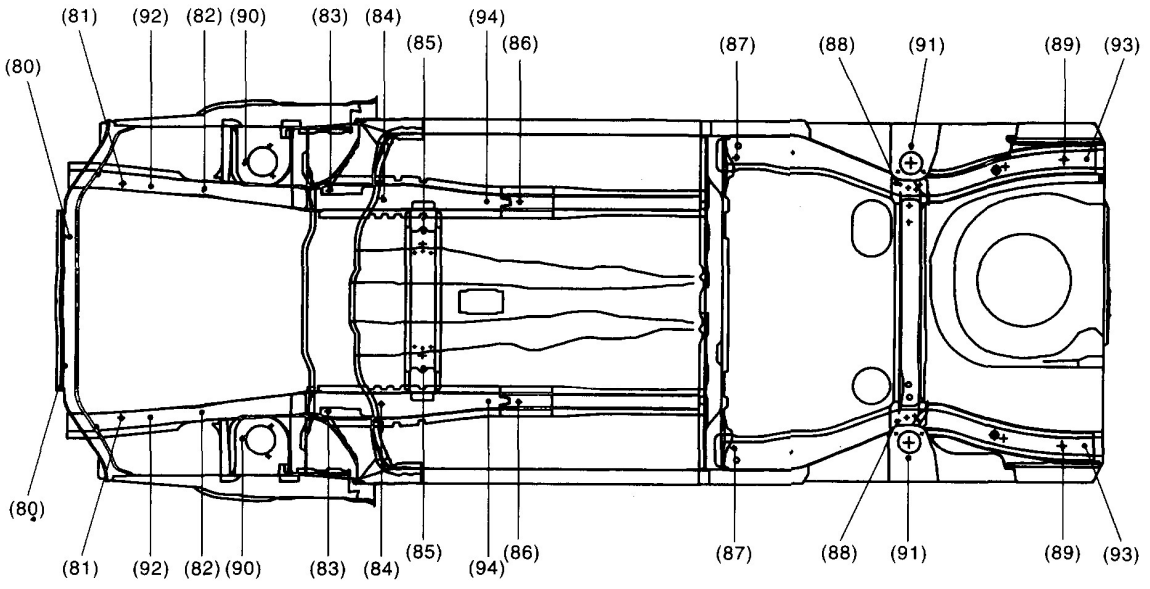


(50) Repair locator hollow (Vehicle center)
(51) Glass attaching hole Right 6.5 mm (0.256 in) dia. Left 6.5 × 10 mm (0.256 × 0.39 in) dia.
(55) Rear combination light mounting hole 8 mm (0.31 in) dia. (Symmetrical)
(56) Bumper attaching hole 7 mm (0.28 in) dia. (Symmetrical)
(58) Rear bumper attaching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

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DATUM POINTS

4. UNDERBODY SECTION



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

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

(82) Front crossmember (Ft) attaching hole 12.4 mm (0.488 in) dia. (Symmetrical)

(83) Suspension attaching hole 17 mm (0.67 in) dia. (Symmetrical)

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

(85) Transmission mount attaching hole 14 mm (0.55 in) dia.

(86) Side frame gauge hole 18 mm (0.71 in) dia. (Symmetrical)

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

(88) Rear suspension attaching hole 16 mm (0.63 in) dia. (Symmetrical)

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

(90) Strut mount attaching hole 9.5 mm (0.374 in) dia. (Symmetrical)

(91) Strut mount attaching hole 10 mm (0.39 in) dia. (Symmetrical)

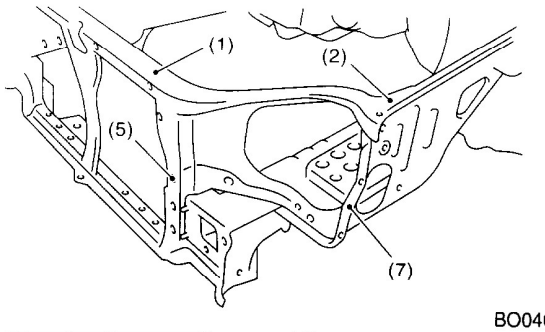
(92) Sub frame attaching hole 16 mm (0.63 in) dia. (Symmetrical)

(93) Bumper beam attaching hole Right 15 mm (0.59 in) dia. Left 19 × 15 mm (0.75 × 0.59 in) dia.

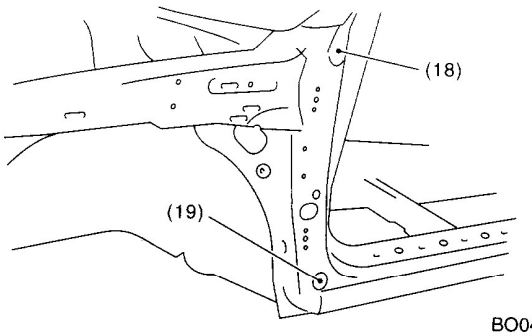
(94) Side frame gauge hole 15 mm (0.59 in) dia. (Symmetrical)

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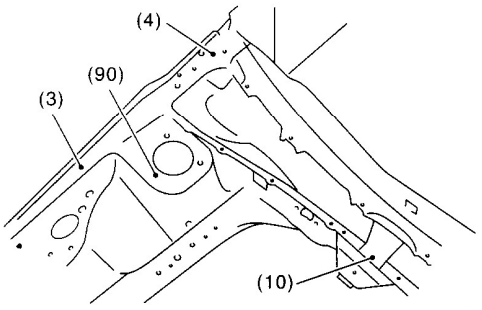
DATUM POINTS



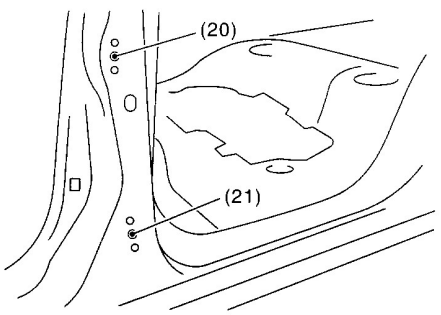
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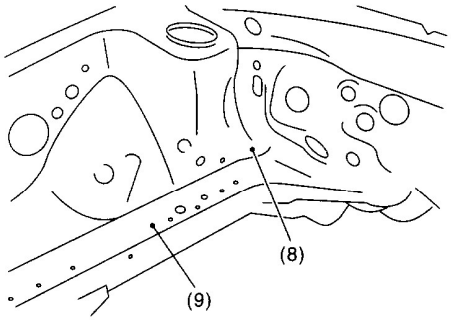
BO0413



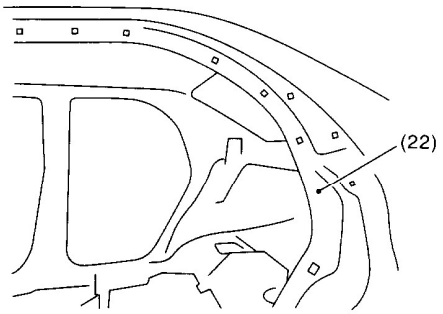
BO0409



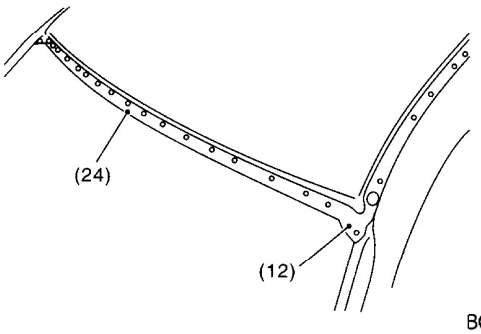
BO0414



BO0410

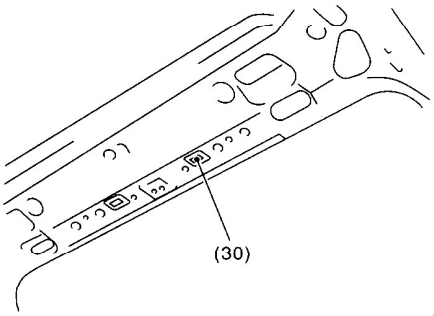


BO0415



BO0411

WAGON

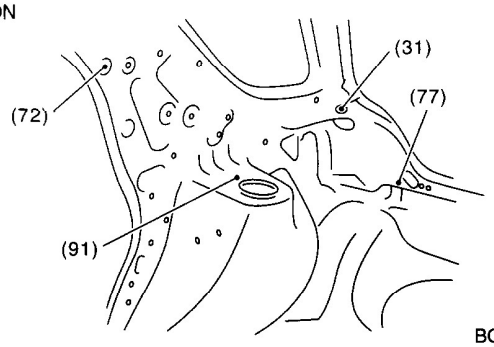


BO0417

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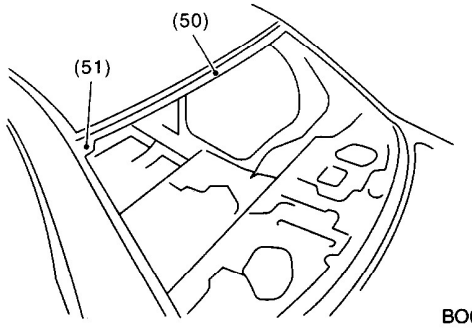
DATUM POINTS

WAGON



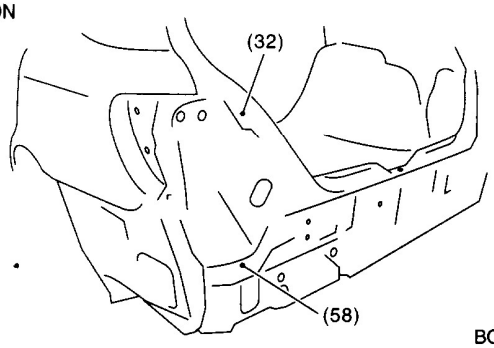
BO0418

SEDAN



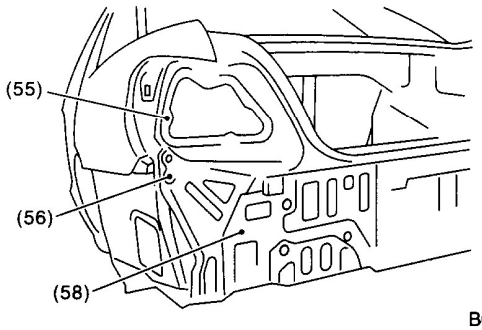
BO0422

WAGON



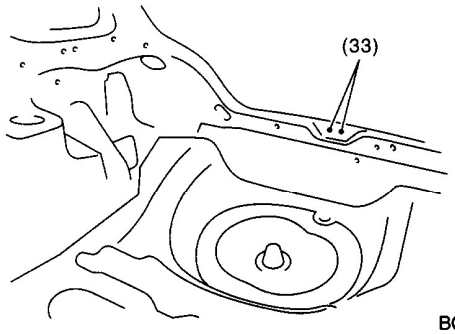
BO0419

SEDAN



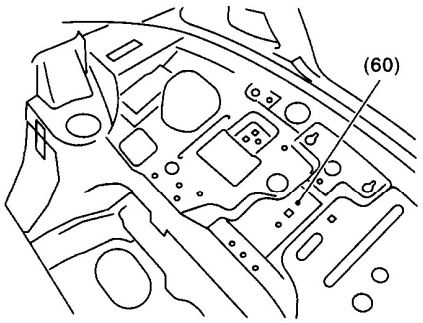
BO0424

WAGON



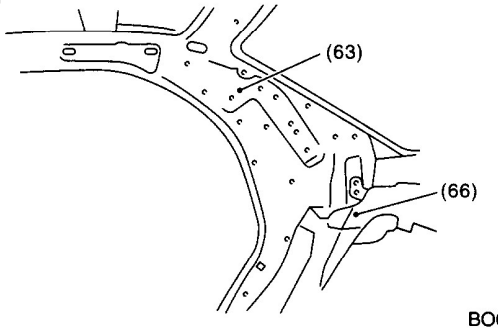
BO0420

SEDAN

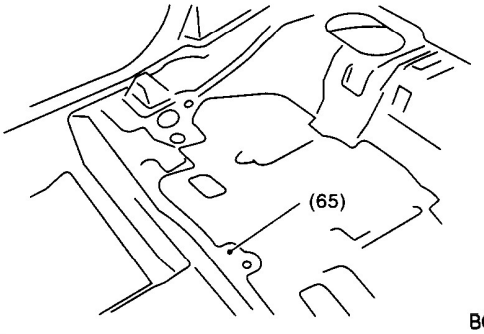


BO0425

SEDAN



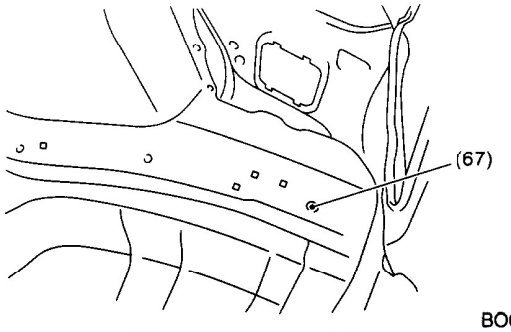
BO0421



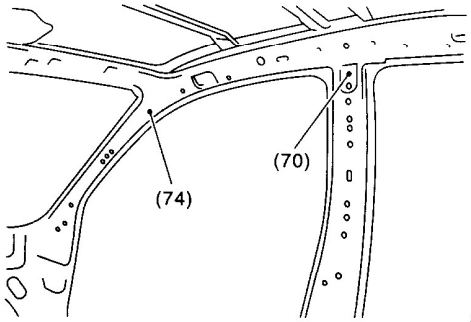
BO0426

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DATUM POINTS

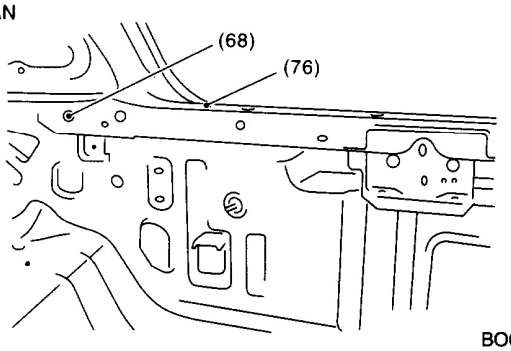


BO0427

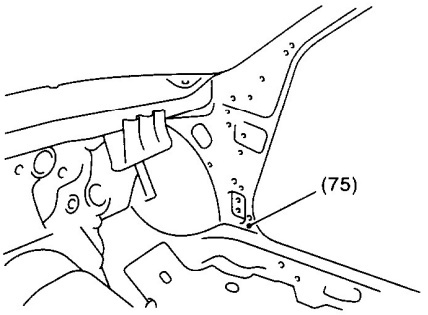


BO0431

SEDAN

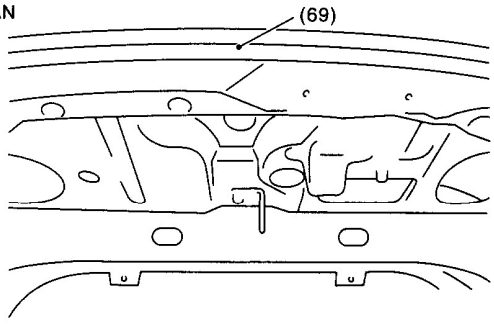


BO0428

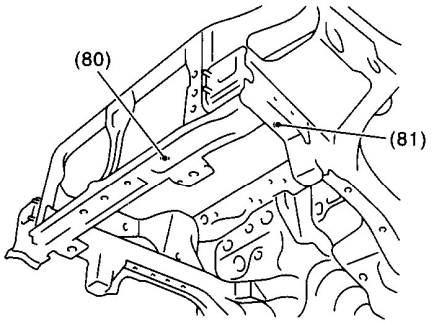


BO0432

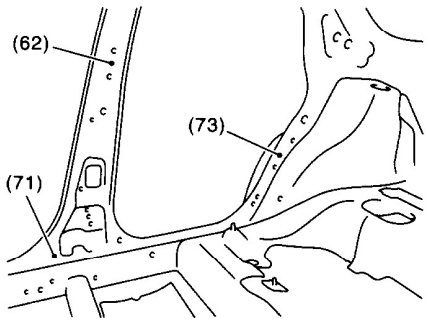
SEDAN



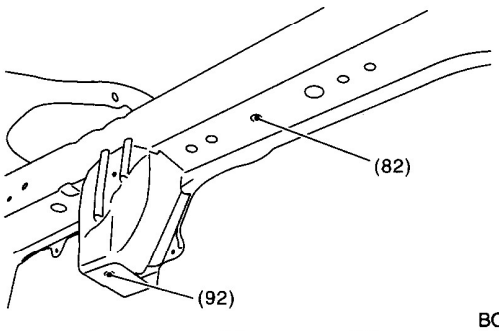
BO0429



BO0433



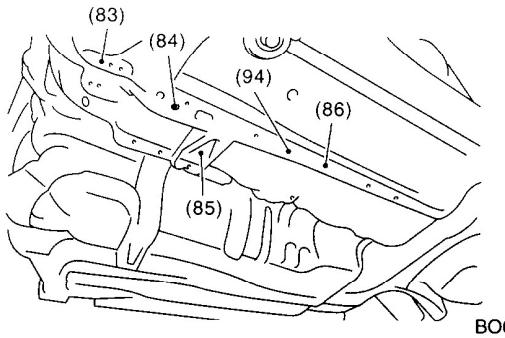
BO0430



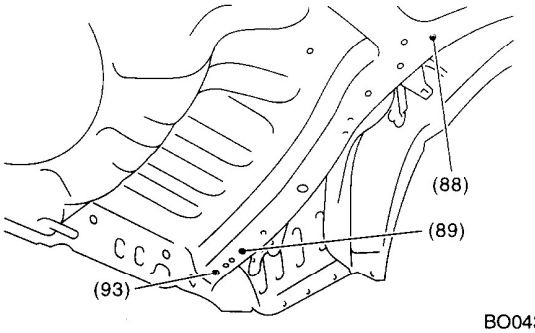
BO0434

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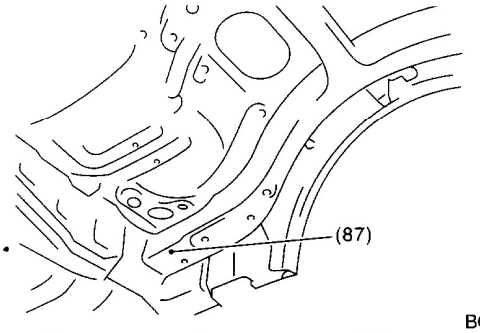
DATUM POINTS



BO0435



BO0437



BO0436

SUBARU

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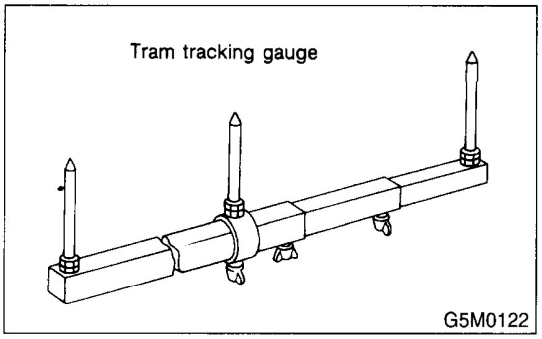
3. Datum Dimensions

A: MEASUREMENT

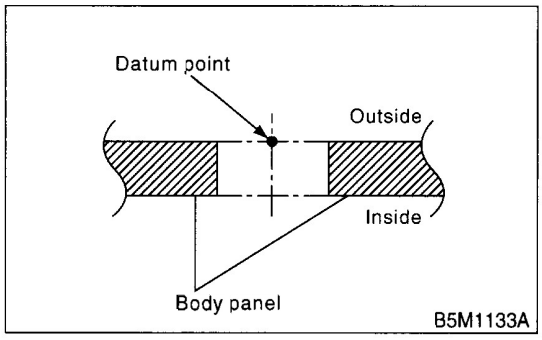
Refer to LOCATION for details on measurement points. <Ref. to BS-3, LOCATION, Datum Points.>

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.



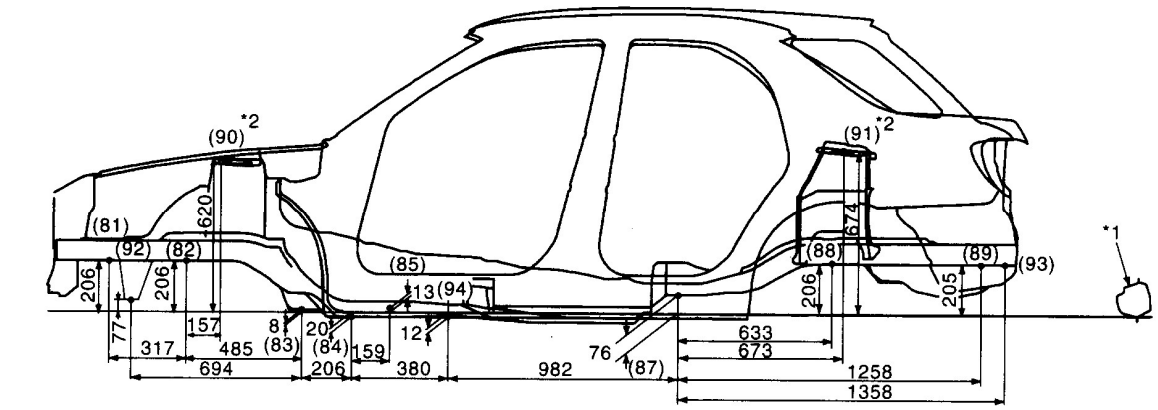
- Measure at the center of the circle around the outside of the body panel.

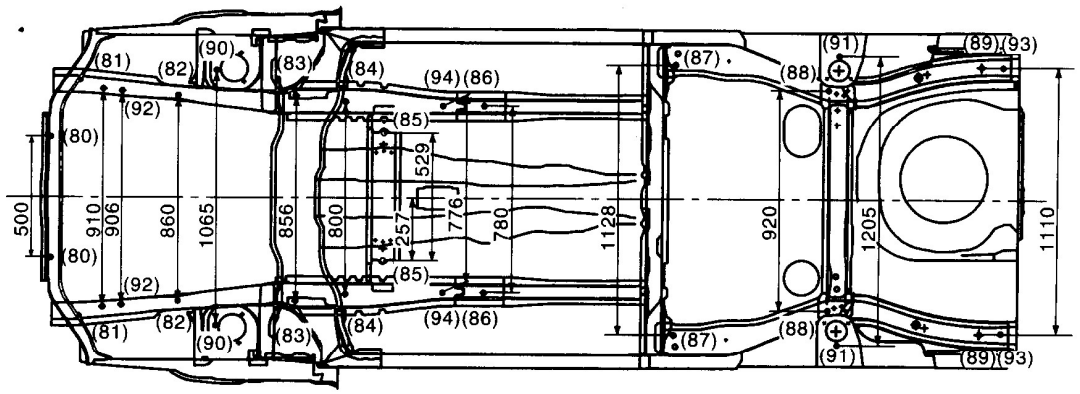


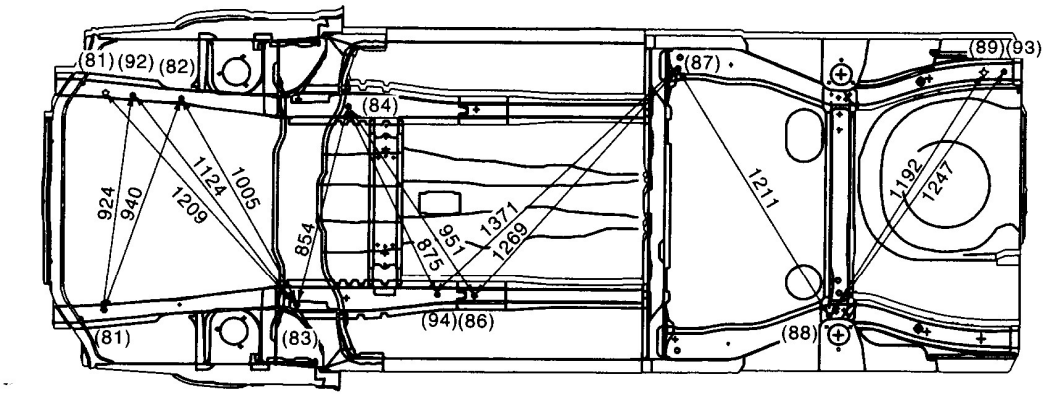
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DATUM DIMENSIONS

1. CENTER STRUCTURE





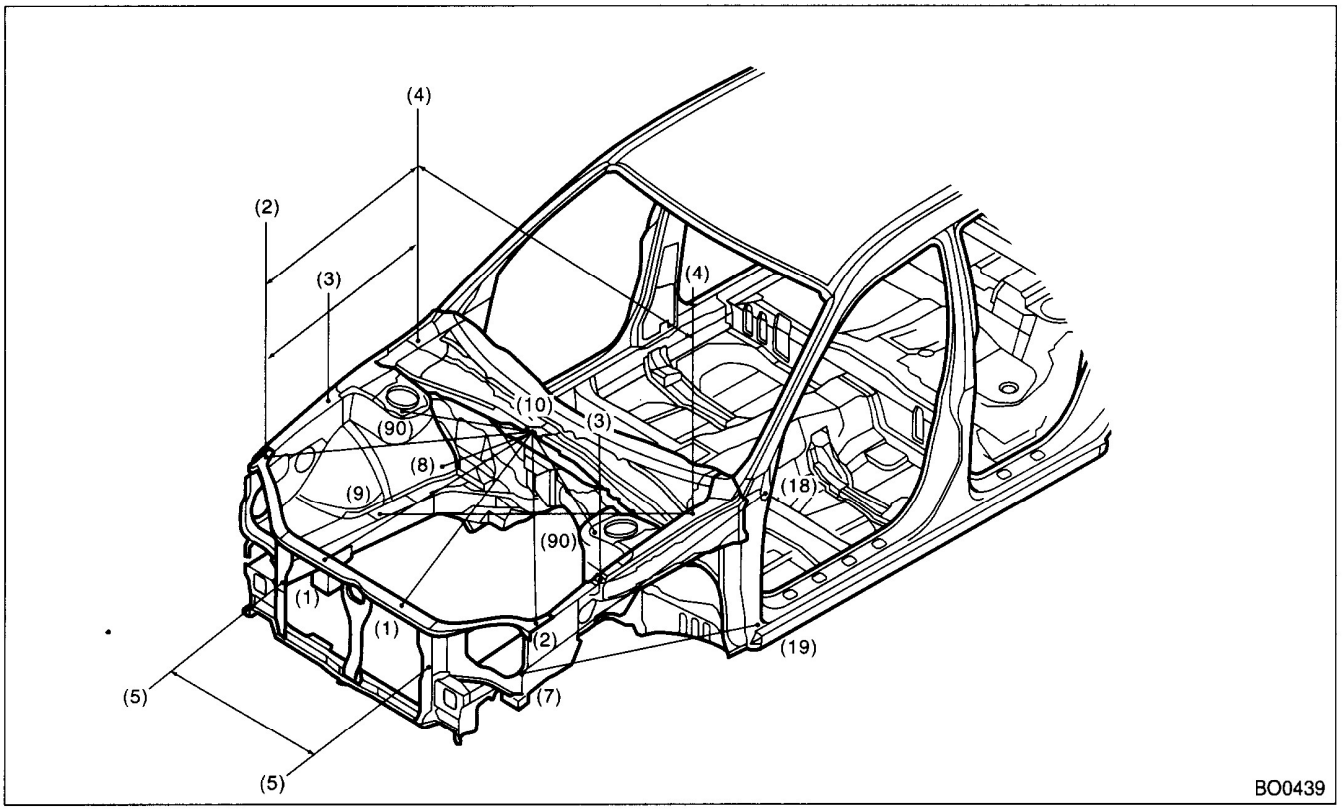


*1: Side sill
*2: Upper surface

BO0438

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2. WAGON/SEDAN (FRONT STRUCTURE)

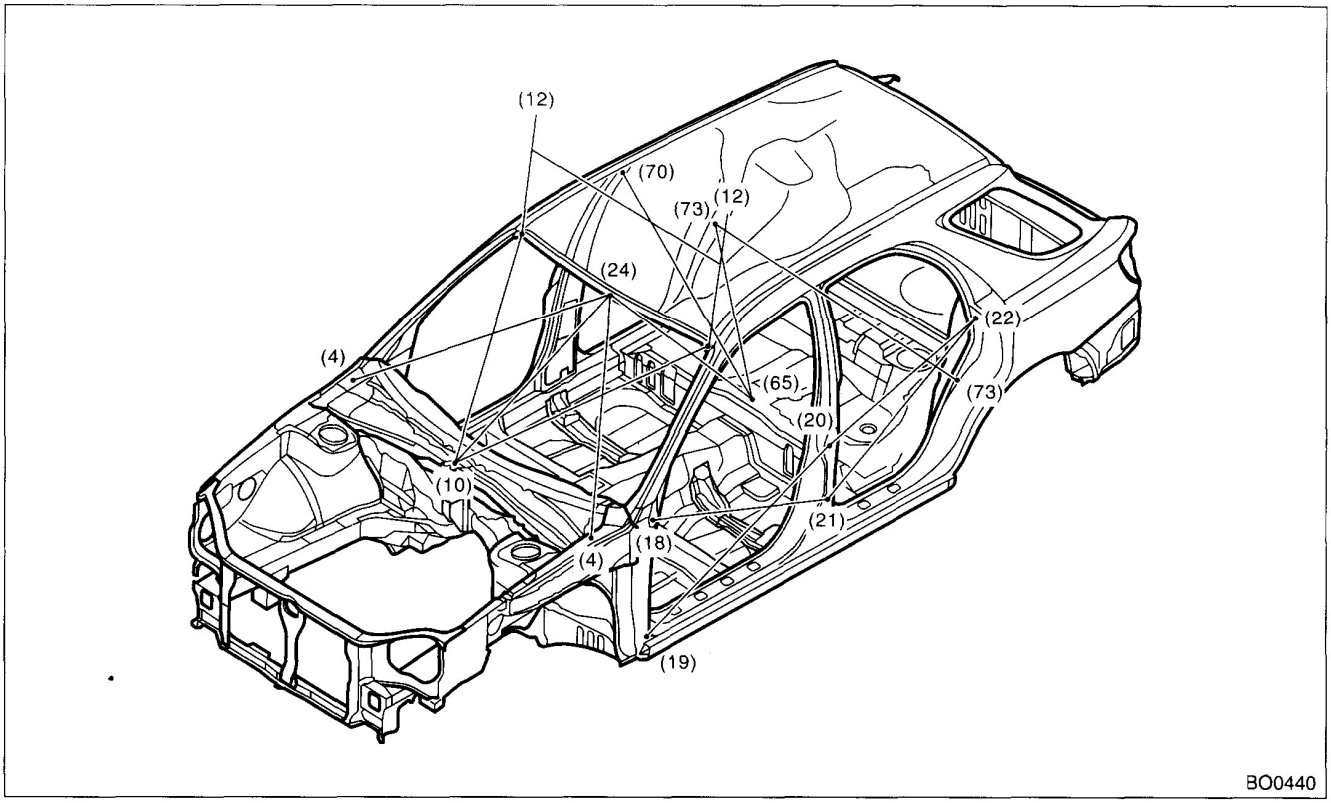


Unit: mm (in)

Point to point	Dimension	Point to point	Dimension
(10) to (1) RH	912 (35.91)	(2) RH to (2) LH	1,341 (52.80)
(10) to (1) LH	912 (35.91)	(5) RH to (5) LH	720 (28.35)
(10) to (90) RH	566 (22.28)	(7) RH to (18) RH	1,138 (44.80)
(10) to (90) LH	566 (22.28)	(7) LH to (18) LH	1,138 (44.80)
(10) to (8) RH	581 (22.87)	(7) RH to (19) RH	1,116 (43.94)
(10) to (8) LH	581 (22.87)	(7) LH to (19) LH	1,116 (43.94)
(10) to (2) RH	947 (37.28)	(4) RH to (2) LH	1,583 (62.32)
(10) to (2) LH	947 (37.28)	(4) LH to (2) RH	1,583 (62.32)
(4) RH to (2) RH	778 (30.63)	(3) RH to (3) LH	1,396 (54.96)
(4) LH to (2) LH	778 (30.63)	(3) RH to (4) LH	1,470 (57.87)
(4) RH to (3) RH	430 (16.93)	(3) LH to (4) RH	1,470 (57.87)
(4) LH to (3) LH	430 (16.93)	(2) RH to (3) LH	1,412 (55.59)
(90) RH to (90) LH	1,065 (41.93)	(2) LH to (3) RH	1,412 (55.59)
(8) RH to (8) LH	894 (35.20)	(9) RH to (9) LH	860 (33.86)
(8) RH to (4) LH	1,210 (47.64)	(9) RH to (8) LH	931 (36.65)
(8) LH to (4) RH	1,210 (47.64)	(9) LH to (8) RH	931 (36.65)
(3) RH to (2) RH	349 (13.74)	(9) RH to (4) LH	1,280 (50.39)
(3) LH to (2) LH	349 (13.74)	(9) LH to (4) RH	1,280 (50.39)
(4) RH to (4) LH	1,417 (55.79)	—	—

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DATUM DIMENSIONS

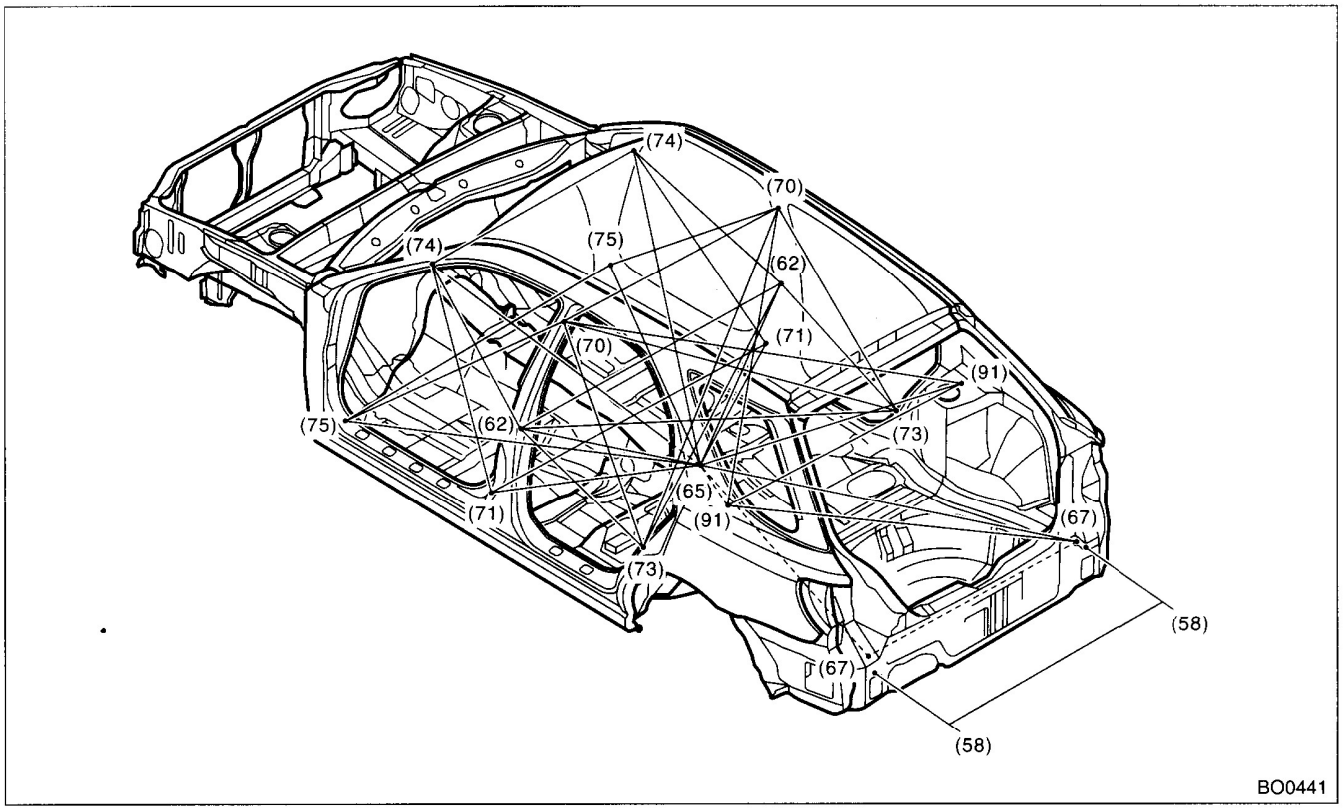


Unit: mm (in)

Point to point	Dimension	Point to point	Dimension
(4) RH to (24)	1,127 (44.37) Wagon	(19) LH to (20) LH	1,089 (42.87)
(4) LH to (24)	1,110 (43.70) Sedan	(20) RH to (22) RH	869 (34.21)
(10) to (24)	957 (37.68) Wagon	(20) LH to (22) LH	869 (34.21)
(10) to (24)	935 (36.81) Sedan	(21) RH to (22) RH	985 (38.78)
(10) to (12) RH	1,122 (44.17) Wagon	(21) LH to (22) LH	985 (38.78)
(10) to (12) RH	1,106 (43.54) Sedan	(24) to (65)	1,232 (48.50) Wagon
(10) to (12) LH	1,122 (44.17) Wagon	(24) to (65)	1,237 (48.70) Sedan
(10) to (12) LH	1,106 (43.17) Sedan	(65) to (70) RH	1,067 (42.01)
(12) RH to (12) LH	1,029 (40.51) Wagon	(65) to (70) LH	1,067 (42.01)
(12) RH to (12) LH	1,042 (41.02) Sedan	(65) to (73) RH	830 (32.68)
(18) RH to (21) RH	1,049 (41.30)	(65) to (73) LH	830 (32.68)
(18) LH to (21) LH	1,049 (41.30)	(73) RH to (73) LH	1,394 (54.88)
(19) RH to (20) RH	1,089 (42.87)	—	—

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3. WAGON/SEDAN (REAR STRUCTURE)



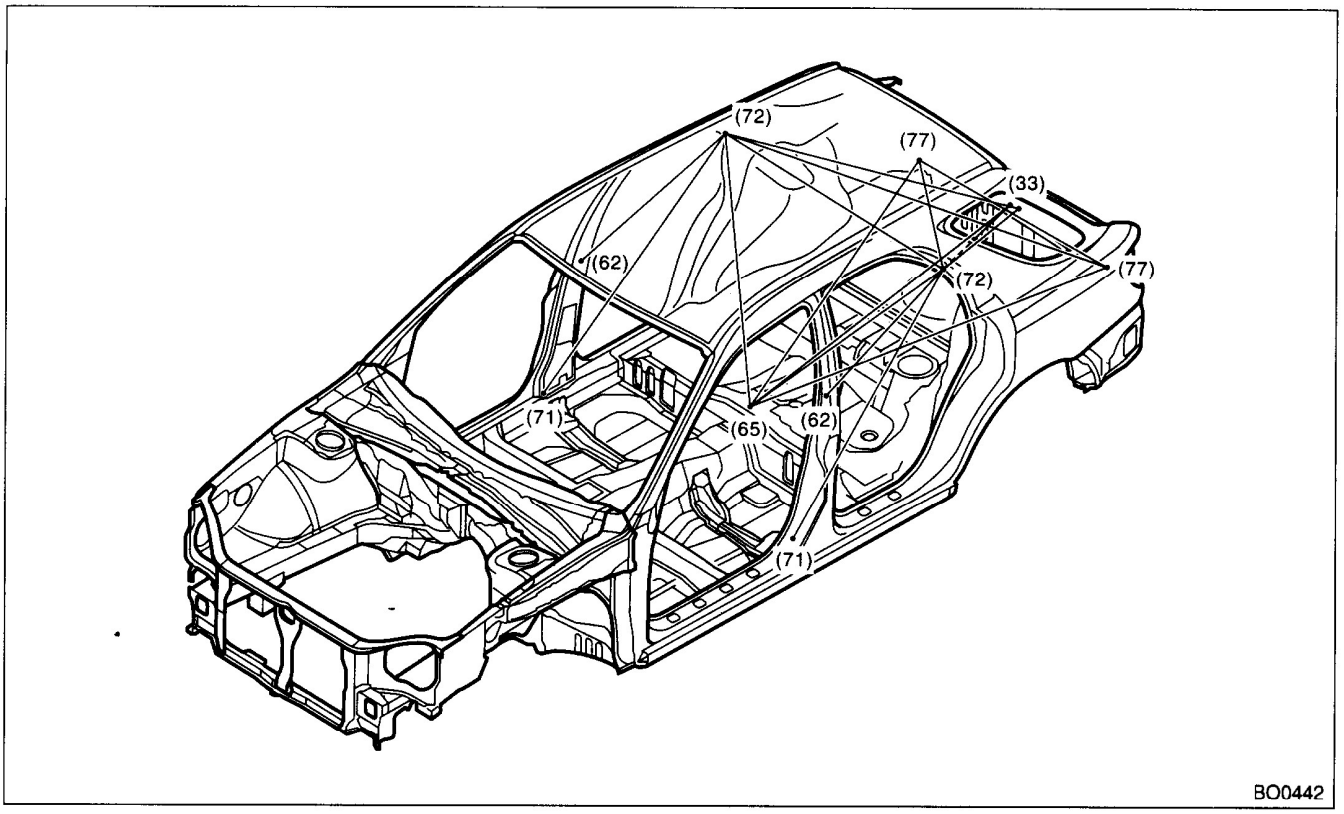
Unit: mm (in)

Point to point	Dimension	Point to point	Dimension
(58) RH to (58) LH	1,128 (44.41)	(67) RH to (67) LH	1,110 (43.70)
(62) RH to (62) LH	1,332 (52.44)	(67) RH to (91) LH	1,381 (54.37)
(62) RH to (65)	915 (36.02)	(67) LH to (91) RH	1,381 (54.37)
(62) LH to (65)	915 (36.02)	(70) RH to (70) LH	1,060 (41.73)
(62) RH to (73) RH	762 (30.00)	(70) RH to (73) RH	948 (37.32)
(62) LH to (73) LH	762 (30.00)	(70) LH to (73) LH	948 (37.32)
(62) RH to (73) LH	1,561 (61.46)	(70) RH to (73) LH	1,542 (60.71)
(62) LH to (73) RH	1,561 (61.46)	(70) LH to (73) RH	1,542 (60.71)
(62) RH to (74) RH	592 (23.31) Wagon	(70) RH to (75) RH	1,443 (56.81)
(62) LH to (74) LH	603 (23.74) Sedan	(70) LH to (75) LH	1,443 (56.81)
(65) to (67) RH	1,501 (59.09)	(70) RH to (91) LH	1,532 (60.32)
(65) to (67) LH	1,501 (59.09)	(70) LH to (91) RH	1,532 (60.32)
(65) to (71) RH	823 (32.40)	(71) RH to (71) LH	1,361 (53.58)
(65) to (71) LH	823 (32.40)	(71) RH to (74) RH	954 (37.56) Wagon
(65) to (74) RH	1,275 (50.20) Wagon	(71) LH to (74) LH	949 (37.36) Sedan
(65) to (74) LH	1,282 (50.47) Sedan	(74) RH to (74) LH	1,135 (44.69) Wagon
(65) to (75) RH	1,450 (57.09)	(74) RH to (74) LH	1,147 (45.16) Sedan
(65) to (75) LH	1,450 (57.09)	(75) RH to (75) LH	1,399 (55.08)
(65) to (91) RH	1,064 (41.89)	(91) RH to (91) LH	1,205 (47.44)
(65) to (91) LH	1,064 (41.89)	—	—

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DATUM DIMENSIONS

4. WAGON (FRONT STRUCTURE)

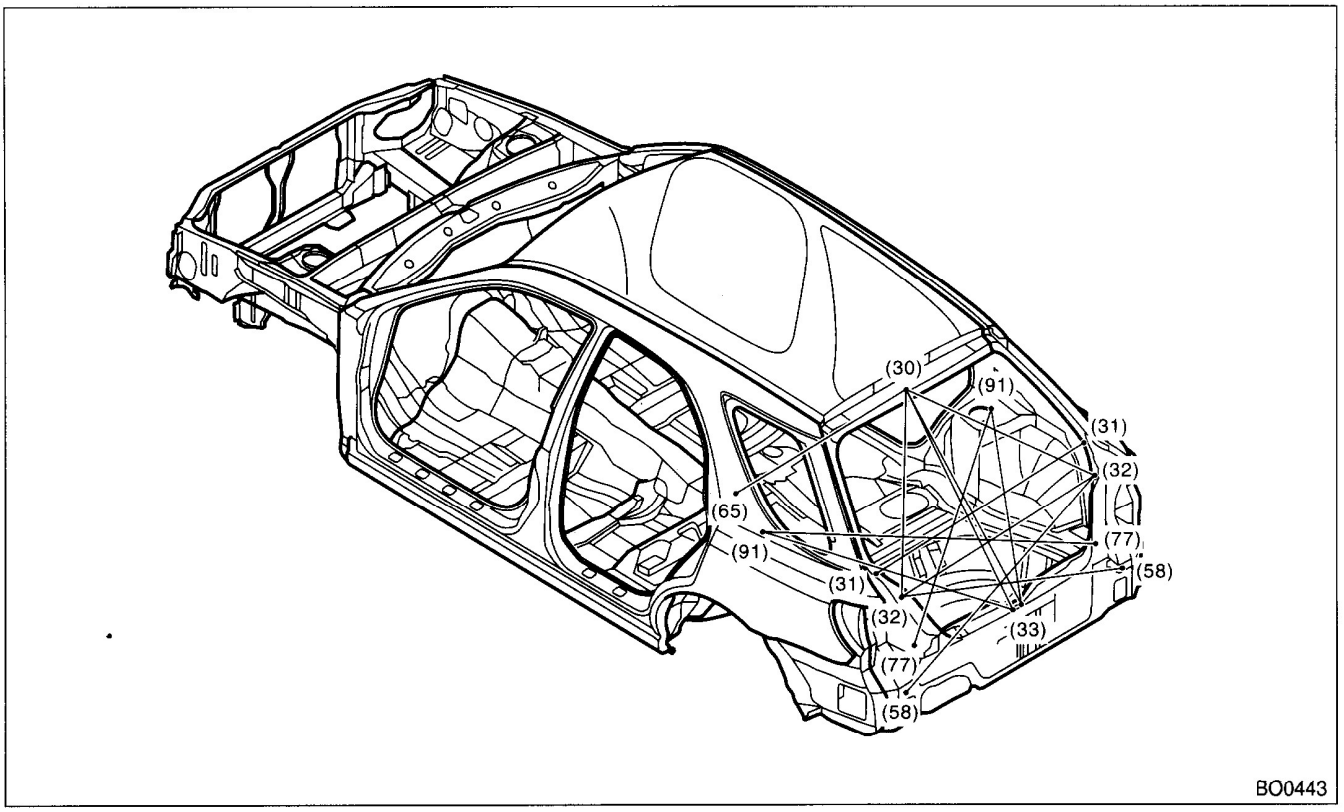


Unit: mm (in)

Point to point	Dimension	Point to point	Dimension
(33) RH to (65)	1,534 (60.39)	(65) to (77) RH	1,538 (60.55)
(33) LH to (65)	1,534 (60.39)	(65) to (77) LH	1,538 (60.55)
(33) RH to (72) LH	1,344 (52.91)	(71) RH to (72) RH	1,223 (48.15)
(33) LH to (72) RH	1,344 (52.91)	(71) LH to (72) LH	1,223 (48.15)
(62) RH to (72) RH	732 (28.82)	(72) RH to (72) LH	1,226 (48.27)
(62) LH to (72) LH	732 (28.82)	(72) RH to (77) LH	1,544 (60.79)
(65) to (72) RH	1,076 (42.36)	(72) LH to (77) RH	1,544 (60.79)
(65) to (72) LH	1,076 (42.36)	(77) RH to (77) LH	898 (35.35)

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5. WAGON (REAR STRUCTURE)



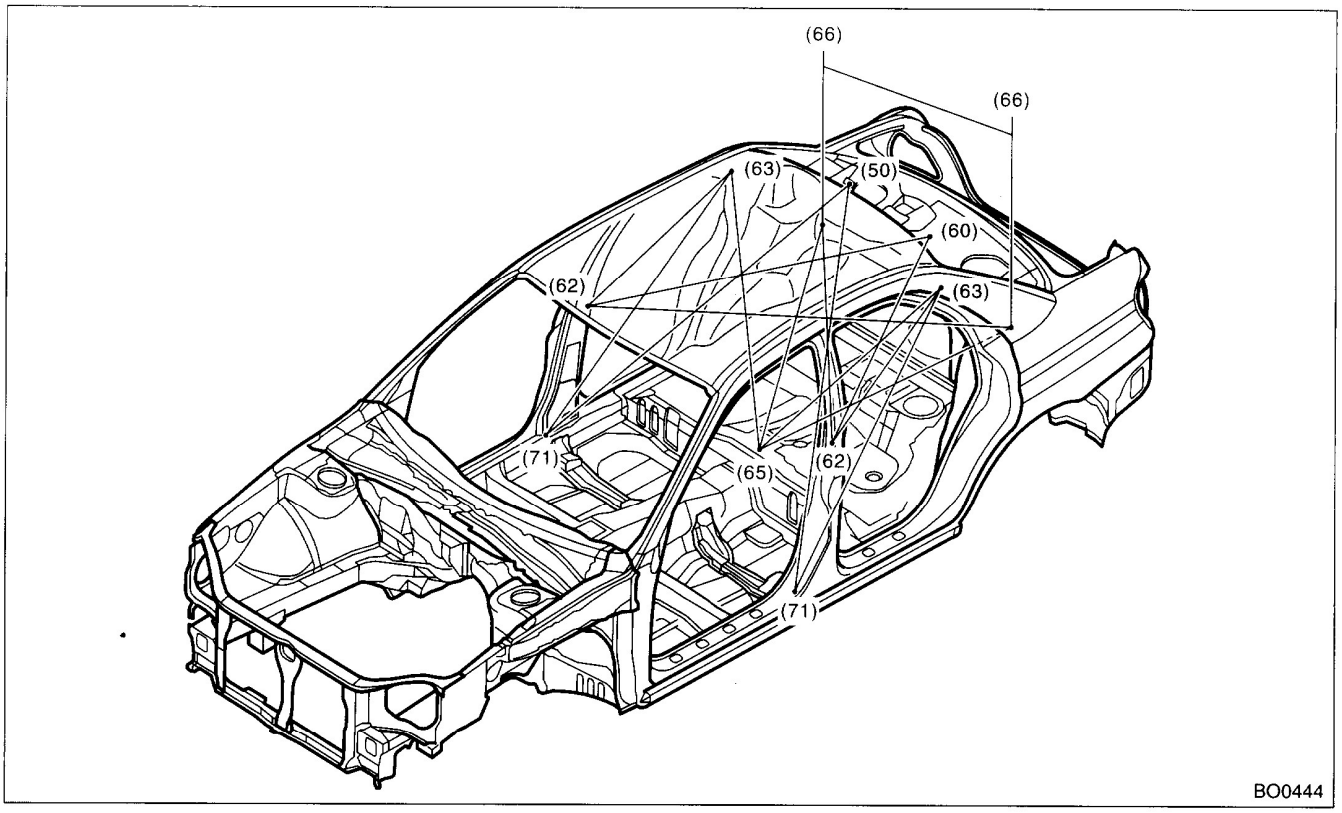
Unit: mm (in)

Point to point	Dimension	Point to point	Dimension
(30) to (32) RH	850 (33.46)	(32) RH to (58) LH	1,139 (44.84)
(30) to (32) LH	850 (33.46)	(32) LH to (58) RH	1,139 (44.84)
(30) to (33) RH	904 (35.59)	(33) RH to (91) LH	993 (39.09)
(30) to (33) LH	904 (35.59)	(33) LH to (91) LH	993 (39.09)
(30) to (65)	1,292 (50.87)	(77) RH to (91) LH	1,289 (50.75)
(31) RH to (31) LH	1,212 (47.72)	(77) LH to (91) RH	1,289 (50.75)
(32) RH to (32) LH	1,038 (40.87)	—	—

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DATUM DIMENSIONS

6. SEDAN (FRONT STRUCTURE)

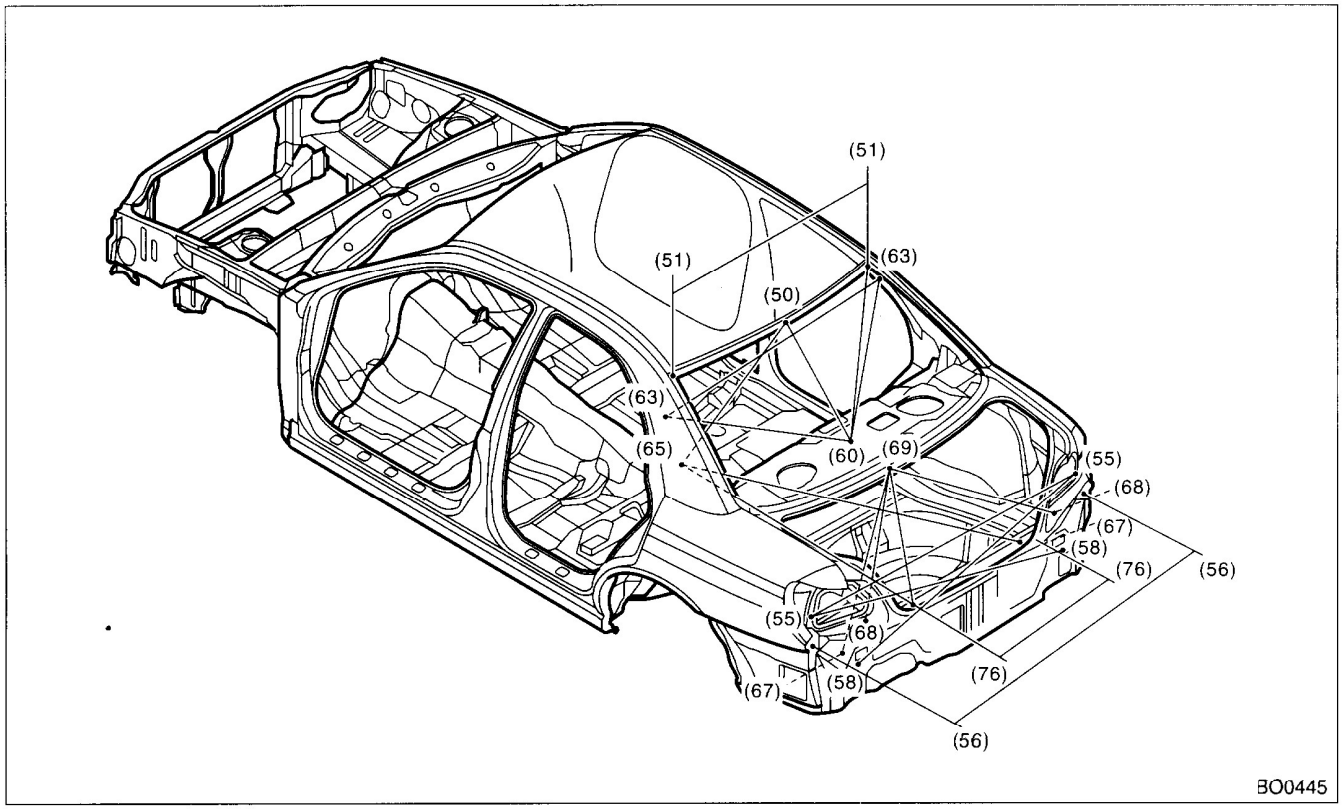


Unit: mm (in)

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

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7. SEDAN (REAR STRUCTURE)



Unit: mm (in)

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

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INSTRUMENTATION/DRIVER INFO

IDI

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1. General Description

A: SPECIFICATIONS

Combination meter	Speedometer	Electric pulse type
	Temperature gauge	Thermistor cross coil type
	Fuel gauge	Resistance cross coil type
	Tachometer	Electric impulse type
	Turn signal indicator light	14 V — 1.4 W
	Charge indicator light	LED
	Oil pressure indicator light	LED
	ABS warning light	LED
	CHECK ENGINE warning light (Malfunction indicator light)	LED
	HI-beam indicator light	14 V — 1.4 W
	Door open warning light	LED
	Seat belt warning light	LED
	Brake fluid and parking brake warning light	LED
	FWD indicator light	LED
	AIRBAG warning light	LED
	Meter illumination light	14 V — 3 W, 14 V — 2 W
	AT OIL TEMP. warning light	LED
	Security indicator light	LED
	Low fuel warning light	LED
	AT select lever position indicator light	14 V — 100 mA
	LCD back light	14 V — 1.4 W

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B: CAUTION

- Be careful not to damage the meters and instrument panel.
- Be careful not to damage the meter glasses.
- Make sure the electrical connector is connected securely.
- After installation, make sure that each meter operates normally.
- Use gloves to avoid damage and getting fingerprints on the glass surface and meter surfaces.
- Do not apply excessive force to the circuit plate.
- Do not drop or otherwise apply impact.

C: PREPARATION TOOL

1. GENERAL TOOLS

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

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2. Combination Meter System

A: SCHEMATIC

1. COMBINATION METER

<Ref. to WI-56, SCHEMATIC, Combination Meter.>

2. OUTSIDE TEMPERATURE INDICATOR

<Ref. to WI-107, SCHEMATIC, Outside Temperature Display System.>

B: INSPECTION

CAUTION:
When measuring the voltage and resistance of the ECM, TCM, or each sensor, use a tapered pin with a diameter of less the an 0.64 mm (0.025 in) in order to avoid poor contact. Do not insert the pin more than 2 mm (0.08 in).

1. SYMPTOM CHART

Symptom	Repair order	Reference
Combination meter assembly does not operate.	(1) Power supply (2) Ground circuit	<Ref. to IDI-5, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Combination Meter System.>
Speedometer does not operate.	(1) (MT) Vehicle speed sensor (AT) Transmission control module (2) Harness (3) Speedometer	MT: <Ref. to IDI-6, CHECK VEHICLE SPEED SENSOR, INSPECTION, Combination Meter System.>
		AT: <Ref. to IDI-7, CHECK TRANSMISSION CONTROL MODULE, INSPECTION, Combination Meter System.>
Tachometer does not operate.	(1) Engine control module (2) Harness (3) Tachometer	<Ref. to IDI-7, CHECK ENGINE CONTROL MODULE, INSPECTION, Combination Meter System.>
Fuel gauge does not operate.	(1) Fuel level sensor (2) Harness (3) Fuel gauge	<Ref. to IDI-8, CHECK FUEL LEVEL SENSOR, INSPECTION, Combination Meter System.>
Water temperature gauge does not operate.	(1) Engine coolant temperature sensor (2) Harness (3) Water temperature gauge	<Ref. to IDI-9, CHECK ENGINE COOLANT TEMPERATURE SENSOR, INSPECTION, Combination Meter System.>
Outside temperature indicator does not operate.	(1) Ambient sensor (2) Harness (3) Combination meter	<Ref. to IDI-10, CHECK OUTSIDE TEMPERATURE INDICATOR, INSPECTION, Combination Meter System.>

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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-11, REMOVAL, Combination Meter Assembly.> 2)Disconnect the combination meter harness connector. 3)Turn the ignition switch to ON. 4)Measure the voltage between the combination meter connector (i10) and chassis ground. ***Connector & terminal*** ***(i10) No. 7 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **2.**	Check the harness for open or short between the ignition switch and combination meter.
2	**CHECK POWER SUPPLY FOR COMBINATION METER.** Measure the voltage between the combination meter connector (i10) and chassis ground. ***Connector & terminal*** ***(i10) No. 10 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	Check the harness for open or short between the fuse and combination meter.
3	**CHECK GROUND CIRCUIT OF COMBINATION METER.** 1)Turn the ignition switch to OFF. 2)Measure the resistance of harness between the combination meter connector (i10) and chassis ground. ***Connector & terminal*** ***(i10) No. 6 — Chassis ground:***	Is the resistance less than 10 Ω?	Replace the combination meter printed circuit.	Repair the wiring harness.

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3. CHECK VEHICLE SPEED SENSOR

	Step	Check	Yes	No
1	**CHECK VEHICLE SPEED SENSOR.** 1)Set the vehicle on a free roller, or lift-up the vehicle and support it with safety stands. 2)Remove the combination meter with harness connector. **Warning:** **Be careful not to get caught in the running wheels.** 3)Drive the vehicle at a speed greater than 20 km/h (12 MPH). 4)Measure the voltage between the combination meter connector (i10) and chassis ground. ***Connector & terminal*** ***(i10) No. 2 (+) — Chassis ground (–):***	Is the voltage less than 1V ←→ more than 4 V?	Check the speedometer. <Ref. to IDI-13, REMOVAL, Speedometer.>	Go to step **2.**
2	**CHECK VEHICLE SPEED SENSOR POWER SUPPLY.** 1)Turn the ignition switch to OFF. 2)Disconnect the vehicle speed sensor harness connector. 3)Turn the ignition switch to ON. 4)Measure the voltage between the vehicle speed sensor connector (B17) and engine ground. ***Connector & terminal*** ***(B17) No. 3 (+) — Engine ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	Check the harness for open or short between the ignition switch and vehicle speed sensor.
3	**CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND ENGINE GROUND.** 1)Turn the ignition switch to OFF. 2)Measure the resistance between the vehicle speed sensor connector (B17) and engine ground. ***Connector & terminal*** ***(B17) No. 2 — Engine ground:***	Is the resistance less than 10 Ω?	Go to step **4.**	Repair the wiring harness.
4	**CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND COMBINATION METER.** 1)Disconnect the connector from the combination meter. 2)Measure the resistance between the vehicle speed sensor harness connector and combination meter harness connector. ***Connector & terminal*** ***(B17) No. 1 — (i10) No. 2:***	Is the resistance less than 10 Ω?	Replace the vehicle speed sensor.	Repair the wiring harness.

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4. CHECK TRANSMISSION CONTROL MODULE

	Step	Check	Yes	No
1	**CHECK TRANSMISSION CONTROL MODULE SIGNAL.** 1)Set the vehicle on a free roller, or lift-up the vehicle and support it with safety stands. **Warning:** **Be careful not to get caught in the running wheels.** 2)Drive the vehicle faster than 10 km/h (6 MPH). 3)Measure the voltage between the transmission control module connector (B56: turbo model) or (B55: non-turbo model) and chassis ground. ***Connector & terminal*** ***Turbo model:*** ***(B56) No. 17 (+) — Chassis ground (–):*** ***Non-turbo model:*** ***(B55) No. 13 (+) — Chassis ground (–):***	Is the voltage less than 1 V ←→ more than 4 V?	Go to step **2.**	Check the transmission control module. <Ref. to AT-2, Basic Diagnostic Procedure.>
2	**CHECK HARNESS BETWEEN TRANSMISSION CONTROL MODULE AND COMBINATION METER.** 1)Turn the ignition switch to OFF. 2)Disconnect the connector from the transmission control module and combination meter. 3)Measure the resistance between the transmission control module harness connector (B56: turbo model) or (B55: non-turbo model) and combination meter harness connector (i10). ***Connector & terminal*** ***Turbo model:*** ***(B56) No. 17 — (i10) No. 2:*** ***Non-turbo model:*** ***(B55) No. 13 — (i10) No. 2:***	Is the resistance less than 10 Ω?	Check the speedometer. <Ref. to IDI-13, REMOVAL, Speedometer.>	Repair the wiring harness.

5. CHECK ENGINE CONTROL MODULE

	Step	Check	Yes	No
1	**CHECK ENGINE CONTROL MODULE SIGNAL.** 1)Start the engine. 2)Measure the voltage between the engine control module connector (B136: turbo model) or (B134: non-turbo model) and engine ground. ***Connector & terminal*** ***Turbo model:*** ***(B136) No. 9 (+) — Engine ground (–):*** ***Non-turbo model:*** ***(B134) No. 30 (+) — Engine ground (–):***	Is the voltage 0 ←→ 13 V or more?	Go to step **2.**	Check the engine control module. <Ref. to EN(SOHC)-2, Basic Diagnostic Procedure.> or <Ref. to EN(DOHC TURBO)-2, Basic Diagnostic Procedure.>

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	Step	Check	Yes	No
2	**CHECK HARNESS BETWEEN COMBINATION METER AND ENGINE CONTROL MOD-**	Is the resistance less than 10 Ω?	Check the tachometer. <Ref. to IDI-14, REMOVAL, Tachometer.>	Repair the wiring harness.

	Step	Check	Yes	No
	CHECK FUEL LEVEL SENSOR. 1)Remove the fuel level sensor. <Ref. to FU(SOHC)-62, REMOVAL, Fuel Level Sensor.> or <Ref. to FU(DOHC TURBO)-62, REMOVAL, Fuel Level Sensor.> 2)Measure the resistance between the fuel level sensor terminals when setting the float to FULL and EMPTY position. ***Terminals*** ***No. 2 — No. 3:***	Is the resistance 0.5 to 2.5 Ω (FULL) and 50 to 52 Ω (EMPTY)?	Go to step **2.**	Replace the fuel level sensor.
!	**CHECK FUEL SUB LEVEL SENSOR.** 1)Remove the fuel sub level sensor. <Ref. to FU(SOHC)-63, REMOVAL, Fuel Sub Level Sensor.> or <Ref. to FU(DOHC TURBO)-63, REMOVAL, Fuel Sub Level Sensor.> 2)Measure the resistance between the fuel sub level sensor terminals when setting the float to FULL and EMPTY position. ***Terminals*** ***No. 1 — No. 2:***	Is the resistance 0.5 to 2.5 Ω (FULL) and 42 to 44 Ω (EMPTY)?	Go to step **3.**	Replace the fuel sub level sensor.
!	**CHECK HARNESS BETWEEN FUEL SUB LEVEL SENSOR AND COMBINATION METER.** 1)Disconnect the connector from the combination meter. 2)Measure the resistance between the fuel sub level sensor harness connector terminal and combination meter harness connector terminal. ***Connector & terminal*** ***(R59) No. 1 — (i12) No. 2:***	Is the resistance less than 10 Ω?	Go to step **4.**	Repair the wiring harness.
!	**CHECK HARNESS BETWEEN FUEL LEVEL SENSOR AND FUEL SUB LEVEL SENSOR.** Measure the resistance between the fuel level sensor harness connector terminal and fuel sub level sensor harness connector terminal. ***Connector & terminal*** ***(R58) No. 3 — (R59) No.2:***	Is the resistance less than 10 Ω?	Go to step **5.**	Repair the wiring harness.

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	Step	Check	Yes	No
5	**CHECK FUEL LEVEL SENSOR GROUND CIRCUIT.** Measure the resistance between the fuel level sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(R58) No. 2 — Chassis ground:***	Is the resistance less than 10 Ω?	Check the fuel gauge. <Ref. to IDI-15, REMOVAL, Fuel Gauge.>	Repair the wiring harness.

7. CHECK ENGINE COOLANT TEMPERATURE SENSOR

	Step	Check	Yes	No
1	**CHECK ENGINE COOLANT TEMPERATURE SENSOR.** Check the engine coolant temperature sensor. <Ref. to EN(SOHC)-120, DTC P0117 — ENGINE COOLANT TEMPERATURE SENSOR CIRCUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> or <Ref. to EN(DOHC TURBO)-126, DTC P0117 — ENGINE COOLANT TEMPERATURE SENSOR CIRCUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is the engine coolant temperature sensor OK?	Go to step **2.**	Replace the engine coolant temperature sensor.
2	**CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND COMBINATION METER.** 1)Turn the ignition switch to OFF. 2)Disconnect the connector from the engine coolant temperature sensor and combination meter. 3)Measure the resistance between the engine coolant temperature sensor harness connector (E8) and combination meter harness connector (i12). ***Connector & terminal*** ***(E8) No. 3 — (i12) No. 9:***	Is the resistance less than 10 Ω?	Check the water temperature gauge. <Ref. to IDI-16, REMOVAL, Water Temperature Gauge.>	Repair the wiring harness.

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8. CHECK OUTSIDE TEMPERATURE INDICATOR

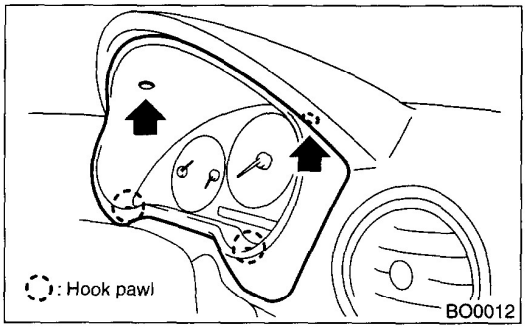
	Step	Check	Yes	No
1	**CHECK POWER SUPPLY FOR AMBIENT SENSOR.** 1)Turn the ignition switch OFF. 2)Disconnect the connector from the combination meter. 3)Turn the ignition switch ON. 4)Measure the voltage between the combination meter terminal and chassis ground. ***Connector & terminal*** ***(i11) No. 11 (+) — Chassis ground (–):***	Is the voltage more than 4V?	Go to step **2.**	Replace the combination meter printed circuit.
2	**CHECK HARNESS BETWEEN AMBIENT SENSOR AND COMBINATION METER.** 1)Turn the ignition switch OFF. 2)Disconnect the connector from the ambient sensor. 3)Measure the resistance between the ambient sensor harness connector terminal and combination meter harness connector terminal. ***Connector & terminal*** ***(F78) No. 1 — (i11) No. 11:*** ***(F78) No. 2 — (i11) No. 8:***	Is the resistance less than 10 Ω?	Go to step **3.**	Repair the wiring harness.
3	**CHECK AMBIENT SENSOR.** 1)Remove the ambient sensor. 2)Check the ambient sensor. <Ref. to IDI-17, INSPECTION, Ambient Sensor.>	Is the ambient sensor OK?	Go to step **4.**	Replace the ambient sensor.
4	**CHECK OUTSIDE TEMPERATURE INDICATOR.** 1)Connect the combination meter harness connector. 2)Connect a resistor (2.2 kΩ) between the terminals of ambient sensor harness connector. 3)Turn the ignition switch 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.

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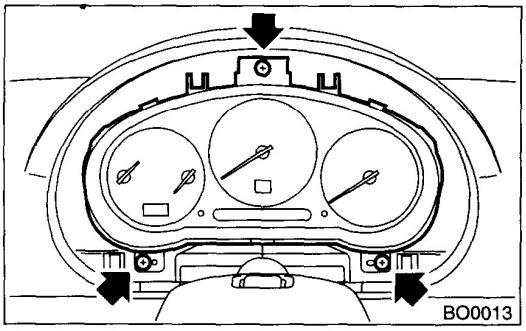
3. Combination Meter Assembly

A: REMOVAL

1) Disconnect the battery ground cable.
2) Set the tilt steering at the lowest position.
3) Remove the screws and detach the meter visor.



4) Remove the screws of combination meter and pull out the meter 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.

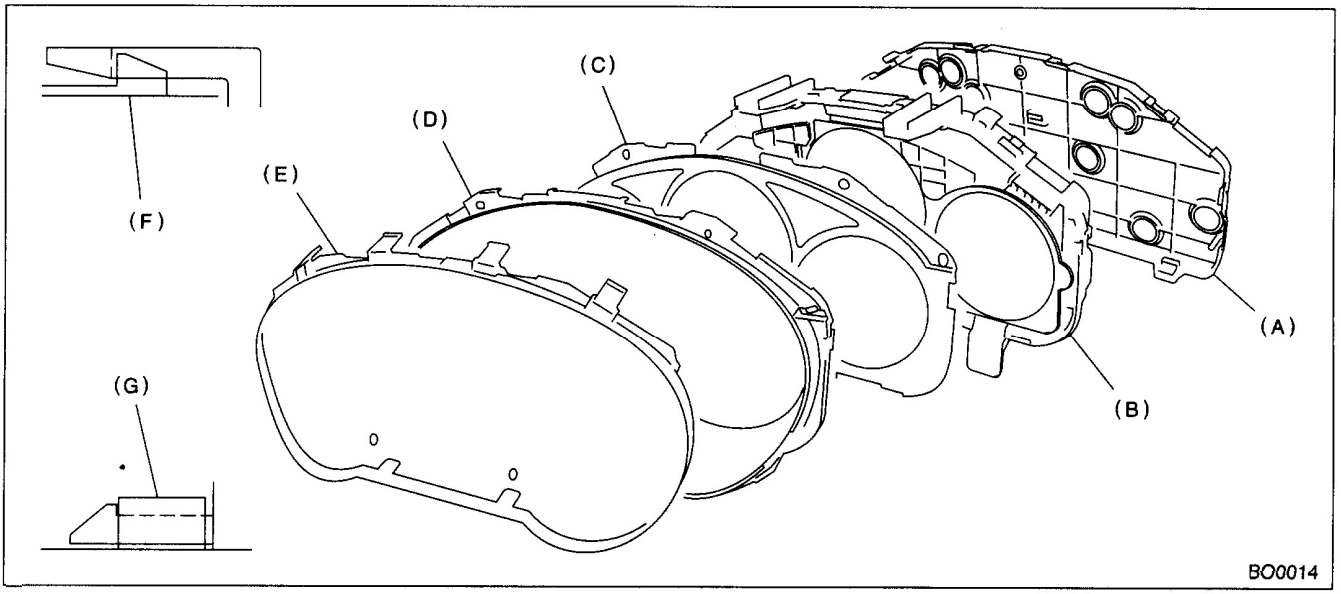
CAUTION:
• Make sure the electrical connector is connected securely.
• Make sure that each meter operates normally.

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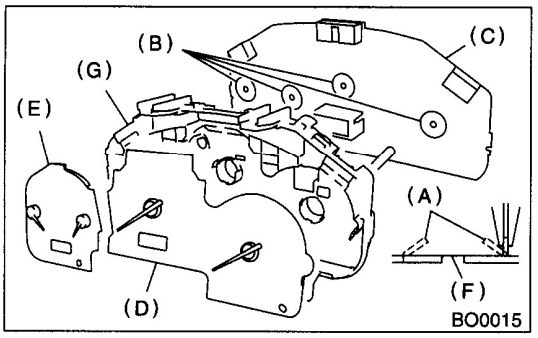
C: DISASSEMBLY

CAUTION:
Use gloves to avoid damage and getting fingerprints on the glass surface and meter surfaces.

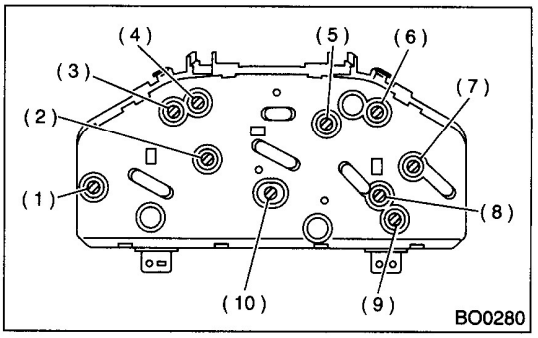
1) Disengage claw (F) to remove case (B) from back cover (A).
2) Disengage claw (G) to remove meter glass (E), reflector (D) and window plate (C) from inner case.



3) Pull up claw (A) in portion (B) of combination meter printed circuit (C) with combination pliers. Push out speedometer and tachometer assembly (D) and fuel gauge and water temperature gauge assembly (E) using hole (F).
4) Pull up the claw in the center of combination meter printed circuit (C), and remove the combination meter printed circuit from case (G).



1. BULB REPLACEMENT



(1) Tachometer
(2) Speedometer and tachometer
(3) Turn RH
(4) HI-beam
(5) Speedometer
(6) Turn LH
(7) Fuel gauge
(8) Temperature gauge
(9) LCD (Outside temperature indicator)
(10) LCD (Odometer and tripmeter)

D: ASSEMBLY

Assemble in the reverse order of disassembly.

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4. Speedometer

A: REMOVAL

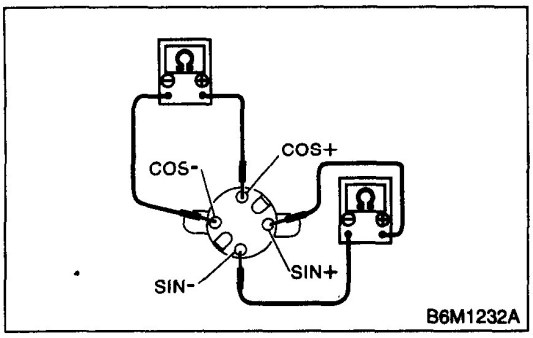
Disassemble the combination meter, and then remove the speedometer and tachometer assembly. <Ref. to IDI-12, DISASSEMBLY, Combination Meter Assembly.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the speedometer resistance.



Terminal	Resistance
SIN+ and SIN–	200±8 Ω
COS+ and COS–	200±8 Ω

If NG, replace the speedometer and tachometer assembly.
If OK, replace the combination meter printed circuit.

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5. Tachometer

A: REMOVAL

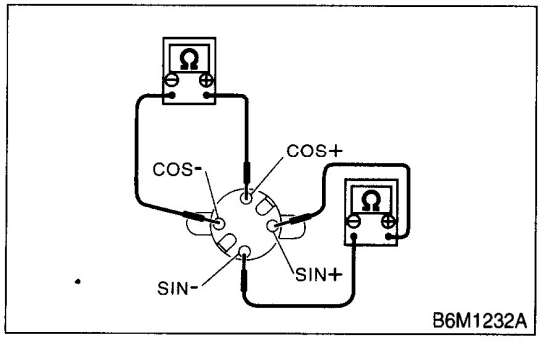
Disassemble the combination meter, and then remove the speedometer and tachometer assembly. <Ref. to IDI-12, DISASSEMBLY, Combination Meter Assembly.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the tachometer resistance.



Terminal	Resistance
SIN+ and SIN–	200±8 Ω
COS+ and COS–	200±8 Ω

If NG, replace the speedometer and tachometer assembly.
If OK, replace the combination meter printed circuit.

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6. Fuel Gauge

A: REMOVAL

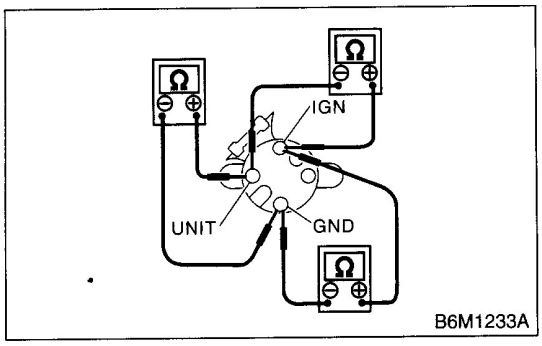
Disassemble the combination meter, and then remove the water temperature gauge and fuel gauge assembly. <Ref. to IDI-12, DISASSEMBLY, Combination Meter Assembly.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the fuel gauge resistance.



Terminal	Resistance
IGN and GND	170±10 Ω
IGN and UNIT	35±10 Ω
UNIT and GND	136±10 Ω

If NG, replace the water temperature gauge and fuel gauge assembly.
If OK, replace the combination meter printed circuit.

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7. Water Temperature Gauge

A: REMOVAL

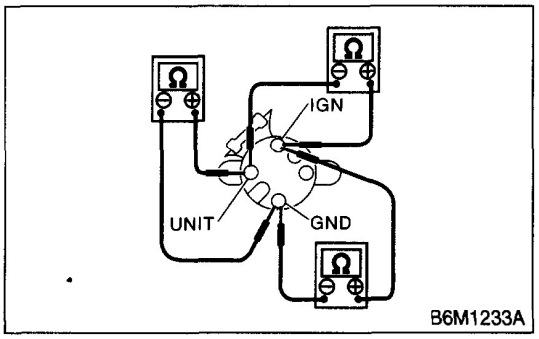
Disassemble the combination meter, and then remove the water temperature gauge and fuel gauge assembly. <Ref. to IDI-12, DISASSEMBLY, Combination Meter Assembly.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the water temperature gauge resistance.



Terminal	Resistance
IGN and GND	208±10 Ω
IGN and UNIT	56±10 Ω
UNIT and GND	264±10 Ω

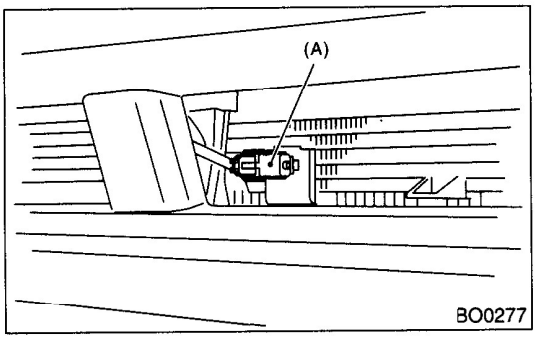
If NG, replace the water temperature gauge and fuel gauge assembly.
If OK, replace the combination meter printed circuit.

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8. Ambient Sensor

A: REMOVAL

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

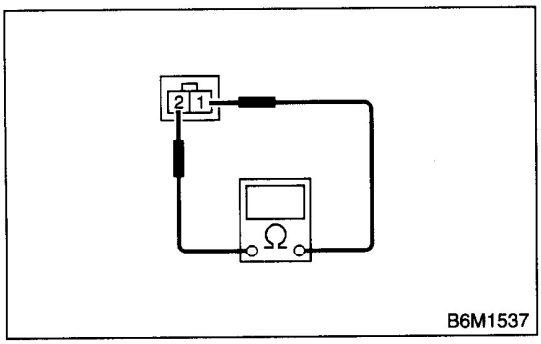


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the ambient sensor resistance.



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

If NG, replace the ambient sensor.

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SEATS

SE

Page

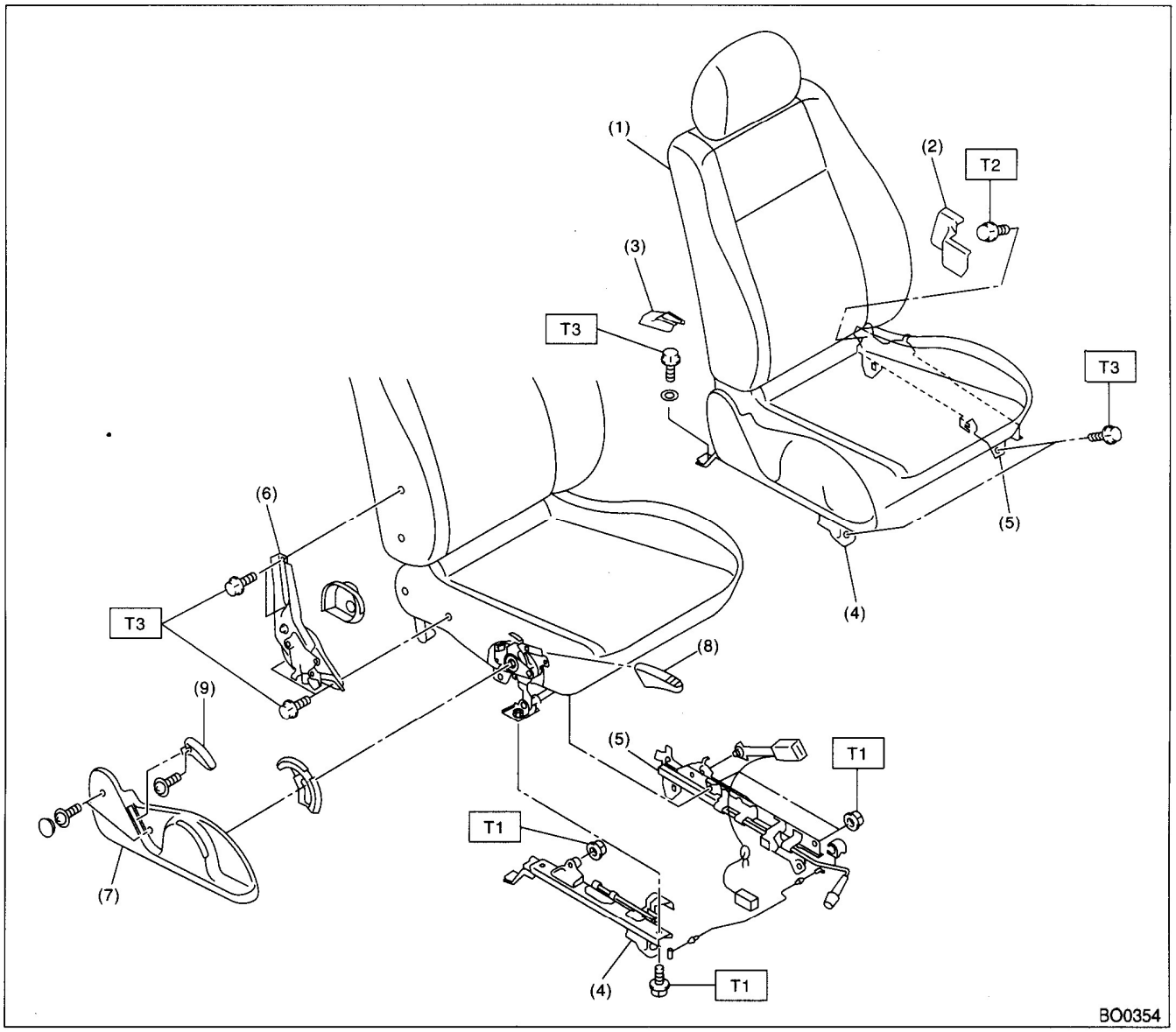
1. General Description 2
2. Front Seat 6
3. Rear Seat 11

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1. General Description

A: COMPONENT

1. FRONT SEAT

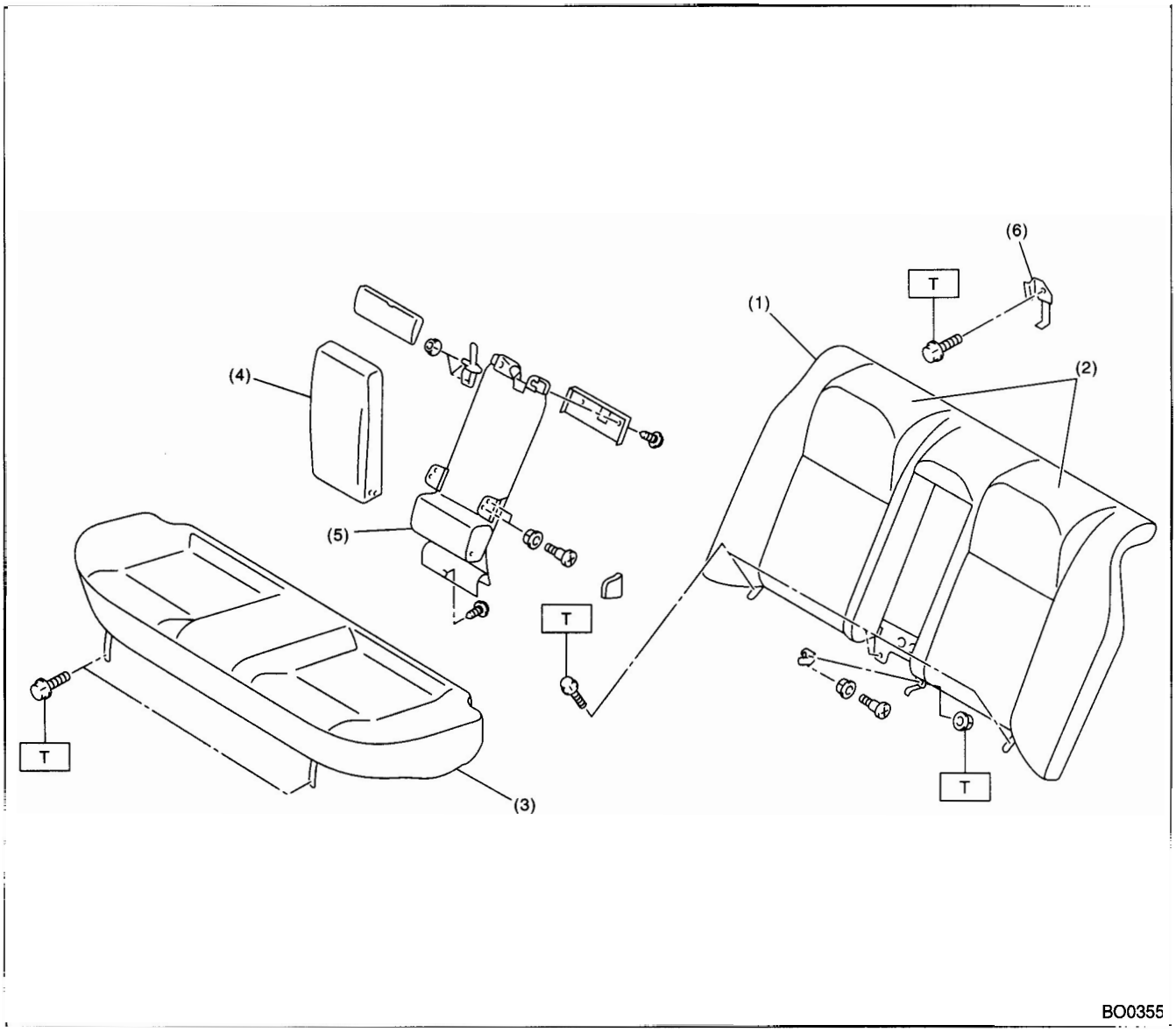


(1) Front seat ASSY
(2) Rail cover IN
(3) Rail cover OUT
(4) Slide rail OUT
(5) Slide rail IN
(6) Seat hinge
(7) Seat hinge cover
(8) Seat lifter lever
(9) Reclining lever

Tightening torque: N·m (kgf-m, ft-lb)
T1: 24.5 (2.5, 18)
T2: 30 (3.1, 22)
T3: 53 (5.4, 39)

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2. REAR SEAT (SEDAN)



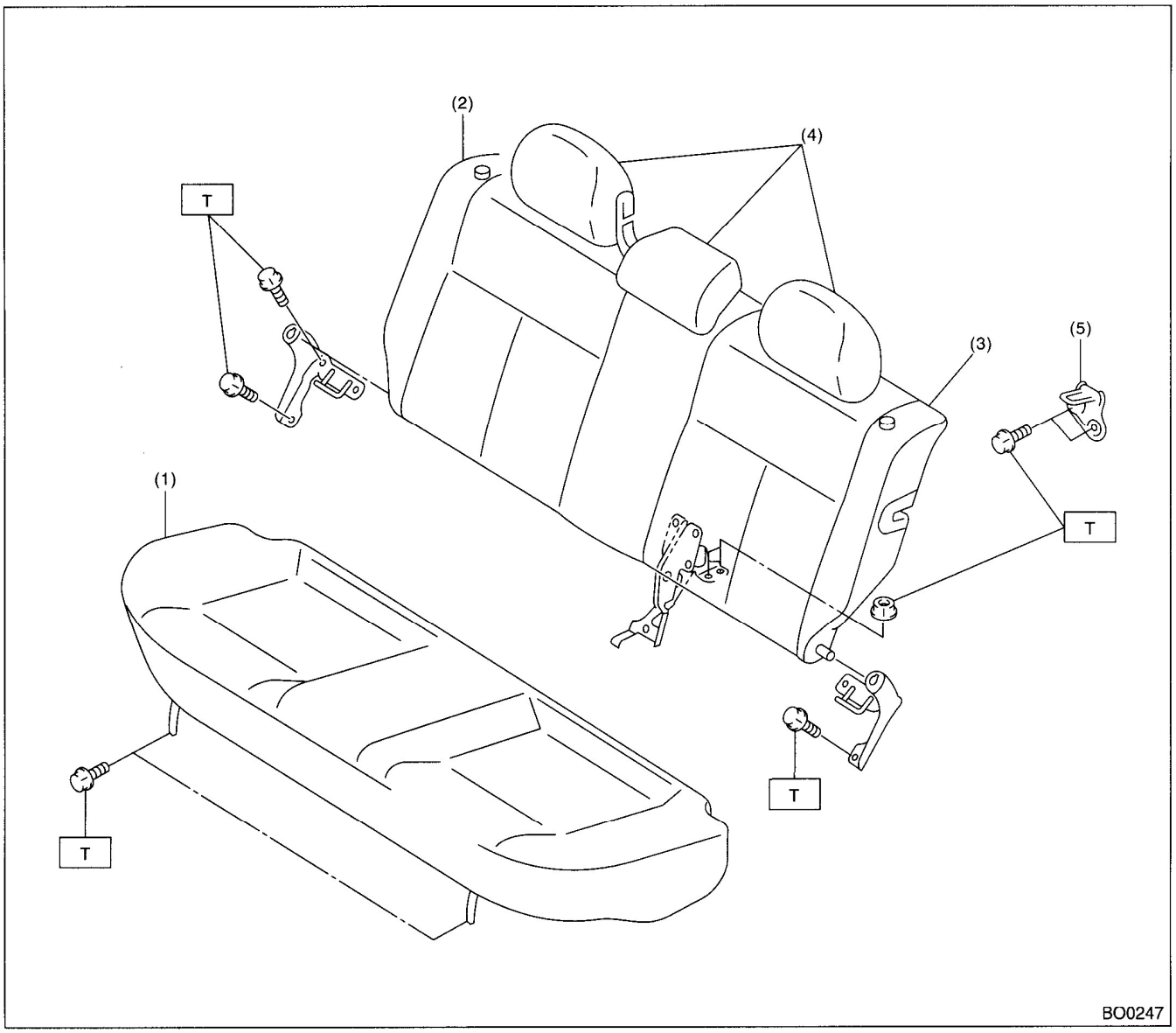
BO0355

(1) Backrest
(2) Head restraint
(3) Cushion
(4) Arm rest
(5) Center through frame
(6) Hook

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

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3. REAR SEAT (WAGON)



(1) Cushion
(2) Backrest RH
(3) Backrest LH
(4) Head restraint
(5) Striker

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

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B: CAUTION

- Take care not to contaminate or damage seat surface.
- While loading to or unloading to the vehicle, take care not to contact body.
- When removing the front seat from a side airbag loaded vehicle, follow cautions given in the airbag section.

C: PREPARATION TOOL

1. GENERAL TOOL

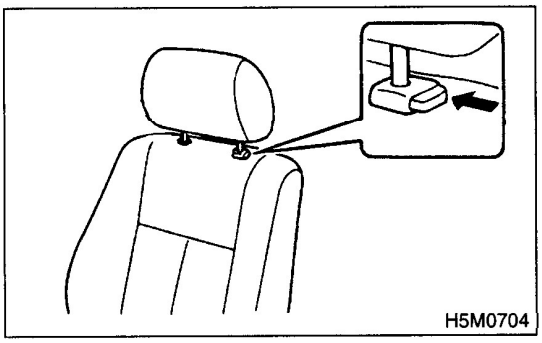
TOOL NAME	REMARKS
Long Nose Pliers	Used for removing and installing the hog ring

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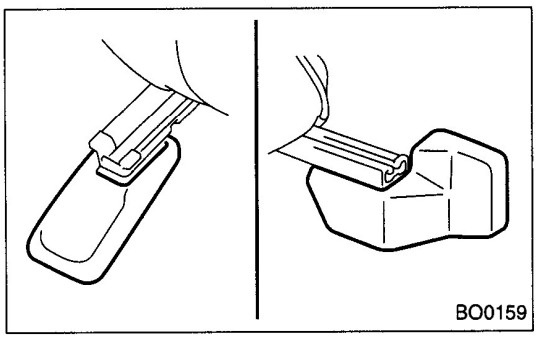
2. Front Seat

A: REMOVAL

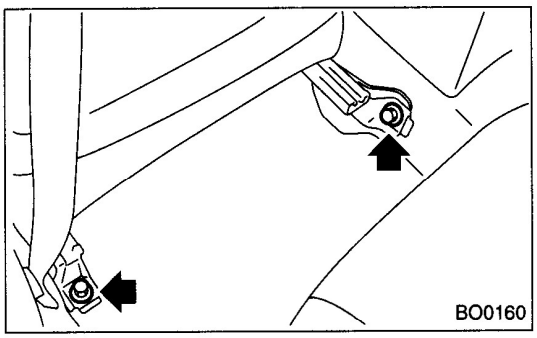
1) Disconnect the ground terminal from battery.
2) While pressing the headrest lock button, remove the headrest.



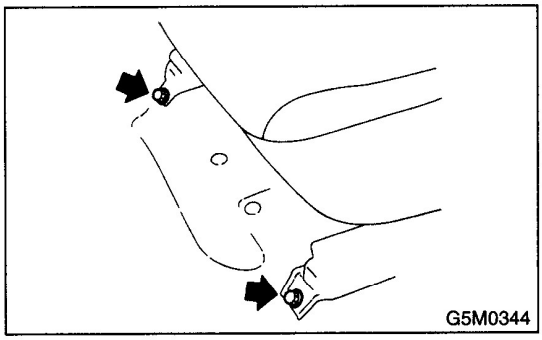
3) Tilt forward the backrest.
4) Move the seat to full front end.
5) Remove the bolt cover at rear end of slide rail.



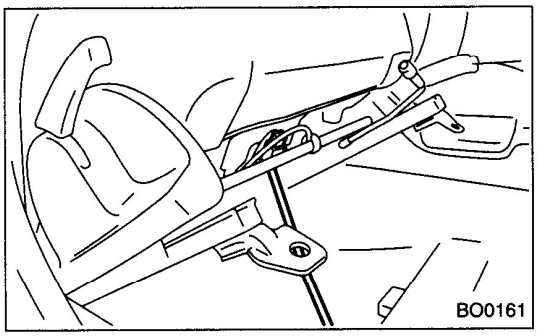
6) Remove the two bolts at rear side of seat rail.



7) Move the seat to full rear end.
8) Remove the two bolts at front side of seat rail.



9) Disconnect the side airbag connector under the seat. (Side airbag equipped vehicle)
10) Disconnect the connector of seat belt warning.



11) Remove the front seat from vehicle.

CAUTION:
When removing the seat from vehicle, take care not to damage body, seat or trim.

B: INSTALLATION

Install in the reverse order of removal.

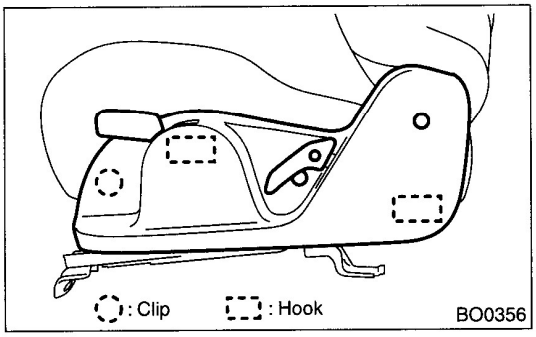
CAUTION:
Confirm that the seat can move smoothly and be locked securely at any position.

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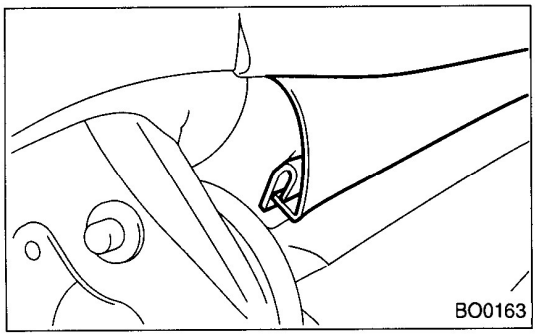
C: DISASSEMBLY

1. DRIVER'S SEAT

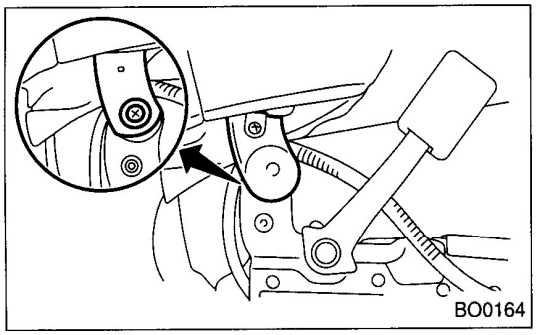
1) Remove the seat from the vehicle. <Ref. to SE-6, REMOVAL, Front Seat.>
2) Remove the reclining hinge cover.



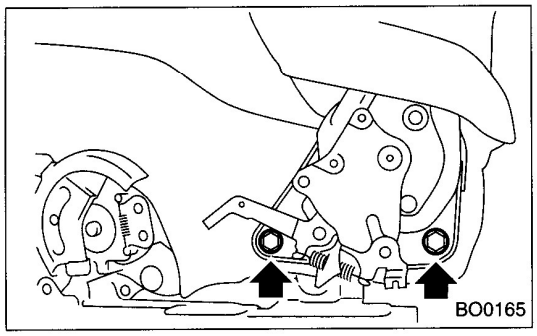
3) Remove the hook at bottom of seat backrest.



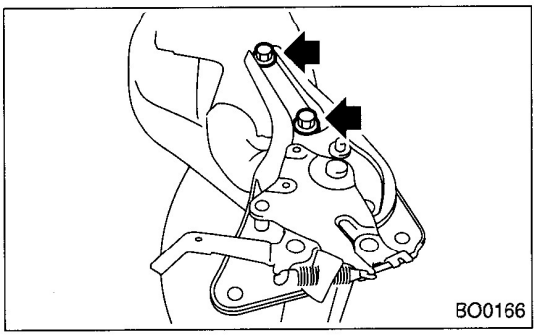
4) Remove the hinge cover and screw.



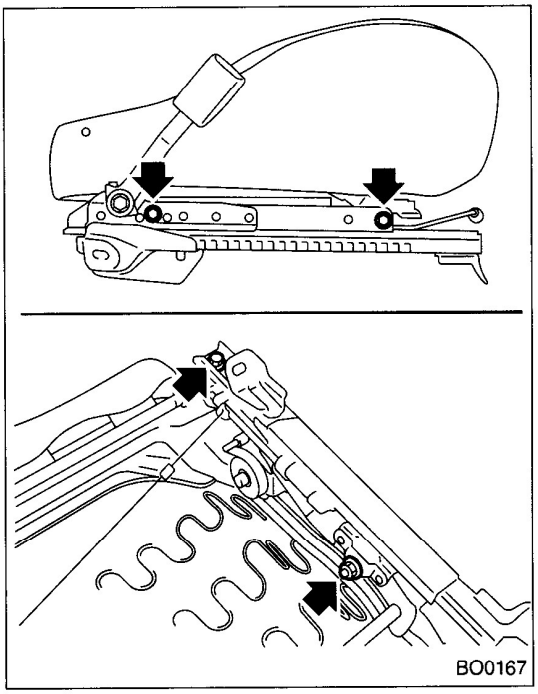
5) Remove the two bolts.



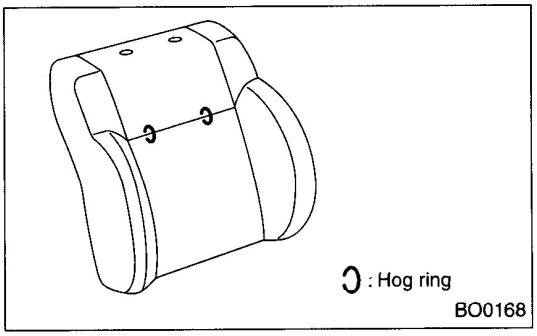
6) Turn the cover, and remove the two bolts from hinge.



7) Loosen the bolt and nuts to remove slide rail.

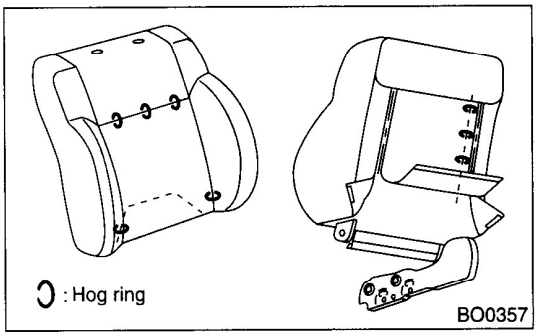


8) Remove the hog rings, and then remove seat back rest cover.
Without side airbag model:



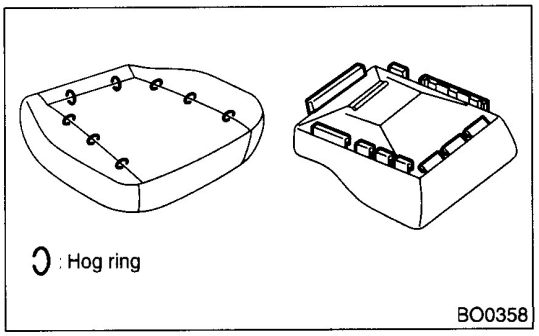
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With side airbag model:

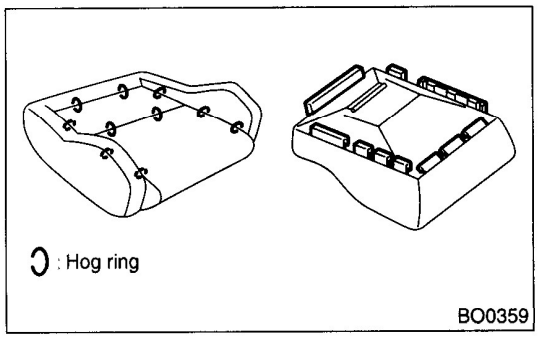


9) Remove the hog rings, and then remove the seat cushion cover.

Standard type model:

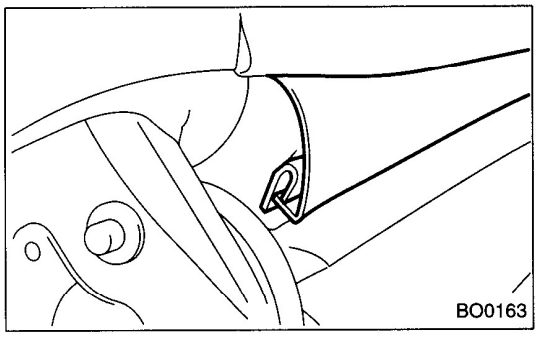


Sporty type model:

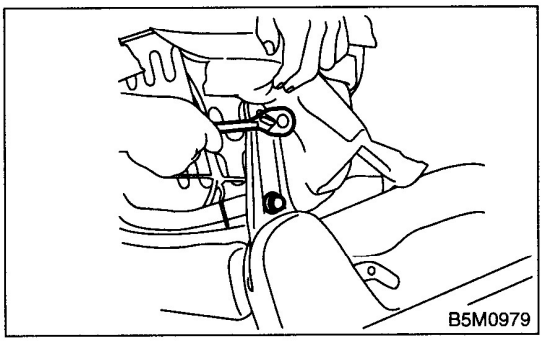


2. PASSENGER'S SEAT

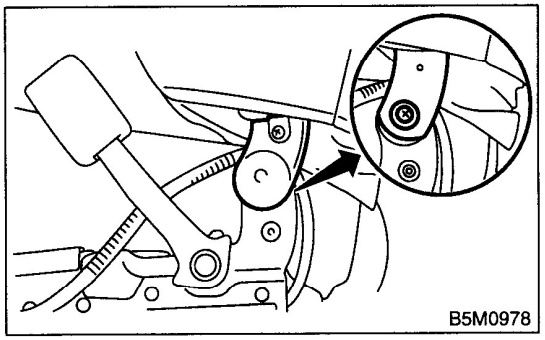
1) Remove the seat from the vehicle. <Ref. to SE-6, REMOVAL, Front Seat.>
2) Remove the hook at bottom of seat back rest.



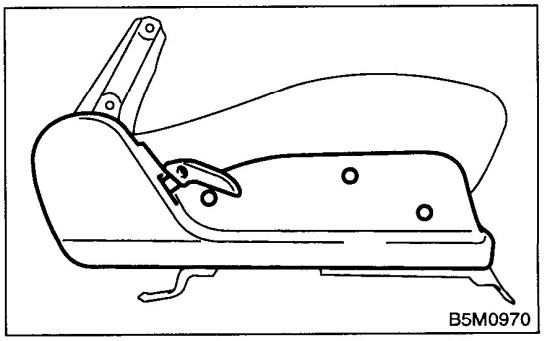
3) Turn the cover, and remove the two bolts from hinge.



4) Remove the hinge screw cover and screw, and remove seat back rest from hinge.

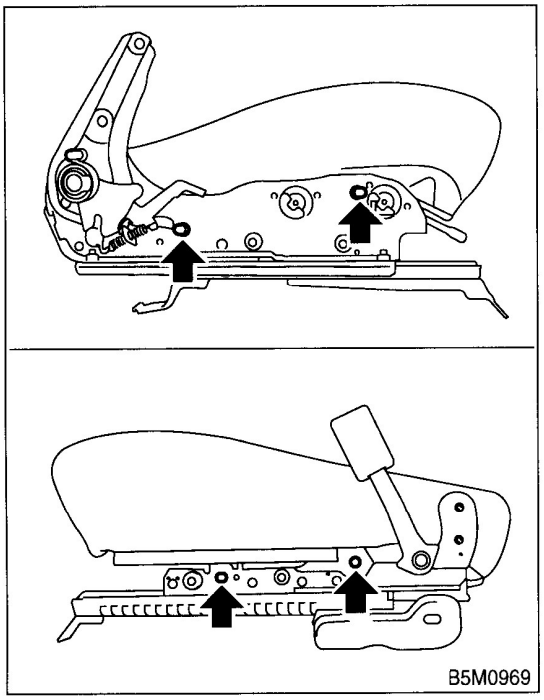


5) Remove the reclining lever cover and hinge cover.

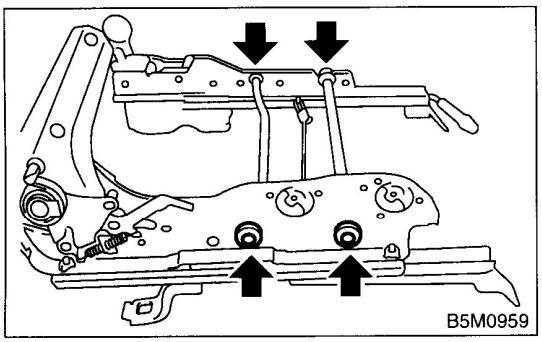


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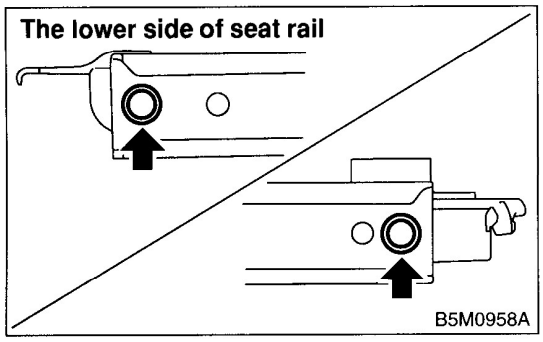
6) Loosen four bolts to remove the seat cushion.



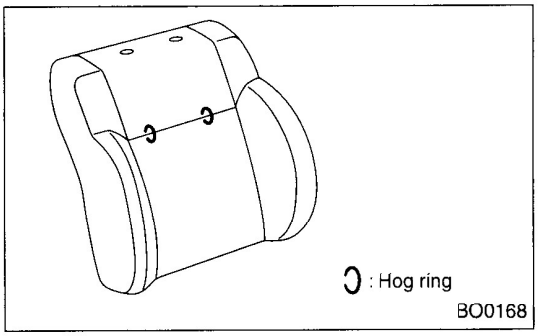
7) Loosen four screws to remove the hinge.



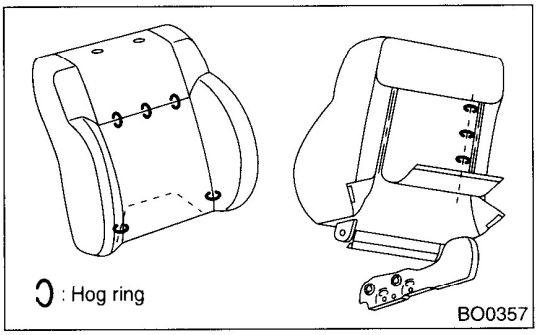
8) Loosen two bolts to remove the slide rail.



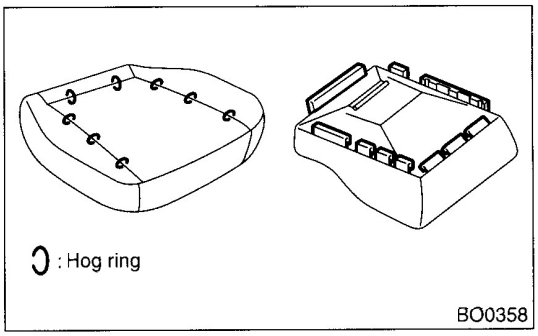
9) Remove the hog rings, and then remove the seat back rest cover.
Without side airbag model:



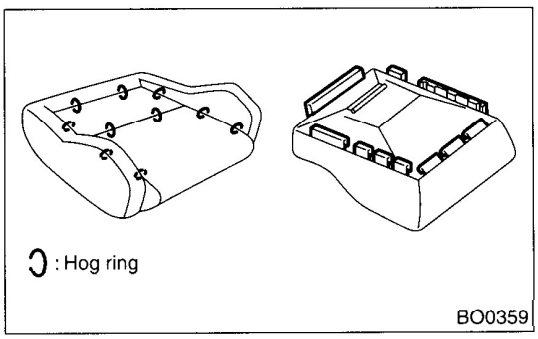
With side airbag model:



10) Remove the hog rings, and then remove the seat cushion cover.
Standard type model:



Sporty type model:



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D: ASSEMBLY

1. DRIVER'S SEAT

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. PASSENGER'S SEAT

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.

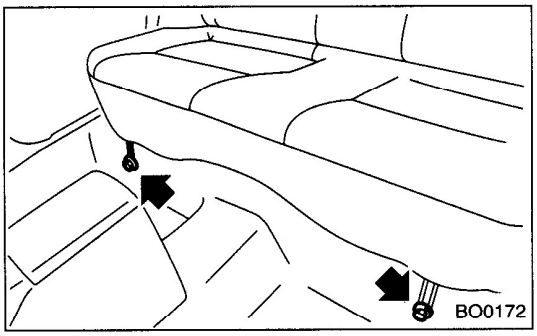
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3. Rear Seat

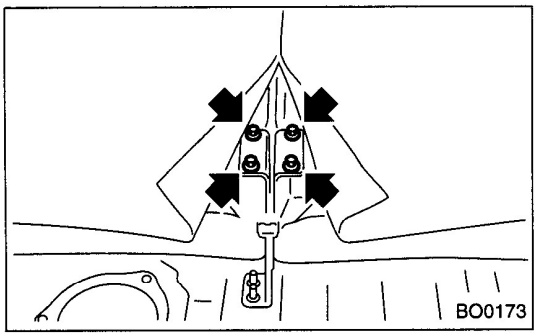
A: REMOVAL

1. WAGON

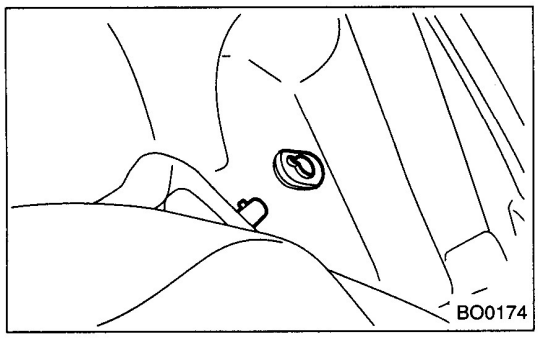
1) Remove the bolts, and then detach rear seat cushion.



2) Remove the headrest.
3) Remove the luggage floor mat. <Ref. to EI-56, REMOVAL, Luggage Floor Mat.>
4) Turn over the mat to remove bolts.

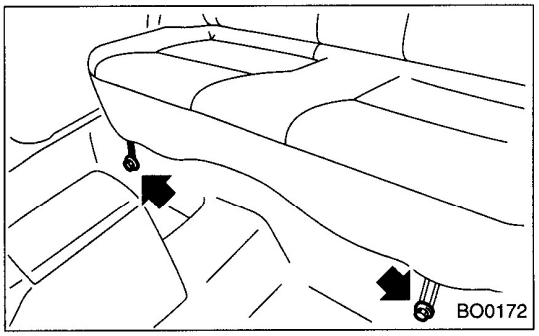


5) Remove the rear seat backrest.

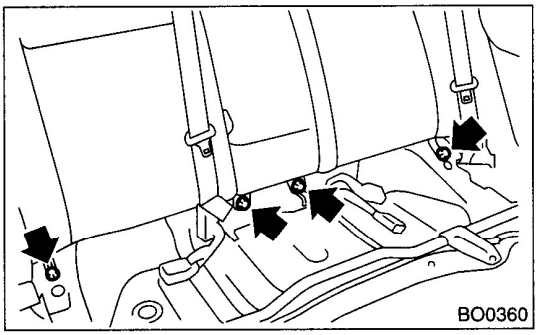


2. SEDAN

1) Remove the bolts, and then detach 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.

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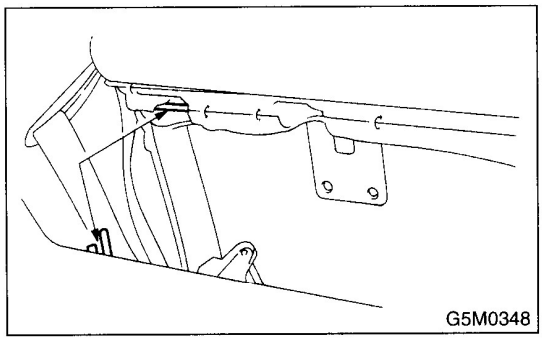
B: INSTALLATION

1. WAGON

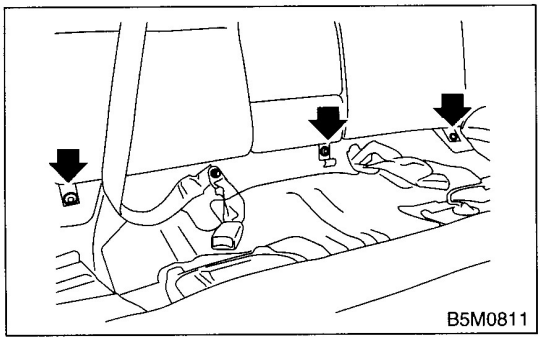
Install in the reverse order of removal.

2. SEDAN

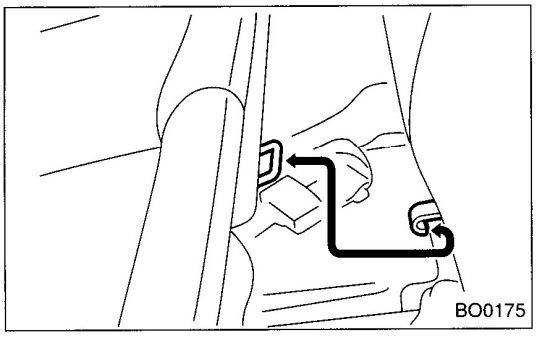
1) Hook and fasten the upper-back side of the rear seat backrest to the body hook.



2) Tighten the bolts.



3) Hook and fasten the seat cushion to the hook on the lower part of the rear seat backrest.

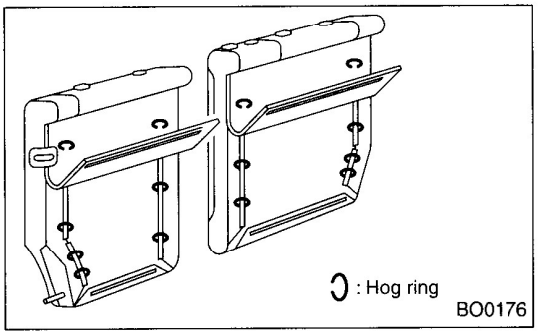


C: DISASSEMBLY

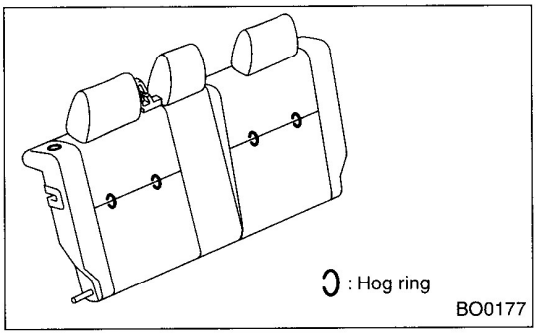
1. WAGON

1) Remove the rear seat. <Ref. to SE-11, WAGON, REMOVAL, Rear Seat.>

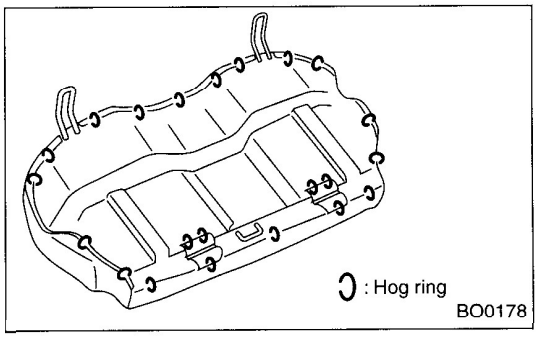
2) Remove the hog rings from around the seat backrest.



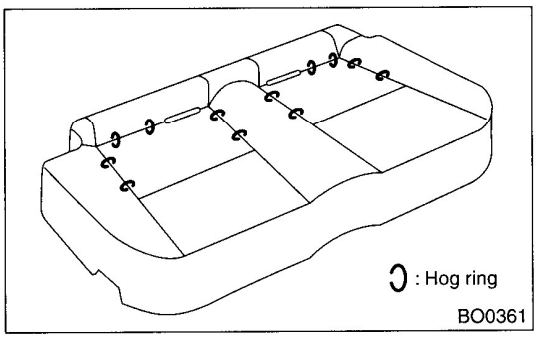
3) Remove the hog rings on front side of cushion pad, and then remove the cover.



4) Remove the hog rings from around the seat cushion.



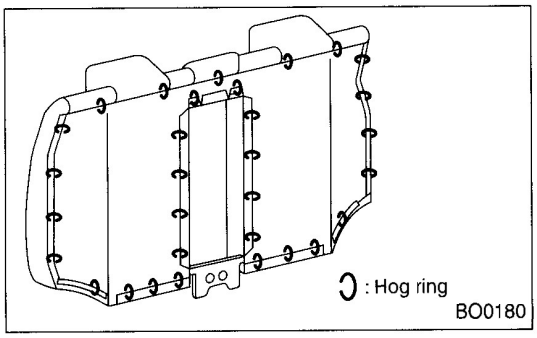
5) Remove the hog rings, and then remove the cover.



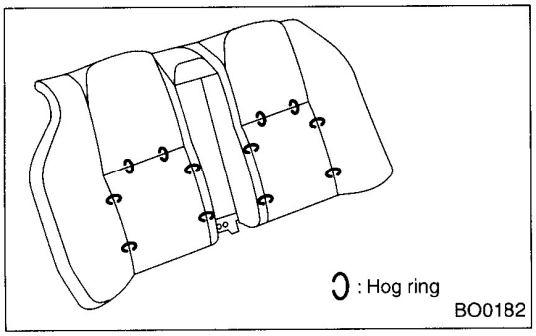
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2. SEDAN

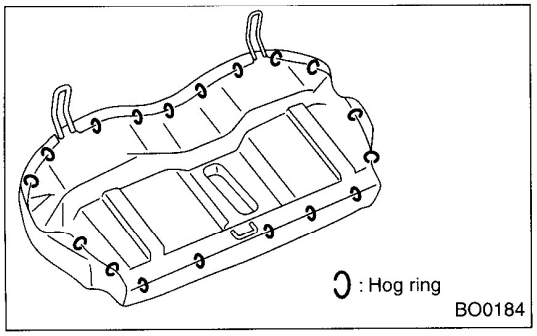
1) Remove the rear seat. <Ref. to SE-11, SEDAN, REMOVAL, Rear Seat.>
2) Remove the hog rings from around the seat backrest.



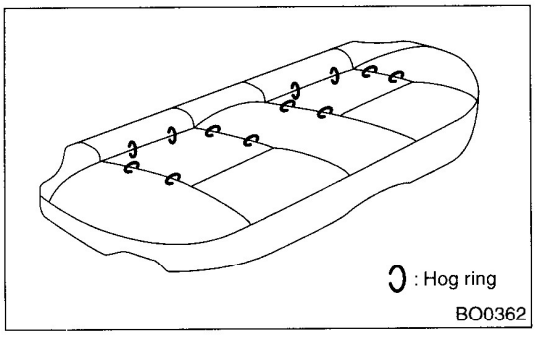
3) Remove the hog rings, and then remove the seat cover.



4) Remove the hog rings around the seat cushion.



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



D: ASSEMBLY

1. WAGON

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

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.

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REAR SEAT

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SECURITY AND LOCKS

SL

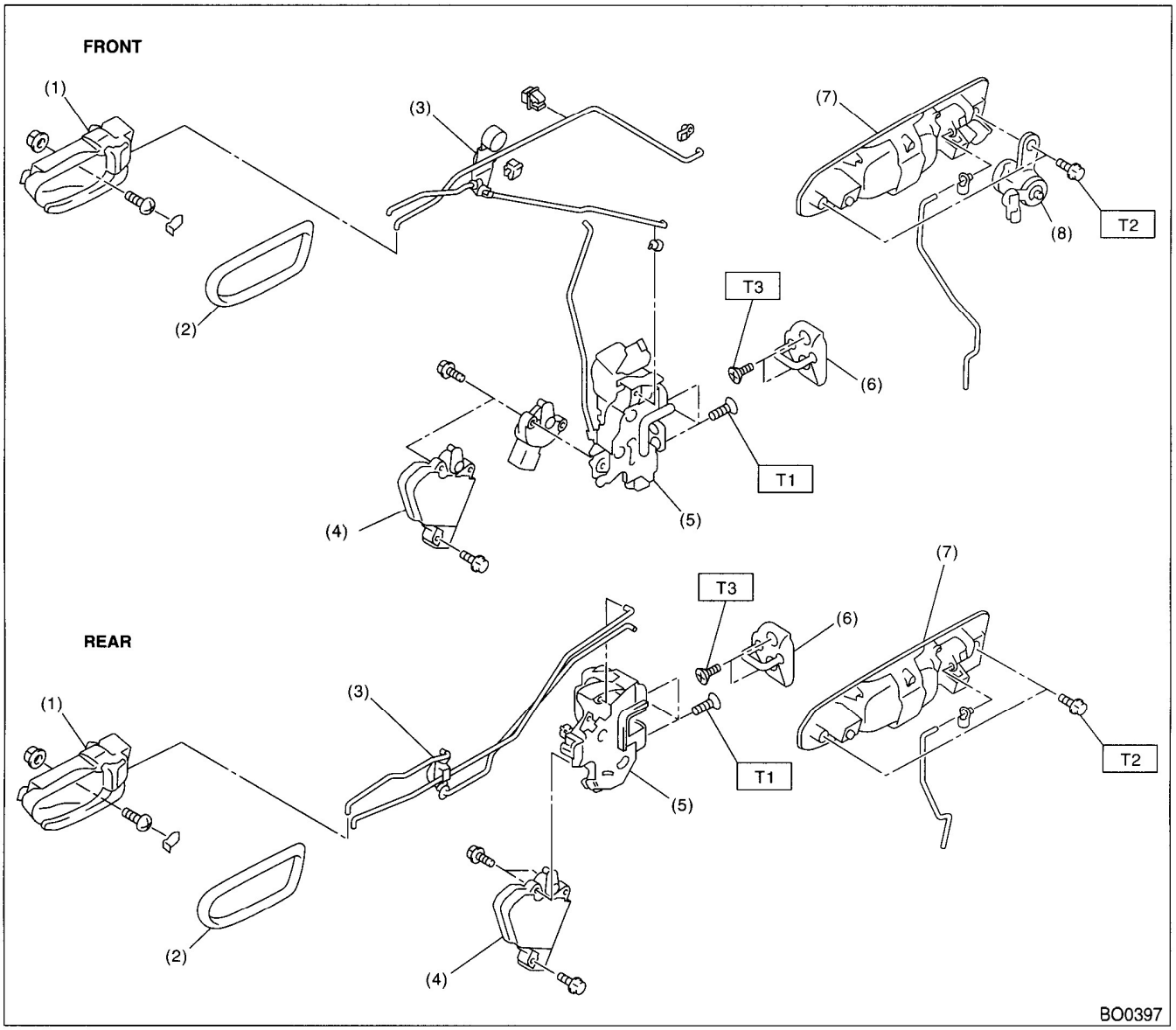
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1. General Description

A: COMPONENT

1. DOOR LOCK ASSEMBLY

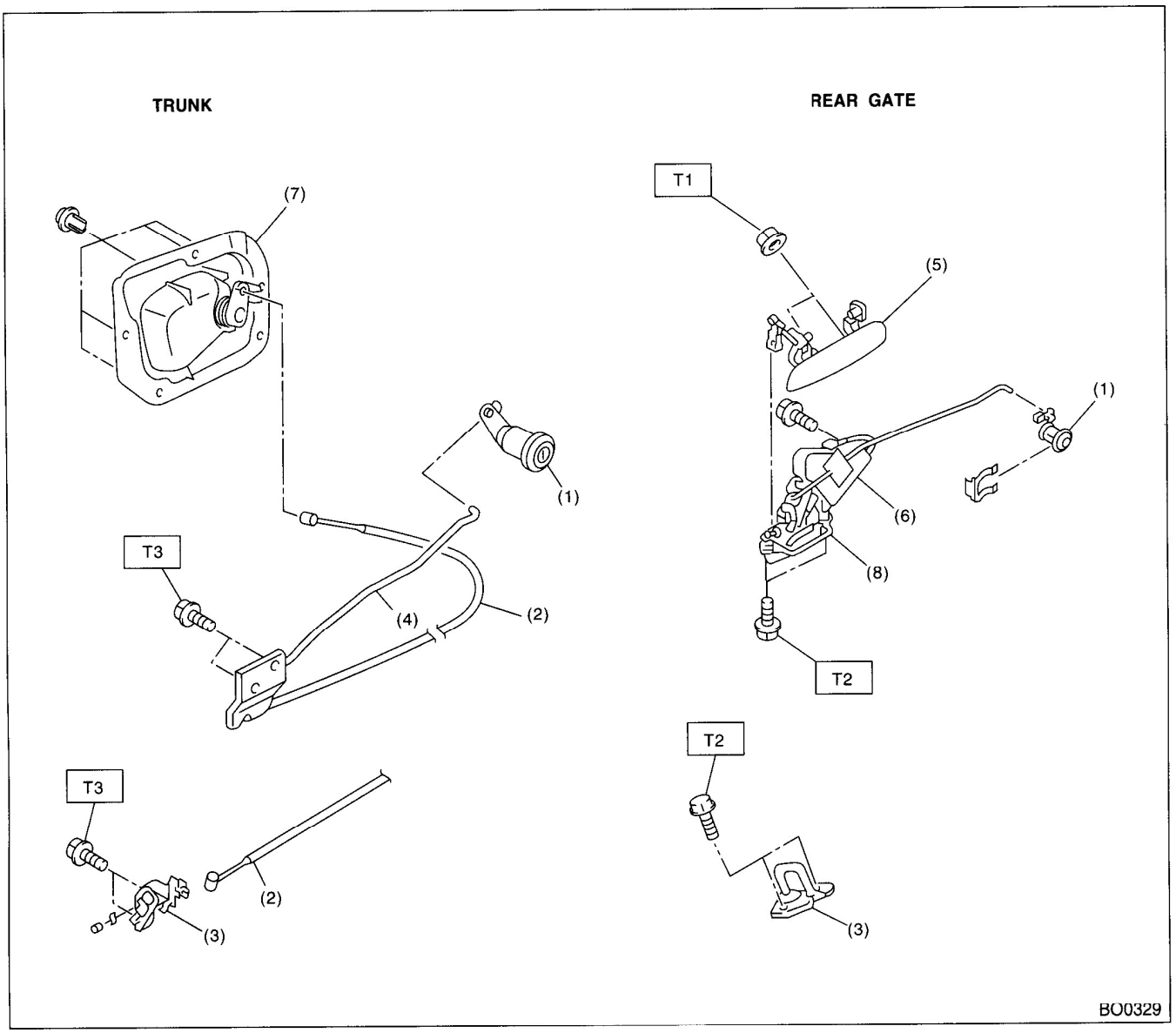


(1) Inner remote ASSY
(2) Inner remote cover
(3) Bell crank
(4) Auto-door lock actuator
(5) Door latch
(6) Striker
(7) Door outer handle
(8) Key cylinder

Tightening torque: N·m (kgf-m, ft-lb)
T1: 6.4 (0.65, 4.7)
T2: 7.4 (0.75, 5.4)
T3: 14 (1.4, 10.1)

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2. TRUNK LID AND REAR GATE LOCK

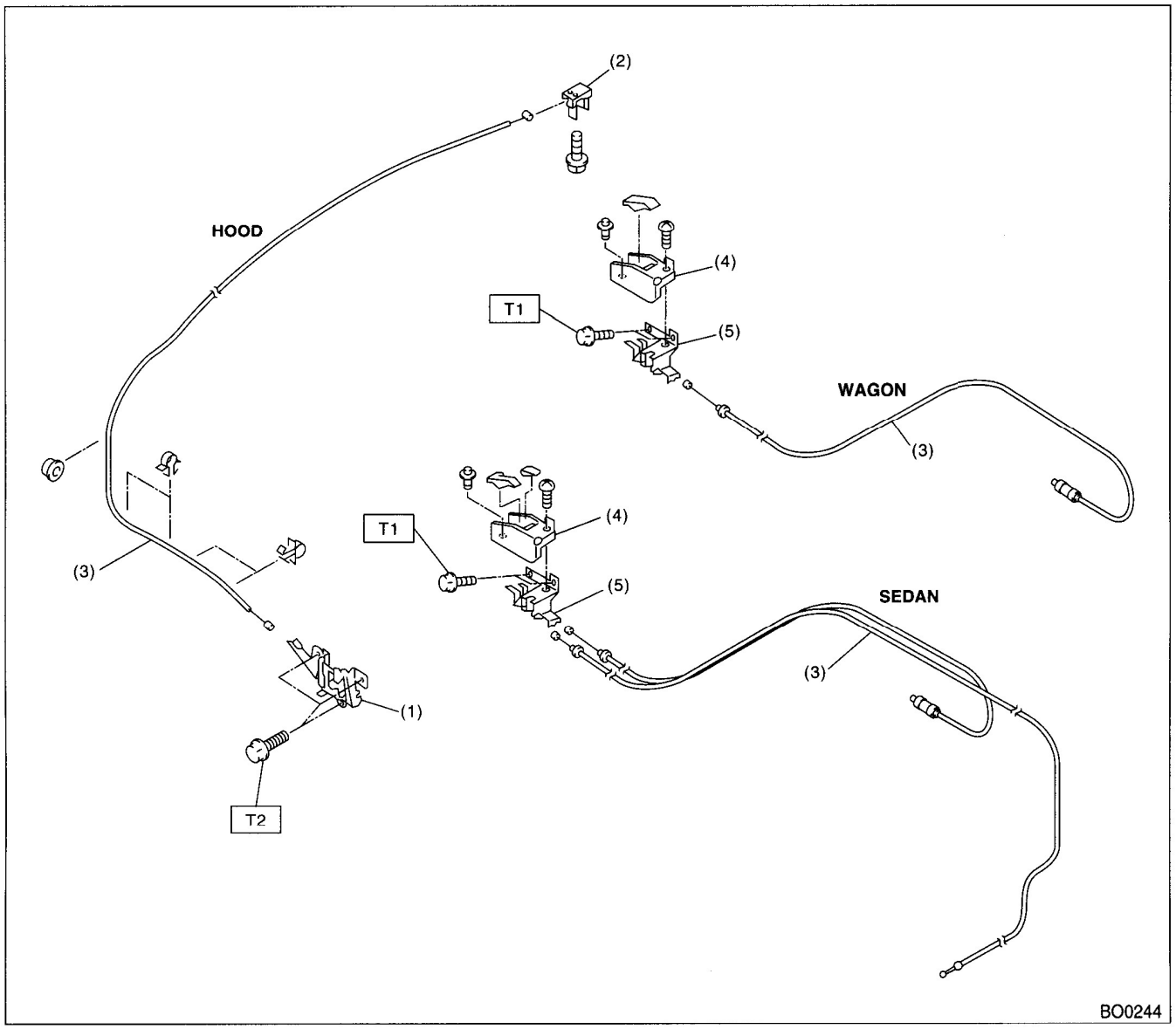


(1) Key cylinder
(2) Cable
(3) Striker
(4) Trunk lid lock ASSY
(5) Rear gate outer handle
(6) Rear gate actuator
(7) Trunk lid release handle
(8) Rear gate latch

Tightening torque: N·m (kgf-m, ft-lb)
T1: 4.5 (0.46, 3.3)
T2: 18 (1.84, 13.3)
T3: 25 (2.5, 18.1)

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3. HOOD LOCK AND REMOTE OPENERS

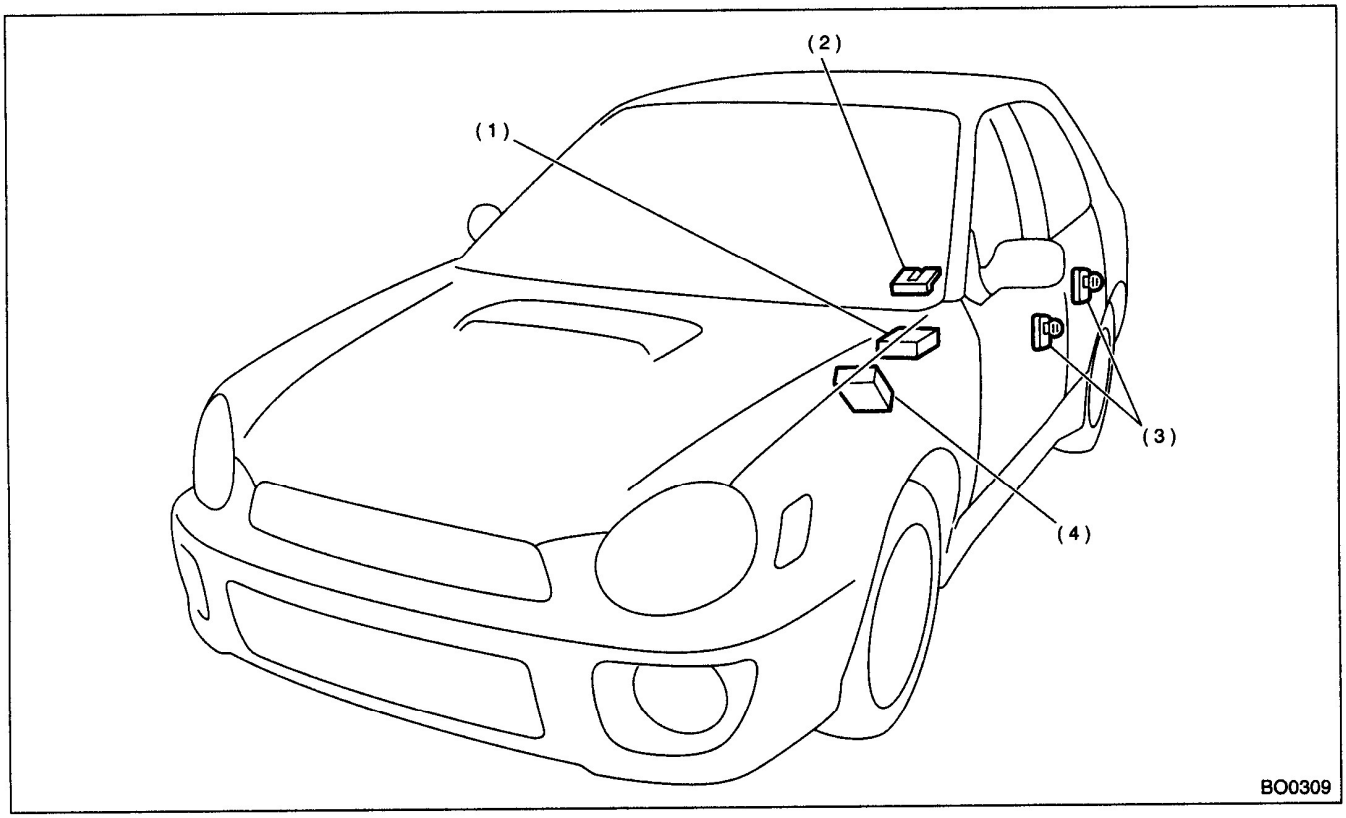


(1) Hood lock ASSY
(2) Lever ASSY
(3) Cable
(4) Cover
(5) Pull handle ASSY

Tightening torque: N·m (kgf-m, ft-lb)
T1: 6.4 (0.65, 4.7)
T2: 32 (3.3, 23.9)

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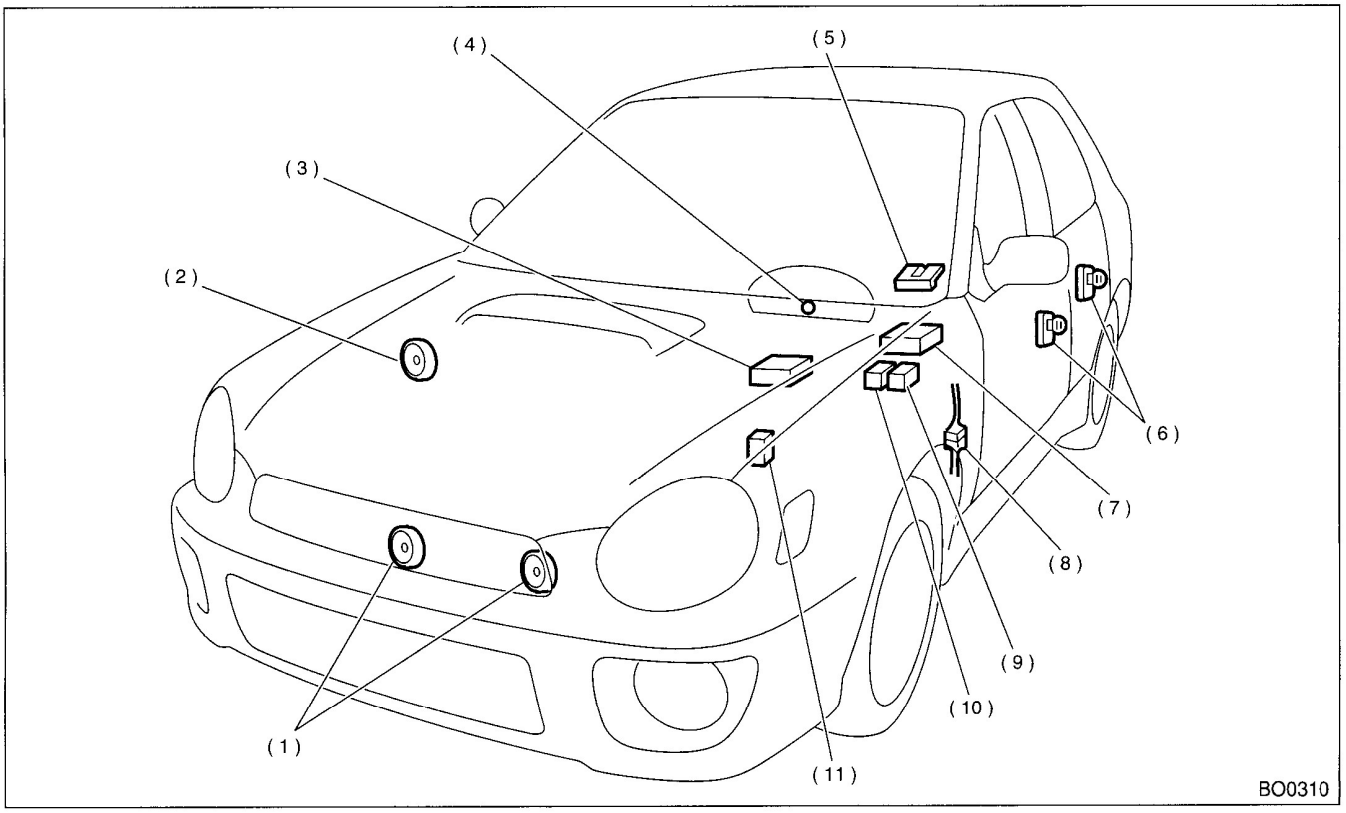
4. KEYLESS ENTRY SYSTEM



(1) Keyless entry control module
(2) Rear gate latch switch (Wagon)
(3) Door switch
(4) Integrated module

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5. SECURITY SYSTEM



(1) Horn
(2) Security horn
(3) Security control module
(4) Security indicator light (in combination meter)
(5) Trunk room light switch (Sedan), rear gate latch switch (Wagon)
(6) Door switch
(7) Keyless entry control module
(8) Passive arm connector
(9) Security horn relay
(10) Interrupt relay
(11) Horn relay (in main fuse box)

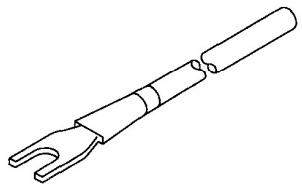
B: CAUTION

• Before disassembling or reassembling the parts, always disconnect the battery ground cable. When repairing the radio, control module, etc. which are provided with memory functions, record the memory contents before disconnecting battery ground cable. Otherwise, these contents are cancelled upon disconnection.
• Reassemble the parts in the reverse order of disassembly procedure unless otherwise indicated.
• Adjust the parts to the specifications contained in this manual if so designated.
• Connect the connectors and hoses securely during reassembly.
• After reassembly, ensure the functional parts operate smoothly.
• The 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 the electrical test equipment on these circuits.
• Be careful not to damage the Airbag system wiring harness when servicing the ignition key cylinder.

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C: PREPARATION TOOL

1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 B5M1120	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.

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2. Door Lock Control System

A: SCHEMATIC

1. DOOR LOCK CONTROL

<Ref. to WI-64, SCHEMATIC, Door Lock System.>

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B: INSPECTION

1. SYMPTOM CHART

Symptom	Repair order	Reference
The door lock control system does not operate.	1. Check the fuse.	<Ref. to SL-9, CHECK FUSE, INSPECTION, Door Lock Control System.>
	2. Check the power supply and ground circuit for the integrated module.	<Ref. to SL-10, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Door Lock Control System.>
	3. Check the door lock switch and the circuit.	<Ref. to SL-10, CHECK DOOR LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
	4. Check the door lock actuator and the circuit.	<Ref. to SL-11, CHECK DOOR LOCK ACTUATOR AND CIRCUIT, INSPECTION, Door Lock Control System.>
The driver side or passenger side door lock switch does not operate.	Check the door lock switch and the circuit.	<Ref. to SL-10, CHECK DOOR LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
A specific door lock actuator does not operate.	Check the door lock actuator and the circuit.	<Ref. to SL-11, CHECK DOOR LOCK ACTUATOR AND CIRCUIT, INSPECTION, Door Lock Control System.>

2. CHECK FUSE

Step		Check	Yes	No
1	**CHECK FUSE.** Remove and visually check the fuse No. 2 (in the main fuse box) and No. 3 (in the fuse and relay box).	Is the fuse blown (15A)?	Replace the fuse with a new one.	Check the power supply and ground circuit. <Ref. to SL-10, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Door Lock Control System.>

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3. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1)Disconnect the integrated module harness connector. 2)Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B281) No. 1 (+) — Chassis ground (–):*** ***(B281) No. 2 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **2.**	Check the harness for open circuits or shorts between the integrated module and the fuse.
2	**CHECK GROUND CIRCUIT.** Measure the resistance between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B281) No. 4, 13 — Chassis ground:***	Is the resistance less than 10 Ω?	The power supply and ground circuit is OK.	Repair the harness.

4. CHECK DOOR LOCK SWITCH AND CIRCUIT

	Step	Check	Yes	No
1	**CHECK DOOR LOCK SWITCH CIRCUIT.** 1)Disconnect the integrated module harness connector. 2)Measure the resistance between the harness connector terminal and chassis ground when moving the door lock switch to LOCK. ***Connector & terminal*** ***Driver side:*** ***(B280) No. 12 — Chassis ground:*** ***Passenger side:*** ***(B280) No. 12 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **2.**	Go to step **3.**
2	**CHECK DOOR LOCK SWITCH CIRCUIT.** Measure the resistance between the harness connector terminal and chassis ground when the door lock switch is moved to UNLOCK. ***Connector & terminal*** ***Driver side:*** ***(B280) No. 11 — Chassis ground:*** ***Passenger side:*** ***(B280) No. 11 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **3.**	The door lock switch is OK.
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. ***Terminal*** ***Driver side: No. 5 — No. 9:*** ***Passenger side: No. 5 — No. 4:***	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. ***Terminal*** ***Driver side: No. 5 — No. 8:*** ***Passenger side: No. 5 — No. 2:***	Is the resistance less than 1 Ω?	Check the harness for open circuits or shorts between the integrated module and the door lock switch.	Replace the door lock switch.

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5. CHECK DOOR LOCK ACTUATOR AND CIRCUIT

	Step	Check	Yes	No
1	**CHECK OUTPUT SIGNAL.** Measure the voltage between the harness connector terminal and chassis ground when moving the door lock switch to LOCK. ***Connector & terminal*** ***(B281) No. 6 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **2.**	Replace the integrated module.
2	**CHECK OUTPUT SIGNAL.** Measure the voltage between the harness connector terminal and chassis ground when moving the door lock switch to UNLOCK. ***Connector & terminal*** ***(B291) No. 7, 8 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	Replace the integrated module.
3	**CHECK DOOR LOCK ACTUATOR.** Check the door lock actuator. Front door lock actuator: <Ref. to SL-31, Front Door Lock Actuator.> Rear door lock actuator: <Ref. to SL-35, Rear Door Lock Actuator.> Rear gate latch lock actuator: <Ref. to SL-38, Rear Gate Latch Lock Actuator.>	Is the door lock actuator OK?	Check the harness for open circuits or shorts between the integrated module and the door lock actuator.	Replace the door lock actuator.

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3. Keyless Entry System

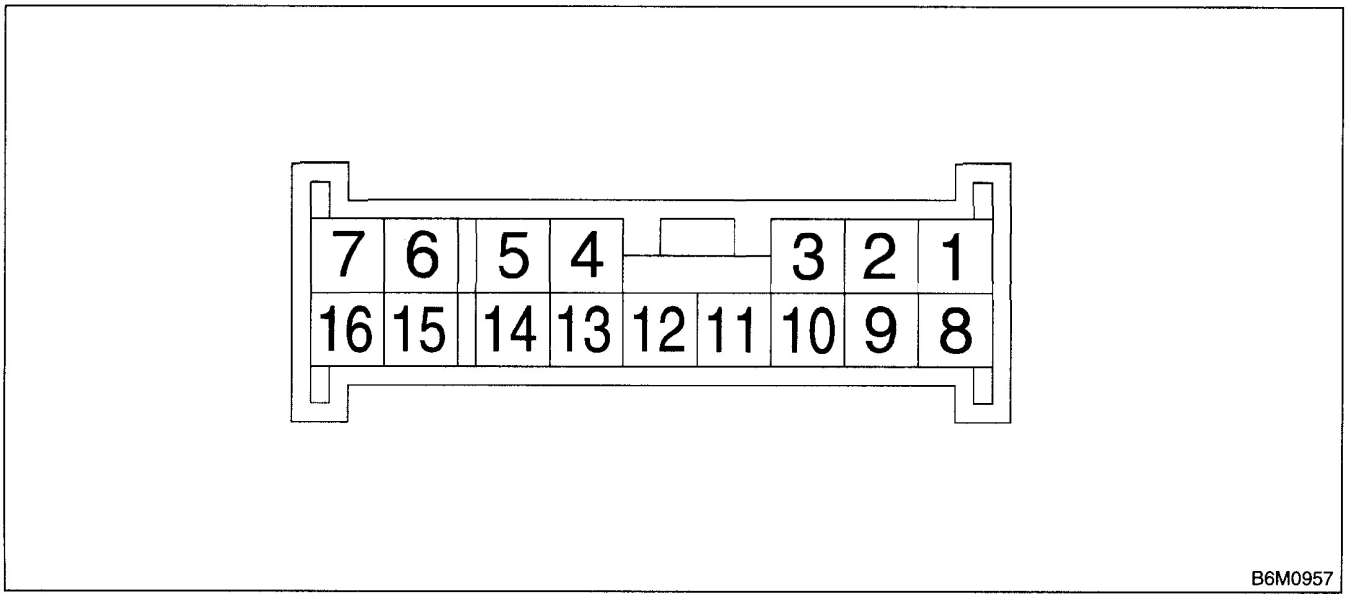
A: SCHEMATIC

1. KEYLESS ENTRY

<Ref. to WI-90, SCHEMATIC, Keyless Entry System.>

B: ELECTRICAL SPECIFICATION

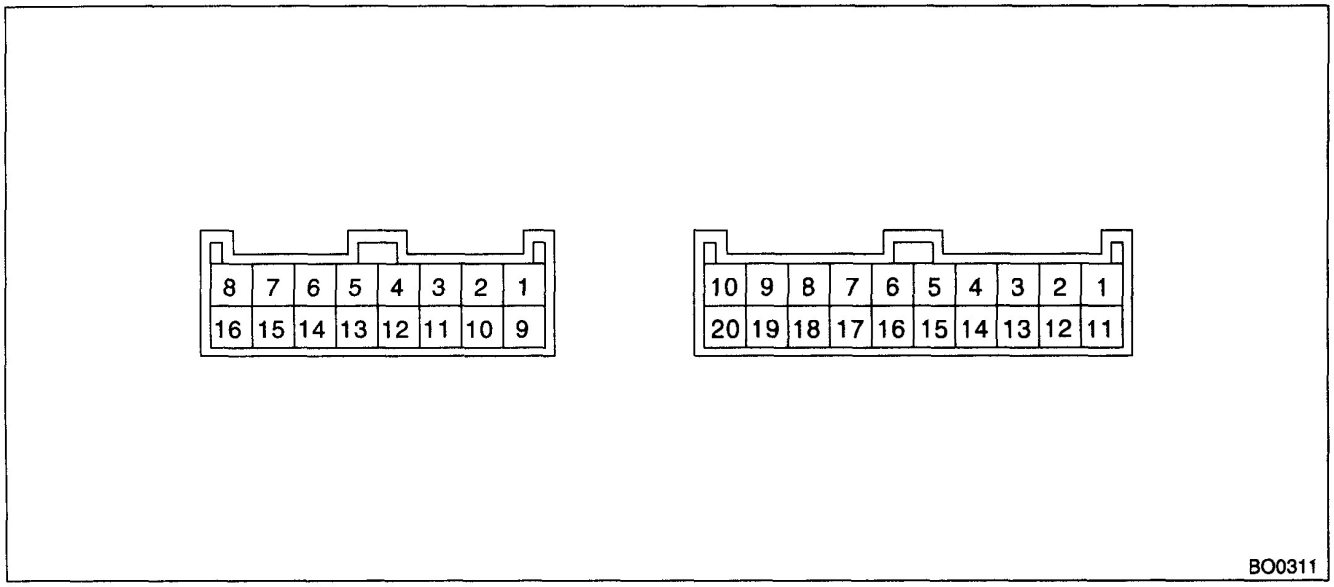
1. KEYLESS ENTRY CONTROL MODULE



Content	Terminal No.	Measuring condition
Integrated module	2 (OUTPUT)	Battery voltage is present when pressing the transmitter LOCK/ARM button one time.
Power supply (Back-up)	3	Battery voltage is constantly present.
Door lock switch	5 (INPUT)	0 V is present when operating the door lock switch.
Trunk room light switch (Sedan), rear gate latch switch (Wagon)	6 (INPUT)	0 V is present when opening the trunk lid or rear gate.
Ground	8	0 V is constantly present.
Integrated module	9 (OUTPUT)	Battery voltage is present when pressing the transmitter UNLOCK/DISARM button one time.
Security control module	10	—
Security control module	11	—
Horn relay	12 (OUTPUT)	0 V is present when pressing the transmitter UNLOCK/DISARM or LOCK/ARM button.
Security control module	13	—
Ignition switch (ON)	14 (INPUT)	Battery voltage is present when ignition switch is turned ON.
Door unlock switch	15 (INPUT)	0 V is present when operating the door lock switch.
Key warning switch	16 (INPUT)	Battery voltage is present when inserting the key into the ignition switch.

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2. INTEGRATED MODULE



Content	Terminal No.	Measuring condition
Door switch (Except driver's door)	A7 (INPUT)	0 V is present when any door is open (Except driver's door).
Door switch (Driver's door)	A8 (INPUT)	0 V is present when driver's door is open.
Door unlock switch	A11 (INPUT)	0 V is present when operating the door lock switch.
Door lock switch	A12 (INPUT)	0 V is present when operating the door lock switch.
Keyless entry control module	A13	—
Keyless entry control module	A14	—
Ignition switch (ON)	A19 (INPUT)	Battery voltage is present when iginition switch is turned ON.
Key warning switch	A20 (INPUT)	Battery voltage is present when inserting the key into ignition switch.
Power supply	B1	Battery voltage is constantly present.
Power supply	B2	Battery voltage is constantly present.
Ground	B4	0 V is constantly present.
Room light	B5 (OUTPUT)	0 V is present when pressing the transmitter UNLOCK/DISARM button one time.
Door and rear gate lock actuator	B6 (OUTPUT)	Battery voltage is present when pressing the transmitter LOCK/ARM button one time.
Door and rear gate lock actuator (Except driver side)	B7 (OUTPUT)	Battery voltage is present when pressing the transmitter UNLOCK/DISARM button two times.
Door lock actuator (Driver side)	B8 (OUTPUT)	Battery voltage is present when pressing the transmitter UNLOCK/DISARM button one time.
Ground	B13	0 V is constantly present.

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C: INSPECTION

1. SYMPTOM CHART

Symptom	Repair order	Reference
None of the functions of the keyless entry system operate.	1. Check the transmitter battery and function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the fuse.	<Ref. to SL-17, CHECK FUSE, INSPECTION, Keyless Entry System.>
	3. Check the keyless entry control module power supply and ground circuit.	<Ref. to SL-17, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Keyless Entry System.>
	4. Replace the keyless entry control module.	<Ref. to SL-49, Keyless Entry Control Module.>
The transmitter cannot be programmed.	1. Check the transmitter battery and function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the ignition switch circuit.	<Ref. to SL-17, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Keyless Entry System.>
	3. Check the door switch.	<Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	4. Replace the keyless entry control module.	<Ref. to SL-49, Keyless Entry Control Module.>
The door lock or unlock does not operate. NOTE: If the door lock control system does not operate when using the door lock switch, check the door lock control system. <Ref. to SL-9, INSPECTION, Door Lock Control System.>	1. Check the transmitter battery and function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the key warning switch.	<Ref. to SL-19, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	3. Check the door switch.	<Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	4. Check the output signal to integrated module.	<Ref. to SL-20, CHECK OUTPUT SIGNAL TO INTEGRATED MODULE, INSPECTION, Keyless Entry System.>
	5. Replace the keyless entry control module.	<Ref. to SL-49, Keyless Entry Control Module.>
The panic alarm does not operate.	1. Check the transmitter battery and function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the horn operation.	<Ref. to SL-19, CHECK HORN OPERATION, INSPECTION, Keyless Entry System.>
	3. Replace the keyless entry control module.	<Ref. to SL-49, Keyless Entry Control Module.>

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Symptom	Repair order	Reference
The horn chirp does not operate.	1. Check the horn chirp function.	<Ref. to SL-16, CHECK HORN CHIRP SETTING, INSPECTION, Keyless Entry System.>
	2. Check the transmitter battery and function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	3. Check the key warning switch.	<Ref. to SL-19, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	4. Check the door switch.	<Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	5. Check the horn operation.	<Ref. to SL-19, CHECK HORN OPERATION, INSPECTION, Keyless Entry System.>
	6. Replace the keyless entry control module.	<Ref. to SL-49, Keyless Entry Control Module.>
The room light operation does not activate.	1. Check the transmitter battery and function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the room light operation.	<Ref. to SL-20, CHECK ROOM LIGHT OPERATION, INSPECTION, Keyless Entry System.>
	3. Check the key warning switch.	<Ref. to SL-19, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	4. Check the door switch.	<Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	5. Check the output signal to integrated module.	<Ref. to SL-20, CHECK OUTPUT SIGNAL TO INTEGRATED MODULE, INSPECTION, Keyless Entry System.>
	6. Replace the keyless entry control module.	<Ref. to SL-49, Keyless Entry Control Module.>
The door warning does not operate.	1. Check the transmitter battery and function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the door switch.	<Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	3. Check the horn operation.	<Ref. to SL-19, CHECK HORN OPERATION, INSPECTION, Keyless Entry System.>
	4. Replace the keyless entry control module.	<Ref. to SL-49, Keyless Entry Control Module.>

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2. CHECK TRANSMITTER BATTERY AND FUNCTION

	Step	Check	Yes	No
1	**CHECK TRANSMITTER BATTERY.** 1)Remove the battery from the transmitter. <Ref. to SL-51, REMOVAL, Keyless Transmitter.> 2)Check the battery voltage. <Ref. to SL-51, INSPECTION, Keyless Transmitter.>	Is the voltage more than 2 V?	Go to step **2.**	Replace the transmitter battery.
2	**CHECK LED OF TRANSMITTER.** 1)Press the LOCK/ARM or UNLOCK/DISARM button six times to synchronize with the keyless entry control module. 2)Press the LOCK/ARM button.	Does the LED blink one time?	Go to step **3.**	Replace the transmitter. <Ref. to SL-51, REPLACEMENT, Keyless Transmitter.>
3	**CHECK LED OF TRANSMITTER.** Keep the LOCK/ARM button pressed.	Does the LED blink one time and then turn on?	Go to step **4.**	Replace the transmitter. <Ref. to SL-51, REPLACEMENT, Keyless Transmitter.>
4	**CHECK LED OF TRANSMITTER.** Press the UNLOCK/DISARM button.	Does the LED blink one time?	Go to step **5.**	Replace the transmitter. <Ref. to SL-51, REPLACEMENT, Keyless Transmitter.>
5	**CHECK LED OF TRANSMITTER.** Keep the UNLOCK/DISARM button pressed.	Does the LED blink two times?	The transmitter is OK.	Replace the transmitter. <Ref. to SL-51, REPLACEMENT, Keyless Transmitter.>

3. CHECK HORN CHIRP SETTING

	Step	Check	Yes	No
1	**CHECK HORN CHIRP SETTING.** Check the current setting of the horn chirp. 1)Remove the key from the ignition switch. 2)Close all doors and the rear gate or trunk lid. 3)Press the LOCK/ARM or UNLOCK/DISARM button.	Does the horn signal chirp?	The horn chirp function is OK.	Go to step **2.**
2	**CHECK HORN CHIRP SETTING.** 1)Press the UNLOCK/DISARM button once. 2)Press both the LOCK/ARM and UNLOCK/DISARM button for more than 2 seconds. 3)Press the LOCK/ARM or UNLOCK/DISARM button.	Does the horn signal chirp?	The horn chirp function is OK.	Check the transmitter function. <Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>

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4. CHECK FUSE

	Step	Check	Yes	No
1	**CHECK FUSE.** Remove and visually check the fuse No. 2 (in the main fuse box)	Is the fuse blown? (15 A)	Replace the fuse with a new one.	Check the power supply and ground circuit. <Ref. to SL-17, CHECK POWER SUPPLY AND GROUND CIRCUIT, Keyless Entry System.>

5. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1)Disconnect the keyless entry control module harness connector. 2)Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 3 (+) — chassis ground (–):***	Is the voltage more than 10 V?	Go to step **2.**	Check the harness for open circuits and shorts between the keyless entry control module and fuse.
2	**CHECK GROUND CIRCUIT.** Measure the resistance between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 8 — chassis ground:***	Is the resistance less than 10 Ω?	The power supply and ground circuit are OK.	Repair the harness.

6. CHECK IGNITION SWITCH CIRCUIT

	Step	Check	Yes	No
1	**CHECK IGNITION SWITCH SIGNAL.** 1)Disconnect the keyless entry control module harness connector. 2)Turn the ignition switch ON. 3)Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 14 (+) — chassis ground (–):***	Is the voltage more than 10 V?	The ignition switch circuit is OK.	Check the harness for open circuits and shorts between the keyless entry control module and ignition relay.

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7. CHECK DOOR SWITCH

	Step	Check	Yes	No
1	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the keyless entry control module harness connector terminal and chassis ground. ***Connector & terminal*** ***Front and rear door:*** ***(B176) No. 7 (+) — chassis ground (–):*** ***Rear gate or trunk lid:*** ***(B176) No. 6 (+) — chassis ground (–):***	Is the voltage 0 V when each door, rear gate and trunk lid is opened?	Go to step **2.**	Go to step **3.**
2	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the keyless entry control module harness connector terminal and chassis ground. ***Connector & terminal*** ***Front and rear door:*** ***(B176) No. 7 (+) — chassis ground (–):*** ***Rear gate or trunk lid:*** ***(B176) No. 6 (+) — chassis ground (–):***	Is the voltage approx. 10 V when each door, rear gate and trunk lid is closed?	The door switch is OK.	Go to step **3.**
3	**CHECK DOOR SWITCH.** 1)Disconnect the door switch harness connector. 2)Measure the resistance between the door switch terminals. ***Terminal*** ***Front LH No. 1 — No. 3:*** ***Front RH No. 1 — No. 3:*** ***Rear LH No. 1 — No. 3:*** ***Rear RH No. 1 — No. 3:*** ***Rear gate No. 1 — No. 2:*** ***Trunk lid No. 1 — No. 2:***	Is the resistance more than 1 MΩ when the door switch is pushed?	Go to step **4.**	Replace the door switch.
4	**CHECK DOOR SWITCH.** Measure the resistance between the door switch terminals. ***Terminal*** ***Front LH No. 1 — No. 3:*** ***Front RH No. 1 — No. 3:*** ***Rear LH No. 1 — No. 3:*** ***Rear RH No. 1 — No. 3:*** ***Rear gate No. 1 — No. 2:*** ***Trunk lid No. 1 — No. 2:***	Is the resistance less than 1 Ω when the door switch is released?	Check the harness for open circuits and shorts between the keyless entry control module and door switch.	Replace the door switch.

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8. CHECK KEY WARNING SWITCH

	Step	Check	Yes	No
1	**CHECK FUSE.** Remove and visually check the fuse No. 6 (in the main fuse box).	Is the fuse blown? (15A)	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 the ignition switch. (LOCK position) 3)Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 16 (+) — chassis ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	Go to step **4.**
3	**CHECK KEY WARNING SWITCH CIRCUIT.** 1)Remove the key from the ignition switch. 2)Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 16 (+) — 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 the ignition switch. (LOCK position) 3)Measure the resistance between the 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 the ignition switch. 2)Measure the resistance between the key warning switch terminals. ***Terminal*** ***No. 1 — No. 2:***	Is the resistance more than 1 MΩ?	**Check the following:** • Harness for open circuits and shorts between the key warning switch and fuse • Harness for open circuits and shorts between the keyless entry control module and key warning switch	Replace the key warning switch.

9. CHECK HORN OPERATION

	Step	Check	Yes	No
1	**CHECK HORN OPERATION.** Make sure the horn sounds when the horn switch is pushed.	Does the horn sound?	Go to step **2.**	Check the horn circuit.
2	**CHECK HORN OPERATION.** 1)Disconnect the keyless entry control module harness connector. 2)Ground the harness connector terminal with a suitable wire. ***Connector & terminal*** ***(B176) No. 12 — chassis ground:***	Does the horn sound?	Replace the keyless entry control module.	Check the harness for open circuits and/or shorts between the keyless entry control module and horn relay.

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10.CHECK ROOM LIGHT OPERATION

	Step	Check	Yes	No
1	**CHECK ROOM LIGHT OPERATION.** Make sure the room light illuminates when the room light switch is turned ON.	Does the room light illuminate?	Go to step **2.**	Check the room light circuit.
2	**CHECK HARNESS BETWEEN ROOM LIGHT AND INTEGRATED MODULE.** 1)Disconnect the integrated module harness connector and room light harness connector. 2)Measure the resistance between the integrated module harness connector terminal and the room light harness connector terminal. ***Connector & terminal*** ***(B281) No. 5 — (R52) No. 2:***	Is resistance less than 10 Ω?	The room light operation circuit is OK.	Check the harness for open circuits and/or shorts between the integrated module and room light.

11.CHECK OUTPUT SIGNAL TO INTEGRATED MODULE

	Step	Check	Yes	No
1	**CHECK OUTPUT SIGNAL.** Measure the voltage between the keyless entry control module harness connector terminal and chassis ground when UNLOCK/DISARM button of transmitter is pressed. ***Connector & terminal*** ***(B176) No. 9 (+) — 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/ARM button of transmitter is pressed. ***Connector & terminal*** ***(B176) No. 2 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	Replace the keyless entry control module.
3	**CHECK HARNESS BETWEEN KEYLESS ENTRY CONTROL MODULE AND INTEGRATED MODULE.** 1)Disconnect the keyless entry control module harness connector and integrated module harness connector. 2)Measure the resistance between the keyless entry control module harness connector terminal and integrated module harness conector terminal. ***Connector & terminal*** ***(B176) No. 9 — (B280) No. 14:*** ***(B176) No. 2 — (B280) No. 13:***	Is the resistance less than 10 Ω?	Replace the integrated module.	Check the harness for open circuit or shorts between the keyless entry control module and integrated module.

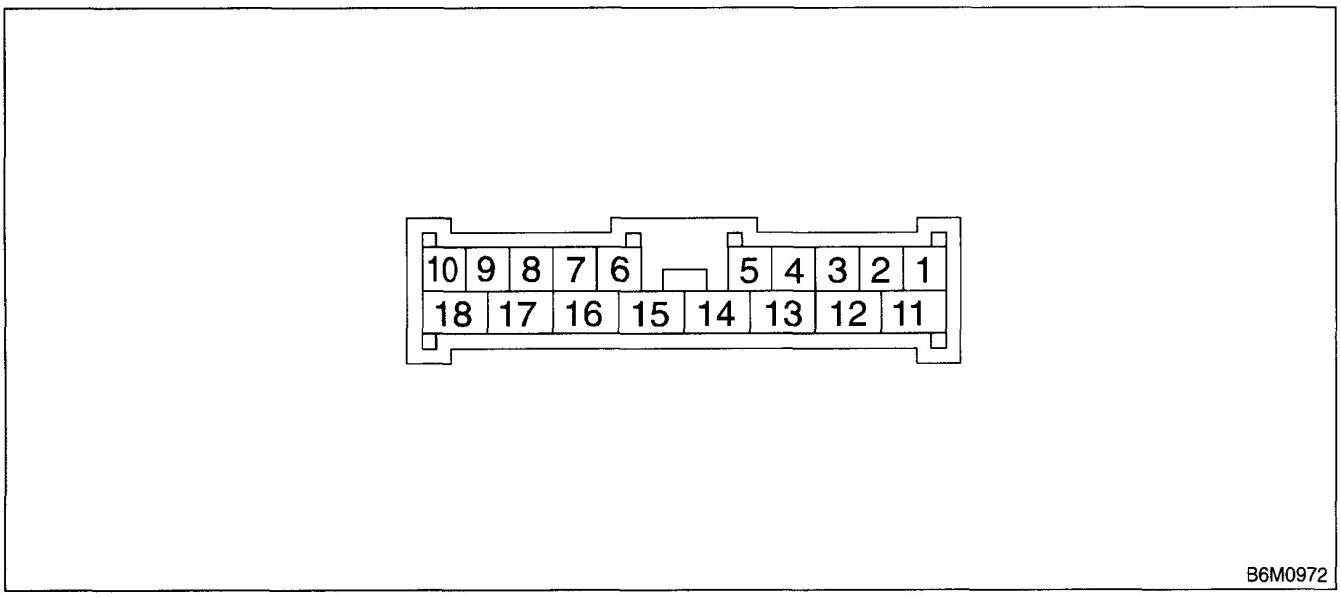
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4. Security System

A: SCHEMATIC

<Ref. to WI-121, SCHEMATIC, Security System.>

B: ELECTRICAL SPECIFICATION



Content	Terminal No.	Measuring condition
Empty	1	—
Ignition switch (ON)	2 (INPUT)	Battery voltage is present when ignition switch is turned ON.
Passive arm	3	—
Trunk room light switch (Sedan), rear gate latch switch (Wagon)	4 (INPUT)	0 V is present when trunk room light switch or rear gate latch switch is turned ON.
Door switch	5 (INPUT)	0 V is present when any door is open.
Empty	6	—
Keyless entry control module	7	—
Keyless entry control module	8	—
Security indicator light	9 (OUTPUT)	0 V is present when activating the alarm operation.
Keyless entry control module	10	—
Power supply for clearance light (Back-up)	11	Battery voltage is constantly present.
Clearance light	12 (OUTPUT)	Battery voltage is present when activating the alarm operation.
Power supply (Back-up)	13	Battery voltage is constantly present.
Ground	14	0 V is constantly present.
Interrupt relay	15 (OUTPUT)	Battery voltage is present when activating the alarm operation.
Security horn relay	16 (INPUT)	Battery voltage is present when activating the alarm operation.
Security horn	17 (OUTPUT)	Battery voltage is present when activating the alarm operation.
Security horn relay	18 (INPUT)	Battery voltage is present when activating the alarm operation.

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C: INSPECTION

1. BASIC DIAGNOSTIC PROCEDURE

	Step	Check	Yes	No
1	**CHECK SECURITY SYSTEM SET OPERATION.** 1)Before starting this diagnosis, open all windows. 2)Remove the key from ignition key cylinder, and then close all doors and rear gate or trunk lid. 3)Press the LOCK/ARM button of transmitter.	Can the security system be set?	Go to step **2.**	Go to symptom 1. <Ref. to SL-23, SYMPTOM CHART, INSPECTION, Security System.>
2	**CHECK SECURITY INDICATOR LIGHT AND CLEARANCE LIGHT BLINKING.** Check the security indicator light and clearance light blinking.	Do the security indicator light and clearance light blink?	Go to step **3.**	Go to symptom 2. <Ref. to SL-23, SYMPTOM CHART, INSPECTION, Security System.>
3	**CHECK SECURITY ALARM OPERATION.** 1)Unlock all doors using the door lock switch on front door. 2)Open any door, rear gate or trunk lid.	Does the security system not alarm when one of the doors is opened?	Go to symptom 3. <Ref. to SL-23, SYMPTOM CHART, INSPECTION, Security System.>	Go to step **4.**
4	**CHECK SECURITY ALARM OPERATION.** Check the security alarm operation.	Does the security alarm (horn, clearance light and security indicator light) operate? And is the starter motor deactivated?	Go to step **5.**	Go to symptom 4. <Ref. to SL-23, SYMPTOM CHART, INSPECTION, Security System.>
5	**CHECK SECURITY ALARM CANCEL OPERATION.** Press the UNLOCK/DISARM button of transmitter.	Does the security alarm (horn and clearance light) stop? And is the starter motor activated?	Go to step **6.**	Go to symptom 5. <Ref. to SL-23, SYMPTOM CHART, INSPECTION, Security System.>
6	**CHECK BATTERY DISCONNECT PROTECTION.** Check the battery disconnect protection. <Ref. to SL-22, CHECK BATTERY DISCONNECT PROTECTION, INSPECTION, Security System.>	Is the battery disconnect protection OK?	Go to step **7.**	Replace the security control module.
7	**PERFORM IMPACT SENSITIVITY TEST.** Perform the impact sensitivity test. <Ref. to SL-45, IMPACT SENSITIVITY TEST, INSPECTION, Security Control Module.>	Is the impact sensitivity OK?	Press the UNLOCK/DISARM button of transmitter, and finish the diagnosis.	Replace the security control module.

2. CHECK BATTERY DISCONNECT PROTECTION

1) Remove the key from the ignition switch.
2) Close all the doors and rear gate or trunk lid.
3) Open the front hood.
4) Press the LOCK/ARM button of the transmitter.
5) Disconnect the ground cable from the battery.
6) Reconnect the cable to the battery.
7) Check that the security indicator light blinks after reconnecting the battery cable.

If NG, replace the security control module.

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3. SYMPTOM CHART

	Symptom		Repair order	Reference
1	The security system cannot be set.		1. Check the transmitter function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
			2. Check the fuse.	<Ref. to SL-24, CHECK FUSE, INSPECTION, Security System.>
			3. Check the security control module power supply and ground circuit.	<Ref. to SL-24, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>
			4. Check the door switch.	<Ref. to SL-24, CHECK DOOR SWITCH, INSPECTION, Security System.>
			5. Replace the security control module.	<Ref. to SL-45, Security Control Module.>
2	The security system can be set, but the security indicator light or clearance light does not blink.	Security indicator light	Check the security indicator light circuit.	<Ref. to SL-25, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Clearance light	Check the clearance light operation.	<Ref. to SL-27, CHECK CLEARANCE LIGHT OPERATION, INSPECTION, Security System.>
3	The security system does not alarm when one of the door is opened.		Check the door switch.	<Ref. to SL-24, CHECK DOOR SWITCH, INSPECTION, Security System.>
4	The security alarm does not activate.	All functions	Check the door switch.	<Ref. to SL-24, CHECK DOOR SWITCH, INSPECTION, Security System.>
		Security indicator light	Check the security indicator light circuit.	<Ref. to SL-25, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Security horn	Check the security horn.	<Ref. to SL-26, CHECK SECURITY HORN, INSPECTION, Security System.>
		Clearance light	Check the clearance light operation.	<Ref. to SL-27, CHECK CLEARANCE LIGHT OPERATION, INSPECTION, Security System.>
		Starter motor deactivation	Check the interrupt relay circuit.	<Ref. to SL-27, CHECK INTERRUPT RELAY CIRCUIT, INSPECTION, Security System.>
5	The security system cannot be canceled.	Transmitter	Check the transmitter function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
		Ignition switch	Check the ignition switch circuit.	<Ref. to SL-27, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Security System.>

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4. CHECK FUSE

	Step	Check	Yes	No
1	**CHECK FUSE.** Remove and visually check the fuse No. 2 and 7 (in main fuse box).	Is the fuse blown? (15 A and 20 A)	Replace the fuse with a new one.	Check the power supply and ground circuit. <Ref. to SL-24, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>

5. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1)Disconnect the security control module harness connector. 2)Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 11 (+) — chassis ground (–):***	Is the voltage more than 10 V?	Go to step **2.**	Check the harness for open circuits and shorts between the security control module and fuse.
2	**CHECK POWER SUPPLY.** 1)Disconnect the security control module harness connector. 2)Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 13 (+) — chassis ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	Check the harness for open circuits and shorts between the security control module and fuse.
3	**CHECK GROUND CIRCUIT.** Measure the resistance between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 14 — chassis ground:***	Is the resistance less than 10 Ω?	The power supply and ground circuit are OK.	Repair the harness.

6. CHECK DOOR SWITCH

	Step	Check	Yes	No
1	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the security control module harness connector terminal and chassis ground. ***Connector & terminal*** ***Front and rear door:*** ***(B93) No. 5 (+) — chassis ground (–):*** ***Rear gate or trunk lid:*** ***(B93) No. 4 (+) — chassis ground (–):***	Is the voltage 0 V when each door, rear gate or trunk lid is opened?	Go to step **2.**	Go to step **3.**
2	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the security control module harness connector terminal and chassis ground. ***Connector & terminal*** ***Front and rear door:*** ***(B93) No. 5 (+) — chassis ground (–):*** ***Rear gate or trunk lid:*** ***(B93) No. 4 (+) — chassis ground (–):***	Is the voltage approx. 10 V when each door, rear gate or trunk lid is closed?	The door switch is OK.	Go to step **3.**

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	Step	Check	Yes	No
3	**CHECK DOOR SWITCH.** 1)Disconnect the door switch harness connector. 2)Measure the resistance between the door switch terminals. ***Terminal*** ***Front LH No. 1 — No. 3:*** ***Front RH No. 1 — No. 3:*** ***Rear LH No. 1 — No. 3:*** ***Rear RH No. 1 — No. 3:*** ***Rear gate No. 1 — No. 2:*** ***Trunk lid No. 1 — No. 2:***	Is the resistance more than 1 MΩ when the door switch is pushed?	Go to step **4.**	Replace the door switch.
4	**CHECK DOOR SWITCH.** Measure the resistance between the door switch terminals. ***Terminal*** ***Front LH No. 1 — No. 3:*** ***Front RH No. 1 — No. 3:*** ***Rear LH No. 1 — No. 3:*** ***Rear RH No. 1 — No. 3:*** ***Rear gate No. 1 — No. 2:*** ***Trunk lid No. 1 — No. 2:***	Is the resistance less than 1Ω when the door switch is released?	Check the harness for open circuits and shorts between the security control module and door switch.	Replace the door switch.

7. CHECK SECURITY INDICATOR LIGHT CIRCUIT

	Step	Check	Yes	No
1	**CHECK SECURITY INDICATOR LIGHT.** 1)Disconnect the security control module harness connector. 2)Ground the harness connector terminal with a suitable wire. ***Connector & terminal*** ***(B93) No. 9 — chassis ground:***	Does the security indicator light illuminate?	Replace the security control module.	Go to step **2.**
2	**CHECK POWER SUPPLY FOR SECURITY INDICATOR LIGHT.** 1)Disconnect the connector from the combination meter. 2)Measure the voltage between the combination meter harness connector terminal and chassis ground. ***Connector & terminal*** ***(i10) No. 10 (+) — chassis ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	Check the harness for open circuits and shorts between the combination meter and the fuse.
3	**CHECK SECURITY INDICATOR LIGHT CIRCUIT.** Measure the resistance between the combination meter harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(i11) No. 6 — (B93) No. 9:***	Is the resistance less than 10 Ω?	Replace the combination meter printed circuit.	Check the harness for open circuits and shorts between the combination meter and security control module.

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8. CHECK SECURITY HORN

	Step	Check	Yes	No
1	**CHECK SECURITY HORN RELAY.** Remove and check the security horn relay. <Ref. to SL-47, Security Horn Relay.>	Is the security horn relay OK?	Go to step **2.**	Replace the security horn relay.
2	**CHECK POWER SUPPLY FOR SECURITY HORN RELAY.** Measure the voltage between the security horn relay harness connector terminal and chassis ground. ***Connector & terminal*** ***(B243) No. 1 (+) — chassis ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	Check the harness for open circuits and shorts between the security horn relay and horn relay.
3	**CHECK POWER SUPPLY FOR SECURITY HORN RELAY.** Measure the voltage between the security horn relay harness connector terminal and chassis ground. ***Connector & terminal*** ***(B243) No. 2 (+) — chassis ground (–):***	Is the voltage more than 10 V?	Go to step **4.**	Check the harness for open circuits and shorts between the security horn relay and the fuse.
4	**CHECK HARNESS BETWEEN SECURITY HORN RELAY AND SECURITY CONTROL MODULE.** 1)Disconnect the security control module harness connector. 2)Measure the resistance between the security horn relay harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(B243) No. 3 — (B93) No. 18:***	Is the resistance less than 10 Ω?	Go to step **5.**	Check the harness for open circuits and shorts between the security horn relay and security control module.
5	**CHECK HARNESS BETWEEN SECURITY HORN RELAY AND SECURITY CONTROL MODULE.** Measure the resistance between the security horn relay harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(B243) No. 4 — (B93) No. 16:***	Is the resistance less than 10 Ω?	Go to step **6.**	Check the harness for open circuits and shorts between the security horn relay and security control module.
6	**CHECK HARNESS BETWEEN SECURITY CONTROL MODULE AND SECURITY HORN.** 1)Disconnect the security horn harness connector. 2)Measure the resistance between the security control module harness connector terminal and security horn harness connector terminal. ***Connector & terminal*** ***(B93) No. 17 — (B204) No. 1:***	Is the resistance less than 10 Ω?	Go to step **7.**	Check the harness for open circuits and shorts between the security control module and security horn.
7	**CHECK SECURITY HORN.** Remove and check the security horn. <Ref. to SL-46, Security Horn.>	Is the security horn OK?	Replace the security control module.	Replace the security horn.

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9. CHECK CLEARANCE LIGHT OPERATION

	Step	Check	Yes	No
1	**CHECK CLEARANCE LIGHT OPERATION.** Turn the parking switch ON and check if the clearance light illuminates.	Does the clearance light illuminate?	Go to step **2.**	Check the clearance light circuit.
2	**CHECK POWER SUPPLY FOR SECURITY CONTROL MODULE.** 1)Turn the parking switch OFF. 2)Disconnect the security control module harness connector. 3)Measure the voltage between the security control module harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 11 (+) — chassis ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	Check the harness for open circuits and shorts between the security control module and the fuse.
3	**CHECK HARNESS BETWEEN SECURITY CONTROL MODULE AND FUSE BOX.** 1)Disconnect the fuse box harness connector (B152). 2)Measure the resistance between the security control module harness connector terminal and fuse box harness connector terminal. ***Connector & terminal*** ***(B93) No. 12 — (B152) No. 11:***	Is the resistance less than 10 Ω?	Replace the security control module.	Check the harness for open circuits and shorts between the security control module and the fuse.

10.CHECK INTERRUPT RELAY CIRCUIT

	Step	Check	Yes	No
1	**CHECK INTERRUPT RELAY.** Remove and check the interrupt relay. <Ref. to SL-48, Interrupt Relay.>	Is the interrupt relay OK?	Go to step **2.**	Replace the interrupt relay.
2	**CHECK POWER SUPPLY FOR INTERRUPT RELAY.** Measure the voltage between the interrupt relay harness connector terminal and chassis ground. ***Connector & terminal*** ***(B59) No. 1 (+) — chassis ground (–):***	Is the voltage more than 10 V when the ignition switch is turned to START?	Go to step **3.**	Check the harness for open circuits and shorts between the interrupt relay and ignition switch.
3	**CHECK HARNESS BETWEEN INTERRUPT RELAY AND SECURITY CONTROL MODULE.** Measure the resistance between the interrupt relay harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(B59) No. 4 — (B93) No. 15:***	Is the resistance less than 10 Ω?	Replace the security control module.	Check the harness for open circuits and shorts between the interrupt relay and security control module.

11.CHECK IGNITION SWITCH CIRCUIT

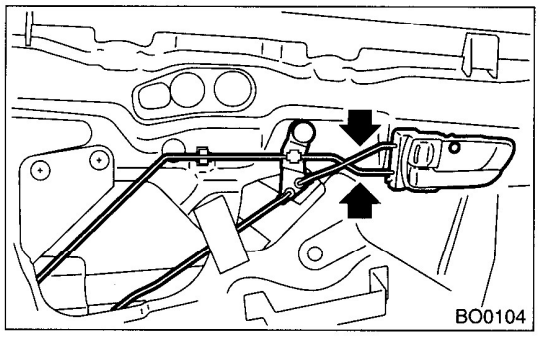
	Step	Check	Yes	No
1	**CHECK IGNITION SWITCH SIGNAL.** 1)Disconnect the security control module harness connector. 2)Turn the ignition switch ON. 3)Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 2 (+) — chassis ground (–):***	Is the voltage more than 10 V?	The ignition switch circuit is OK.	Check the harness for open circuits and shorts between the security control module and ignition switch.

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5. Front Inner Remote

A: REMOVAL

1) Remove the door trim. <Ref. to EI-37, REMOVAL, Front Door Trim.>
2) Remove the sealing cover. <Ref. to EB-14, REMOVAL, Front Sealing Cover.>
3) Remove the screw and the two rod joints.
4) Remove the front inner remote.



B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
Make sure the lock works properly after installation.

C: INSPECTION

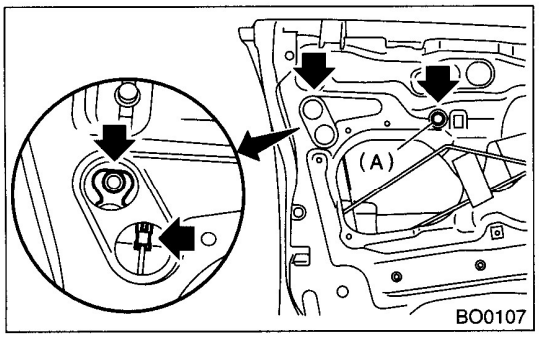
1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

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6. Front Outer Handle

A: REMOVAL

1) Remove the door trim. <Ref. to EI-37, REMOVAL, Front Door Trim.>
2) Remove the sealing cover. <Ref. to EB-14, REMOVAL, Front Sealing Cover.>
3) Remove bolt (A).
4) Move the front door glass downward. Remove the bolt and rod clamp.
5) Remove the front outer handle.



CAUTION:
Do not use excessive force to remove the door panel. This will deform it.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

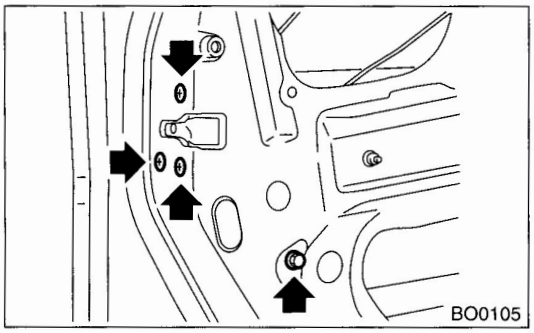
1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

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7. Front Door Latch Assembly

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the front door trim. <Ref. to EI-37, REMOVAL, Front Door Trim.>
3) Remove the sealing cover. <Ref. to EB-14, REMOVAL, Front Sealing Cover.>
4) Remove the front inner remote. <Ref. to SL-28, REMOVAL, Front Inner Remote.>
5) Remove the three screws and bolt.



6) Disconnect the connector. Remove the front door latch assembly.

B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
Make sure the lock works properly after installation.

C: INSPECTION

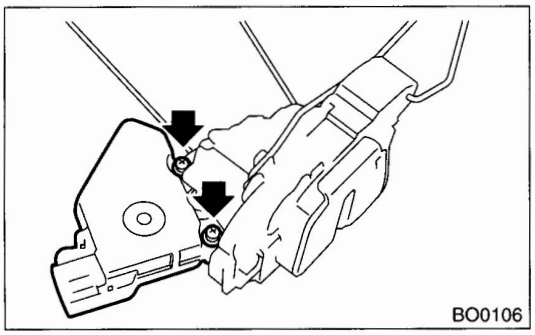
1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

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8. Front Door Lock Actuator

A: REMOVAL

1) Remove the front door latch assembly. <Ref. to SL-28, REMOVAL, Front Inner Remote.>
2) Loosen two screws to remove the front door lock acutuator.

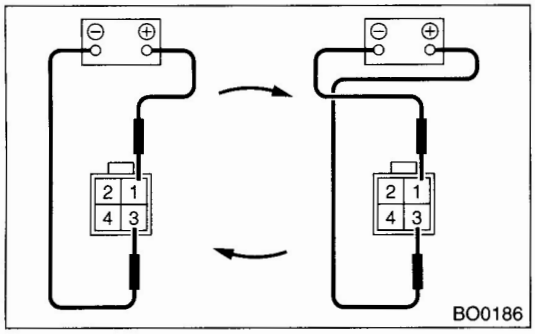


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1) Disconnect the door lock actuator harness connector.
2) Connect the battery to the door lock actuator terminals.



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

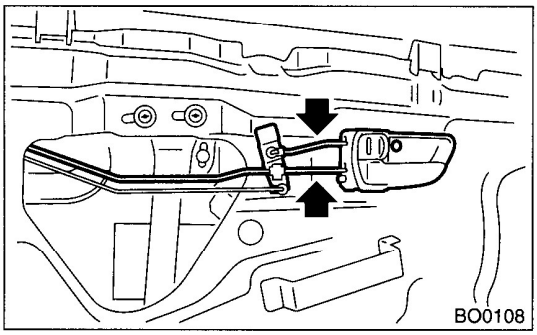
If NG, replace the door lock actuator.

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9. Rear Inner Remote

A: REMOVAL

1) Remove the rear door trim. <Ref. to EI-38, REMOVAL, Rear Door Trim.>
2) Remove the sealing cover. <Ref. to EB-17, REMOVAL, Rear Sealing Cover.>
3) Remove the screw and the two rod joints.
4) Remove the inner remote.



B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
Make sure the lock works properly after installation.

C: INSPECTION

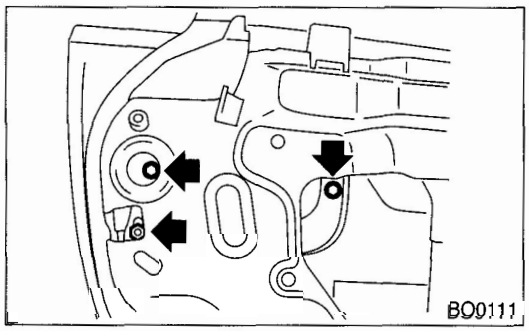
1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.
3) Make sure the child safety lock on rear doors work properly, when applicable.

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10.Rear Outer Handle

A: REMOVAL

1) Remove the rear door trim. <Ref. to EI-38, REMOVAL, Rear Door Trim.>
2) Remove the sealing cover. <Ref. to EB-17, REMOVAL, Rear Sealing Cover.>
3) Remove the rear inner remote. <Ref. to SL-32, REMOVAL, Rear Inner Remote.>
4) Remove the rear door latch assembly. <Ref. to SL-34, REMOVAL, Rear Door Latch Assembly.>
5) Loosen two bolts and nut to remove the rear outer handle.



CAUTION:
Do not use excessive force to remove the door panel. This will deform it.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

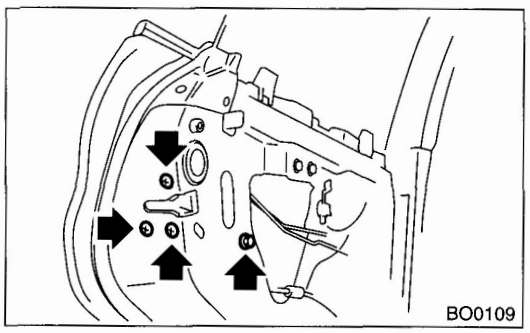
1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

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11.Rear Door Latch Assembly

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the rear door trim. <Ref. to EI-38, REMOVAL, Rear Door Trim.>
3) Remove the sealing cover. <Ref. to EB-17, REMOVAL, Rear Sealing Cover.>
4) Remove the rear inner remote. <Ref. to SL-32, REMOVAL, Rear Inner Remote.>
5) Remove the three screws and bolt.



6) Disconnect the connector, and then remove the rear door latch assembly.

B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
Make sure the lock works properly after installation.

C: INSPECTION

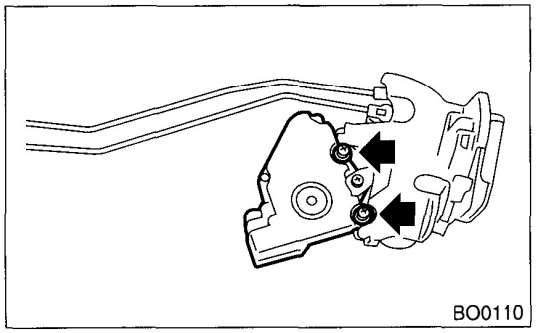
1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

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12.Rear Door Lock Actuator

A: REMOVAL

1) Remove the rear door latch assembly. <Ref. to SL-34, REMOVAL, Rear Door Latch Assembly.>
2) Loosen two screws to remove the rear door lock acutuator.



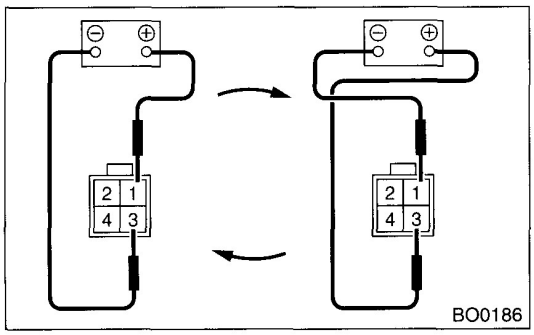
B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
Make sure the lock works properly after installation.

C: INSPECTION

1) Disconnect the door lock actuator harness connector.
2) Connect the battery to the door lock actuator terminals.



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

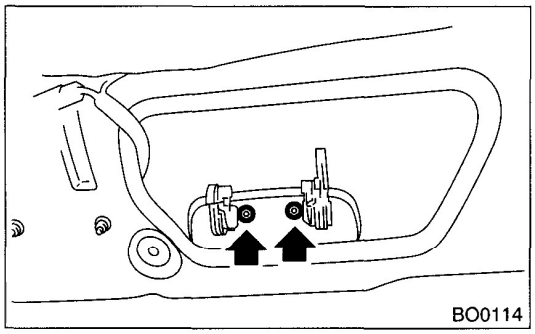
If NG, replace the door lock actuator.

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13.Rear Gate Outer Handle

A: REMOVAL

1) Remove the rear gate trim. <Ref. to EI-52, REMOVAL, Rear Gate Trim.>
2) Remove the rear gate latch assembly. <Ref. to SL-37, REMOVAL, Rear Gate Latch Assembly.>
3) Loosen two nuts to remove the rear gate outer handle.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

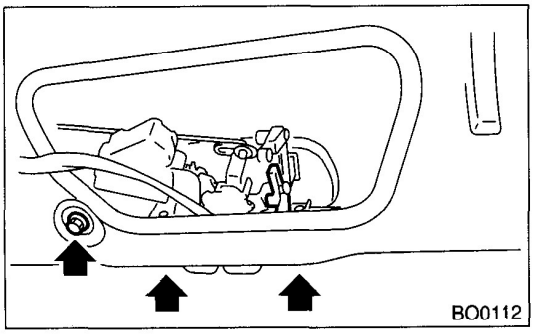
1) Inspect the rod for deformation.
2) Make sure the lever and rod move smoothly.

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14.Rear Gate Latch Assembly

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the rear gate trim. <Ref. to EI-52, REMOVAL, Rear Gate Trim.>
3) Remove the rear gate key cylinder rod clamp.
4) Remove the three bolts.



5) Disconnect the connectors, and then remove the rear gate latch assembly.

B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
Make sure the lock works properly after installation.

C: INSPECTION

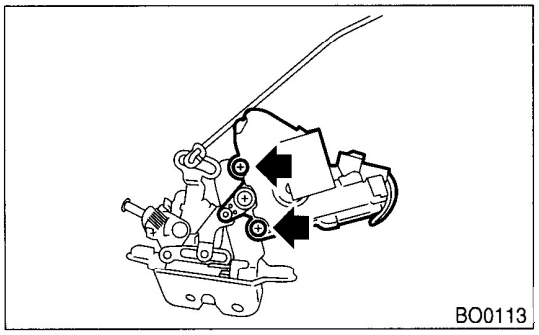
1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

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15.Rear Gate Latch Lock Actuator

A: REMOVAL

1) Remove the rear gate latch assembly. <Ref. to SL-37, REMOVAL, Rear Gate Latch Assembly.>
2) Loosen two screws to remove the rear gate lock actuator.

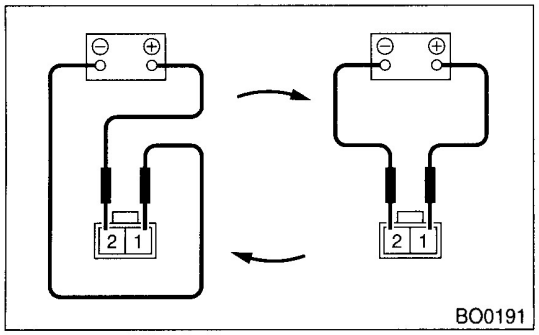


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1) Disconnect the door lock actuator harness connector.
2) Connect the battery to the door lock actuator terminals.



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

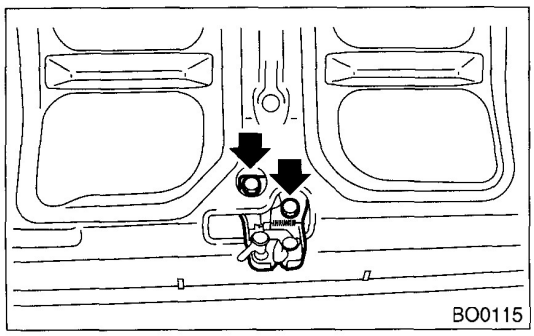
If NG, replace the rear gate latch lock actuator.

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16.Trunk Lid Lock Assembly

A: REMOVAL

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



B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
- **Apply grease to the parts that rub.**
- **Make sure the lock works properly after installation.**

C: INSPECTION

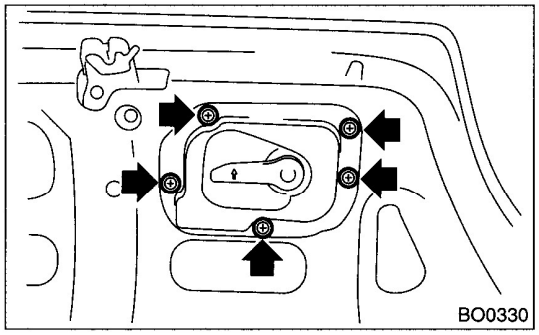
1) Check the striker for bending or abnormal wear.
2) Check the safety lever for improper movement.
3) Check other levers and the spring for rust formation and unsmooth movement.

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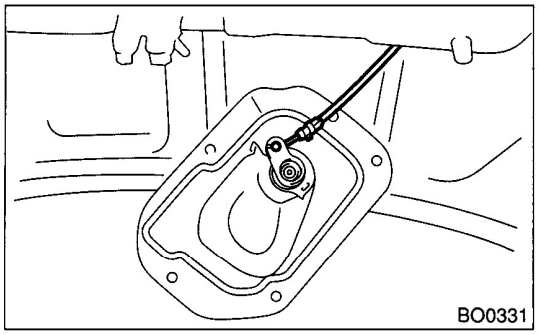
17.Trunk Lid Release Handle

A: REMOVAL

1) Remove the five clips.



2) Remove the cable from trunk lid release handle.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

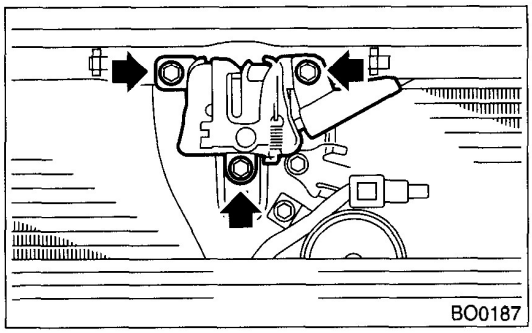
1) Make sure the cable is not deformed.
2) Make sure the lever works smoothly.

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18.Front Hood Lock Assembly

A: REMOVAL

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



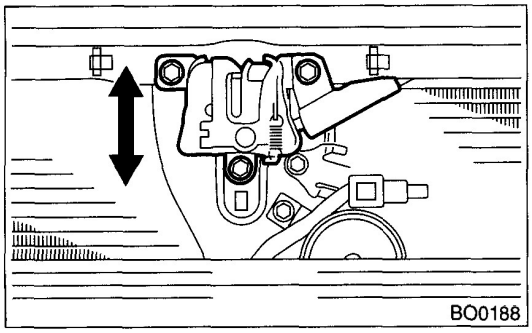
B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
- **Apply grease to the 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.

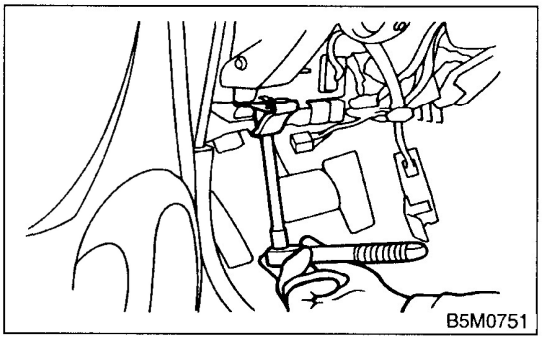
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19.Remote Openers

A: REMOVAL

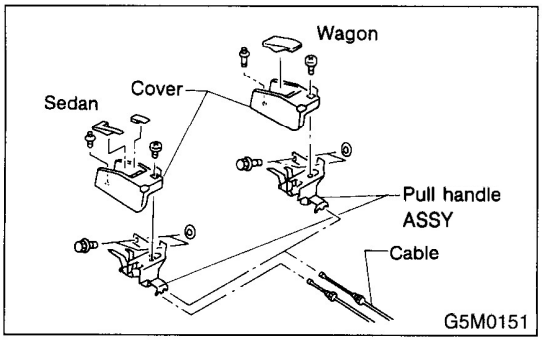
1. HOOD OPENER

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

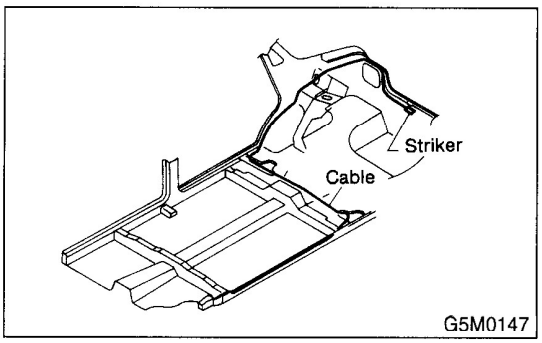


2. TRUNK LID OPENER

1) Remove the rear seat. <Ref. to SE-11, REMOVAL, Rear Seat.>
2) Remove the center pillar lower trim and side sill cover on the 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.

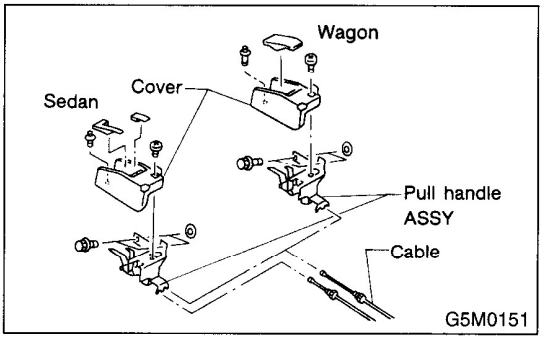


4) Remove the cable from the opener pull handle.
5) Remove the striker from the trunk lid.
6) Remove the cable from the striker.

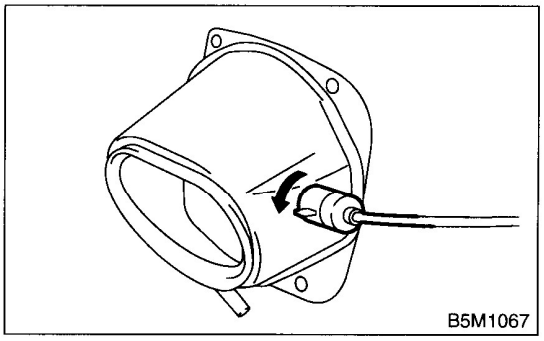


3. FUEL FLAP OPENER

1) Remove the rear seat. <Ref. to SE-11, REMOVAL, Rear Seat.>
2) Remove the center pillar lower trim and side sill cover on the 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.



4) Remove the cable from the opener pull handle.
5) Remove the right rear quarter trim. <Ref. to EI-47, REMOVAL, Rear Quarter Trim.>
6) Rotate the fuel lock inside the quarter panel to the left and remove.



B: INSTALLATION

1. HOOD OPENER

Install in the reverse order of removal.

2. TRUNK LID OPENER

Install in the reverse order of removal.

3. FUEL FLAP OPENER

Install in the reverse order of removal.

C: INSPECTION

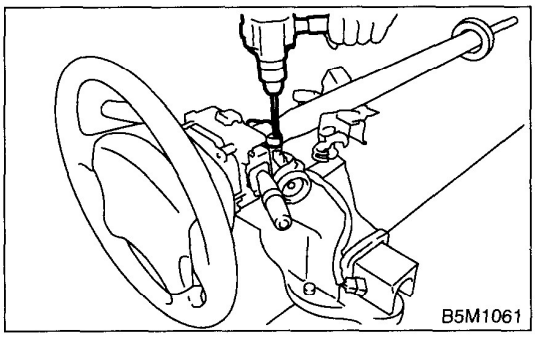
Make sure the fuel flap opens and closes smoothly.

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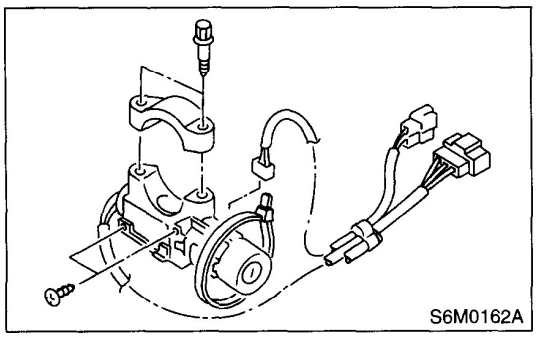
20.Ignition Key Lock

A: REPLACEMENT

1) Disconnect the ground terminal from battery.
2) Remove the steering column. <Ref. to PS-23, REMOVAL, Tilt Steering Column.>
3) Secure the steering column in a vise. Remove the bolt with a drill.



4) Remove the ignition key lock.
5) Use a new torn bolt. Tighten the torn bolt to the end of the thread.



B: INSPECTION

1) Remove the instrument panel lower cover.
2) Remove the lower column cover.
3) Unfasten the holddown clip which secures the harness and disconnect the connector of the ignition switch from the body harness.
4) Turn the ignition key plate to each position and measure the ignition switch resistance.

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.

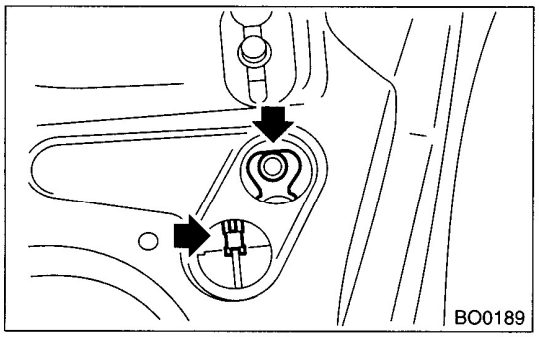
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21.Key Lock Cylinders

A: REPLACEMENT

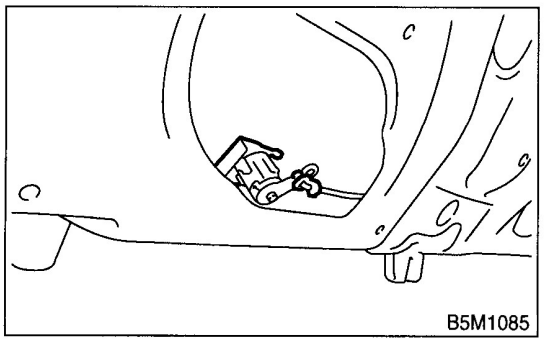
1. FRONT DOOR

1) Remove the door trim. <Ref. to EI-37, REMOVAL, Front Door Trim.>
2) Pull back the sealing cover.
3) Move the front door glass downward.
4) Remove the rod clamp. Remove the bolt. Replace the key cylinder.



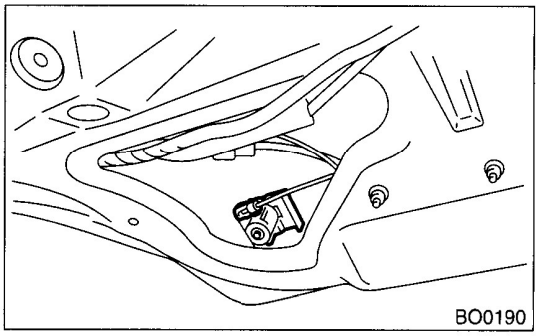
2. TRUNK LID

1) Remove the trunk lid release handle. <Ref. to SL-40, Trunk Lid Release Handle.>
2) Remove the rod clamp. Remove the lock plate. Replace the key cylinder.



3. REAR GATE

1) Remove the rear gate trim. <Ref. to EI-52, REMOVAL, Rear Gate Trim.>
2) Remove the rod clamp. Remove the lock plate. Replace the key cylinder.

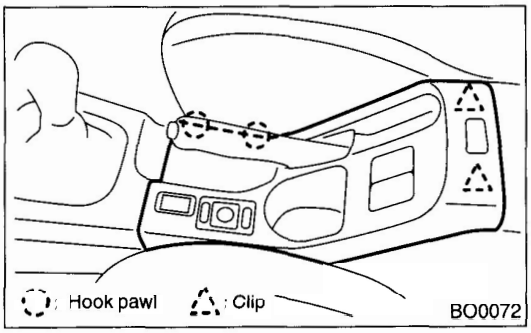


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22.Security Control Module

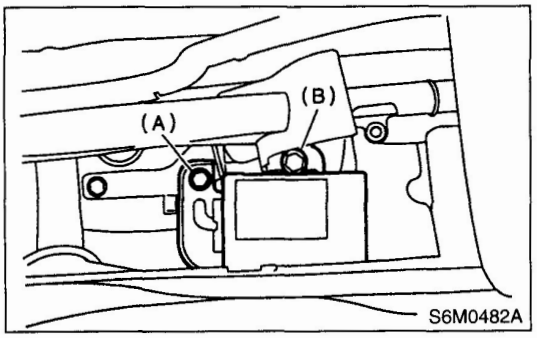
A: REMOVAL

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



3) Disconnect the connector from the security control module.
4) Remove bolt (A) and loosen bolt (B).

NOTE:
Loosen bolt (B) without completely removing it.



5) Remove the security control module.

B: INSTALLATION

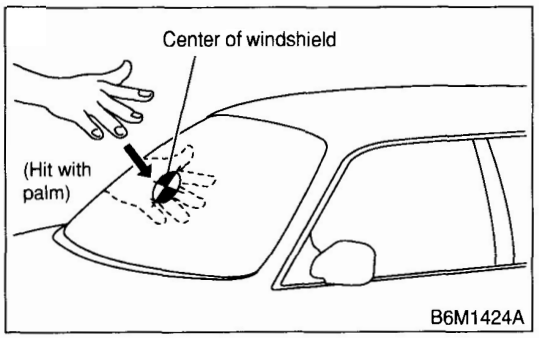
Install in the reverse order of removal.

NOTE:
To install the security control module, tighten the bolts securely so that the bolts do not come loose.

C: INSPECTION

1. IMPACT SENSITIVITY TEST

1) Remove the key from the ignition switch.
2) Close all windows.
3) Close all doors and the rear gate or trunk lid.
4) Cover the hood with a blanket.
5) Press the LOCK/ARM button of the transmitter.
6) Confirm that the security indicator light blinks every 2 seconds.
7) Hit the center of the windshield with your palm and make sure the alarm operates.



If NG, adjust the impact sensitivity. <Ref. to SL-45, ADJUSTMENT, Security Control Module.>

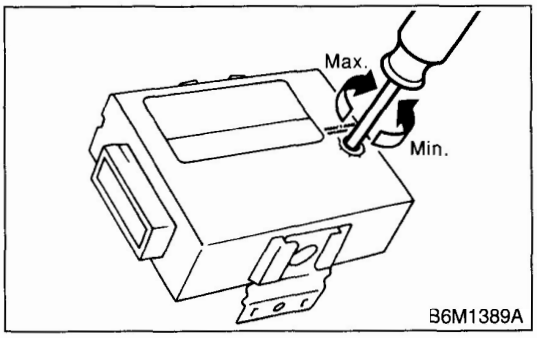
D: ADJUSTMENT

1. IMPACT SENSITIVITY

NOTE:
Before adjustment, make sure the security control module has been securely installed on the bracket.

1) Remove the security control module. <Ref. to SL-45, REMOVAL, Security Control Module.>
2) Adjust the sensitivity adjust screw in the security control module.

NOTE:
After adjusting, be sure to plug the adjust screw hole.



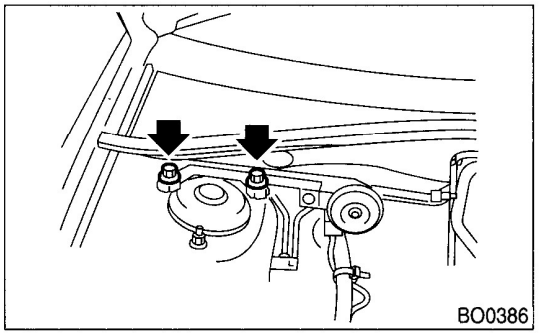
3) Install the security control module.
4) Perform the impact sensitivity test.

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23.Security Horn

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the nuts and then detach the security horn while disconnecting the connector.

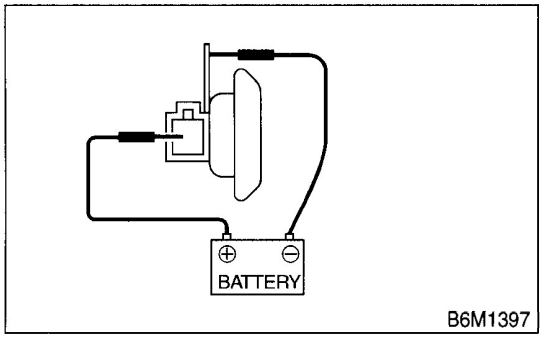


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Connect the battery to the security horn terminal and case ground and make sure the horn sounds properly.



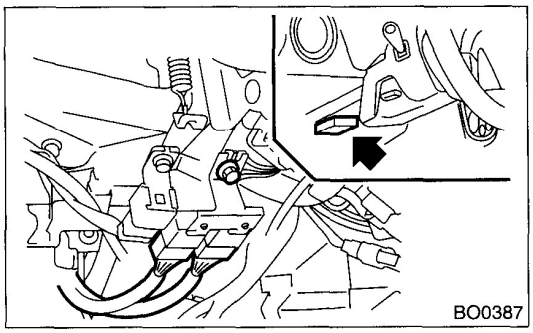
If NG, replace the security horn.

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24.Security Horn Relay

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the mounting bolt and detach the security horn relay (near the fuse box).



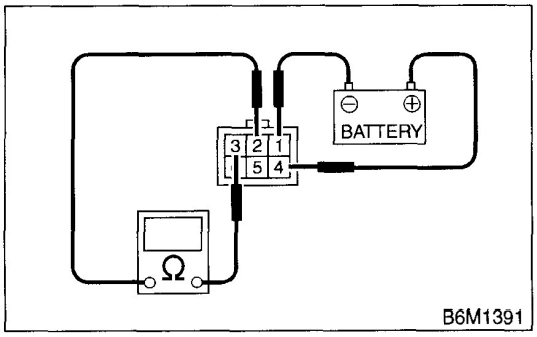
B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the security horn relay resistance between terminals (indicated in the table below) when connecting terminal No. 4 to battery positive terminal and terminal No. 1 to battery ground terminal.

Current	Terminal No.	Standard
Flow	2 and 3	Less than 1 Ω
No flow		More than 1 MΩ



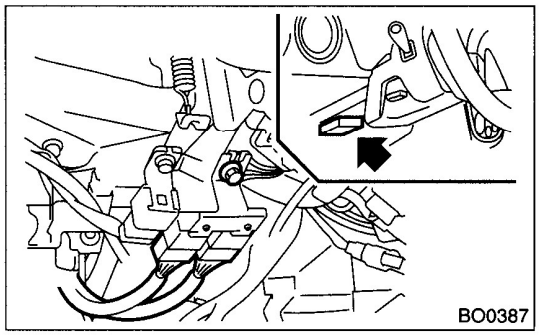
If NG, replace the security horn relay.

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25.Interrupt Relay

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the mounting nuts and detach the interrupt relay (near the fuse box).



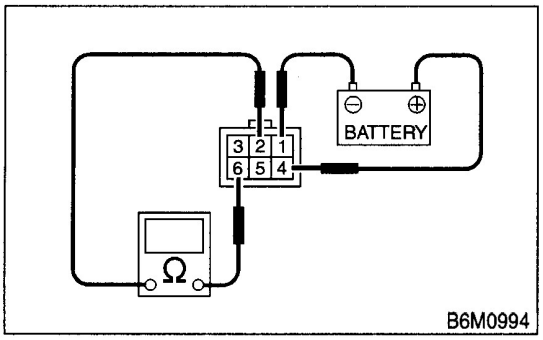
B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the interrupt relay resistance between terminals (indicated in the table below) when connecting terminal No.4 to battery positive terminal and terminal No.1 to battery ground terminal.

Current	Terminal No.	Standard
Flow	2 and 6	Less than 1 Ω
No flow		More than 1 MΩ



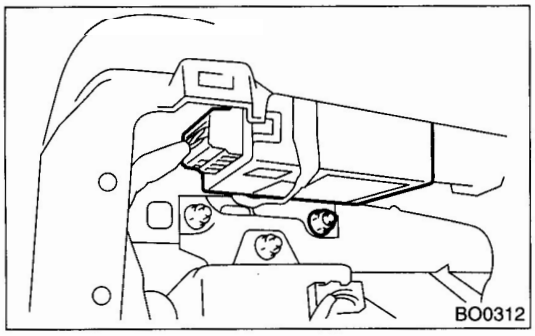
If NG, replace the interrupt relay.

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26. Keyless Entry Control Module

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the instrument panel lower cover. <Ref. to EI-42, REMOVAL, Instrument Panel Assembly.>
3) Remove the nut, then remove the keyless entry control module while disconnecting the connector.



B: INSTALLATION

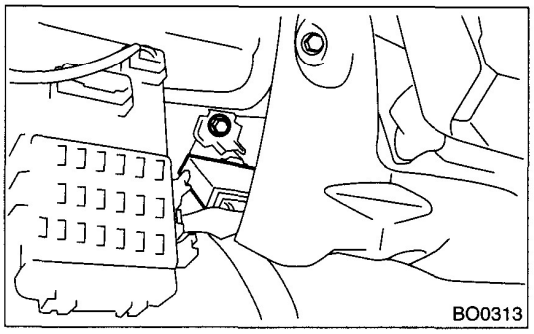
Install in the reverse order of removal.

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27.Integrated Module

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the instrument panel lower cover. <Ref. to EI-42, REMOVAL, Instrument Panel Assembly.>
3) Remove the nut, then remove the integrated module while disconnecting the connector.



B: INSTALLATION

Install in the reverse order of removal.

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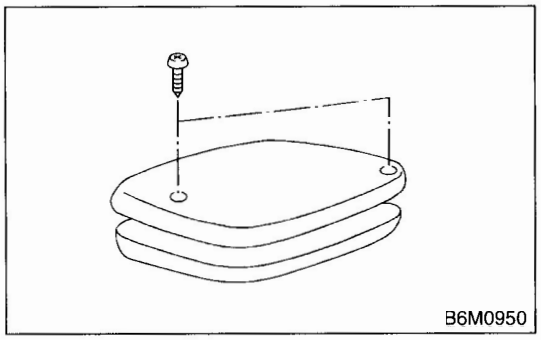
28.Keyless Transmitter

A: REMOVAL

1. TRANSMITTER BATTERY

Remove the battery from the transmitter.

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



B: INSTALLATION

1. TRANSMITTER BATTERY

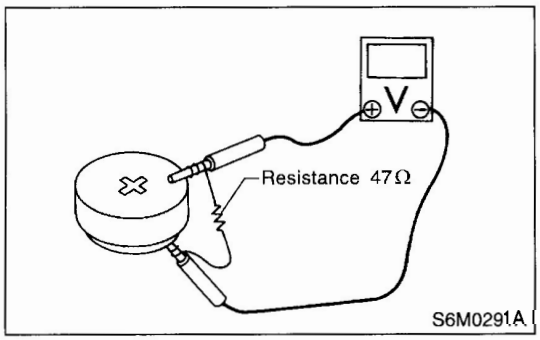
Install in the reverse order of removal.

C: INSPECTION

1. TRANSMITTER BATTERY

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

NOTE:
• Battery discharge occurs during the measurement. Complete the measurement within 5 seconds.
• During the battery voltage measurement, the voltage falls more than 1.8 volts in 3 seconds period.



Tester connection		Standard
(+)	(–)	
Battery (+) terminal	Battery (–) terminal	More than 2 V

If NG, replace the battery. (Use CR2032 or equivalent.)

D: REPLACEMENT

1. TRANSMITTER PROGRAMMING

NOTE:
Perform the programming when the transmitter is replaced and when an additional transmitter is required.

NOTE:
Finish the operation from step 1) through 4) within 45 seconds.

1) Sit on the driver's seat and close all doors, rear gate and trunk lid.
2) Open the driver's door.
3) Close the driver's door.
4) Turn the ignition switch from ON to LOCK ten times within 15 seconds.

NOTE:
Do not start the engine at this time.

5) The horn chirps one time to indicate that the system has entered in the programming mode.
6) Open the driver's door.
7) Close the driver's door.
8) Press any button on the transmitter that you wish to program into the system.
9) Horn will chirp two times to indicate that the transmitter has been programmed.

NOTE:
Any additional transmitter can also be programmed at this time. Repeat steps 6) through 9) for an additional transmitter.

10) Remove the ignition key from the ignition switch.
11) The horn will chirp three times to indicate that the system has exited the programming mode.
12) Check the keyless entry system properly operates by operating each transmitter.

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EXTERIOR/INTERIOR TRIM

EI

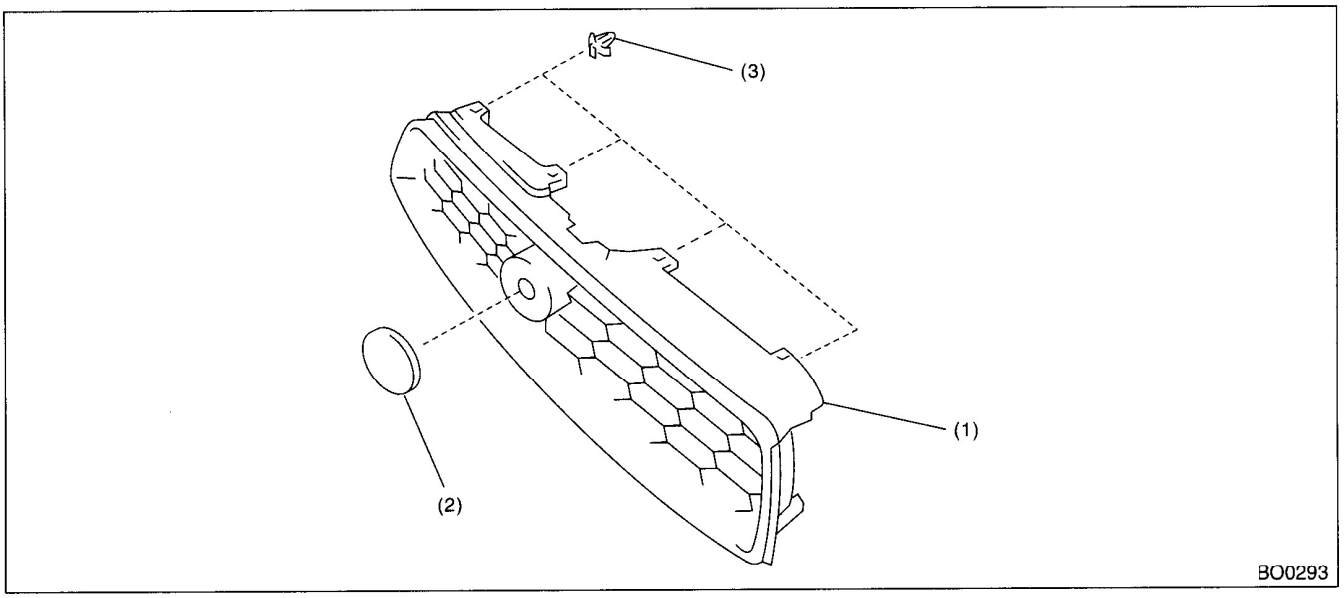
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18.	Upper Inner Trim	45
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20.	Rear Quarter Trim	47
21.	Sun Visor	49
22.	Roof Trim	50
23.	Rear Gate Trim	52
24.	Rear Shelf Trim	53
25.	Trunk Trim	54
26.	Floor Mat	55
27.	Luggage Floor Mat	56
28.	Trunk Room Mat	57

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1. General Description

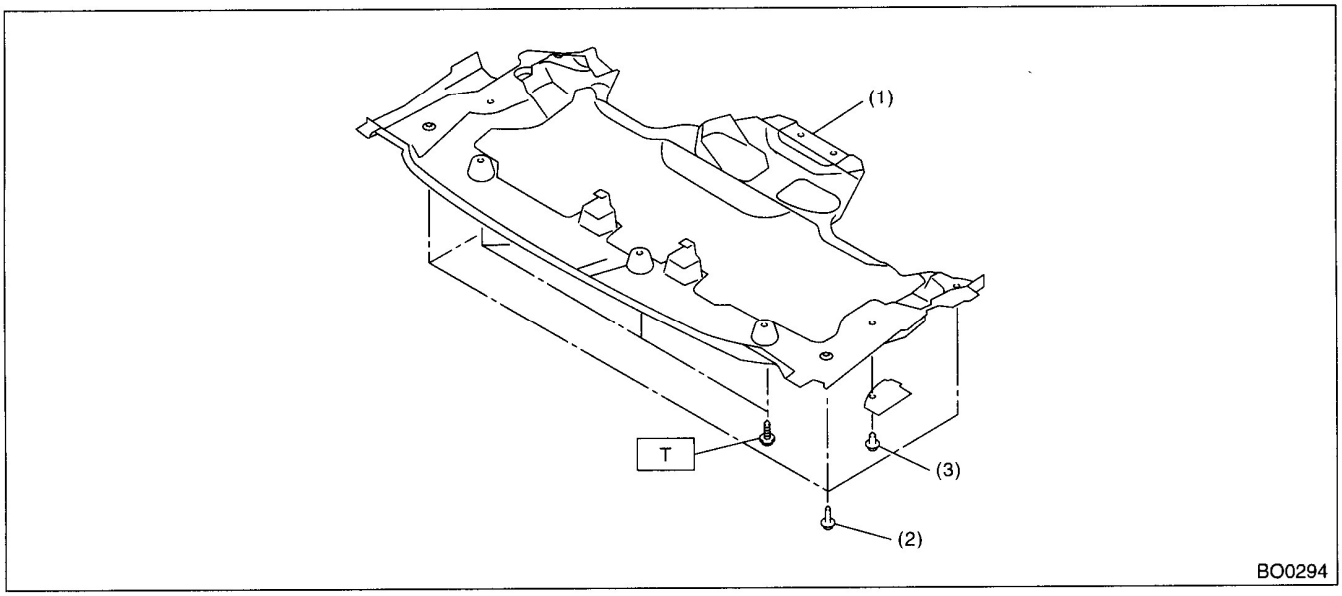
A: COMPONENT

1. FRONT GRILLE



(1) Front grille
(2) Front grille emblem
(3) Clip

2. UNDER COVER

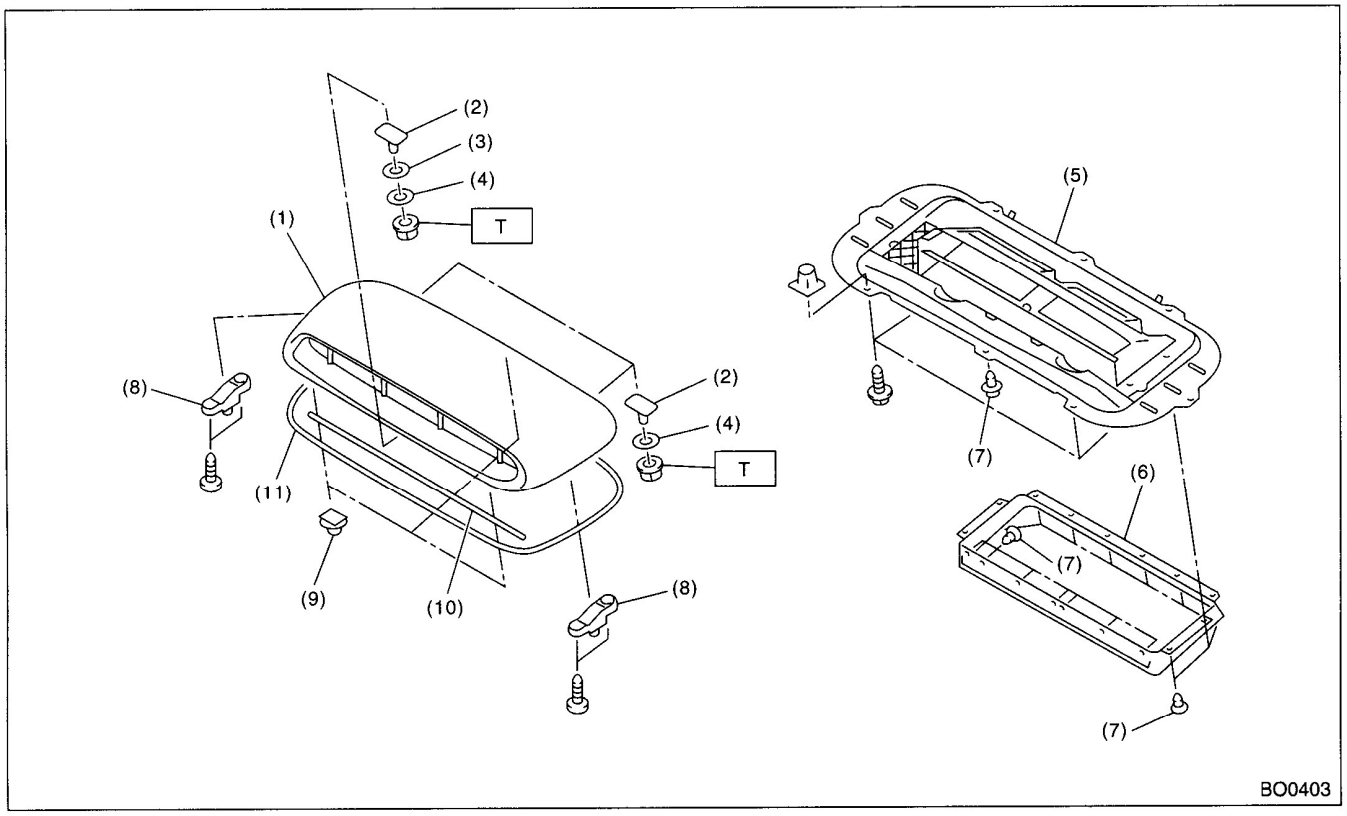


(1) Under cover
(2) Clip (side)
(3) Clip

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

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3. HOOD GRILLE

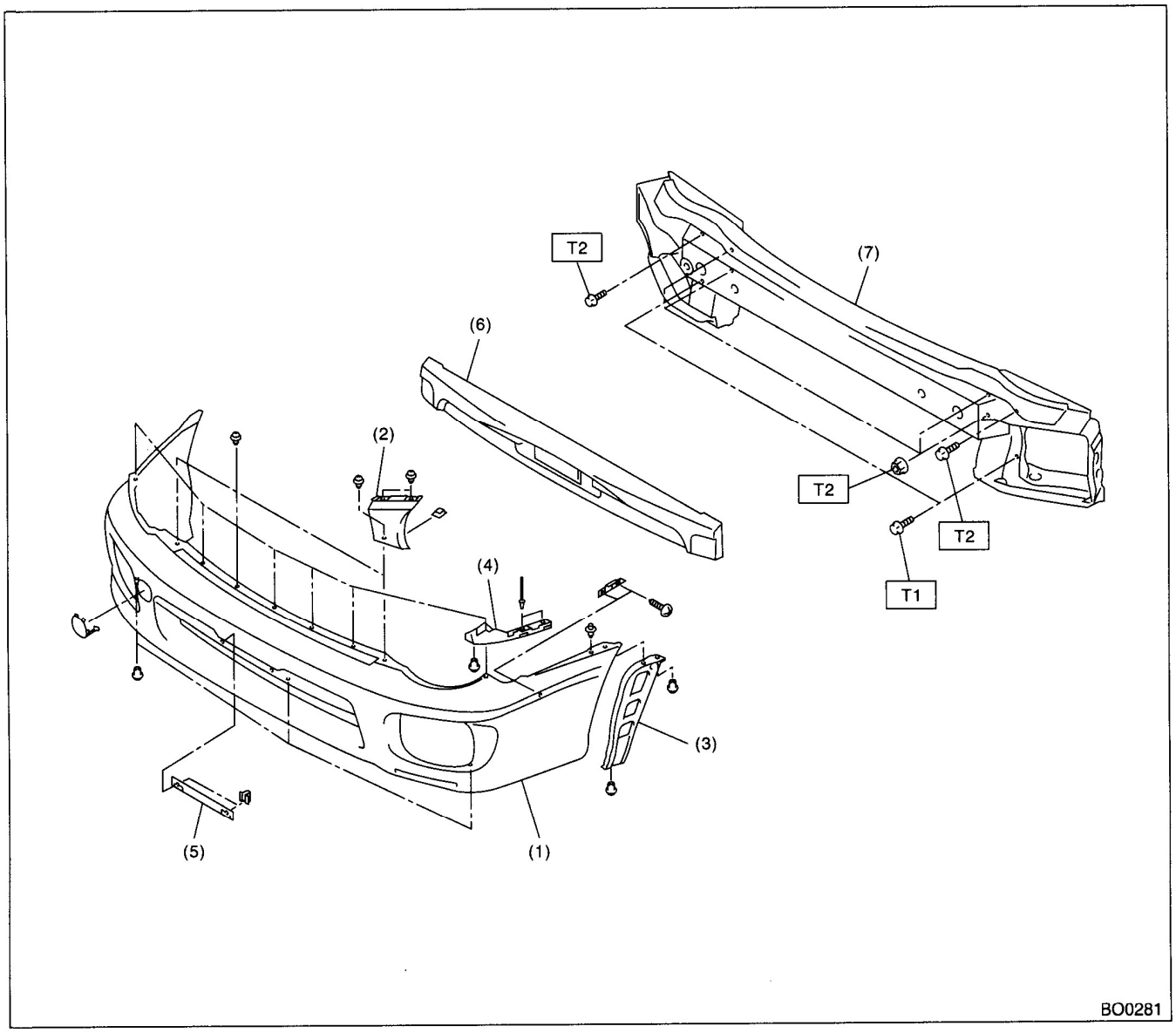


(1) Hood grille
(2) Bolt
(3) Metal washer
(4) Foam rubber washer
(5) Grille duct
(6) Grille lower duct
(7) Clip
(8) Black clip
(9) White clip
(10) Packing
(11) Packing

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

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4. FRONT BUMPER

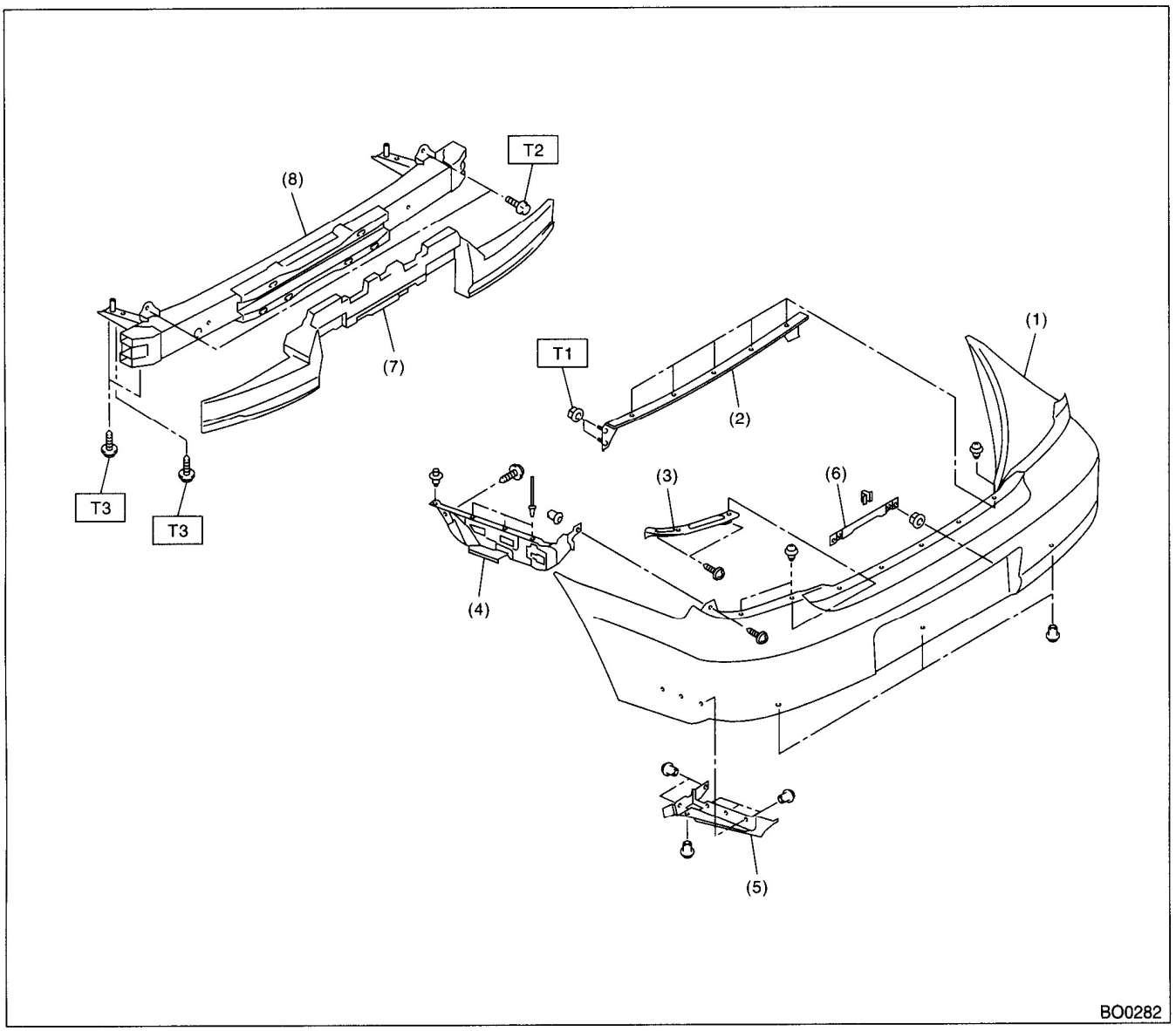


(1) Bumper face
(2) Head light side cover
(3) Bumper side bracket
(4) Bumper corner bracket
(5) License plate bracket
(6) Bumper energy absorber
(7) Bumper back beam

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

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5. REAR BUMPER

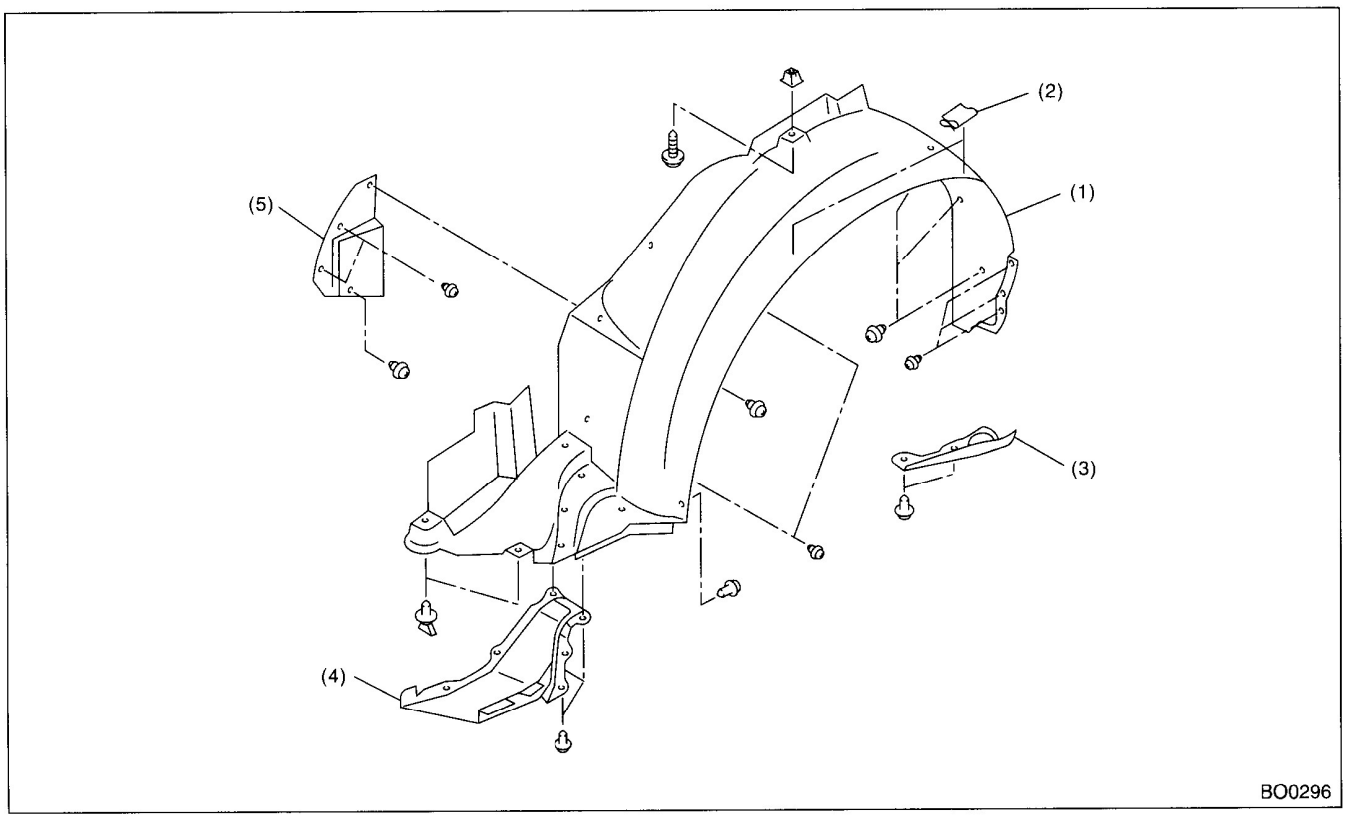


(1)	Bumper face	(5)	Bumper side cover
(2)	Bumper upper beam	(6)	License plate base
(3)	Bumper corner bracket	(7)	Bumper energy absorber
(4)	Bumper side bracket	(8)	Bumper back beam

Tightening torque: N·m (kgf-m, ft-lb)
T1: 33 (3.4, 24)
T2: 34 (3.5, 25)
T3: 95 (9.7, 70)

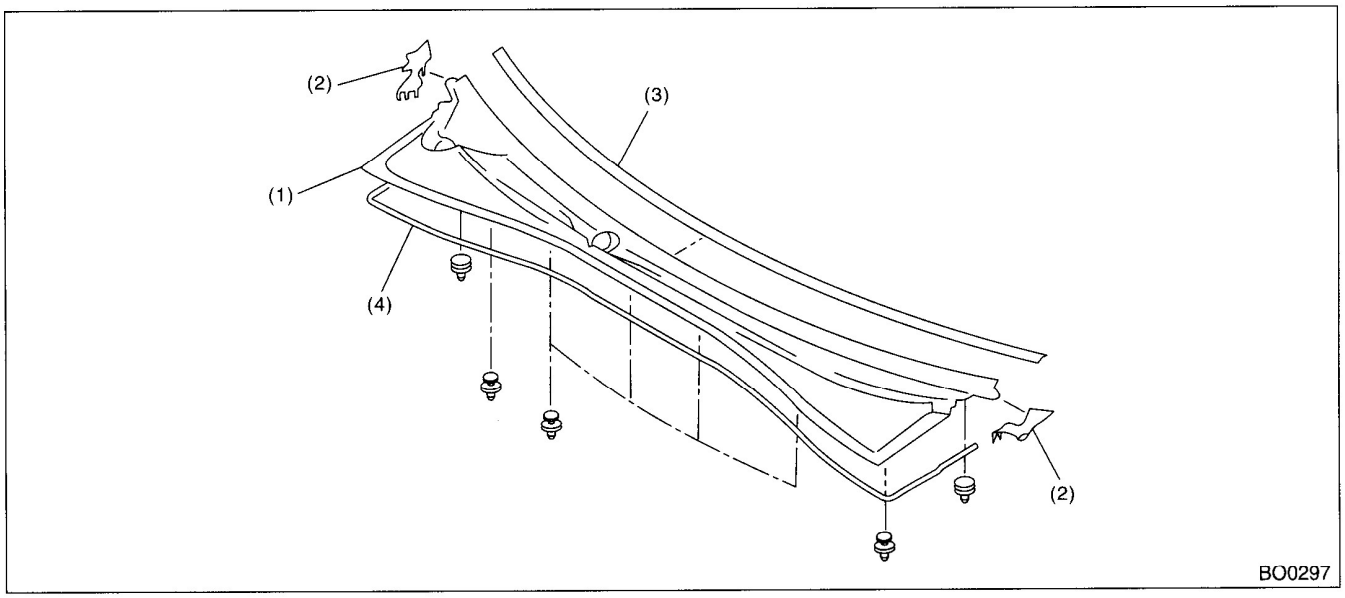
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6. MUD GUARD



(1) Mud guard
(2) Clip
(3) Sub frame cover
(4) Brake duct plate
(5) Mud guard plate

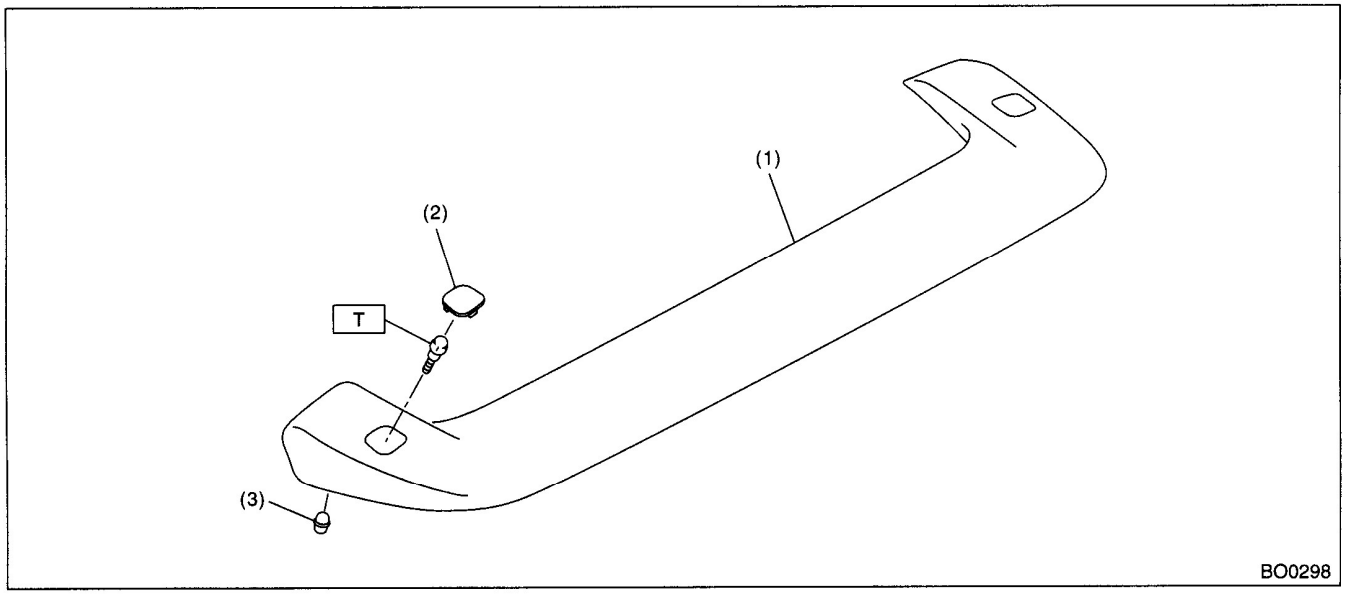
7. COWL PANEL



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

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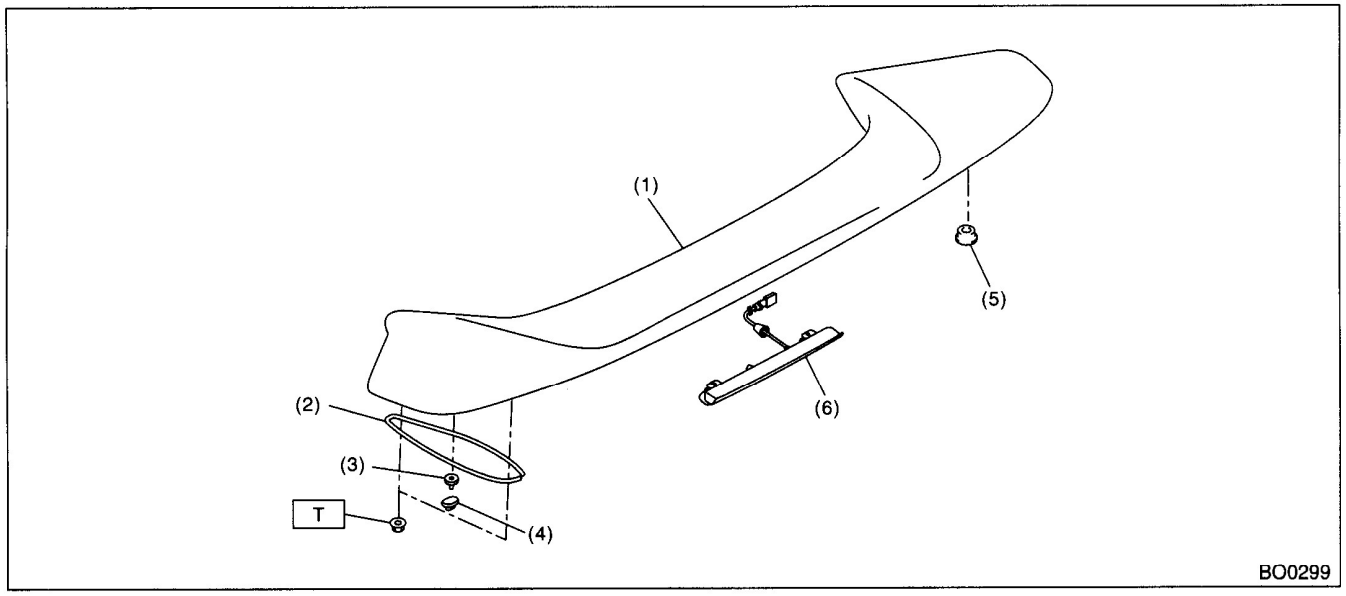
8. ROOF SPOILER



(1) Roof spoiler
(2) Cap
(3) Clip

Tightening torque: N·m (kgf-m, ft-lb)
T: 7.35 (0.749, 5.42)

9. REAR SPOILER

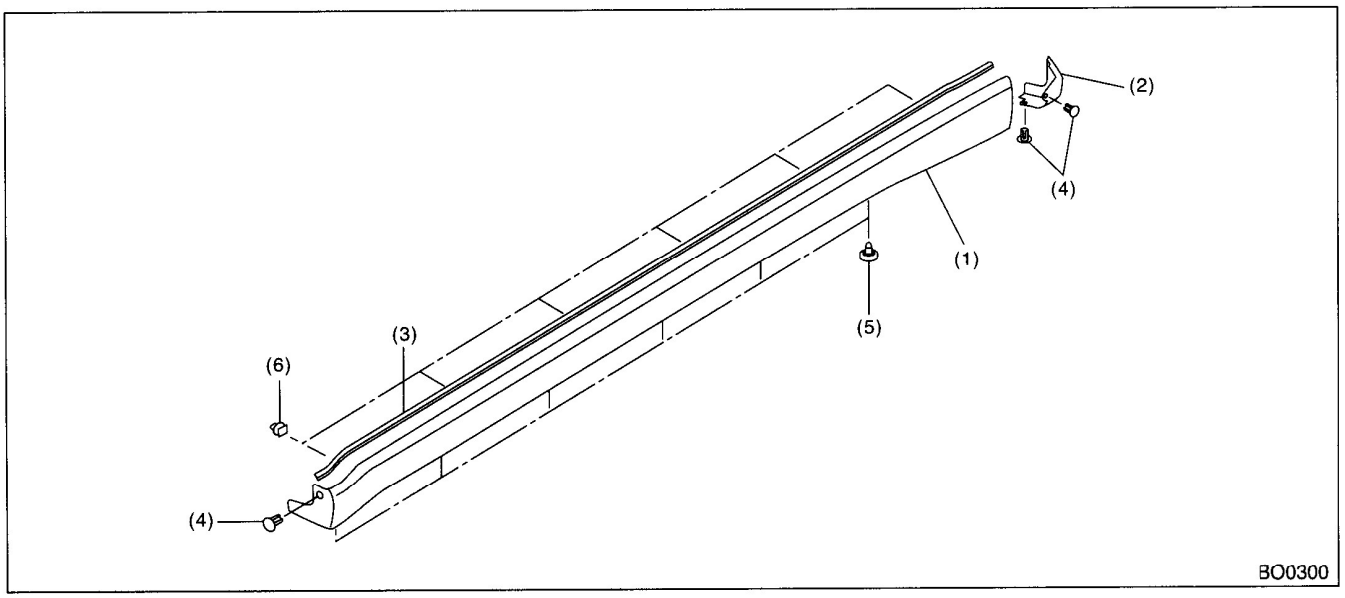


(1) Rear spoiler
(2) Protector
(3) Clip
(4) Grommet
(5) Seal (only RH side)
(6) High mount stop lamp

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

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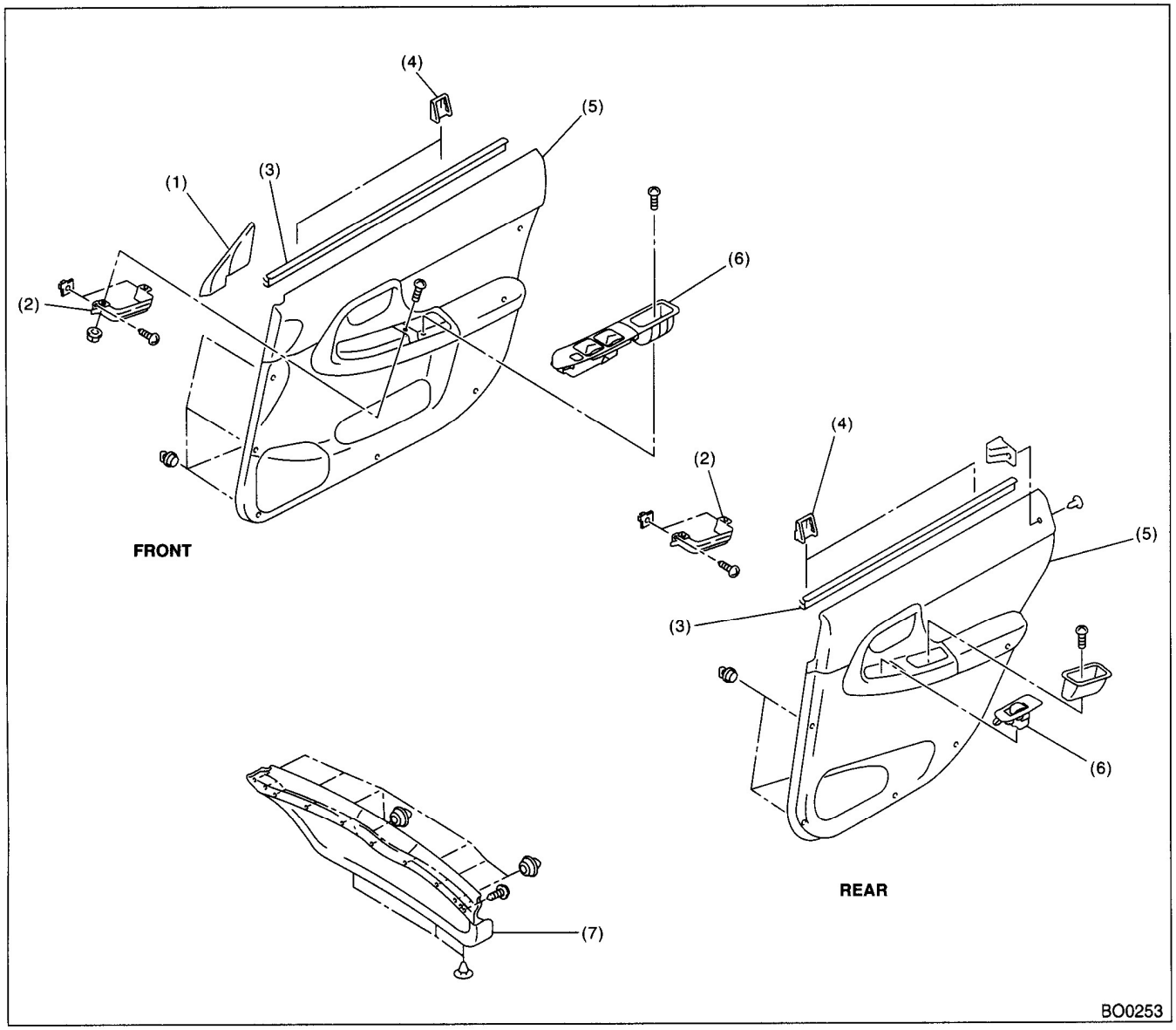
10.SIDE SILL SPOILER



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

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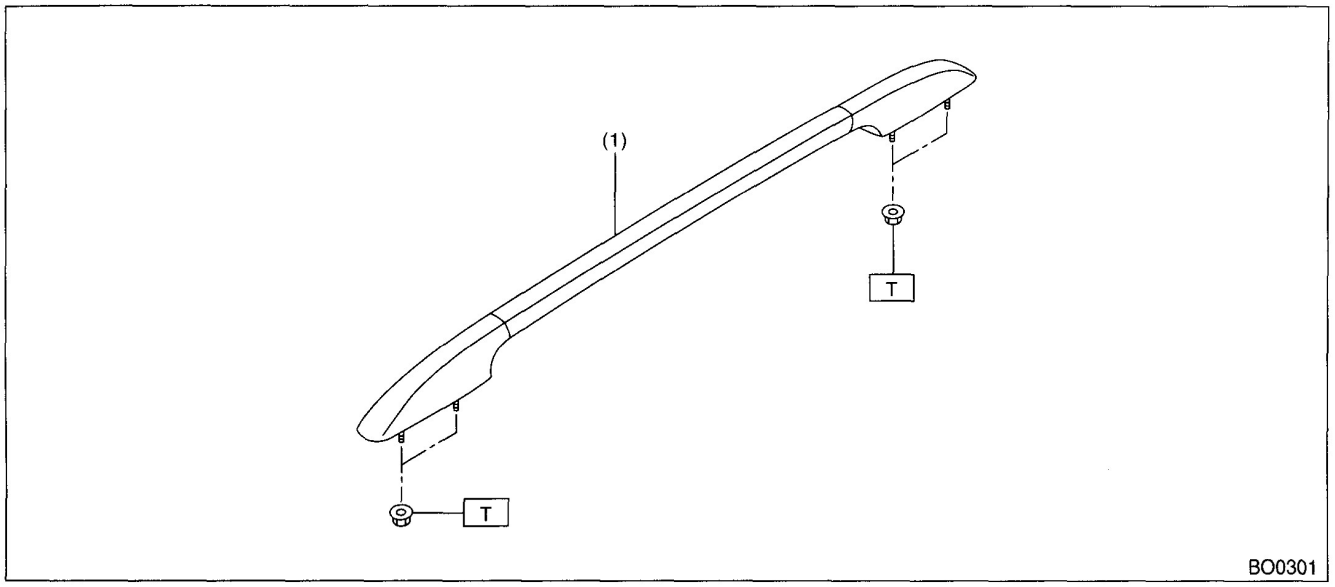
11.DOOR TRIM



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

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12.ROOF RAIL

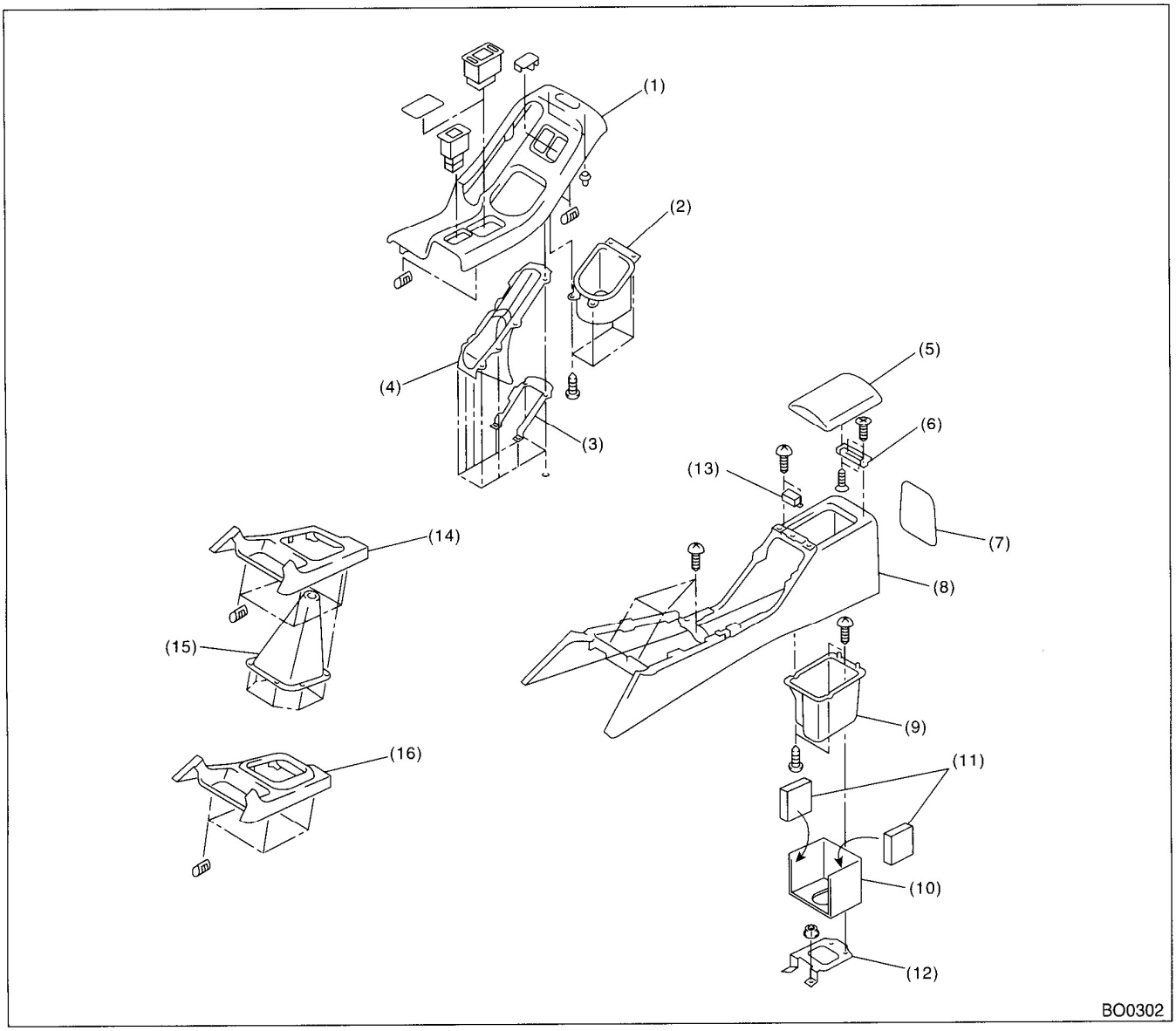


(1) Roof rail

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

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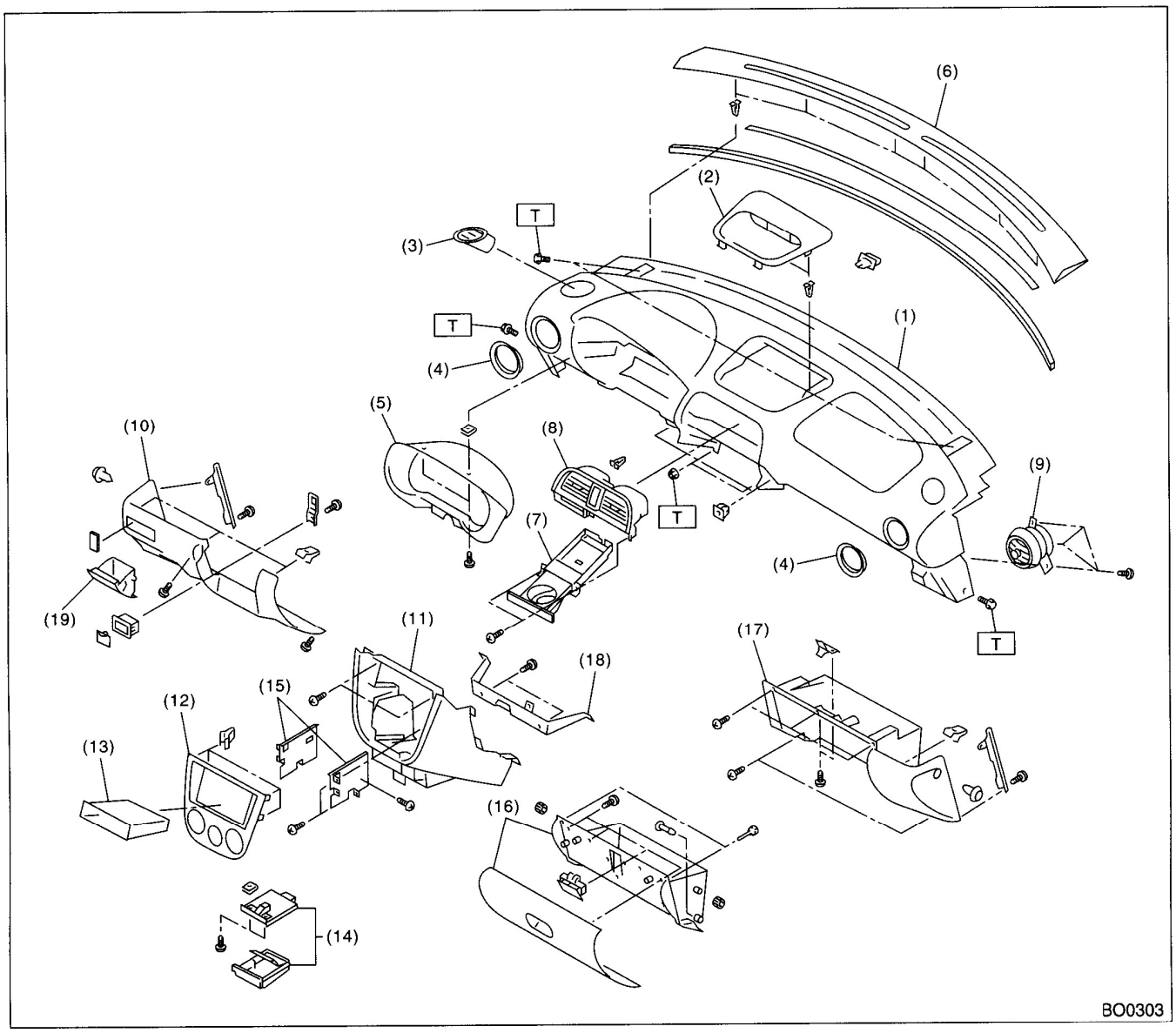
13.CONSOLE BOX



(1) Console cover
(2) Cup holder
(3) Bracket
(4) Strip
(5) Upper lid
(6) Lid hinge
(7) Rear lid
(8) Console box
(9) Console pocket
(10) Upper bracket
(11) Pad
(12) Lower bracket
(13) Lock
(14) Front cover (MT)
(15) Boot
(16) Front cover (AT)

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14.INSTRUMENT PANEL

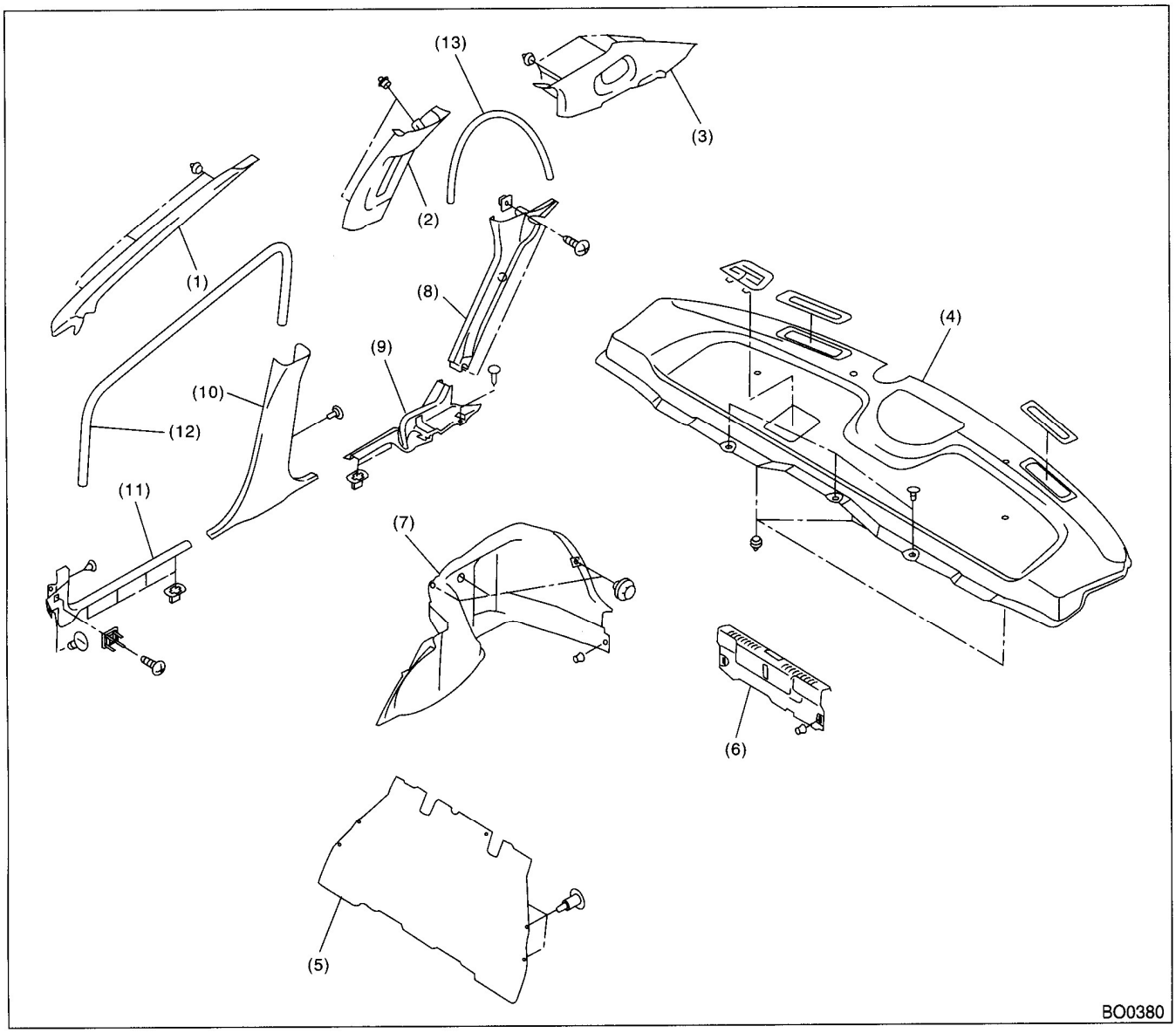


(1) Pad & frame
(2) Center upper panel
(3) Air vent grille (Defroster)
(4) Grille cover
(5) Meter visor
(6) Defroster grille
(7) Cup holder
(8) Air vent grille (Center)
(9) Air vent grille (Side)
(10) Lower cover
(11) Console cover
(12) Center panel
(13) Center pocket
(14) Ash tray
(15) Audio bracket
(16) Glove box lid
(17) Glove box panel
(18) Console rein forcement
(19) Coin box

Tightening torque: N·m (kgf-m, ft-lb)
T: 7 (0.71, 5.2)

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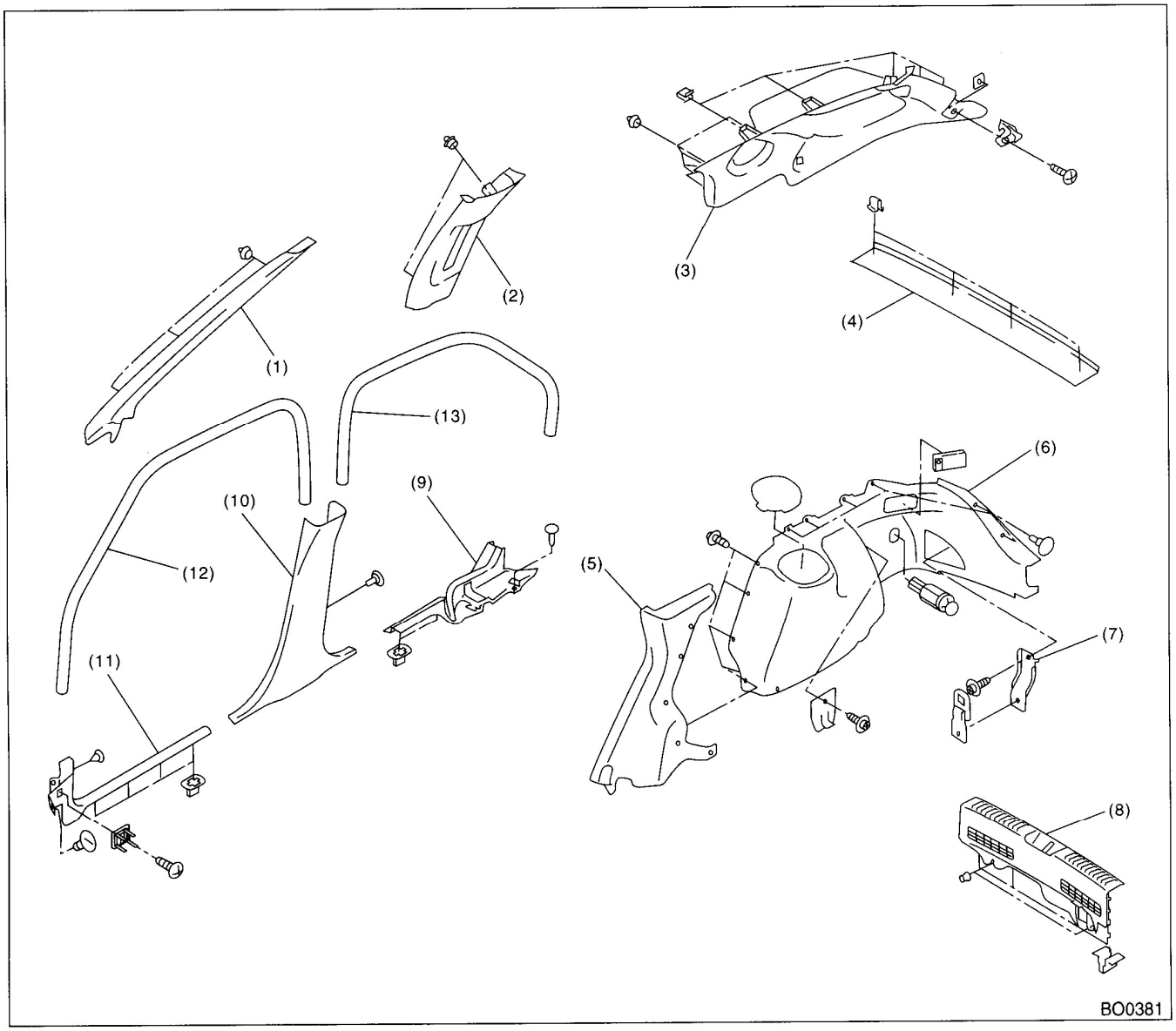
15.INNER TRIM (SEDAN)



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

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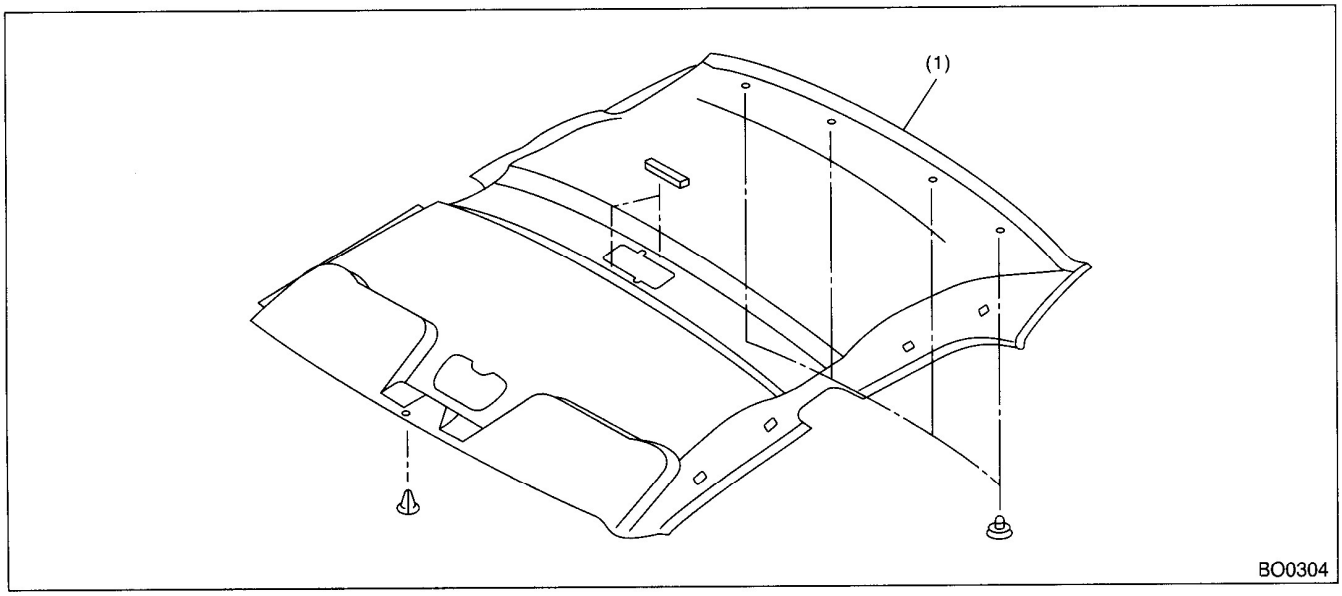
16.INNER TRIM (WAGON)



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

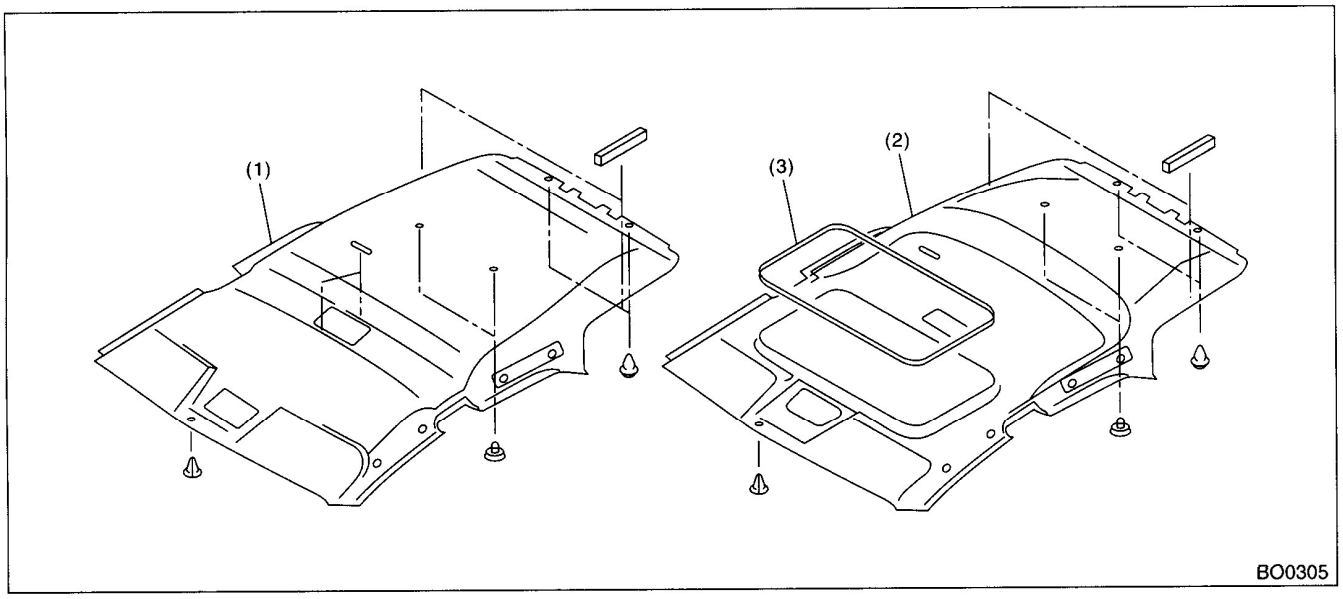
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17.ROOF TRIM (SEDAN)



(1) Roof trim

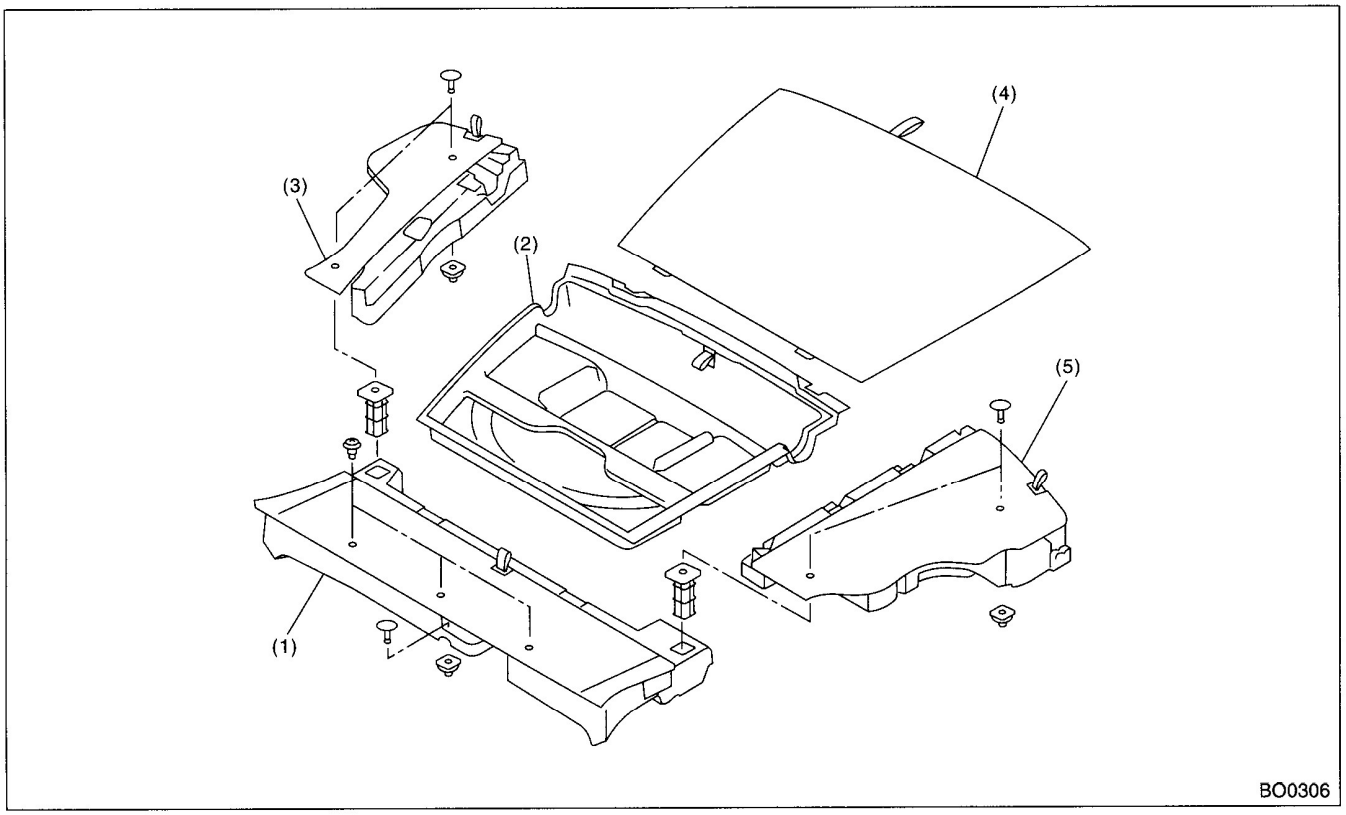
18.ROOF TRIM (WAGON)



(1) Roof trim
(2) Roof trim (sun roof model)
(3) Sun roof garnish

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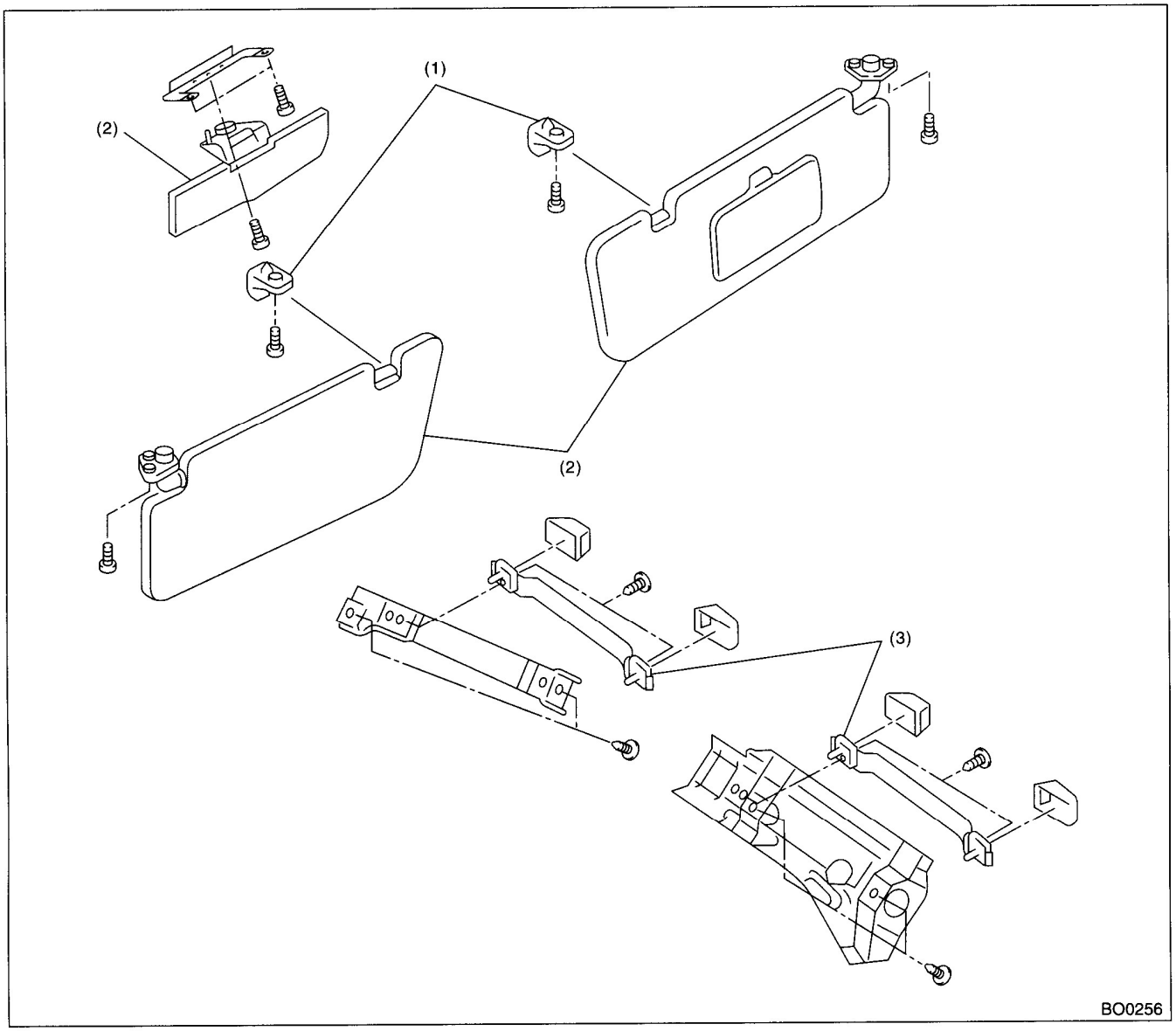
19.LUGGAGE FLOOR MAT



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

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20.INNER ACCESSORIES



(1) Hook (2) Sun visor (3) Assist grip

B: PREPARATION TOOL

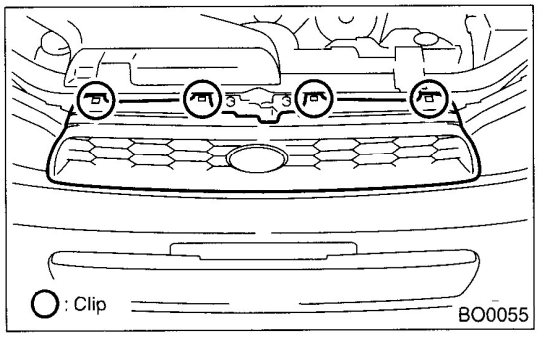
TOOL NAME	REMARKS
Clip remover	Used for removal of trim.

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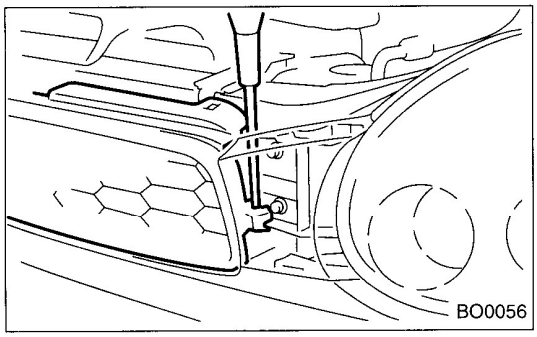
2. Front Grille

A: REMOVAL

1) Open the hood.
2) Remove the four clips.



3) Remove the two hooks.



B: INSTALLATION

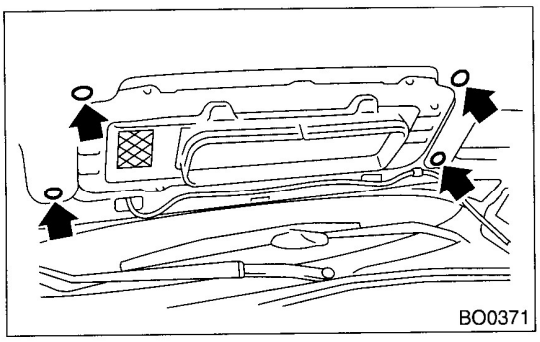
Install in the reverse order of removal.

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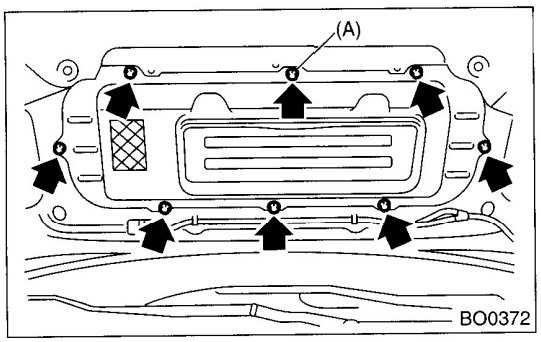
3. Hood Grille

A: REMOVAL

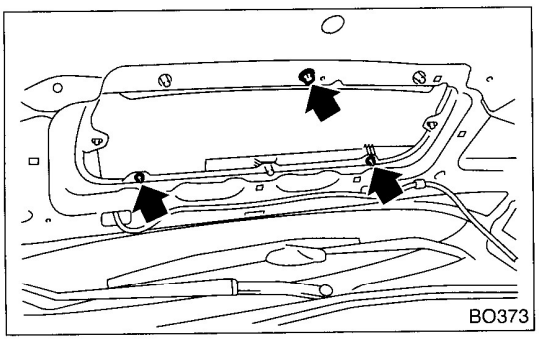
1) Remove the four clips of hood insulator.



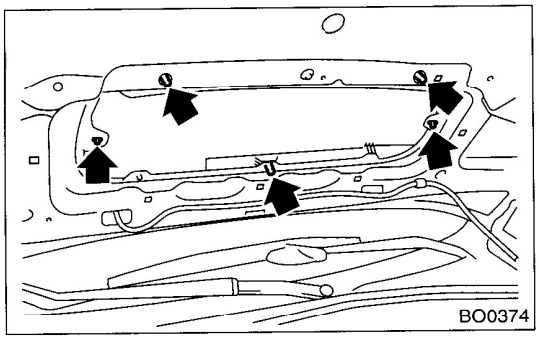
2) Remove seven bolts and clip (A) to remove the hood duct.



3) Remove three nuts.

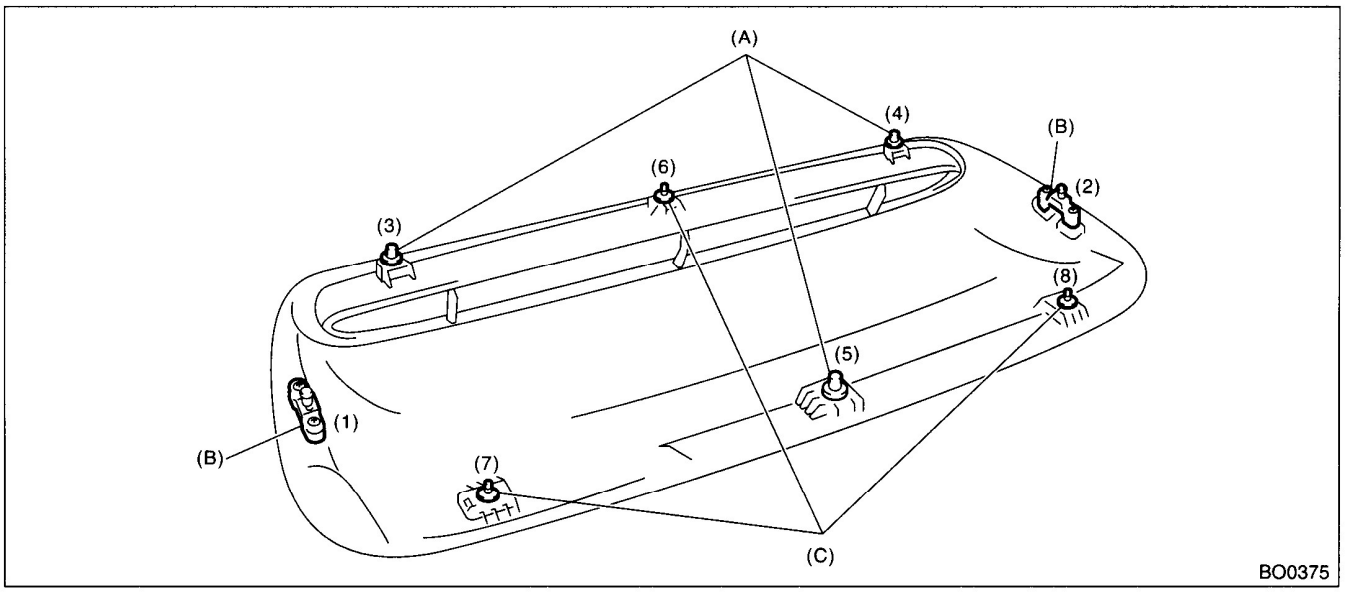


4) Remove three white clips and two black clips to remove the hood grille.



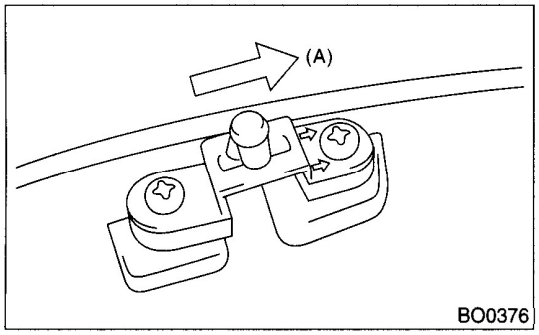
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B: INSTALLATION



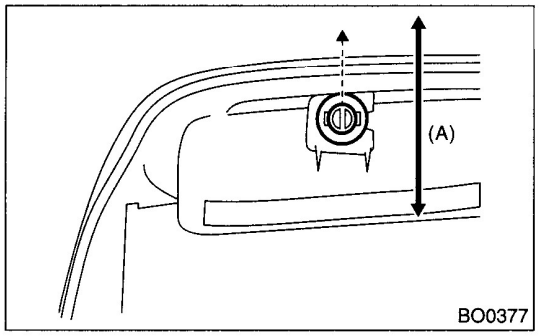
(A) White clip (B) Black clip (C) Bolt

1) Replace the black clip (1), (2) with a new one. Install the clip with arrow mark facing the front side of grille (A).

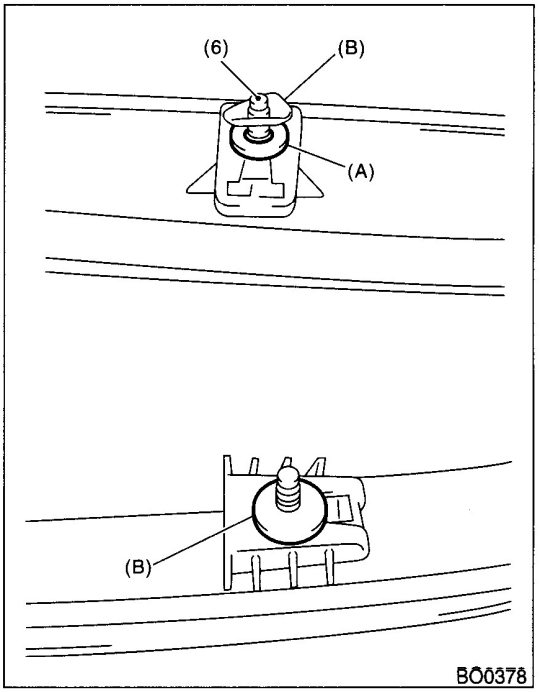


2) Replace the white clip (3), (4), (5) with a new one. Install the white clip (3), (4) by aligning the rib of clip parallel with the grille front/rear direction (A).

CAUTION:
Do not use foam rubber washer with new white clips.



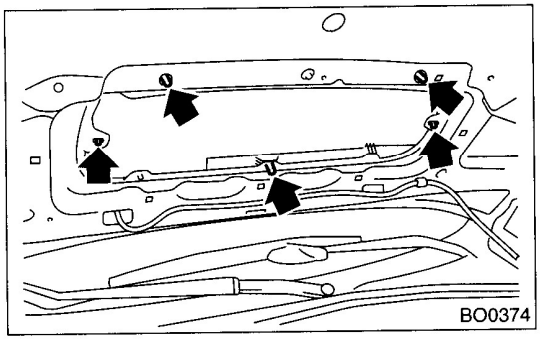
3) Attach the metal washer (A) only to bolt (6). Attach the foam rubber washer (B) to bolt (6), (7), (8).



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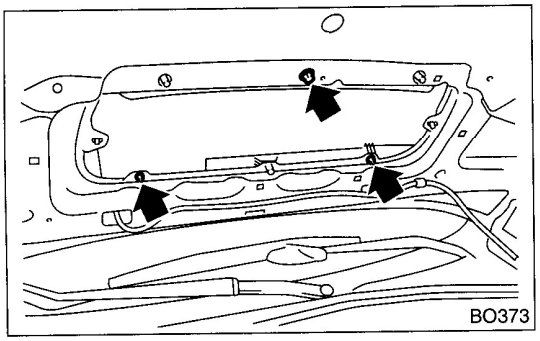
4) Insert the hood grille clip and engage the five clips.

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

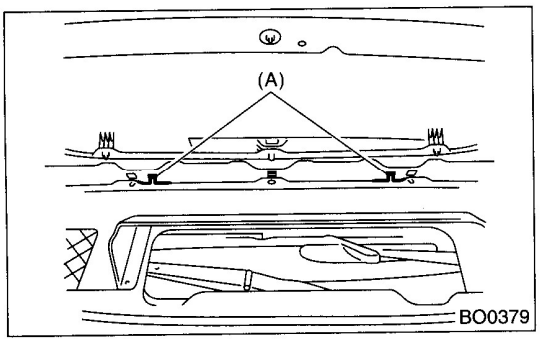


5) Install the three nuts.

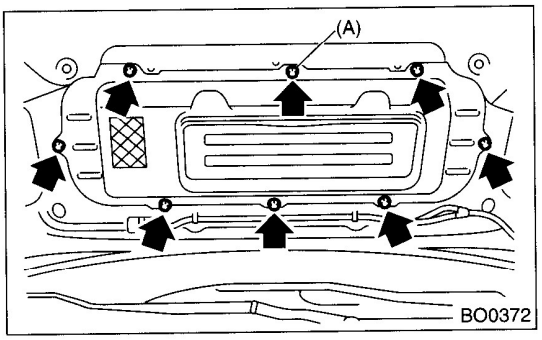
Tightening torque:
4.4 N·m (0.45 kgf-m, 3.25 ft-lb)



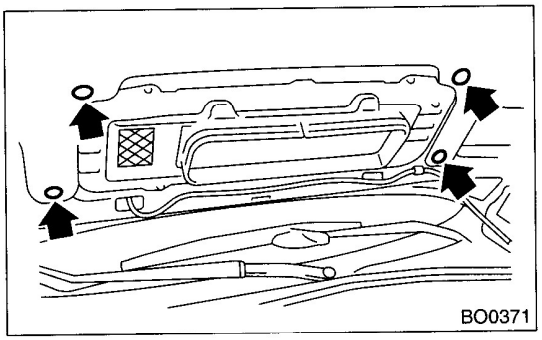
6) Catch the two hooks of hood duct to the hood holes.



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



8) Install the hood insulator with four new clips.



C: INSPECTION

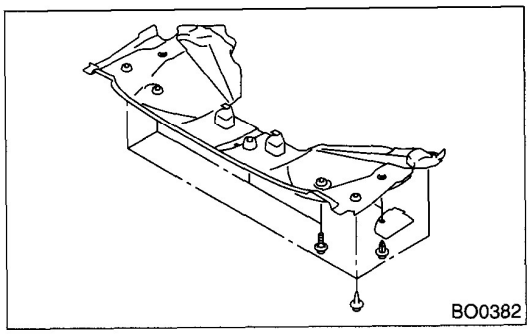
Make sure that the clip is firmly engaged.
Make sure that there is no abnormal gap at whole periphery of hood grille.
Make sure that there is no damage on hood grille.

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4. Front Under Cover

A: REMOVAL

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



B: INSTALLATION

Install in the reverse order of removal.

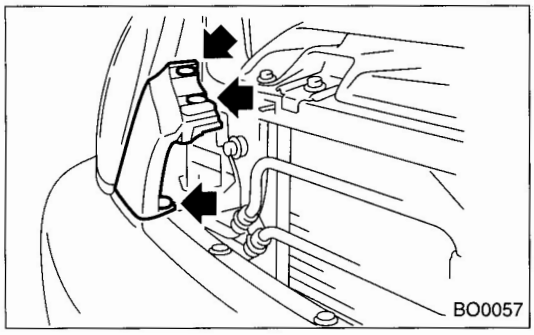
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5. Front Bumper

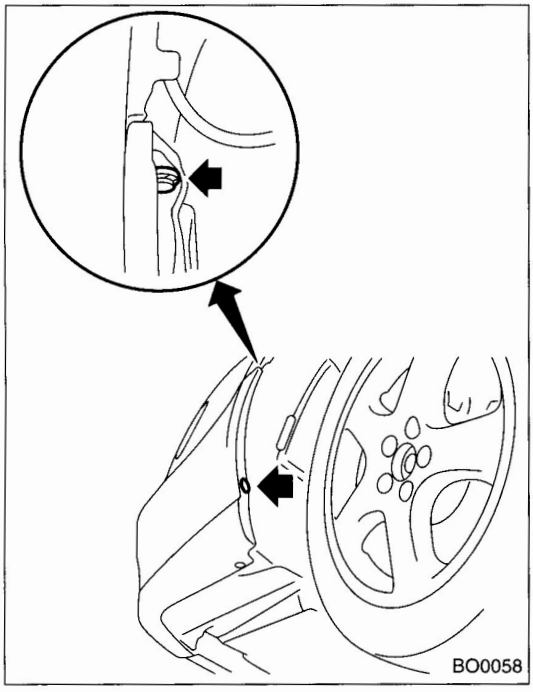
A: REMOVAL

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

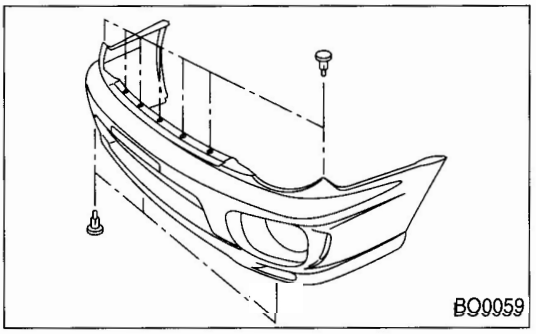
1) Disconnect the ground terminal from battery.
2) Remove the front grille. <Ref. to EI-18, REMOVAL, Front Grille.>
3) Loosen the three clips to remove the head light side cover.



4) Pull off the front side of front mud guard to remove the clip.

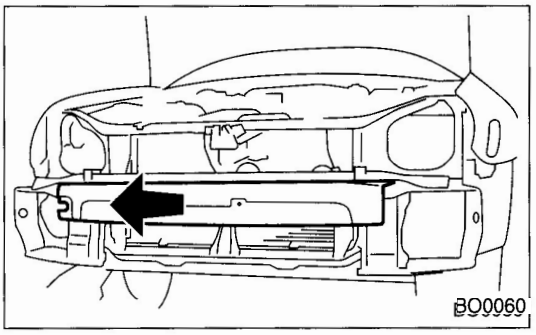


5) Remove clips, and pull out bumper slightly.
6) Disconnect the fog light connector to remove the bumper.

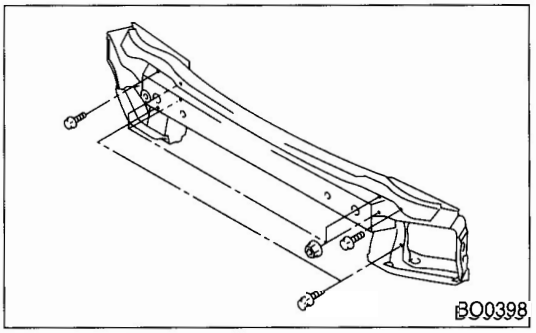


7) Remove the E/A FORM from bumper beam.

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



8) Remove the bumper beam.

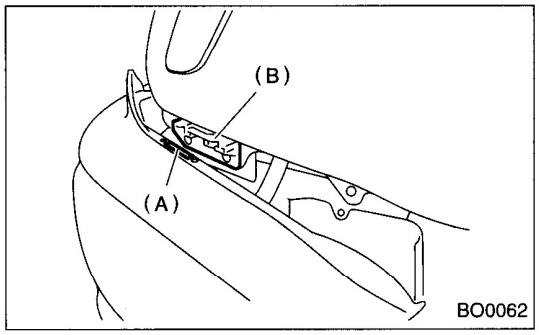


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B: INSTALLATION

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

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

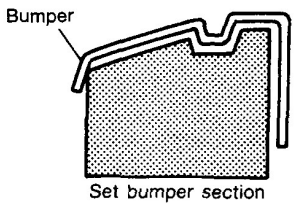


Tightening torque:
Refer to COMPONENT of General Description for tightening torque. <Ref. to EI-4, FRONT BUMPER, COMPONENT, General Description.>

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C: REPAIR

1. COATING METHOD FOR PP BUMPER

<table>
<tr><th>Process No.</th><th>Process name</th><th colspan="2">Job contents</th></tr>
<tr><td>1</td><td>Bumper mounting</td><td>Set the bumper on paint worktable if required.
Use paint worktable conforming to inner shape of bumper when possible.</td><td>

G5M0164</td></tr>
<tr><td>2</td><td>Masking</td><td colspan="2">Mask specified part (black base) with masking tape. Use masking tape for PP (example, Nichiban No. 533, etc.).</td></tr>
<tr><td>3</td><td>Degreasing, cleaning</td><td colspan="2">Clean all parts to be painted with white gasoline, normal alcohol, etc. to remove dirt, oil, fat, etc.</td></tr>
<tr><td>4</td><td>Primer paint</td><td colspan="2">Apply primer one to all parts to be painted, using air gun. Use primer (clear).</td></tr>
<tr><td>5</td><td>Drying</td><td colspan="2">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.</td></tr>
<tr><td rowspan="2">6</td><td rowspan="2">Top coat paint (I)</td><td>Solid color</td><td>Metallic color</td></tr>
<tr><td>Use section (block) paint for top coat.
• Paint in use (for each color):
Solid paint
Hardener PB
Thinner T-301
• Mixing ratio:
Main agent vs. hardener = 4:1
• Viscosity: 10 — 13 sec/20°C (68°F)
• Film thickness: 35 — 45μ
• Spraying pressure: 245 — 343 kPa
(2.5 — 3.5 kg/cm^2, 36 — 50 psi)</td><td>Use section (block) paint for top coat.
• Paint in use (for each color):
Metallic paint
Hardener PB
Thinner T-306
• Mixing ratio:
Main agent vs. hardener = 10:1
• Viscosity: 10 — 13 sec/20°C (68°F)
• Film thickness: 15 — 20μ
• Spraying pressure: 245 — 343 kPa
(2.5 — 3.5 kg/cm^2, 36 — 50 psi)</td></tr>
<tr><td>7</td><td>Drying</td><td>Not required.</td><td>Dry at normal temperature [10 min. or more at 20°C (68°F)].
In half-dried condition, avoid dust, dirt.</td></tr>
<tr><td>8</td><td>Top coat paint (II)</td><td>Not required.</td><td>Apply a clear coat to parts with top coat paint (I), three times, at 5 — 7 minutes intervals.
• Paint in use:
Metallic paint
Hardener PB
Thinner T-301
• Mixing ratio: Clear vs. hardener = 6:1
• Viscosity: 14 — 16 sec/20°C (68°F)
• Film thickness: 25 — 30μ
• Spraying pressure: 245 — 343 kPa
(2.5 — 3.5 kg/cm^2, 36 — 50 psi)</td></tr>
<tr><td>9</td><td>Drying</td><td colspan="2">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).</td></tr>
<tr><td>10</td><td>Inspection</td><td colspan="2">Paint check.</td></tr>
<tr><td>11</td><td>Masking removal</td><td colspan="2">Remove masking in process No. 2.</td></tr>
</table>

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2. REPAIR INSTRUCTIONS FOR COLORED PP BUMPER

NOTE:
All PP bumpers are provided with a grained surface, and if the surface is damaged, it cannot normally be restored to its former condition. Damage limited to shallow scratches that cause only a change in the lustre of the base material or coating, can be almost fully restored. Before repairing a damaged area, explain this point to the customer and get an understanding about the matter. Repair methods are outlined below, based on a classification of the extent of damage.

• Minor damage causing only a change in the lustre of the bumper due to a light touch

Almost restorable.

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

• Deep damage caused by scratching fences, etc.

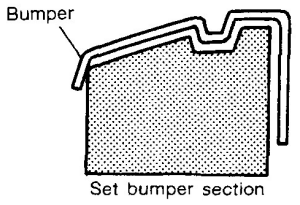
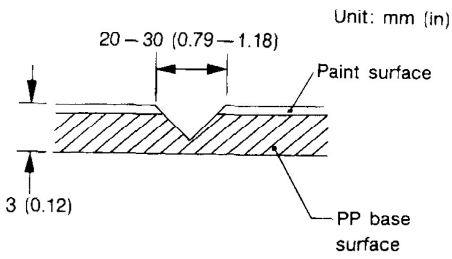
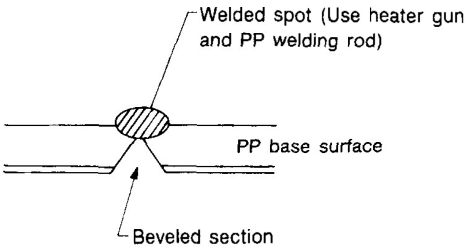
A dent cannot be repaired but a whitened or swelled part can be removed.

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

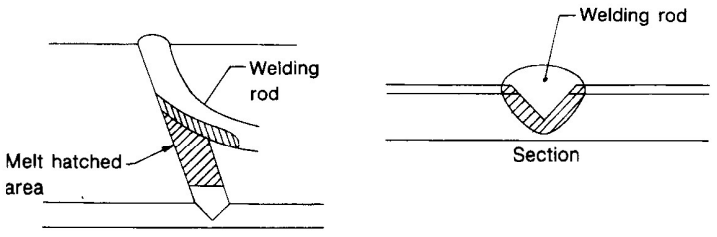
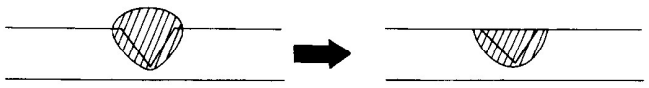
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• Deep damage such as a break or hole that requires filling

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.  G5M0164
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.  G5M0165
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.  G5M0166 NOTE: • Do not melt welding rod until it flows out. This results in reduced strength. • Leave the welded spot unattended until it cools completely.

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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.
		 G5M0167
		NOTE: • Melt the sections indicated by hatched area. • Do not melt the welding rod until it flows out, in order to provide strength. • Always keep the heater gun 1 to 2 cm (0.4 to 0.8 in) away from the welding spot. • Leave the welded spot unattended until it cools completely.
10	Sanding (II)	Remove excess part of weld with a putty knife. If a drill or disc wheel is used instead of the knife, operate it at a rate lower than 1,500 rpm and grind the excess part little by little. A higher rpm will cause the PP substrate to melt from the heat.
		 G5M0168
		Sand the welded spot smooth with #240 sand paper.
11	Masking	Mask the black substrate section using masking tape. Recommended masking tape: Nichiban No. 533 or equivalent
12	Cleaning/ degreasing	Completely clean the entire coated area, using solvent similar to that used in Process No. 4.
13	Primer coating	Apply a coat of primer to the repaired surface and its surrounding areas. Mask these areas, if necessary. Recommended primer: Mp/ 364 PP Primer NOTE: Be sure to apply one coat of primer at a spraying pressure of 245 to 343 kPa (2.5 to 3.5 kg/cm^2, 36 to 50 psi) with a spray gun.
14	Leave unattended.	Leave the repaired area unattended at 20°C (68°F) for 10 to 15 minutes until primer is half-dry. NOTE: If dirt or dust comes in contact with the coated area, wipe it off with a cloth dampended with alcohol. (Do not use thinner since the coated area tends to melt.)
15	Primer surfacer coating	Apply a coat of primer surfacer to the repaired area two or three times at an interval of 3 to 5 minutes. Recommended surfacer: • UPS 300 Flex Primer • No. 303 UPS 300 Exclusive hardener • NPS 725 Exclusive Reducer (thinner) • Mixing ratio: 2 : 1 (UPS 300: No. 303) • Viscosity: 12 — 14 sec/20°C (68°F) • Coated film thickness: 40 — 50μ
16	Drying	Allow the coated surface to dry for 60 minutes at 20°C (68°F) [or 30 minutes at 60°C (140°F)].
17	Sanding (III)	Sand the coated surface and its surrounding areas using #400 sand paper and water.
18	Cleaning/ degreasing	Same as Process No. 12.

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Process No.	Process name	Job contents	
		Solid color	Metallic color
19	Top coat (I)	Use a "block" coating method. • Recommended paint: Suncryl (SC) No. 307 Flex Hardener SC Reducer (thinner) • Mixing ratio: 3 : 1 Suncryl (SC) vs. No. 307 Flex Hardener • Viscosity: 11 — 13 sec/20°C (68°F) • Coated film thickness: 40 — 50μ • Spraying thickness: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)	Use a "block" coating method. • Recommended paint: Suncryl (SC) No. 307 Flex Hardener SC Reducer (thinner) • Mixing ratio: 3 : 1 Suncryl (SC) vs. No. 307 Flex Hardener • Viscosity: 11 — 13 sec/20°C (68°F) • Coated film thickness: 20 — 30μ • Spraying thickness: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)
20	Leave unattended.	Not required.	Leave unattended at 20°C (68°F) for at least 10 minutes until the topcoated area is half-dry. NOTE: Be careful to keep dust or dirt from coming in contact with the affected area.
21	Top coat (II)	Not required.	Apply a clear coat three times at an interval of 3 to 5 minutes. • Recommended paint: SC710 Overlay Clear No. 307 Flex Hardener SC Reducer (thinner) • Mixing ratio: 3 : 1 Suncryl (SC) vs. No. 307 Flex Hardener • Viscosity: 10 — 13 sec/20°C (68°F) • Coated film thickness: 20 — 30μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)
22	Drying	Allow the coated surface to dry at 20°C (68°F) for two hours or 60°C (140°F) for 30 minutes. NOTE: Do not allow the temperature to exceed 80°C (176°F) since this will deform the PP substrate.	
23	Inspection	Carefully check the condition of the repaired area.	
24	Masking removal	Remove the masking tape applied in Process No. 11 and 13.	
25	Parts installation	Install parts on the bumper in reverse order of removal.	
26	Bumper installation	Install the bumper.	

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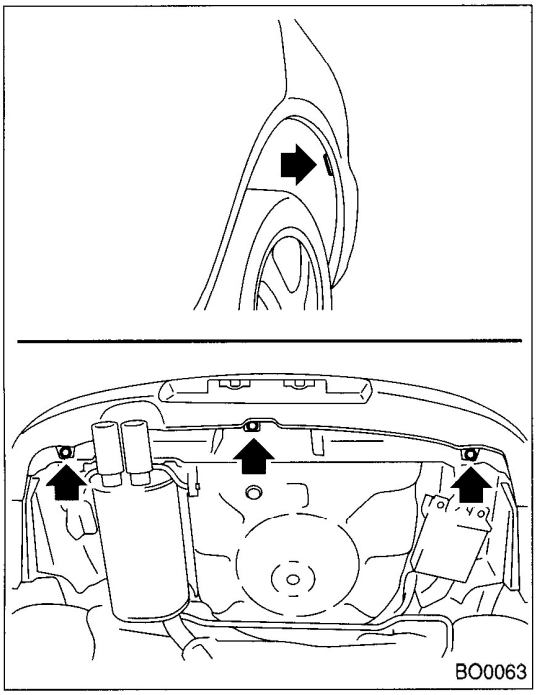
6. Rear Bumper

A: REMOVAL

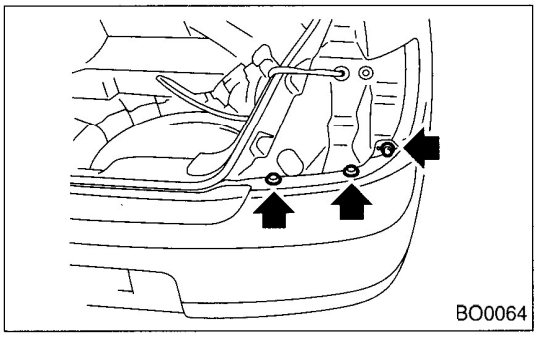
1. WAGON

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

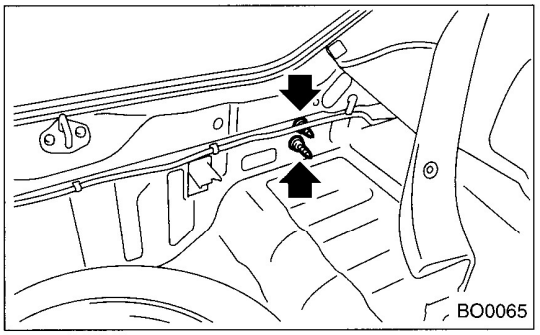
1) Disconnect the ground terminal from battery.
2) Remove the bolts and clips.



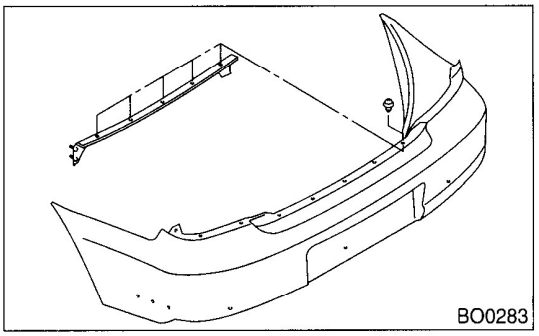
3) Remove the rear combination light assembly. <Ref. to LI-18, REMOVAL, Rear Combination Light Assembly.>
4) Remove the screw and two clips from each side.



5) Remove the floor box.
6) Remove the rear skirt trim.
7) Pull off the rear end of rear quarter lower trim, and then loosen the two nuts from each side to remove the rear bumper.

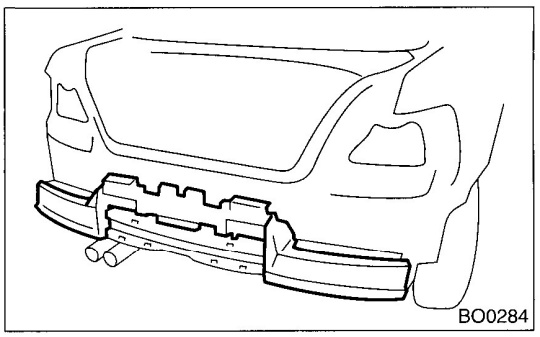


8) Loosen the clips to remove the bumper beam.

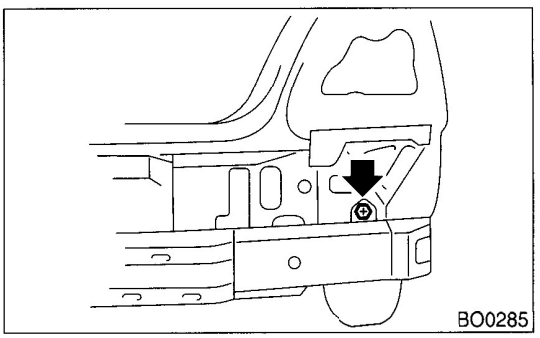


9) Remove the E/A FORM from bumper beam.

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

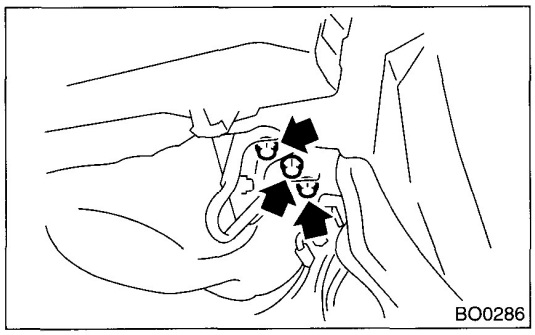


10) Remove the bolt.



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11) Remove the canister. <Ref. to EC(SOHC)-5, REMOVAL, Canister.>
12) Remove the three bolts, then remove the bumper beam.



2. SEDAN

Refer to rear bumper removal WAGON. <Ref. to EI-30, WAGON, REMOVAL, Rear Bumper.>

B: INSTALLATION

1. WAGON

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

1) Install in the reverse order of removal.

Tightening torque:
Refer to COMPONENT of General Description for tightening torque. <Ref. to EI-5, REAR BUMPER, COMPONENT, General Description.>

2. SEDAN

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

1) Install in the reverse order of removal.

Tightening torque:
Refer to COMPONENT of General Description for tightening torque. <Ref. to EI-5, REAR BUMPER, COMPONENT, General Description.>

C: REPAIR

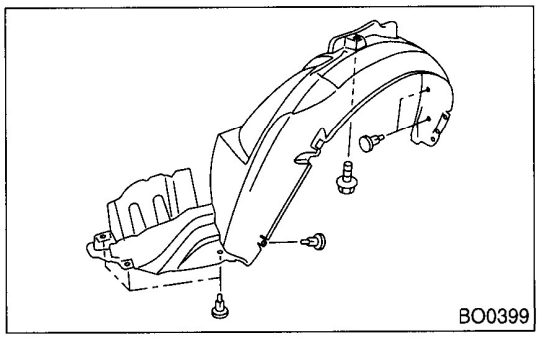
Refer to front bumper repair. <Ref. to EI-23, REMOVAL, Front Bumper.>

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7. Mud Guard

A: REMOVAL

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



B: INSTALLATION

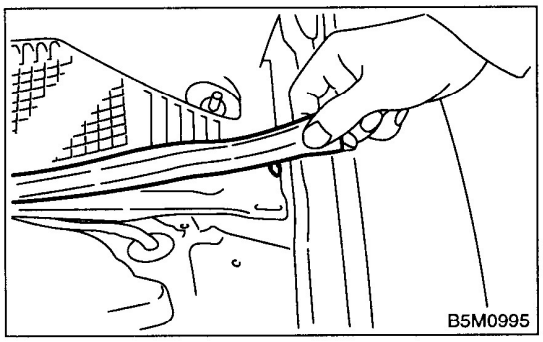
Insert the hook into body, and tighten it with screw and clip.

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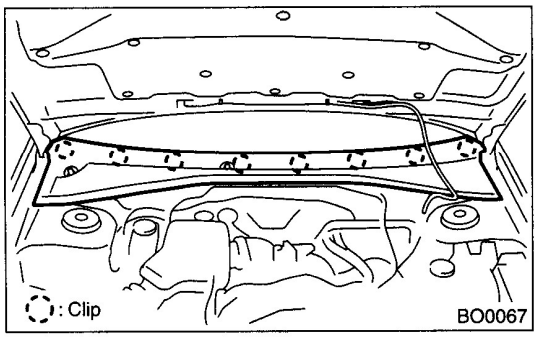
8. Cowl Panel

A: REMOVAL

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



4) Loosen the clips to remove the cowl panel.



B: INSTALLATION

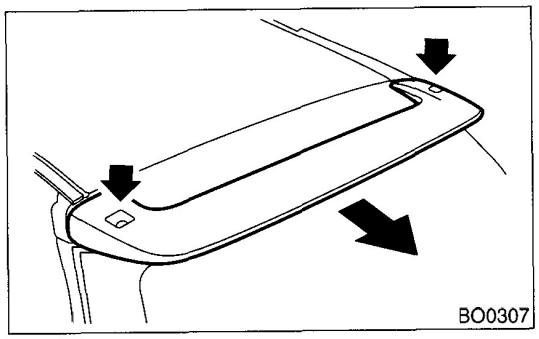
Install in the reverse order of removal.

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9. Roof Spoiler

A: REMOVAL

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



B: INSTALLATION

Install in the reverse order of removal.

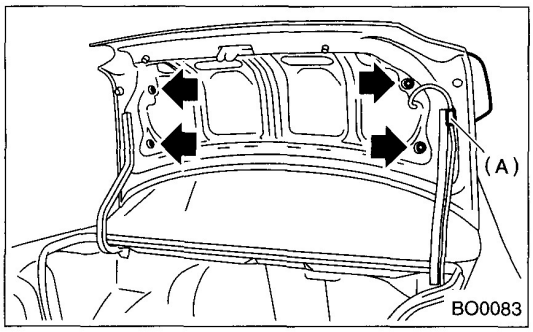
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10.Rear Spoiler

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Open the trunk lid.
3) Remove the electrical connector (A) of high-mounted stop light.
4) Loosen the mounting nut of rear spoiler to remove the rear spoiler.

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



B: INSTALLATION

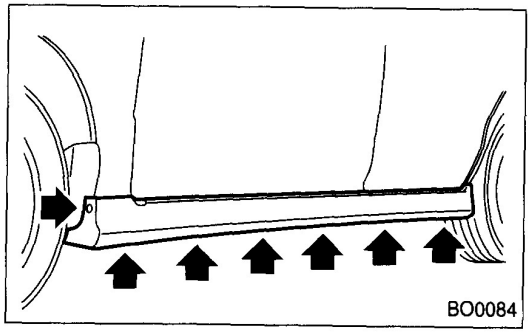
1) Install in the reverse order of removal.
2) Clean the mounting surfaces of trunk lid and spoiler before installation.

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11.Side Sill Spoiler

A: REMOVAL

Remove the clips (1 on front, 6 on lower), then remove the side sill spoiler.



B: INSTALLATION

Install in the reverse order of removal.

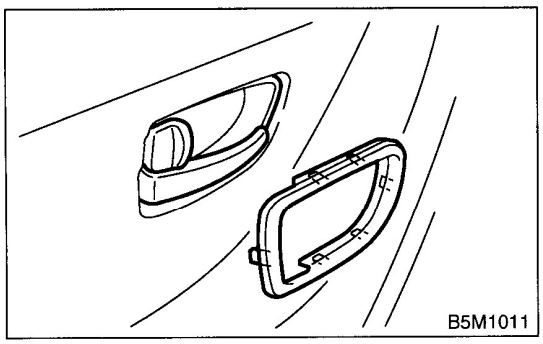
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12.Front Door Trim

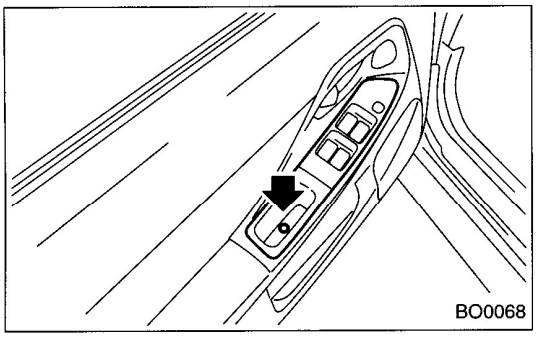
A: REMOVAL

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

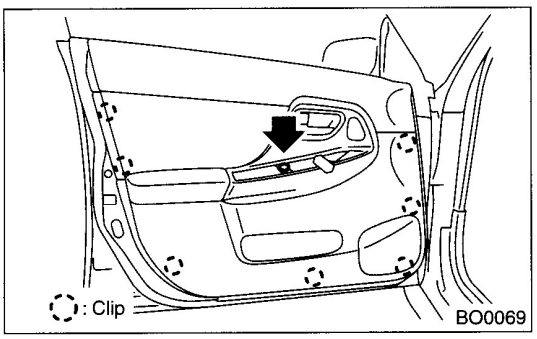
1) Disconnect the ground terminal from battery.
2) Pull up the inner remote cover toward you to remove the upper hook. Pull down it to remove the lower hook. Remove the inner remote cover.



3) Remove the screw.
4) Remove the power window switch assembly and disconnect the harness connector.



5) Remove the screw.
6) Remove the clips of trim panel using clip remover to remove the trim panel.



B: INSTALLATION

Install in the reverse order of removal.

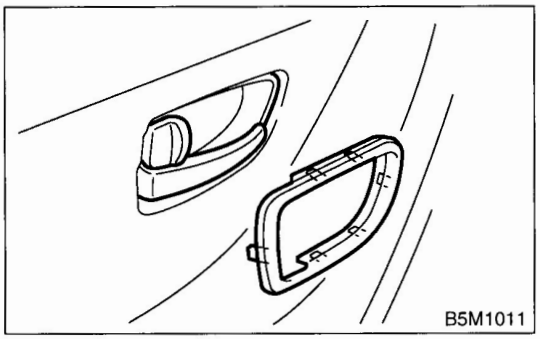
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13.Rear Door Trim

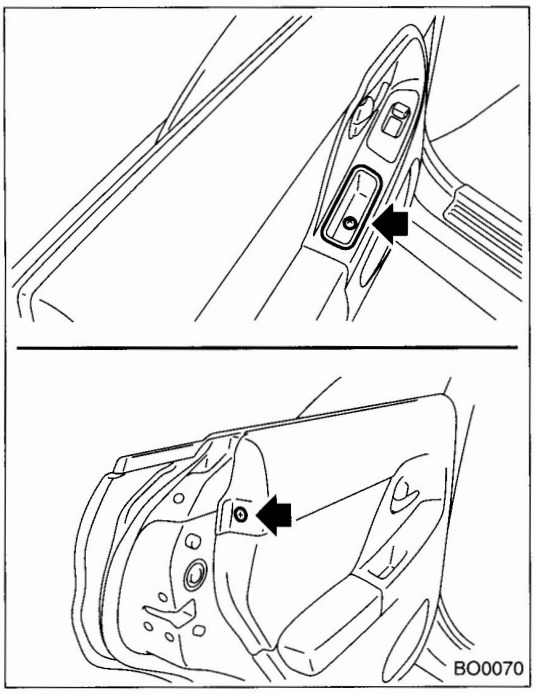
A: REMOVAL

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

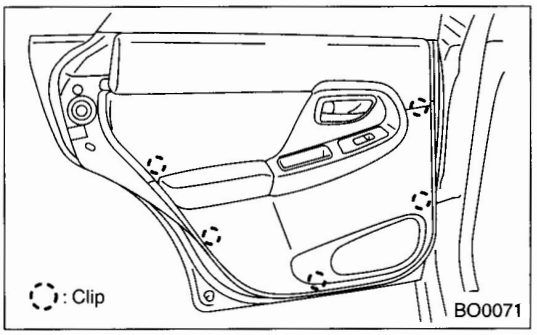
1) Disconnect the ground terminal from battery.
2) Pull up the inner remote cover toward you to remove the upper hook. Pull down it to remove the lower hook. Remove the inner remote cover.



3) Remove the screw and clip.



4) Remove the clips of trim panel using clip remover to remove the trim panel.
5) Disconnect the power window harness connector.



B: INSTALLATION

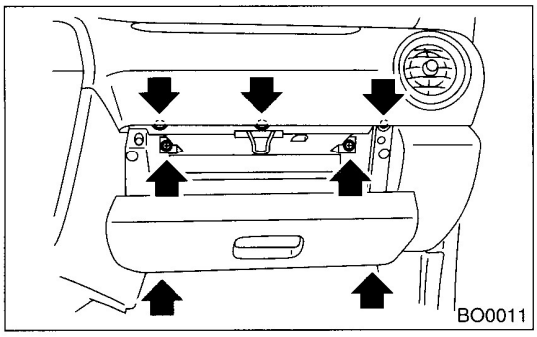
Install in the reverse order of removal.

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14.Glove Box

A: REMOVAL

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



B: INSTALLATION

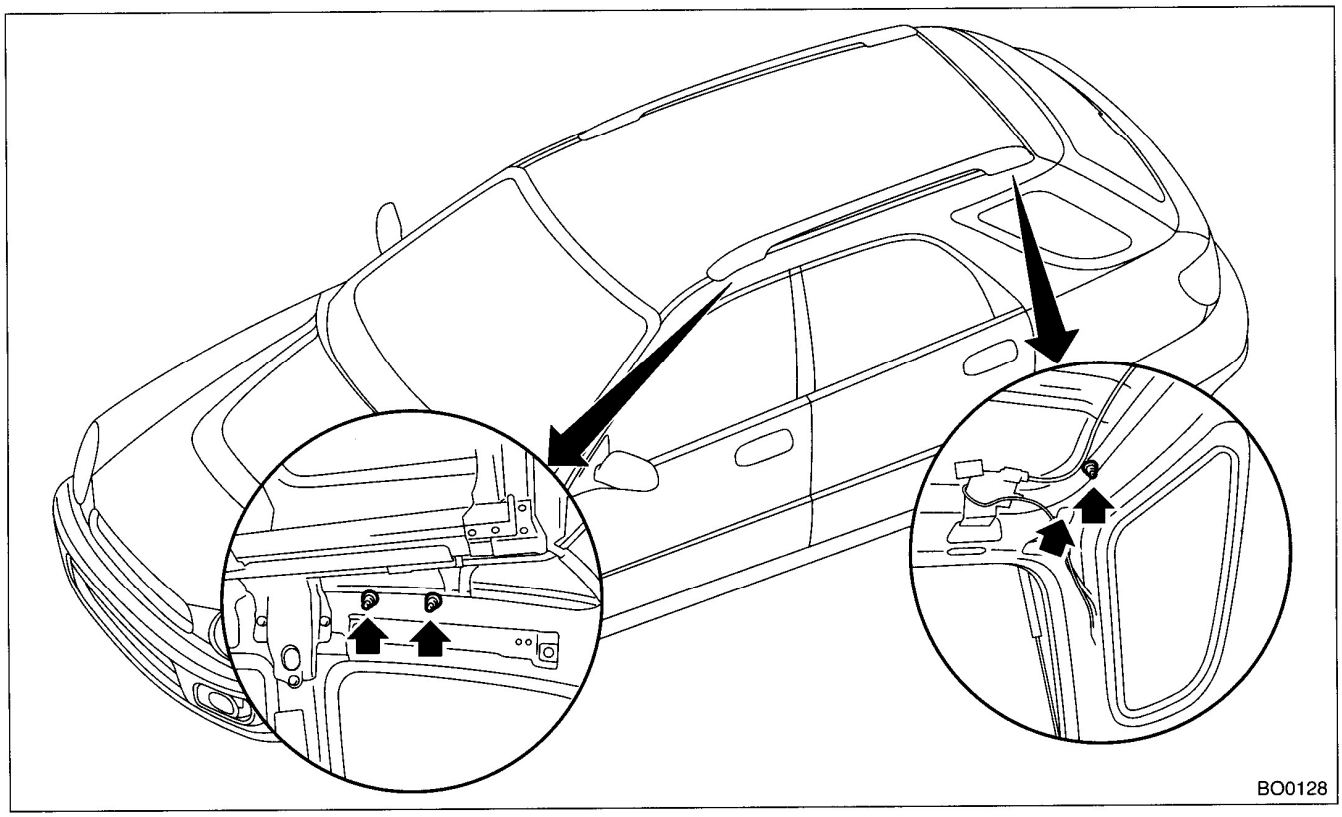
Install in the reverse order of removal.

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15.Roof Rail

A: REMOVAL

1) Remove the roof trim. <Ref. to EI-50, REMOVAL, Roof Trim.>
2) Remove the four mounting nuts and then detach the roof rail carefully.



B: INSTALLATION

Install in the reverse order of removal.

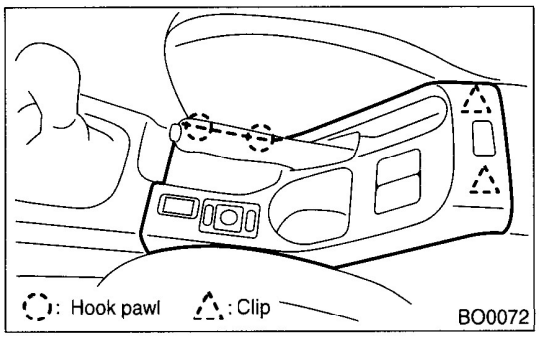
CAUTION:
Be careful not to scratch the body panels with roof rail stud bolts when removing and installing them.

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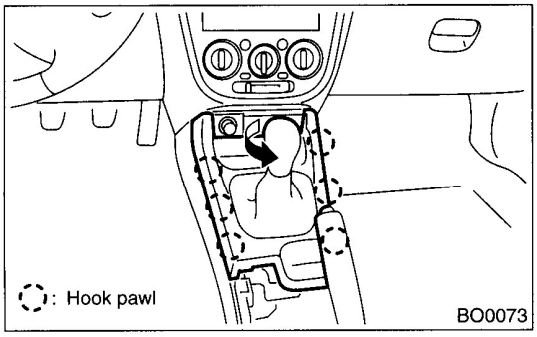
16.Console Box

A: REMOVAL

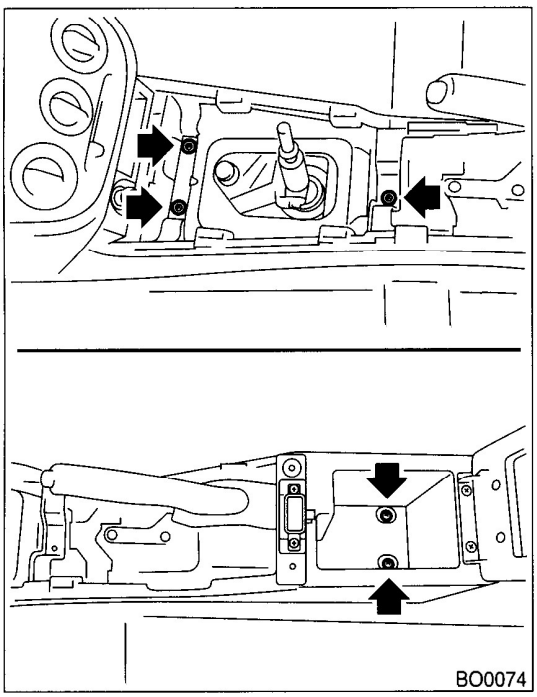
1) Disconnect the ground terminal from battery.
2) Remove the console cover.



3) Remove the shift knob (MT model) and front cover.



4) Loosen the screws to remove the console box.



B: INSTALLATION

Install in the reverse order of removal.

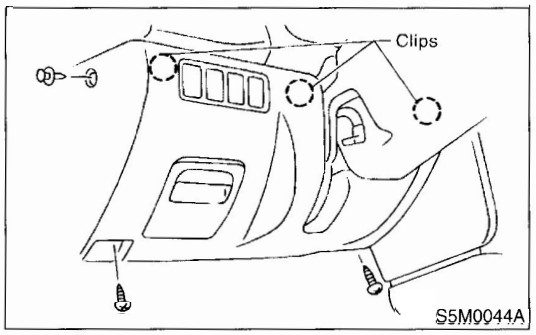
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17.Instrument Panel Assembly

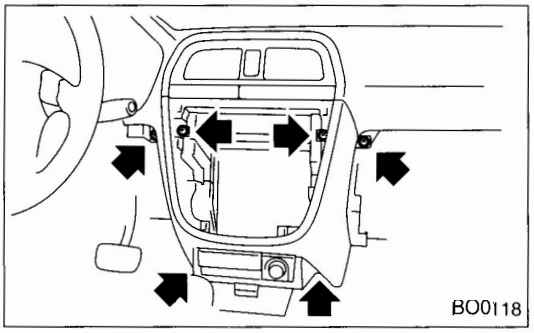
A: REMOVAL

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

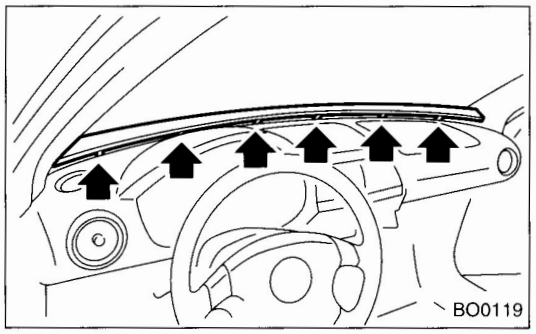
1) Disconnect the ground terminal from battery.
2) Loosen the screws and clips to remove the lower cover.



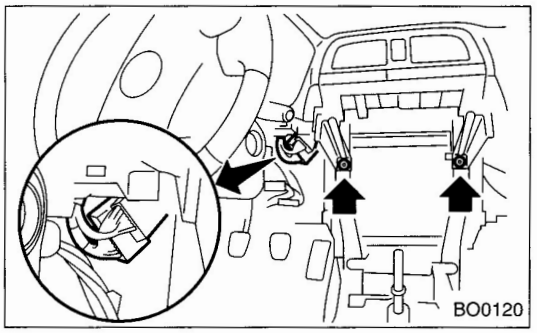
3) Remove the glove box. <Ref. to EI-39, REMOVAL, Glove Box.>
4) Remove the center console panel. <Ref. to AC-25, REMOVAL, Control Unit.>
5) Remove the passenger airbag module. <Ref. to AB-13, Passenger's Airbag Module.>
6) Loosen the four screws and two nuts to remove the lower console panel.



7) Loosen the hooks to remove the defroster panel.

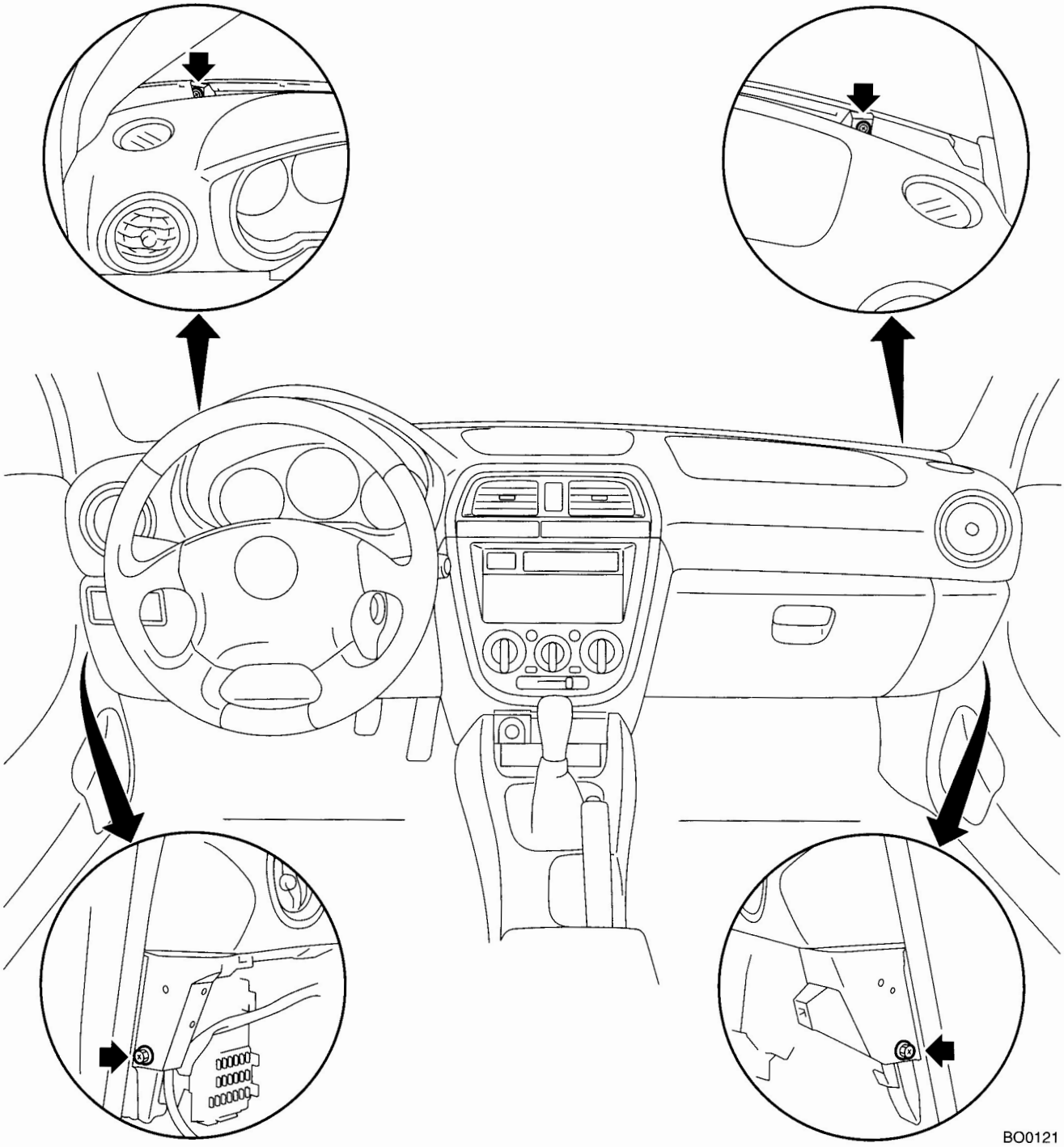


8) Remove the two nuts and disconnect the two connectors.



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9) Remove the instrument panel mounting bolts.



10) Remove the instrument panel.

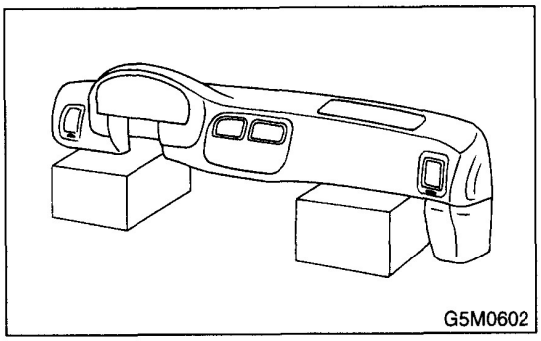
CAUTION:
Do not pull the harness when disconnecting the connector.

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

CAUTION:
• Take care not to scratch the instrument panel and related parts.

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- **When storing the removed instrument panel, place it standing up on the floor.**

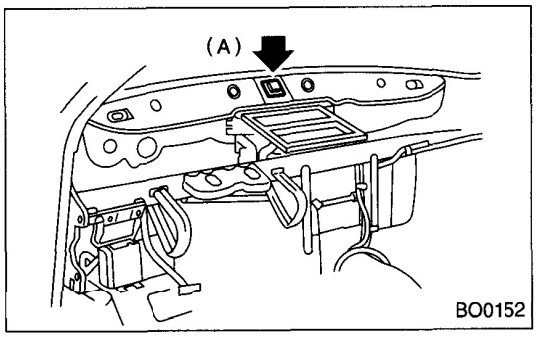


B: INSTALLATION

Install in the reverse order of removal.

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

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

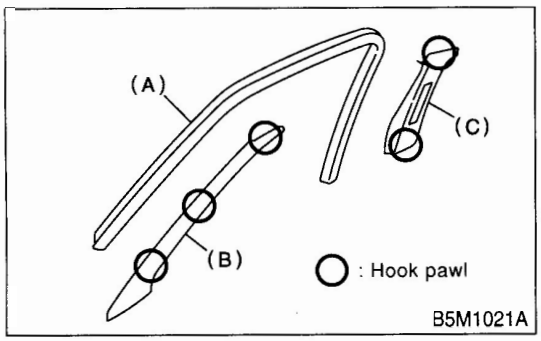


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18.Upper Inner Trim

A: REMOVAL

1) Remove the lower inner trim. <Ref. to EI-46, REMOVAL, Lower Inner Trim.>
2) Remove the front mole (A).
3) Remove the front pillar upper trim (B).
4) Detach the front seat belt shoulder anchor, then remove the center pillar upper trim (C).

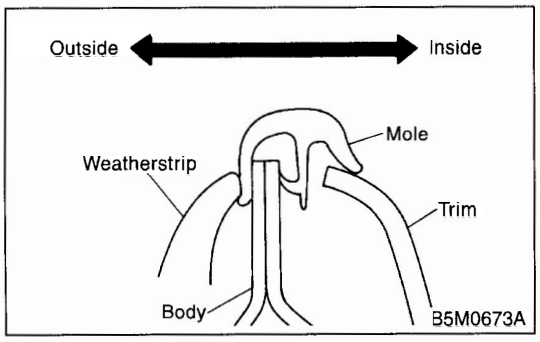


B: INSTALLATION

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 mole as shown in figure.

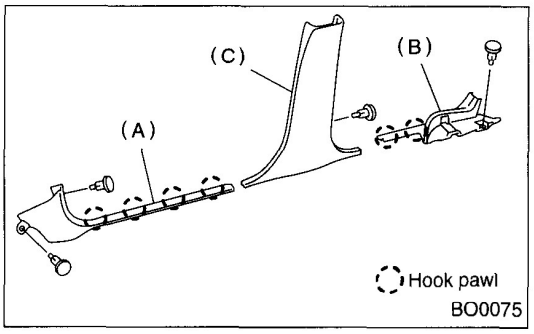


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19.Lower Inner Trim

A: REMOVAL

1) Remove the side sill front cover (A).
2) Remove the rear seat cushion <Ref. to SE-11, REMOVAL, Rear Seat.>, then remove side sill rear cover (B).
3) Remove the center pillar lower trim (C).



B: INSTALLATION

Install in the reverse order of removal.

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

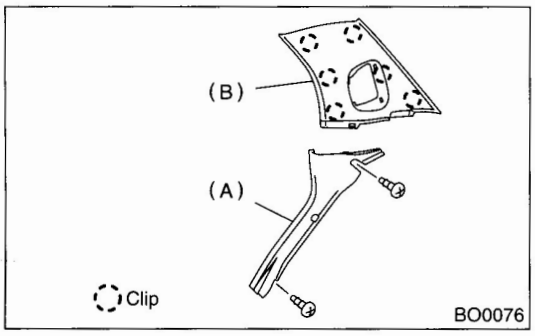
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20.Rear Quarter Trim

A: REMOVAL

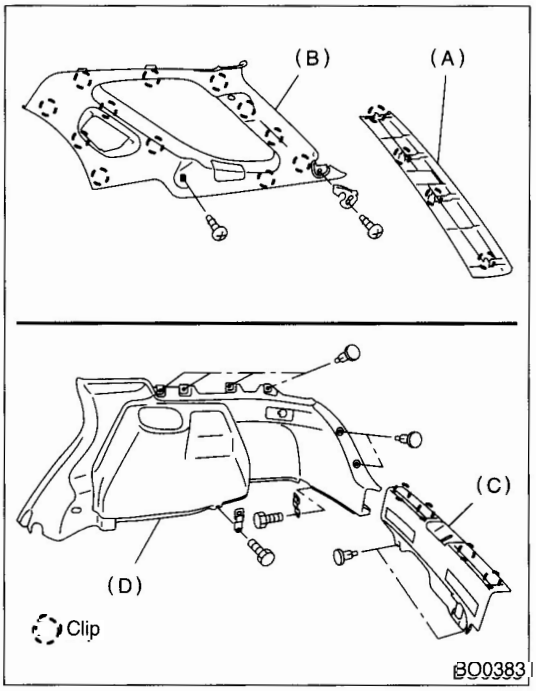
1. SEDAN

1) Remove the rear seat. <Ref. to SE-11, REMOVAL, Rear Seat.>
2) Remove the side sill rear cover. <Ref. to EI-46, 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).



2. WAGON

1) Remove the rear seat. <Ref. to SE-11, 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).



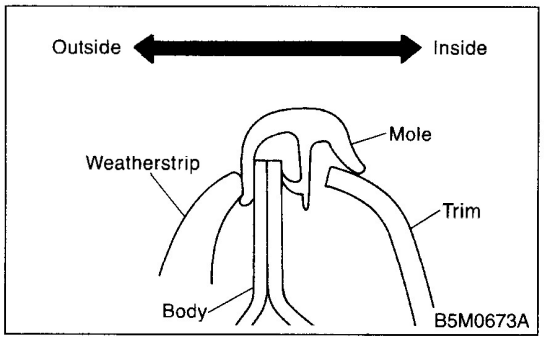
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B: INSTALLATION

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 mole as shown in the figure.

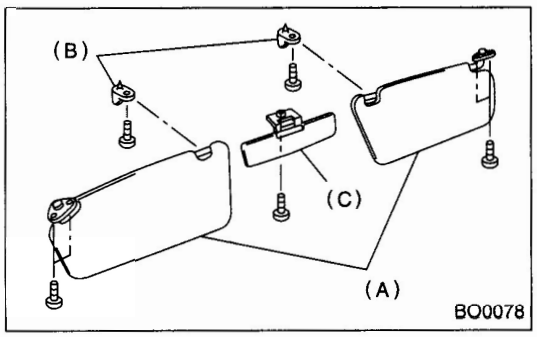


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21.Sun Visor

A: REMOVAL

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



B: INSTALLATION

Install in the reverse order of removal.

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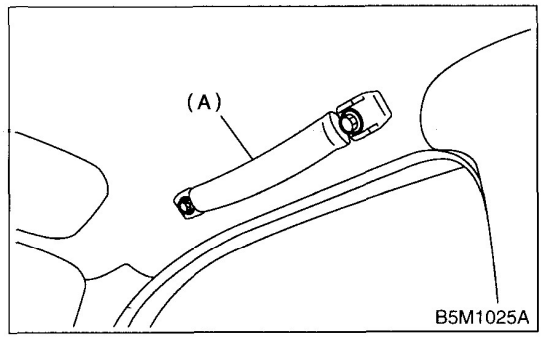
22.Roof Trim

A: REMOVAL

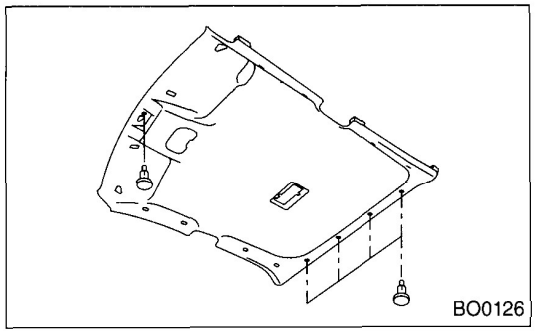
CAUTION:
When removing the clip, use great care not to damage the roof trim.

1. SEDAN

1) Disconnect the ground terminal from battery.
2) Remove the spots light. <Ref. to LI-25, REMOVAL, Spot Light.>
3) Remove the room light. <Ref. to LI-26, REMOVAL, Room Light.>
4) Remove the sun visor and hook on both sides. <Ref. to EI-49, REMOVAL, Sun Visor.>
5) Remove the assist-grips (A).

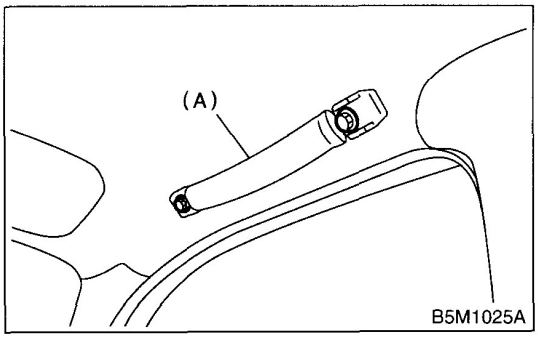


6) Remove the upper inner trim. <Ref. to EI-45, REMOVAL, Upper Inner Trim.>
7) Remove the quarter upper trim. <Ref. to EI-47, SEDAN, REMOVAL, Rear Quarter Trim.>
8) Remove the clips, and then remove the roof trim.

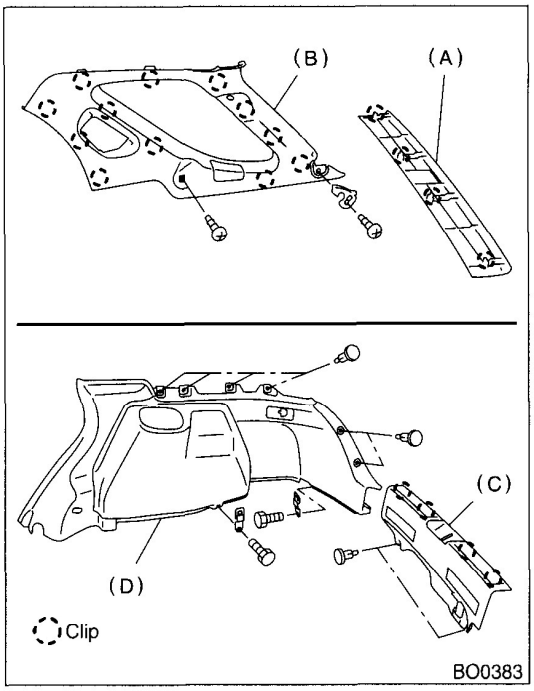


2. WAGON

1) Disconnect the ground terminal from battery.
2) Remove the room light. <Ref. to LI-26, REMOVAL, Room Light.>
3) Remove the sun visor and hook on both sides. <Ref. to EI-49, REMOVAL, Sun Visor.>
4) Remove the assist-grips (A).

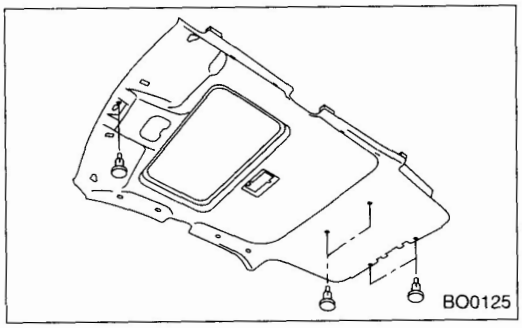


5) Remove the upper inner trim. <Ref. to EI-45, REMOVAL, Upper Inner Trim.>
6) Remove the rear quarter upper trim shown in the figure.
7) Remove the rear rail trim (A).
8) Remove the rear quarter upper trim (B) of both sides.



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



B: INSTALLATION

Install in the reverse order of removal.

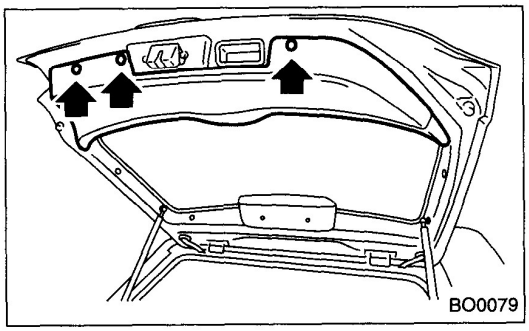
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23.Rear Gate Trim

A: REMOVAL

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

1) Remove the clips and detach the rear gate trim.



B: INSTALLATION

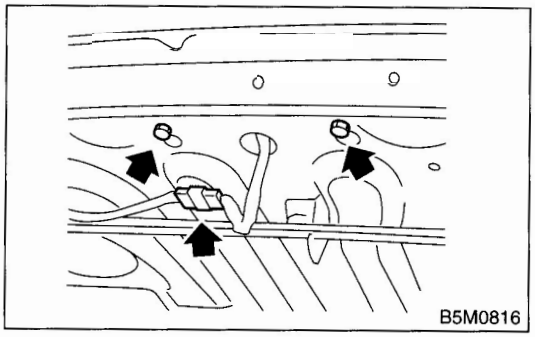
Install in the reverse order of removal.

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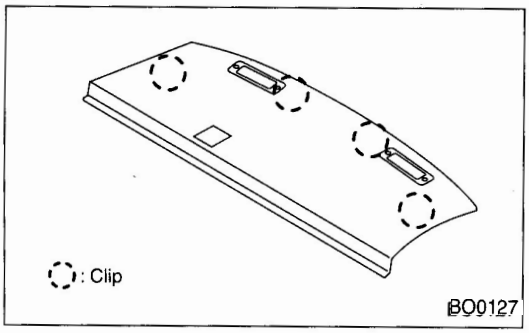
24.Rear Shelf Trim

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the high-mounted stop light.



3) Remove the rear quarter upper trim. <Ref. to EI-47, REMOVAL, Rear Quarter Trim.>
4) Remove the seat belt center lower anchor bolt.
5) Remove the rear shelf trim.



B: INSTALLATION

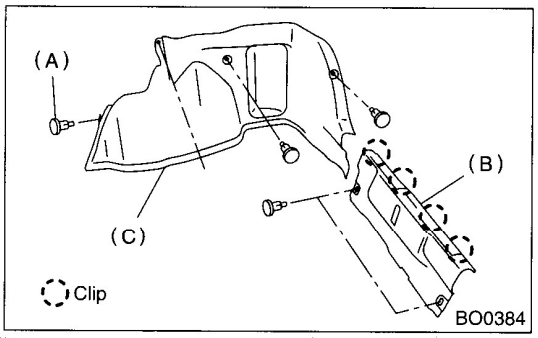
Install in the reverse order of removal.

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25.Trunk Trim

A: REMOVAL

1) Remove the rear seat backrest. <Ref. to SE-11, SEDAN, REMOVAL, Rear Seat.>
2) Remove the clip (A).
3) Loosen the clips, and then detach the trunk rear trim (B).
4) Loosen the clips to remove the trunk side trim (C).



B: INSTALLATION

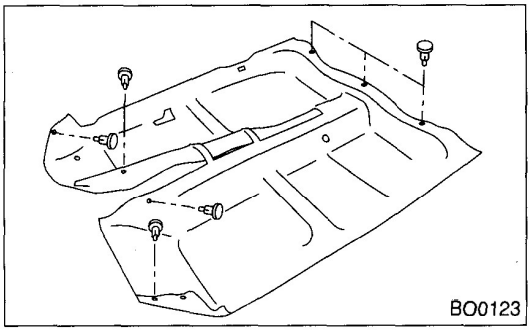
Install in the reverse order of removal.

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26.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-11, REMOVAL, Rear Seat.>
3) Remove the console box. <Ref. to EI-41, Console Box.>
4) Remove the side sill front cover, side sill rear cover and center pillar lower trim. <Ref. to EI-46, REMOVAL, Lower Inner Trim.>
5) Remove the clips from floor mat.
6) Remove the mat hook.
7) Remove the mat from toe board area.
8) Remove the mat from rear heater duct.
9) Roll the mat, and then take it out of opened rear door.



B: INSTALLATION

Install in the reverse order of removal.

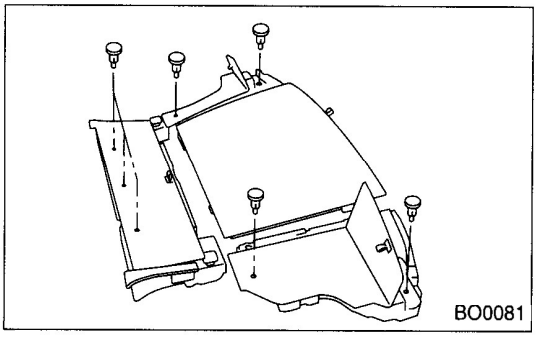
NOTE:
- Secure the mat firmly with hook and Velcro tape.
- Insert the mat edge firmly into the groove of side sill cover.

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27.Luggage Floor Mat

A: REMOVAL

Remove the clips, then detach the rear floor mats and boxes.



B: INSTALLATION

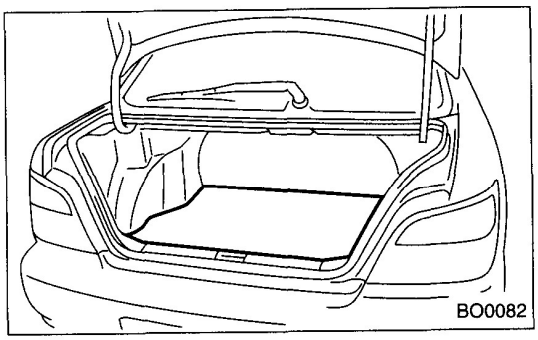
Install in the reverse order of removal.

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28.Trunk Room Mat

A: REMOVAL

Draw out the trunk room mat.



B: INSTALLATION

Install in the reverse order of removal.

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TRUNK ROOM MAT

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EXTERIOR BODY PANELS

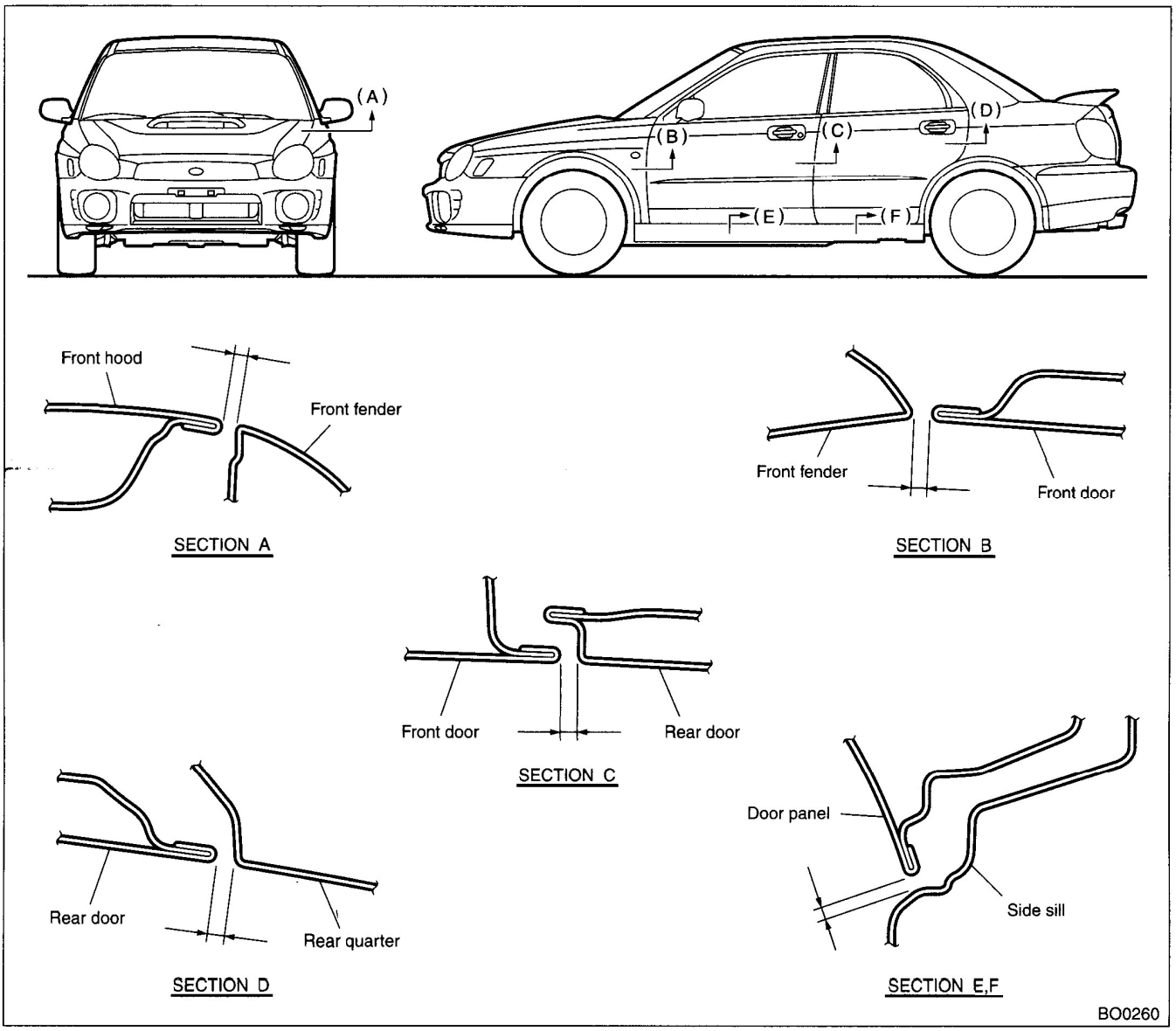
EB

		Page
1.	General Description	2
2.	Front Hood	10
3.	Fender Panel	11
4.	Front Door Panel	12
5.	Front Sealing Cover	14
6.	Rear Door Panel	15
7.	Rear Sealing Cover	17
8.	Trunk Lid Panel	18
9.	Rear Gate Panel	19

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1. General Description

A: SPECIFICATIONS

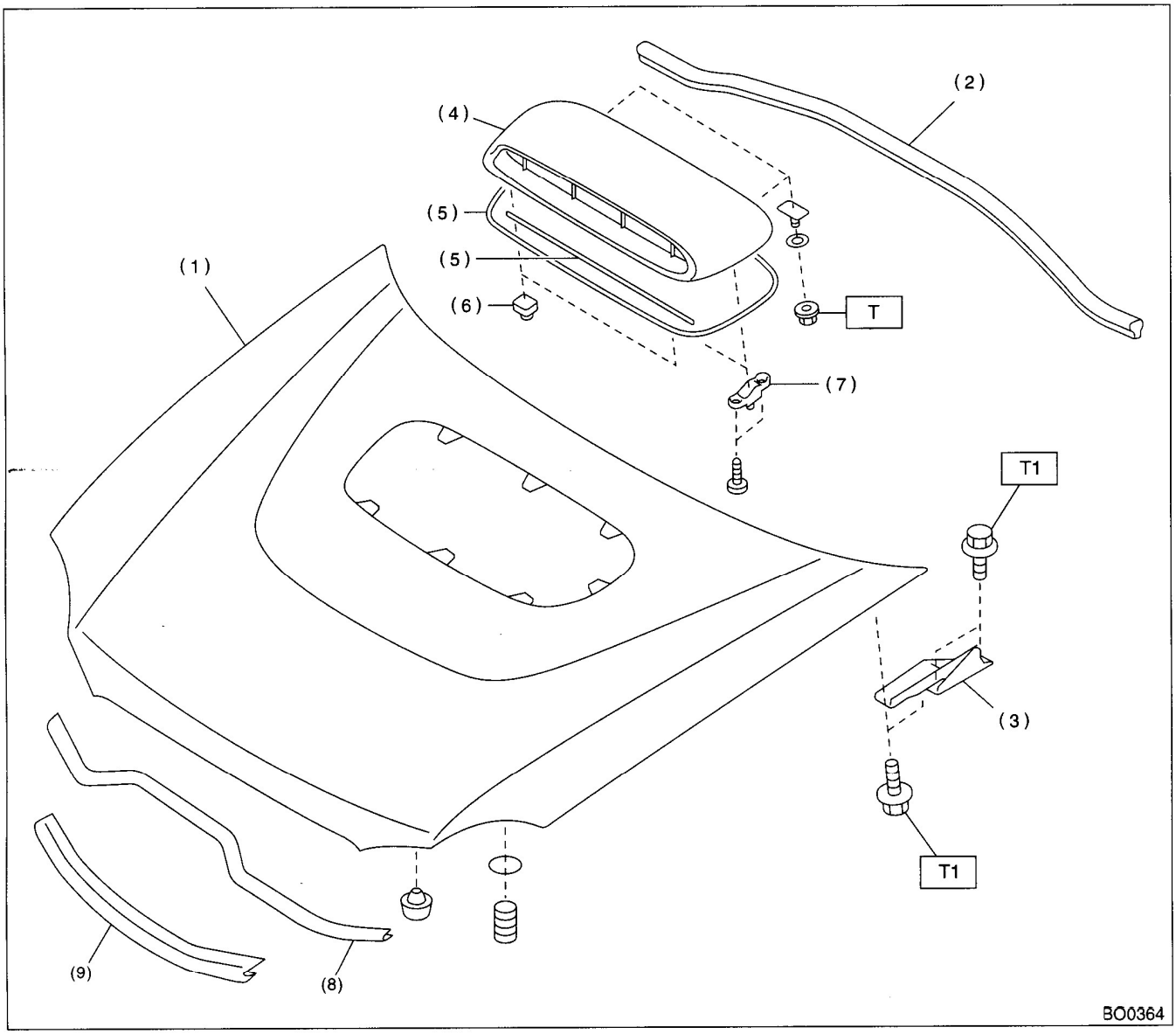


Section	Part	Specification
A	Front hood to Front fender	NA: 4.0 mm ± 1.0 (0.16 ± 0.04 in) TURBO: 3.7 mm ± 1.0 (0.15 ± 0.04 in)
B	Front fender to Front door	4.6 mm ± 1.0 (0.18 ± 0.04 in)
C	Front door to Rear door	5.0 mm (0.20 in)
D	Rear door to Rear quarter	4.6 mm (0.18 in)
E, F	Door panel to Side sill	5.9 mm (0.23 in)

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B: COMPONENT

1. FRONT HOOD

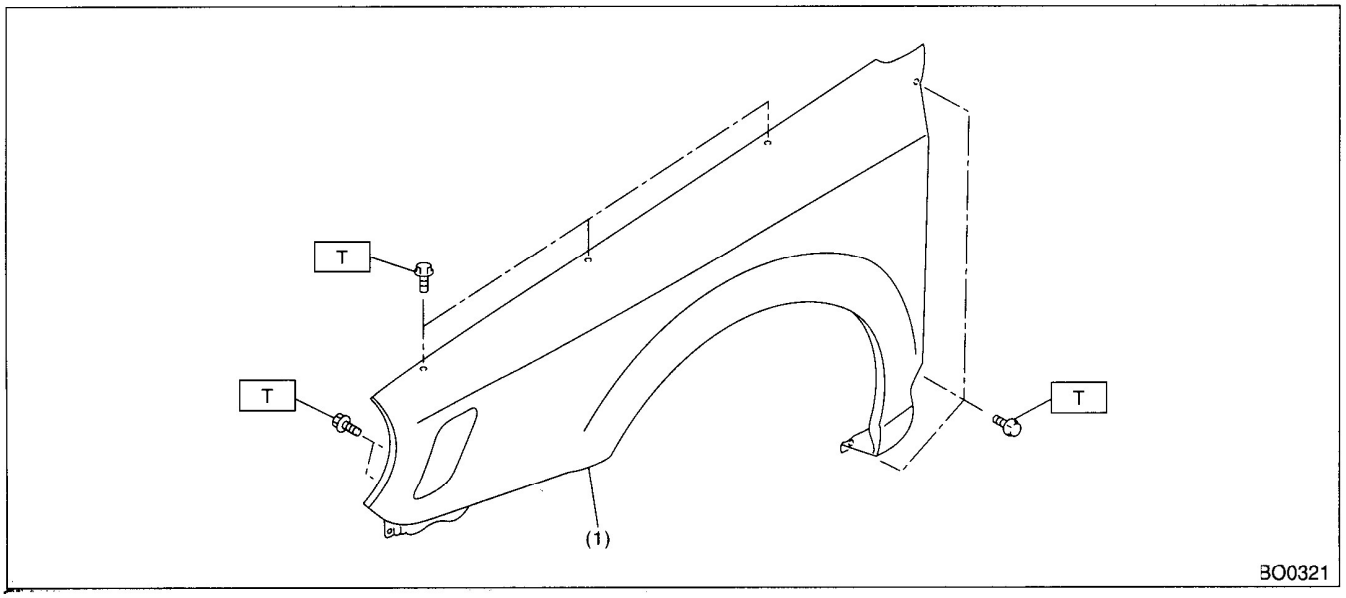


(1) Front hood
(2) Seal (Front panel)
(3) Hinge
(4) Hood grille
(5) Packing
(6) Clip
(7) Locking piece
(8) Seal (Intake duct) (Only turbo model)
(9) Seal (Hood)

Tightening torque: N·m (kgf-m, ft-lb)
T: 7.35 (0.75, 5.4)
T1: 24.5 (2.5, 18.1)

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2. FRONT FENDER PANEL

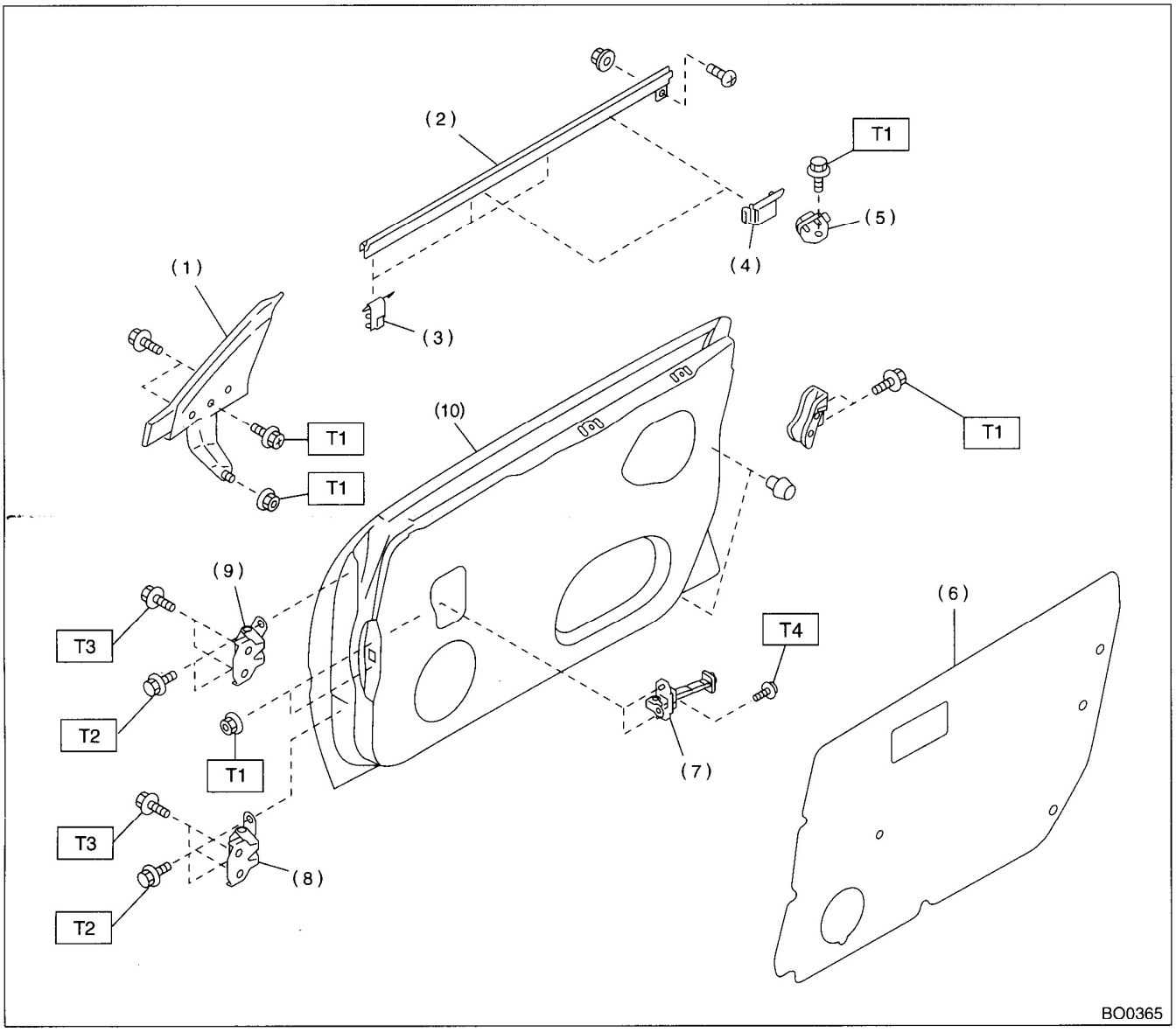


(1) Front fender panel

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

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3. FRONT DOOR PANEL

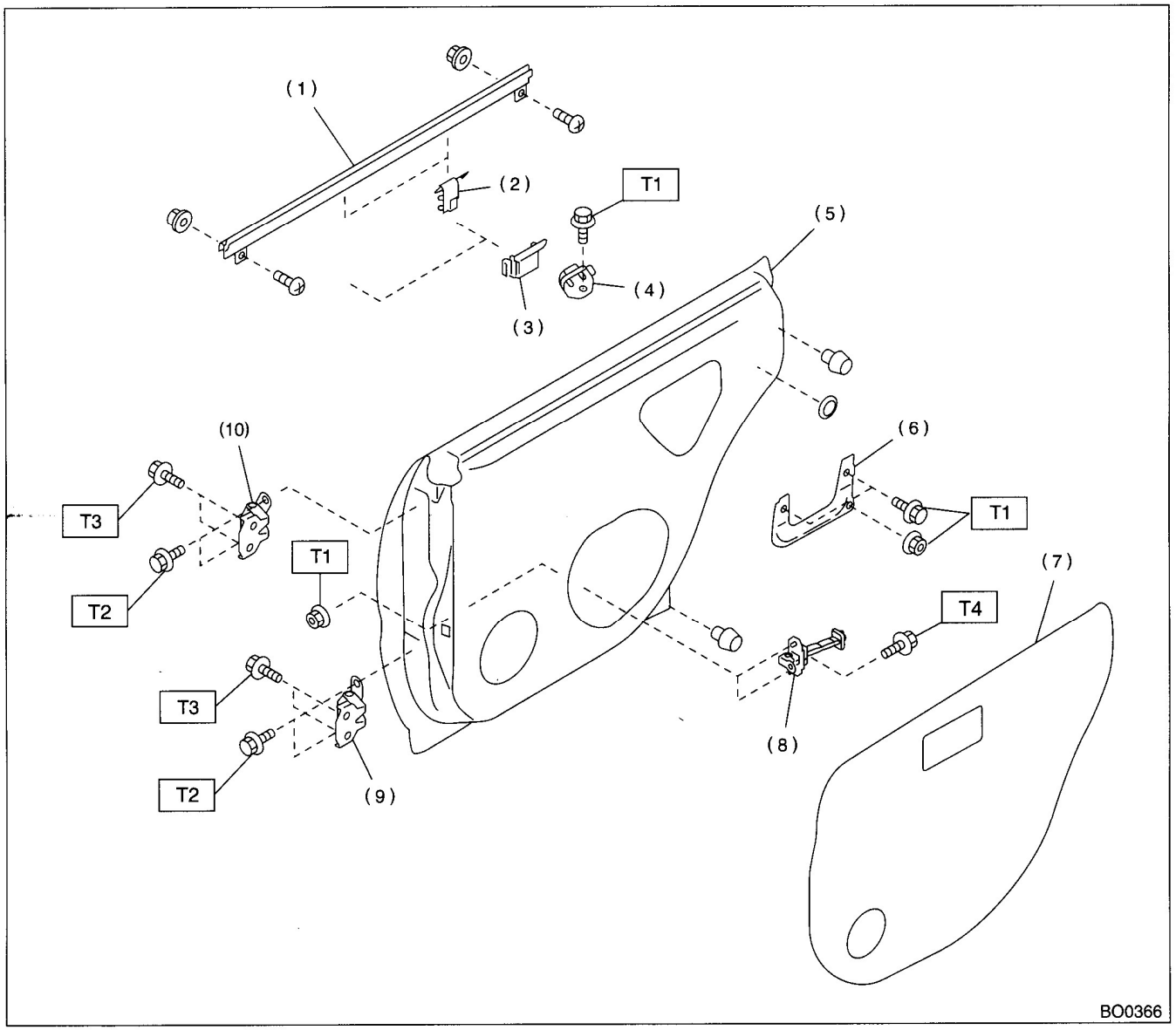


(1)	Gusset	(6)	Sealing cover
(2)	Weatherstrip (Outer)	(7)	Checker
(3)	Clip (Weatherstrip, outer)	(8)	Lower hinge
(4)	Stabilizer (Outer)	(9)	Upper hinge
(5)	Stabilizer (Inner)	(10)	Door panel

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.4 (0.75, 5.5)
T2: 24.5 (2.49, 18)
T3: 29.4 (3.0, 21.7)
T4: 32.3 (3.29, 23.8)

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4. REAR DOOR PANEL

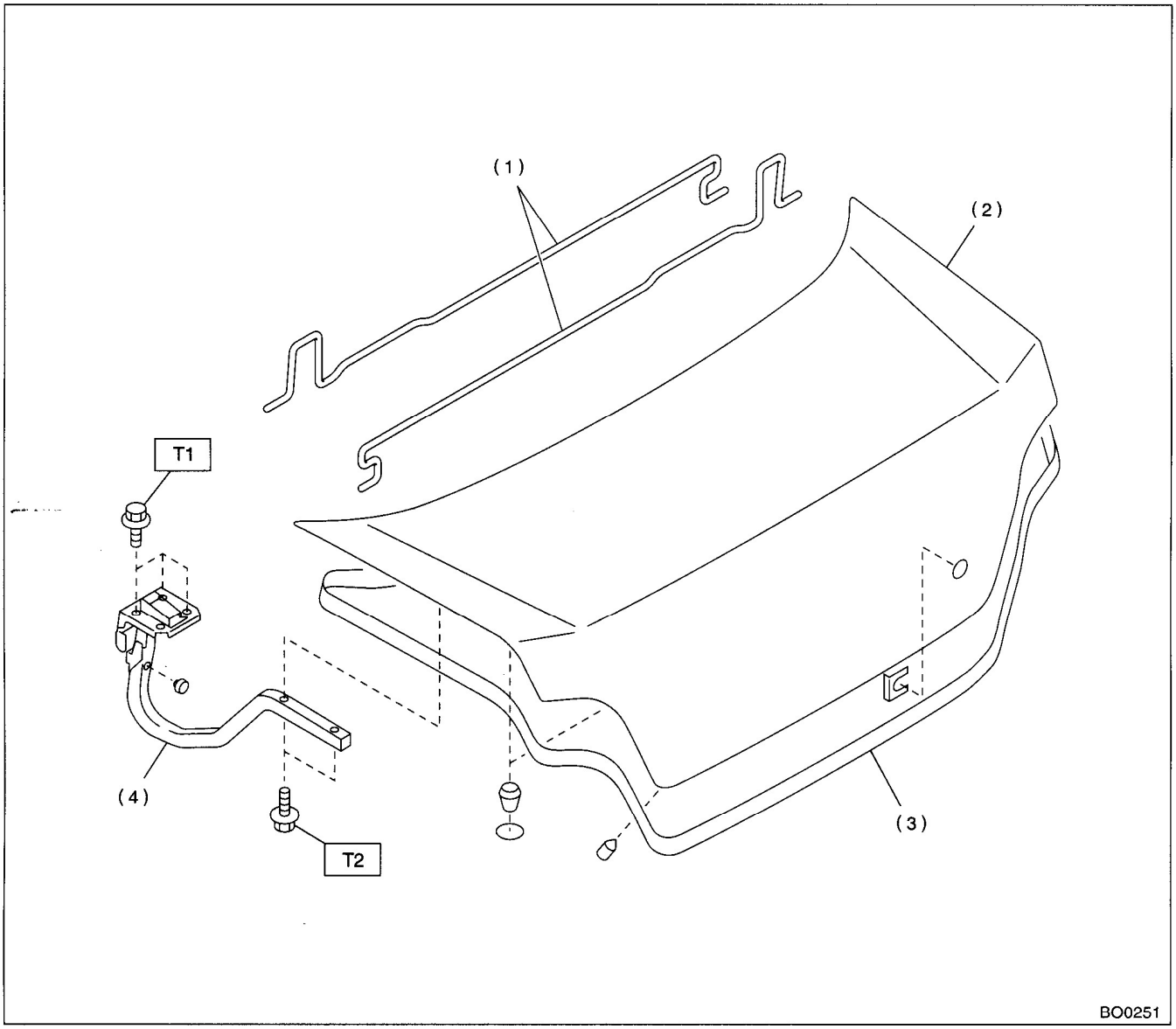


(1) Weatherstrip (Outer)
(2) Clip (Weatherstrip, outer)
(3) Stabilizer (Outer)
(4) Stabilizer (Inner)
(5) Door panel
(6) Bracket
(7) Sealing cover
(8) Checker
(9) Lower hinge
(10) Upper hinge

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.4 (0.75, 5.5)
T2: 24.5 (2.49, 18)
T3: 29.4 (3.0, 21.7)
T4: 32.3 (3.29, 23.8)

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5. TRUNK LID PANEL

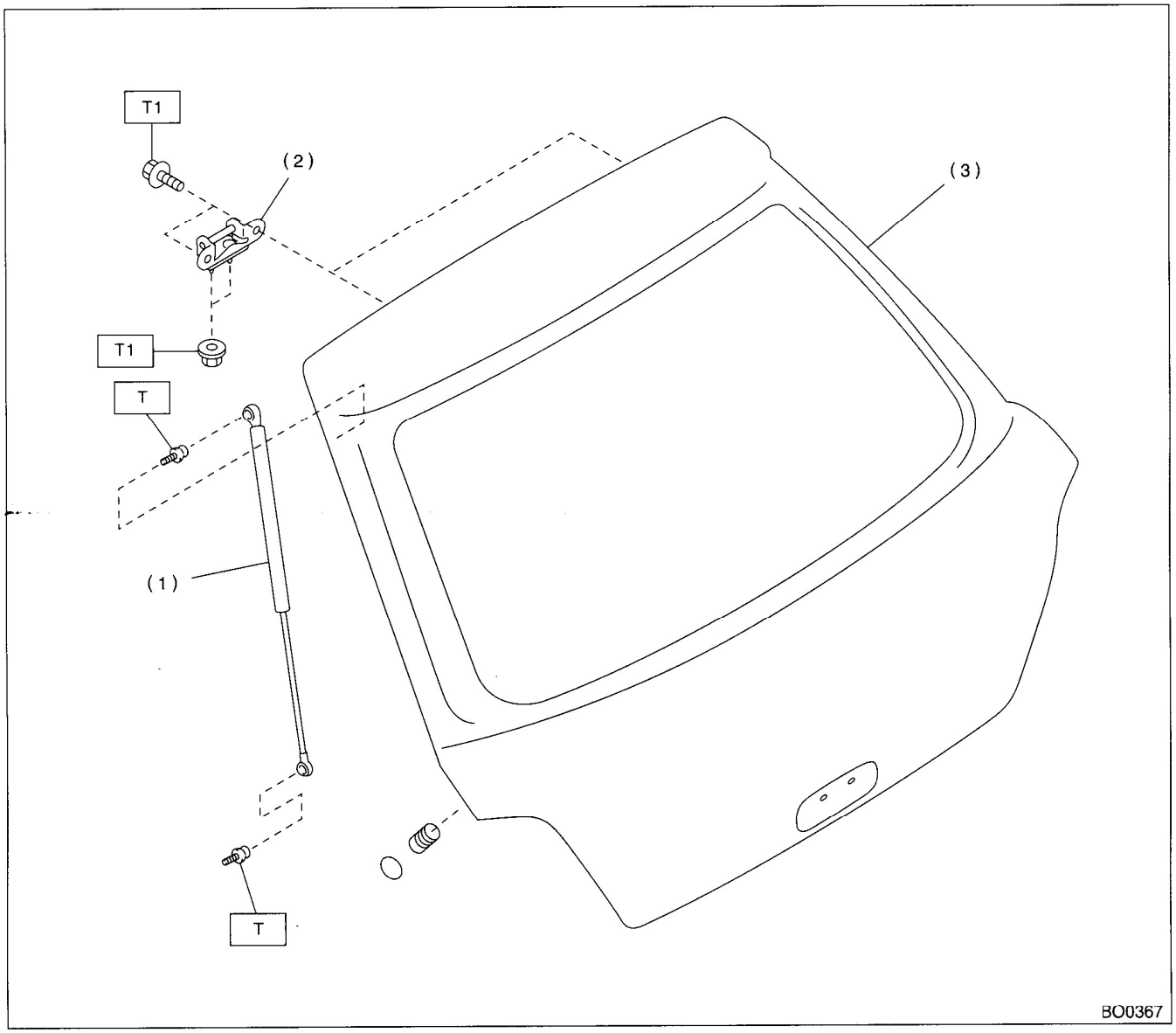


(1) Torsion bar
(2) Trunk lid
(3) Weatherstrip
(4) Hinge ASSY

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 14 (1.8, 13)

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6. REAR GATE PANEL



(1) Gas stay
(2) Hinge
(3) Rear gate

Tightening torque: N·m (kgf-m, ft-lb)
T: 14 (1.43, 10.3)
T1: 25 (2.5, 18.1)

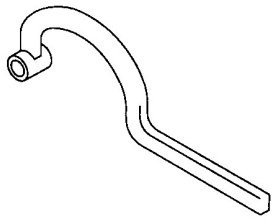
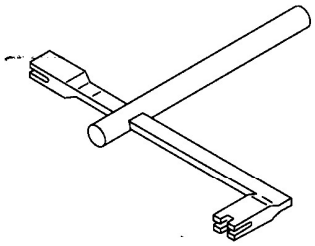
C: CAUTION

- 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 mounting bolts, using assistance devices such as a support jack will help support the panel.
- Be careful not to lose small parts.

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D: PREPARATION TOOL

1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 B5M1117	925610000	WRENCH	Used for removing and installing door hinge.
 B5M1118	927780000	REMOVER	Used for removing and installing trunk torsion bar.

2. GENERAL TOOL

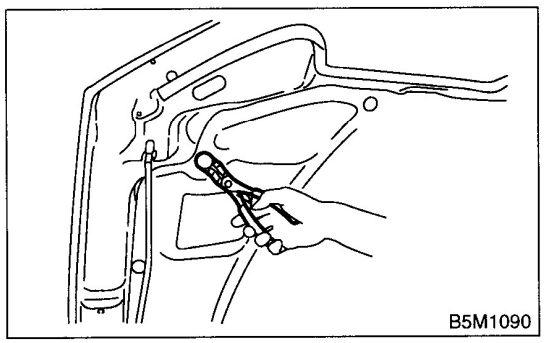
TOOL NAME	REMARKS
Support Jack	Used for supporting door panel.

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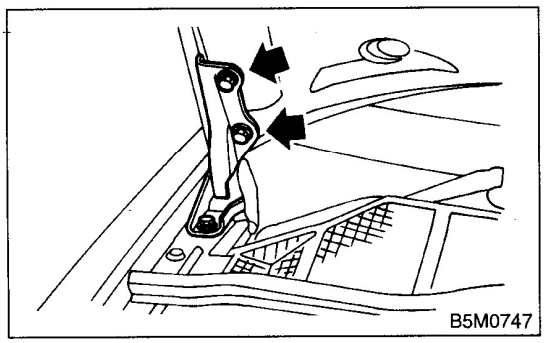
2. Front Hood

A: REMOVAL

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



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



4) Remove the hood grille. (Turbo model) <Ref. to EI-19, REMOVAL, Hood Grille.>

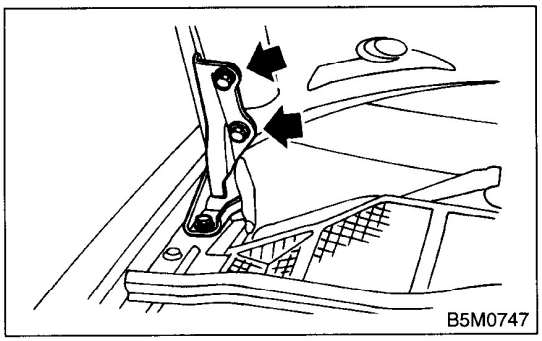
B: INSTALLATION

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

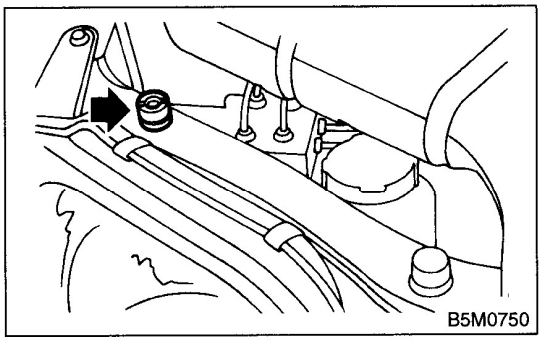
Tightening torque:
24.5 N·m (2.49 kgf-m, 18 ft-lb)

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-41, ADJUSTMENT, Front Hood Lock Assembly.>
3) Rotate the hood buffer to adjust lateral height.

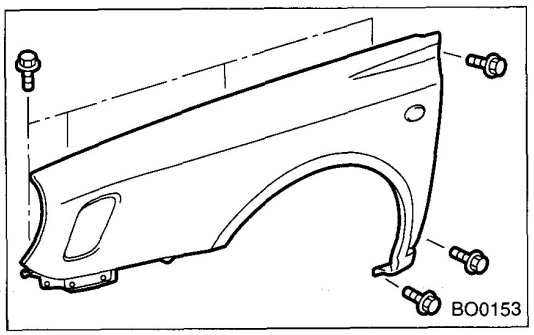


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3. Fender Panel

A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Remove the side sill spoilers. <Ref. to EI-36, Side Sill Spoiler.> (If fitted)
3) Remove the front bumper face. <Ref. to EI-23, REMOVAL, Front Bumper.>
4) Remove the mud guard. <Ref. to EI-32, REMOVAL, Mud Guard.>
5) Loosen the bolts to remove front fender.



B: INSTALLATION

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

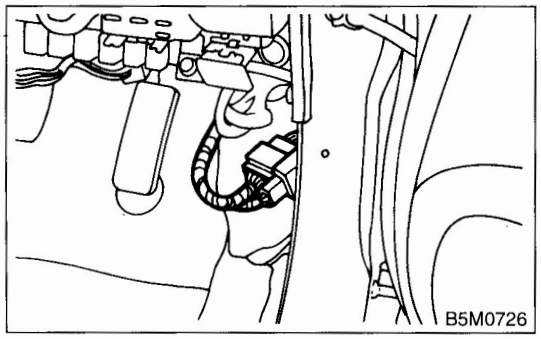
Tightening torque:
7.35 N·m (0.75 kgf-m, 5.4 ft-lb)

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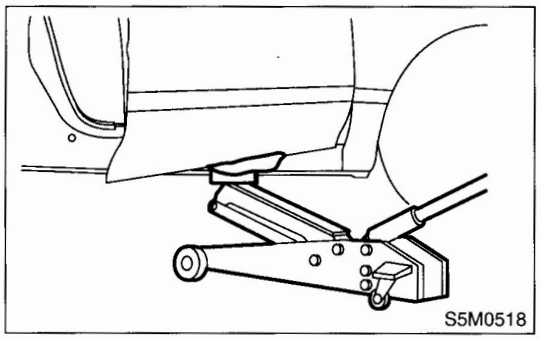
4. Front Door Panel

A: REMOVAL

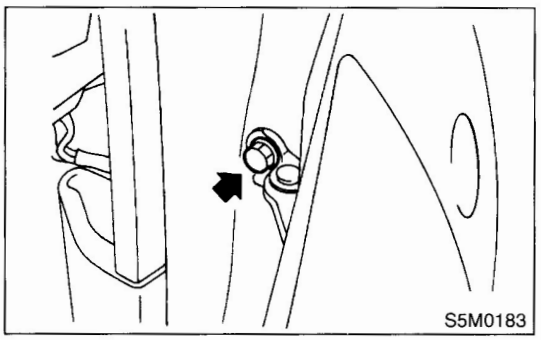
1) Disconnect the ground terminal from battery.
2) Remove the front door trim. <Ref. to EI-37, REMOVAL, Front Door Trim.>
3) Remove the outer mirror assembly. <Ref. to GW-33, REMOVAL, Outer Mirror Assembly.>
4) Remove the front door glass. <Ref. to GW-15, REMOVAL, Front Door Glass.>
5) Remove the front door regulator and motor. <Ref. to GW-19, REMOVAL, Front Regulator and Motor Assembly.>
6) Remove the front door latch assembly. <Ref. to SL-30, REMOVAL, Front Door Latch Assembly.>
7) Remove the front outer handle. <Ref. to SL-29, REMOVAL, Front Outer Handle.>
8) Remove the front pillar lower trim to disconnect connector from the body harness.


B5M0726

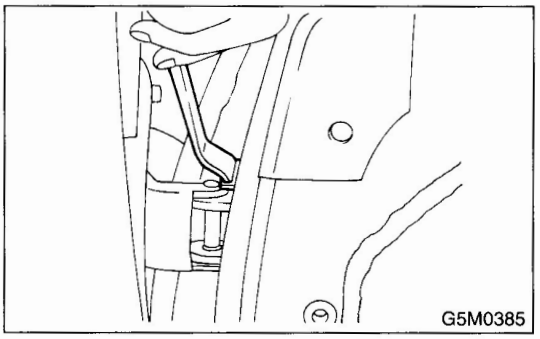
9) Put a wooden block on jack and place jack under the door. Support the door with a support jack to protect it from damage.


S5M0518

10) Remove the checker bolts.


S5M0183

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


G5M0385

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

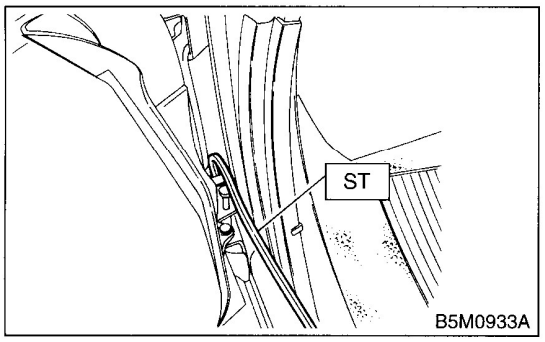
B: INSTALLATION

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

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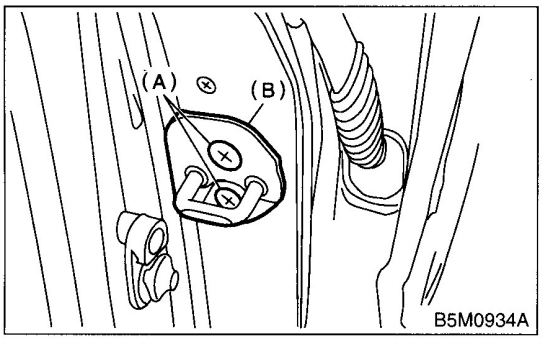
C: ADJUSTMENT

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



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

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



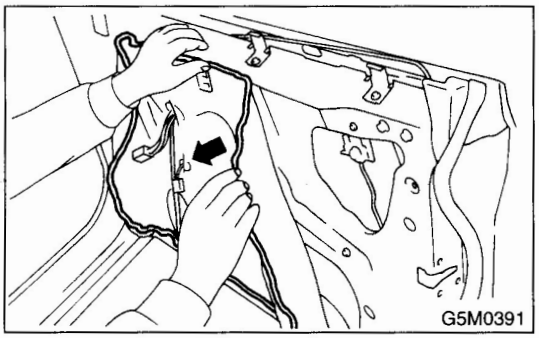
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5. Front Sealing Cover

A: REMOVAL

1) Disconnect the battery ground cable.
2) Remove the front door trim. <Ref. to EI-37, REMOVAL, Front Door Trim.>
3) Remove the front speaker. <Ref. to ET-7, REMOVAL, Front Speaker.>
4) Using a spatula, remove the sealer.

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



B: INSTALLATION

1) Install in the reverse order of removal.
2) When replacing sealing cover, use the CEMEDINE 5430L sealer.
3) Press the sealer-applied area firmly to prevent any floating on surface.

Sealer:
CEMEDINE 5430L or equivalent

CAUTION:
• Apply a uniform bead of sealer.
• Attach 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.

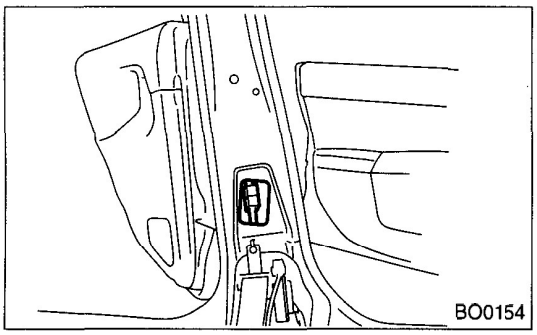
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6. Rear Door Panel

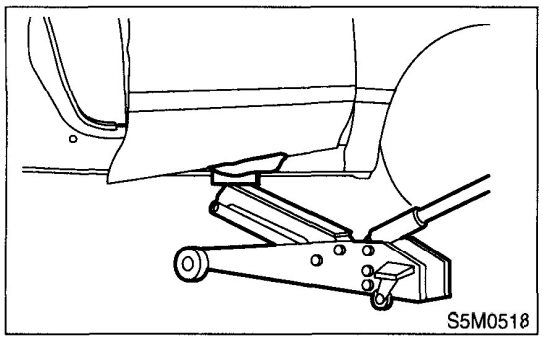
A: REMOVAL

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

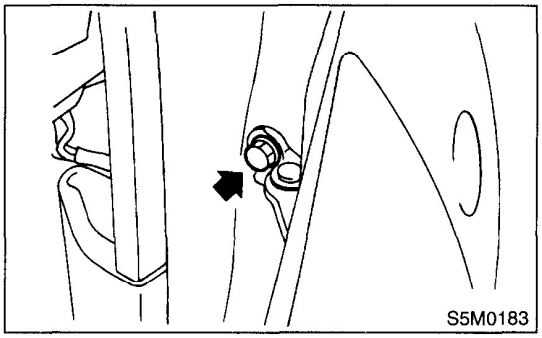
1) Disconnect the ground terminal from battery.
2) Remove the rear door trim. <Ref. to EI-38, REMOVAL, Rear Door Trim.>
3) Remove the rear door glass. <Ref. to GW-20, REMOVAL, Rear Door Glass.>
4) Remove the rear door regulator and motor assembly. <Ref. to GW-22, REMOVAL, Rear Regulator and Motor Assembly.>
5) Remove the rear door latch. <Ref. to SL-34, REMOVAL, Rear Door Latch Assembly.>
6) Remove the rear outer handle. <Ref. to SL-33, REMOVAL, Rear Outer Handle.>
7) Remove the center pillar lower trim. <Ref. to EI-46, REMOVAL, Lower Inner Trim.>
8) Disconnect the connector of door harness.


BO0154

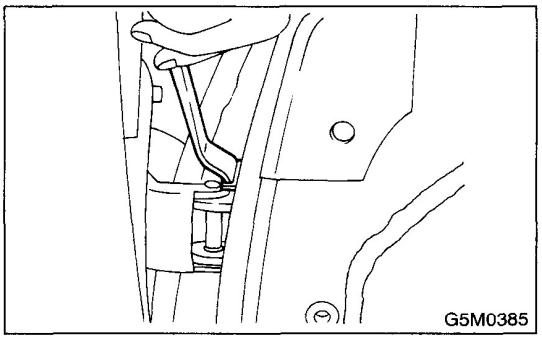
9) Put a wooden block on the jack and place the jack under the door. Support the door with the jack to protect it.


S5M0518

10) Remove the checker bolts.


S5M0183

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


G5M0385

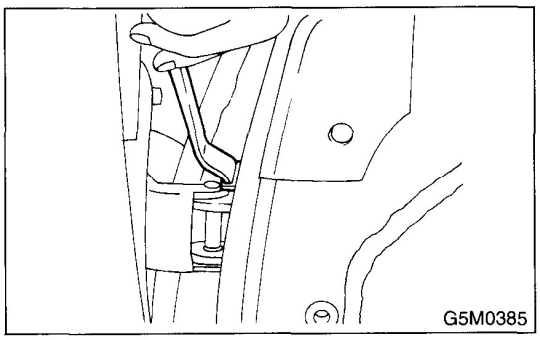
B: INSTALLATION

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

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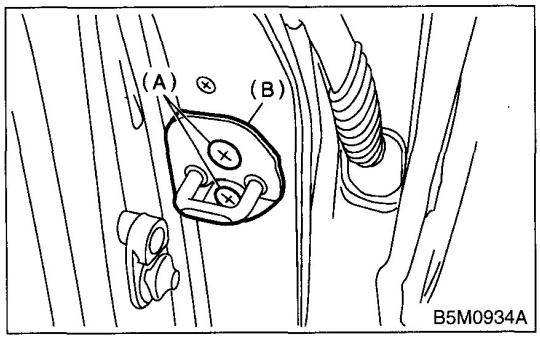
C: ADJUSTMENT

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



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

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



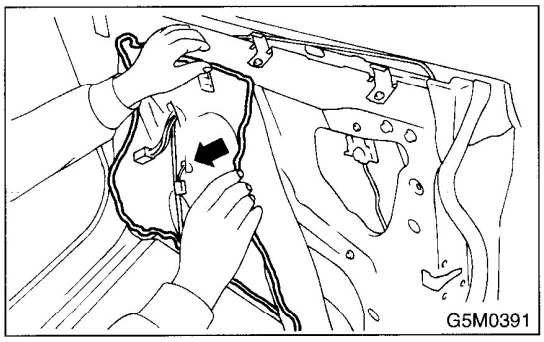
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7. Rear Sealing Cover

A: REMOVAL

1) Disconnect the battery ground cable.
2) Remove the rear door trim. <Ref. to EI-38, REMOVAL, Rear Door Trim.>
3) Remove the rear speaker. <Ref. to ET-9, REMOVAL, Rear Speaker.>
4) Using a spatula, remove the sealer.

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



B: INSTALLATION

1) Install in the reverse order of removal.
2) When replacing sealing cover, use the CEMEDINE 5430L sealer.
3) Press the sealer-applied area firmly to prevent any floating on surface.

Sealer:
CEMEDINE 5430L or equivalent

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

C: INSPECTION

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

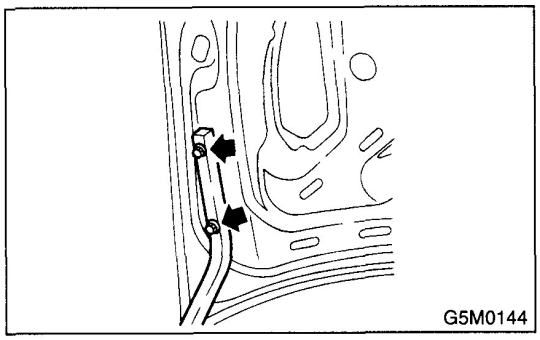
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8. Trunk Lid Panel

A: REMOVAL

1. TRUNK LID

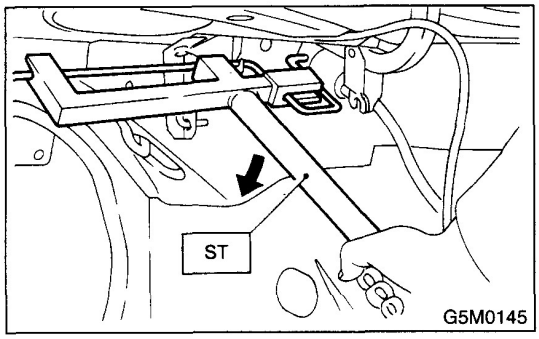
1) Open the trunk lid.
2) Remove the trunk lid release handle. <Ref.to>
3) Loosen the trunk lid mounting bolts to remove trunk lid from the hinges.



2. TORSION BAR

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

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



3) Remove the right/left torsion bars.

CAUTION:
After the torsion bar is removed, the trunk lid will slam shut. Be careful not to get hit by the trunk lid.

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 (1.8 kgf-m, 13 ft-lb)

2. TORSION BAR

1) Install in the reverse order of removal.
2) Apply the grease to rotating area of hinges and mating surface of torsion bar.

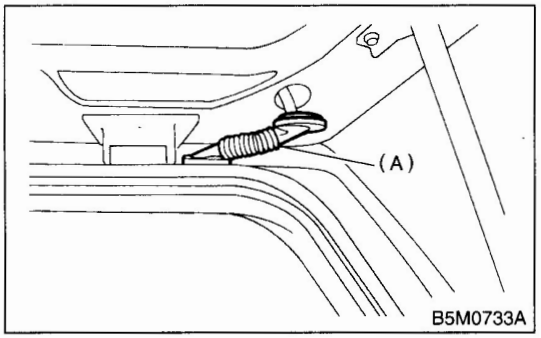
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9. Rear Gate Panel

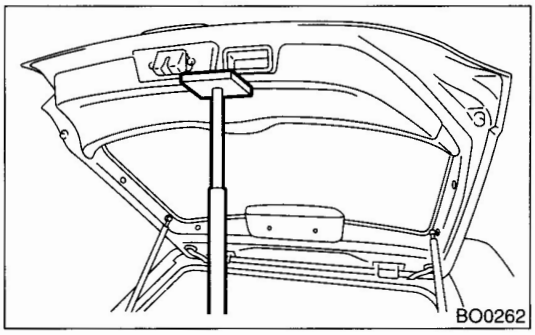
A: REMOVAL

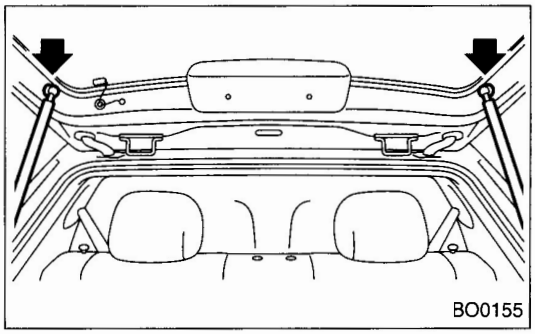
1. REAR GATE PANEL

1) Disconnect the battery ground cable.
2) Open the rear gate.
3) Remove the rear gate outer handle. <Ref. to SL-36, REMOVAL, Rear Gate Outer Handle.>
4) Remove the rear gate latch assembly. <Ref. to SL-37, REMOVAL, Rear Gate Latch Assembly.>
5) Remove the rear gate key lock cylinders. <Ref. to SL-44, REAR GATE, REPLACEMENT, Key Lock Cylinders.>
6) Remove the rear wiper. <Ref. to WW-17, REMOVAL, Rear Wiper Motor.>
7) Disconnect the connectors of rear wiper, rear defogger, and other lighting devices.
8) Disconnect the washer hose.
9) Remove the rubber duct (A) connection, and pull out the harness and washer hose from the rear gate.



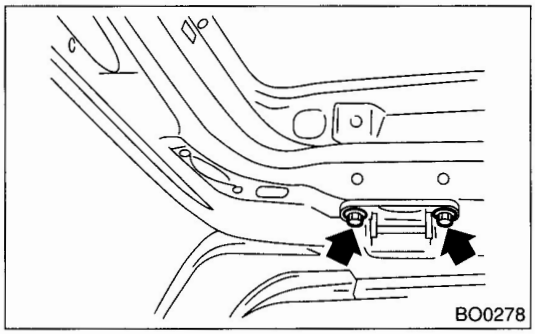
10) Using a support, support the rear gate while removing gas stay mounting bolts.





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

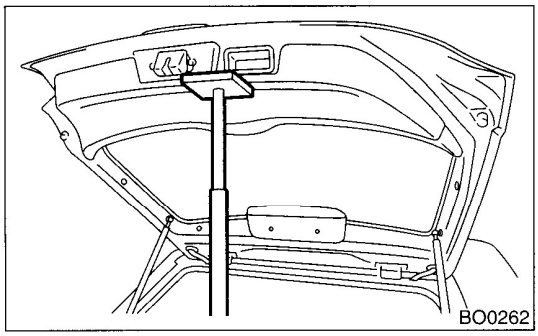
11) Loosen the rear gate bolts to remove the rear gate.



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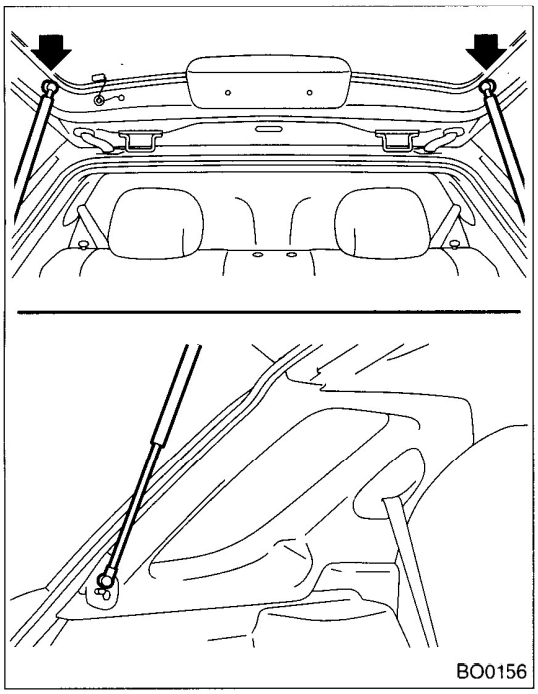
2. GAS STAY

1) Open the rear gate. Using a support jack to support the rear gate.



CAUTION:
• After gas stay is removed, rear gate cannot stay open. Supporting the rear gate with a jack, remove the bolts.
• Do not damage piston rods and oil seals.
• Never disassemble cylinders: They contain gas.

2) Loosen the bolts to remove gas 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-8, REAR GATE PANEL, General Description.>

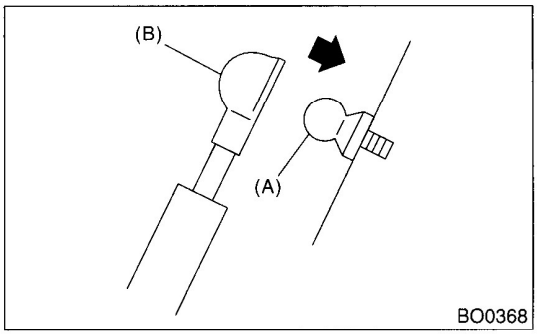
CAUTION:
Do not damage painted surfaces of body and rear gate.

2. GAS STAY

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

Tightening torque:
14 N·m (1.8 kgf-m, 13 ft-lb)

2) Firmly install the gas stay (B) to mounting bolt (A).



CAUTION:
After supporting rear gate with a jack, start operation.

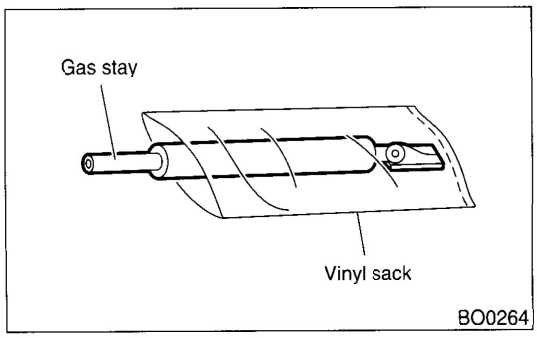
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C: DISPOSAL

1. GAS STAY

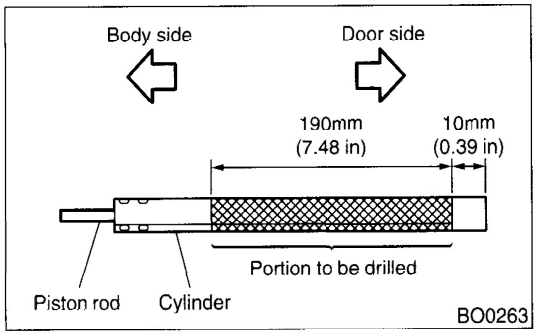
CAUTION:
Gas is colorless, odorless, and harmless. However, gas pressure may spray cutting powder or oil. Be sure to wear dust-resistant goggles.

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



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

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



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CRUISE CONTROL SYSTEM

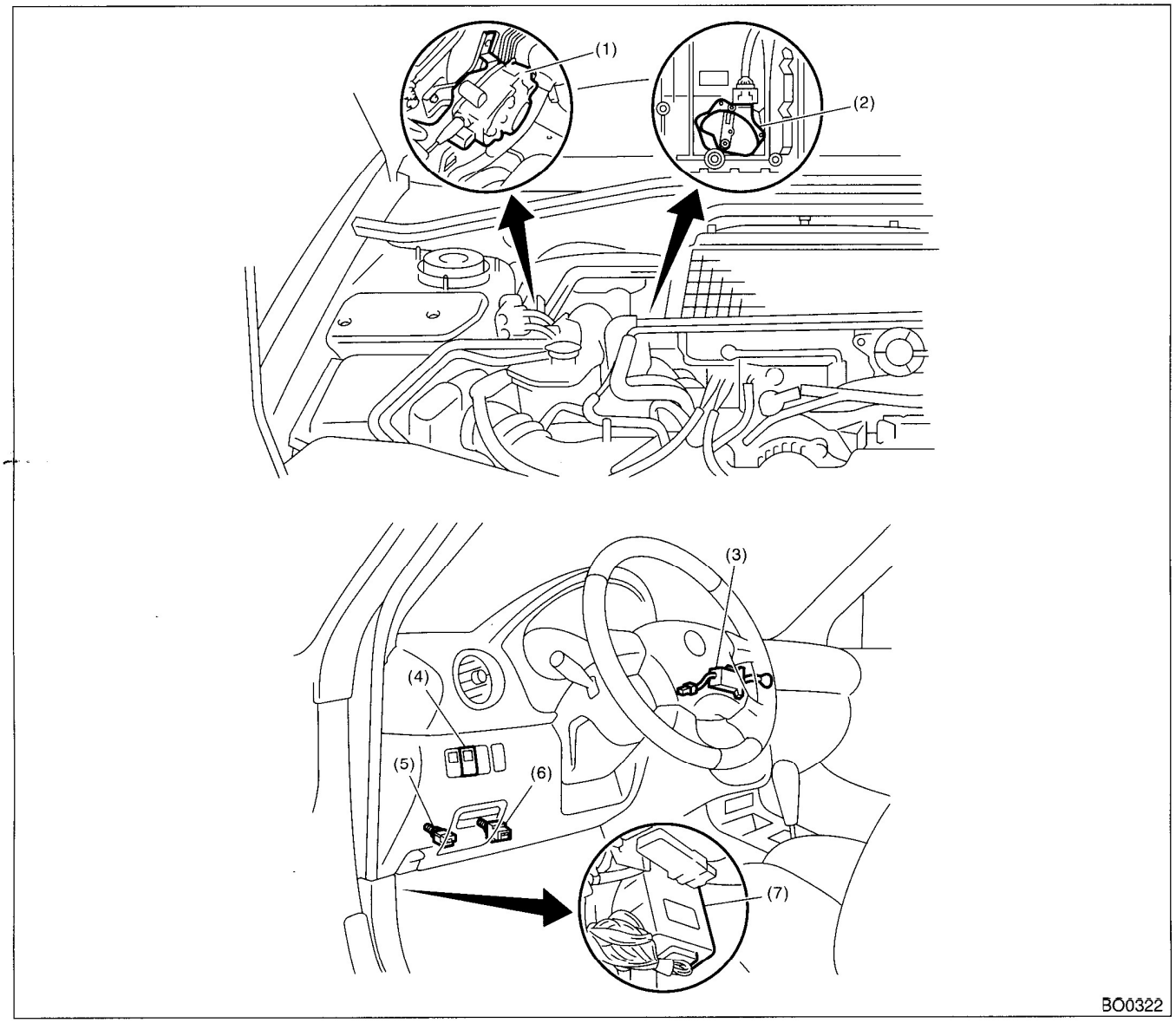
CC

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1.	General Description	2
2.	Actuator	4
3.	Cruise Control Module	5
4.	Cruise Control Main Switch	6
5.	Cruise Control Command Switch	7
6.	Stop and Brake Switch	8
7.	Clutch Switch	9
8.	Inhibitor Switch	10

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1. General Description

A: COMPONENT



(1) Actuator
(2) Inhibitor switch (AT)
(3) Cruise control command switch
(4) Cruise control main switch
(5) Clutch switch (MT)
(6) Stop and brake switch
(7) Cruise control module

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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 the parts in the reverse order of disassembly unless otherwise indicated.
- Adjust the parts to specifications specified in this manual.
- Connect the connectors and hoses securely during reassembly.
- After reassembly, ensure functional parts operate properly.

C: PREPARATION TOOL

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

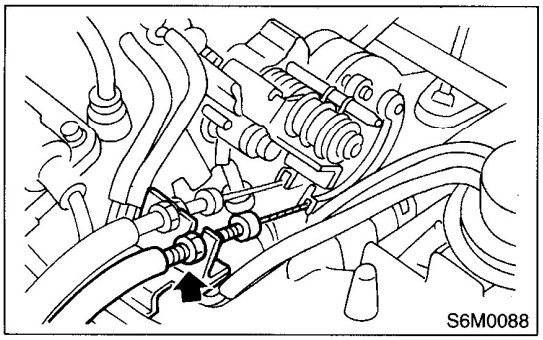
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2. Actuator

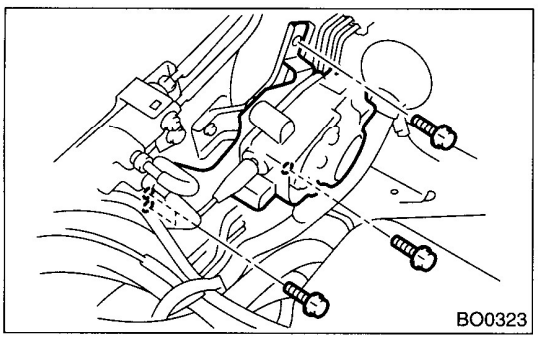
A: REMOVAL

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

1) Disconnect the ground terminal 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.


S6M0088

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

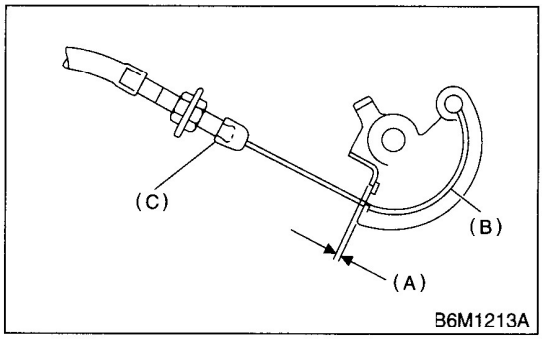

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B: INSTALLATION

Install in the reverse order of removal.

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

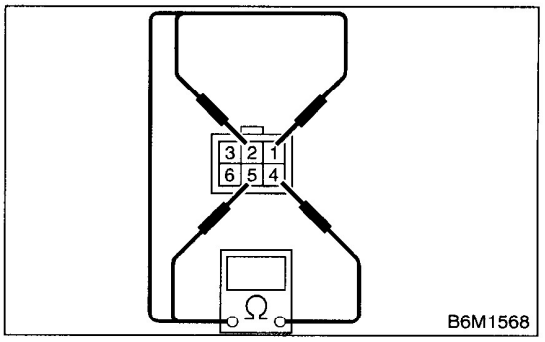
NOTE:
(A): Must be adjusted when cable end outer is fixed in place, so that the gap between throttle cam and lever is 0 — 1 mm (0 — 0.04 in).
(Must be attached while throttle cam is being pulled by wire cable.)
(B): Must be coated evenly on cam end inner connection.
(C): Cover must be inserted securely,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



B6M1213A

C: INSPECTION

Measure the cruise control actuator resistance.



B6M1568

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

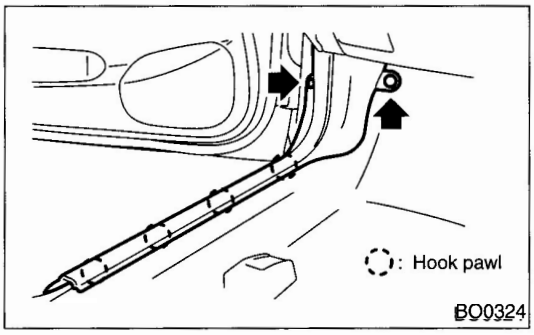
If NG, replace cruise control actuator.

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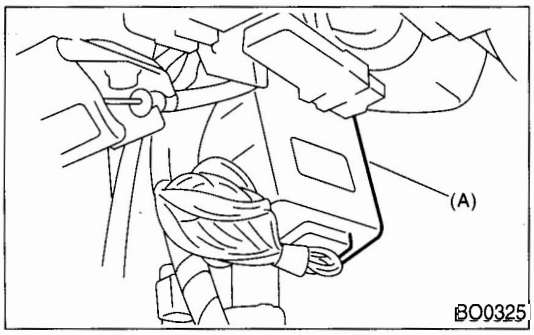
3. Cruise Control Module

A: REMOVAL

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



3) Disconnect the connector from the cruise control module.
4) Remove the cruise control module (A).



B: INSTALLATION

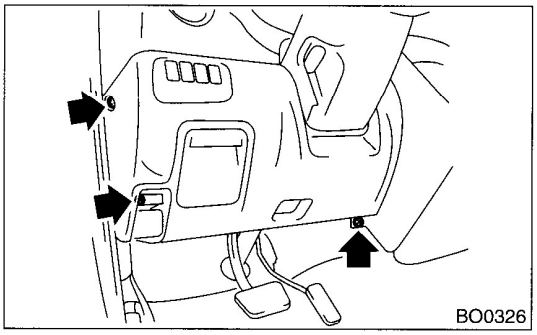
Install is in the reverse order of removal.

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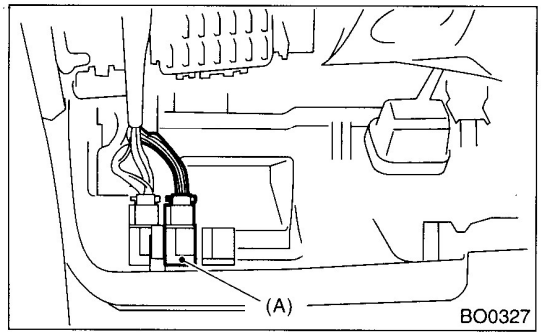
4. Cruise Control Main Switch

A: REMOVAL

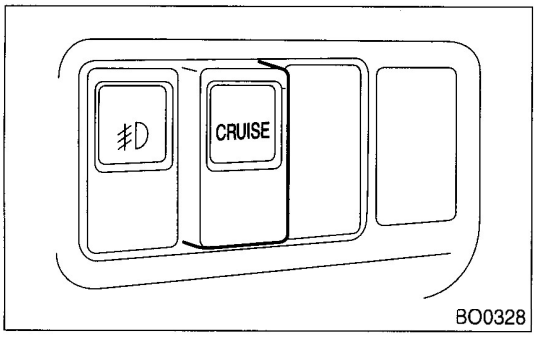
1) Disconnect the ground terminal from battery.
2) Remove the screws and clip from the instrument panel lower cover.
3) Remove the instrument panel lower cover.



4) Disconnect the connector from the cruise control main switch(A).



5) Remove the main switch by pushing it outward.

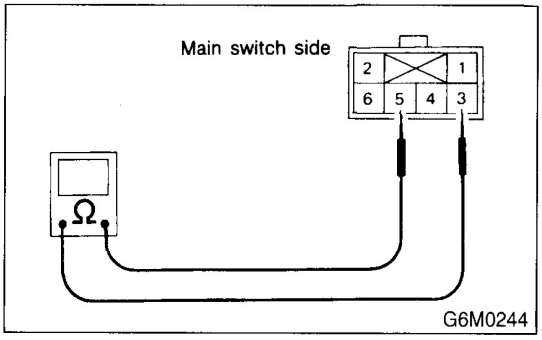


B: INSTALLATION

Install is in the reverse order of removal.

C: INSPECTION

Measure the cruise control main switch resistance.



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

If NG, replace the cruise control main switch.

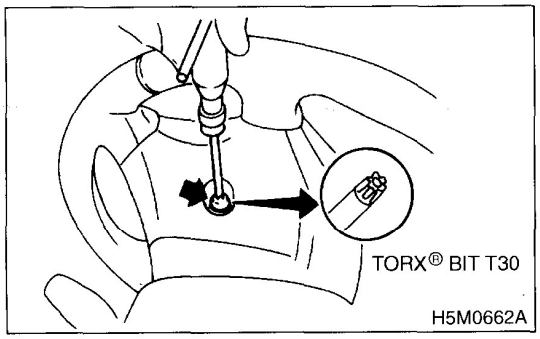
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5. Cruise Control Command Switch

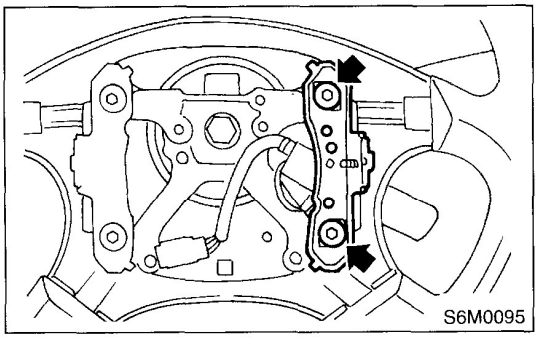
A: REMOVAL

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.>

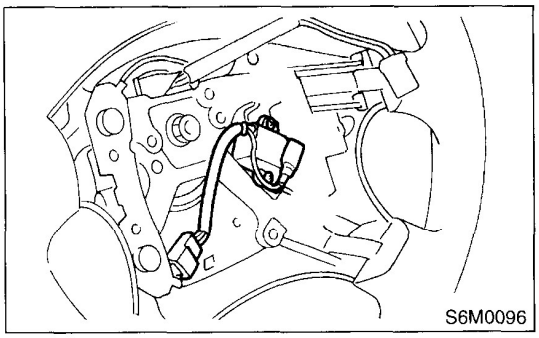
1) Set the front wheels in straight ahead position.
2) Turn ignition switch OFF.
3) Disconnect the ground terminal from battery and wait for at least 20 seconds before starting work.
4) Using TORX® BIT T30 (Tamper resistant type), loosen two TORX® bolts which secure driver's airbag module.



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



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

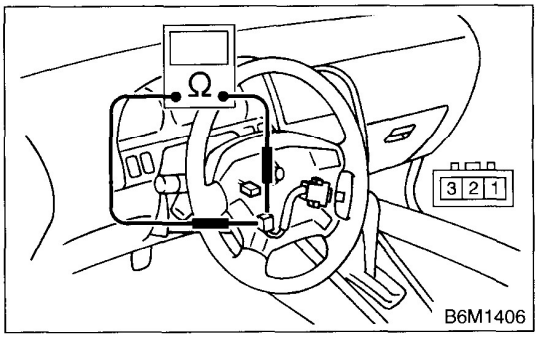


B: INSTALLATION

Install is in the reverse order of removal.

C: INSPECTION

Measure the cruise control command switch resistance.



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

If NG, replace the cruise control command switch.

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6. Stop and Brake Switch

A: REMOVAL

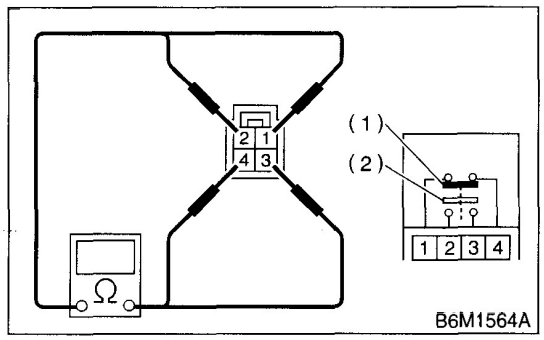
1) Disconnect the ground terminal from battery.
2) Disconnect the connector from the switch, and then remove the switch. <Ref. to BR-55, REMOVAL, Stop Light Switch.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the brake switch (1) and stop light switch (2) resistance.



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

If NG, replace the stop and brake switch.

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7. Clutch Switch

A: REMOVAL

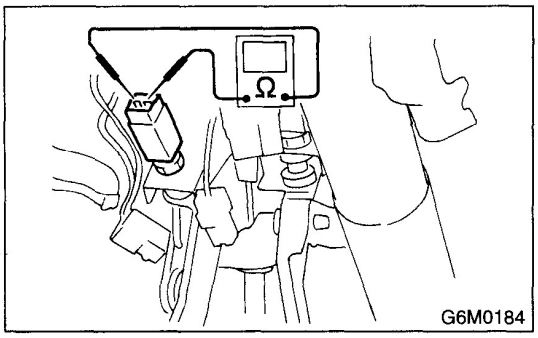
1) Disconnect the ground terminal from battery.
2) Disconnect the connector from the clutch switch, and then remove the switch. <Ref. to CL-26, DISASSEMBLY, Clutch Pedal.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the clutch switch resistance.



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

If NG, replace the clutch switch.

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8. Inhibitor Switch

A: REMOVAL

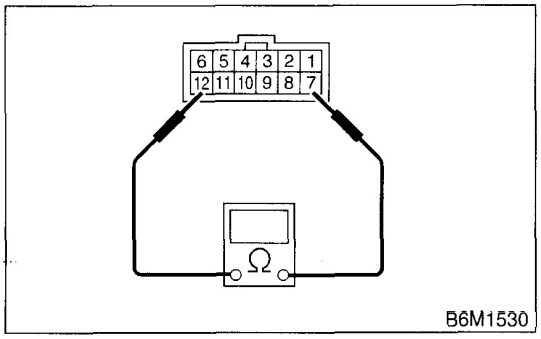
1) Disconnect the ground terminal from the battery.
2) Disconnect the connector from the switch, and then remove the switch. <Ref. to AT-29, REMOVAL, Inhibitor Switch.>

B: INSTALLATION

Installation is in the reverse order of removal.

C: INSPECTION

Measure the inhibitor switch resistance.



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

If NG, replace the inhibitor switch.

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CRUISE CONTROL SYSTEM (DIAGNOSTICS)

CC

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1.	Basic Diagnostic Procedure	2
2.	General Description	3
3.	Electrical Components Location	5
4.	Cruise Control Module I/O Signal	6
5.	Subaru Select Monitor	9
6.	Diagnostics Chart with Symptom	11
7.	List of Diagnostic Trouble Code (DTC)	26
8.	Diagnostics Chart with Diagnostic Trouble Code	28

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1. Basic Diagnostic Procedure

A: PROCEDURE

	Step	Check	Yes	No
1	**START DIAGNOSIS.** 1)Perform pre-inspection. <Ref. to CC-4, INSPECTION, General Description.> 2)Check cruise control main switch operation.	Is cruise control main switch turned ON?	Go to step **2.**	Go to symptom 1. <Ref. to CC-11, SYMPTOM CHART, Diagnostics Chart with Symptom.>
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 cruise cancel conditions diagnosis. <Ref. to CC-9, Subaru Select Monitor.>	Is trouble code indicated?	Go to "Diagnostics Chart with Trouble Code".	Go to step **4.**
4	**CHECK CRUISE CONTROL SET OPERATION.** Check cruise control set operation.	Can cruise control be set while driving at 40 km/h (25 MPH)?	Go to step **5.**	Go to symptom 2. <Ref. to CC-11, SYMPTOM CHART, Diagnostics Chart with Symptom.>
5	**CHECK VEHICLE SPEED IS HELD WITHIN SET SPEED.** Make sure vehicle speed is held within set speed.	Is vehicle speed held within set speed ±3 km/h (±2 MPH) ?	Go to step **6.**	Go to symptom 3. <Ref. to CC-11, SYMPTOM CHART, Diagnostics Chart with Symptom.>
6	**CHECK RESUME/ACCEL OPERATION.** Check RESUME/ACCEL operation.	Does vehicle speed increase or return to set speed after RESUME/ACCEL switch has been pressed?	Go to step **7.**	Go to symptom 4. <Ref. to CC-11, SYMPTOM CHART, Diagnostics Chart with Symptom.>
7	**CHECK SET/COAST OPERATION.** Check SET/COAST operation.	Does vehicle speed decrease after SET/COAST switch has been pressed?	Go to step **8.**	Go to symptom 5. <Ref. to CC-11, SYMPTOM CHART, Diagnostics Chart with Symptom.>
8	**CHECK CANCEL OPERATION.** Check CANCEL operation.	Is cruise control released after CANCEL switch has been pressed?	Go to step **9.**	Go to symptom 6. <Ref. to CC-11, SYMPTOM CHART, Diagnostics Chart with Symptom.>
9	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check cruise control release operation.	Is cruise control released after brake pedal has been depressed?	Go to step **10.**	Go to symptom 7. <Ref. to CC-11, SYMPTOM CHART, Diagnostics Chart with Symptom.>
10	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check cruise control release operation.	Is cruise control released after clutch pedal has been depressed? (MT)	Finish the diagnostics.	Go to symptom 8. <Ref. to CC-11, SYMPTOM CHART, Diagnostics Chart with Symptom.>

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2. General Description

A: CAUTION

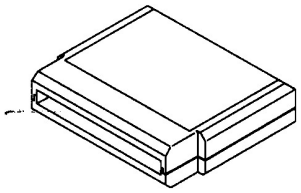
1. SUPPLEMENTAL RESTRAINT SYSTEM "AIRBAG"

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

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

B: PREPARATION TOOL

1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 B2M3876	24082AA150 (Newly adopted tool)	CARTRIDGE	Troubleshooting for electrical systems.
 B2M3877	22771AA030	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 ampere.

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C: INSPECTION

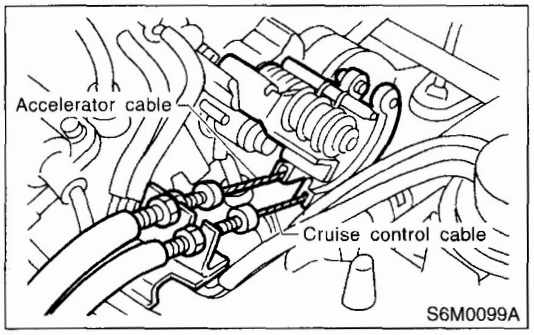
1. BATTERY

Measure the battery voltage and specific gravity of electrolyte.

Standard voltage:
12 V, or more

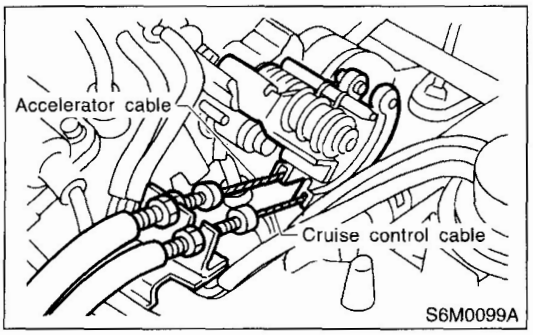
Specific gravity:
Above 1.260

2. CRUISE CONTROL CABLE



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

3. ACCELERATOR CABLE

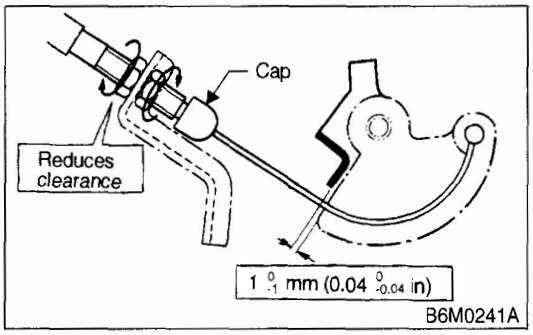


Check movement of the accelerator cable when the cruise control throttle is moved by hand.
If NG, check the throttle cam.

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 is within specifications.

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

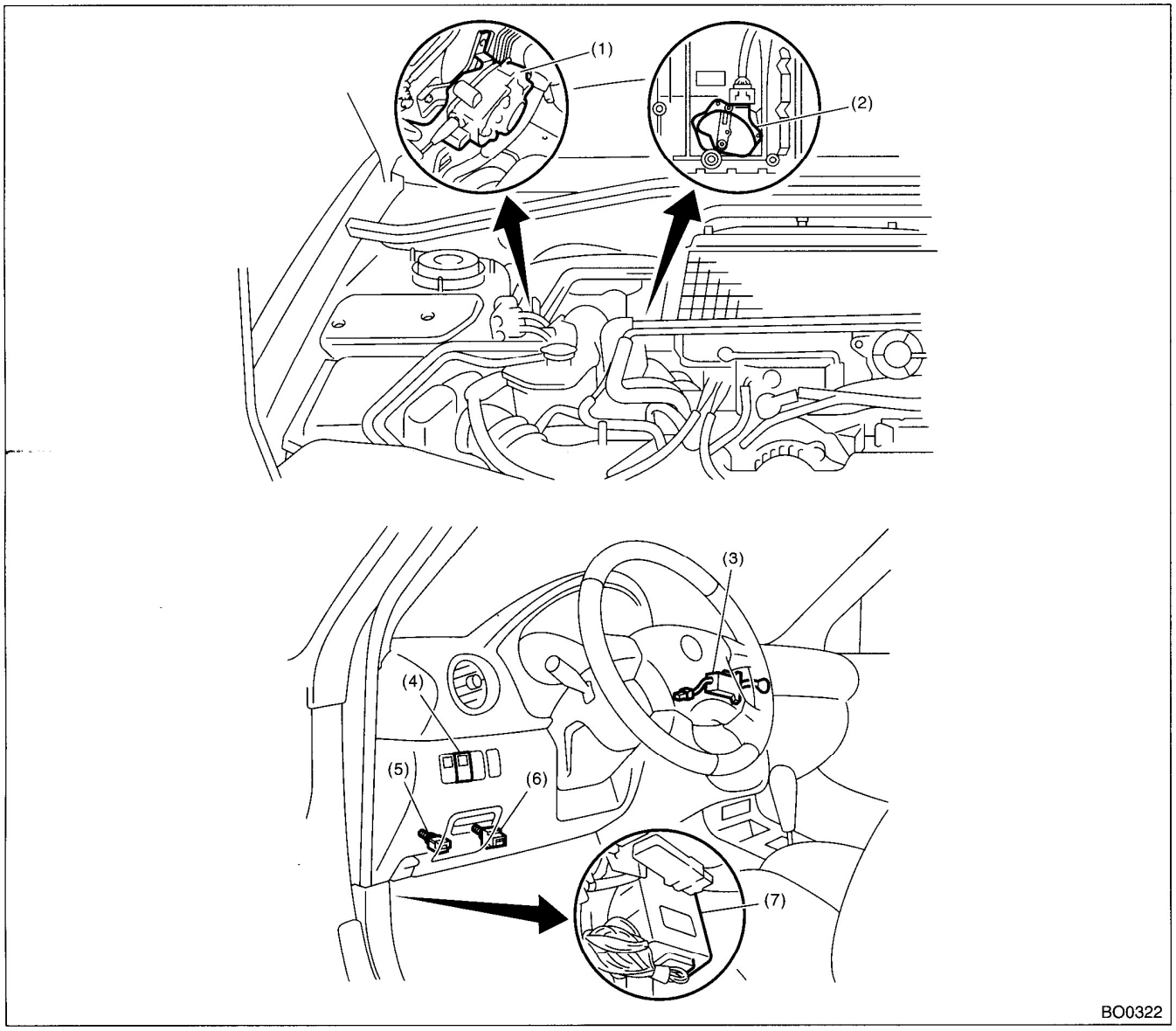
If NG, adjust the clearance with the adjust nut.

NOTE:
Check that the cap is positioned in the groove.

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3. Electrical Components Location

A: LOCATION

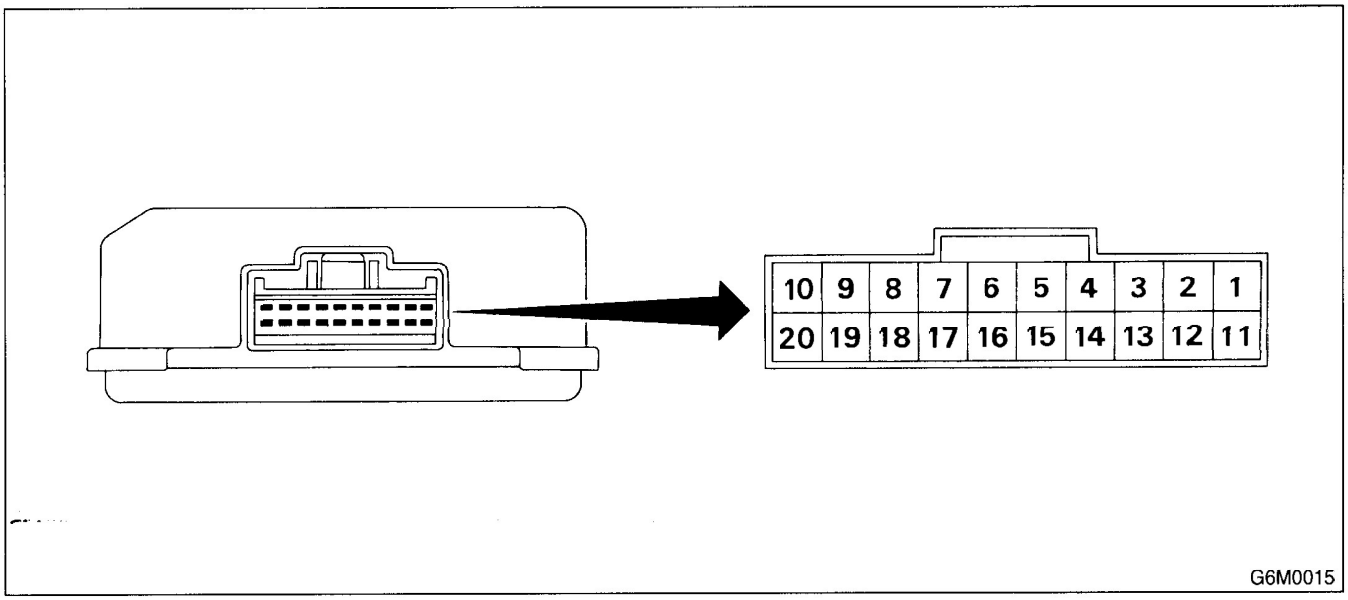


(1) Actuator
(2) Inhibitor switch (AT)
(3) Cruise control command switch
(4) Cruise control main switch
(5) Clutch switch (MT)
(6) Stop and brake switch
(7) Cruise control module

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4. Cruise Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



Content	Terminal No.	Measuring conditions and I/O signals (ignition switch ON and engine idling)
Main light	1	• Battery voltage is present when main switch is turned OFF. • "0" volt is present when main switch is turned ON.
Inhibitor switch (AT)	4	• Battery voltage is present when selector lever is other than "P" or "N" position. • "0" volt is present when selector lever is set to "P" or "N" position.
Motor B	5	• ON-and-OFF ("0"-and-battery voltage) operation is alternately repeated while cruise control is operating. • "0" volt is present when main switch is turned OFF.
Ground	6	—
Motor A	7	• ON-and-OFF ("0"-and-battery voltage) operation is alternately repeated while cruise control is operating. • "0" volt is present when main switch is turned OFF.
RESUME/ACCEL switch	9	• Battery voltage is present when command switch is turned to RESUME/ACCEL position. • "0" volt is present when command switch is released.
SET/COAST switch	10	• Battery voltage is present when command switch is turned to SET/COAST position. • "0" volt is present when command switch is released.
Main power supply	11	• Battery voltage is present when main power is turned ON. • "0" volt is present when main power is turned OFF.
Ignition switch	12	• Battery voltage is present when ignition switch is turned ON. • "0" volt is present when ignition switch is turned OFF.
Motor C	13	• ON-and-OFF ("0"-and-battery voltage) operation is alternately repeated while cruise control is operating. • "0" volt is present when main switch is turned OFF.
Motor clutch	14	• ON-and-OFF ("0"-and-battery voltage) operation is alternately repeated while cruise control is operating. • "0" volt is present when vehicle is stopped.
Cruise control main switch	15	• Battery voltage is present during pressing the cruise control main switch, and then battery voltage is present while main switch is turned ON. • "0" volt is present when main switch is turned OFF.

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Content	Terminal No.	Measuring conditions and I/O signals (ignition switch ON and engine idling)
Brake switch	16	Leave clutch pedal released (MT), while cruise control main switch is turned ON. Then check that; • Battery voltage is present when brake pedal is released. • "0" volt is present when brake pedal is depressed. Additionally only in MT vehicle, keep the cruise control main switch to ON and leave brake pedal released. Then check that; • Battery voltage is present when clutch pedal is released. • "0" volt is present when clutch pedal is depressed.
Data link connector	17	—
Data link connector	18	—
Vehicle speed sensor (MT) TCM (AT)	19	Lift-up the vehicle until all four wheels are raised off ground, and then rotate any wheel manually. Approx. "5" and "0" volt pulse signals are alternately input to cruise control module.
Stop light switch	20	Turn ignition switch to OFF. Then check that; • Battery voltage is present when brake pedal is depressed. • "0" volt is present when brake pedal is released.
NOTE: Voltage at terminals 5, 7, 13 and 14 cannot be checked unless vehicle is driving by cruise control operation.		

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B: SCHEMATIC

1. CRUISE CONTROL

<Ref. to WI-61, SCHEMATIC, Cruise Control System.>

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5. Subaru Select Monitor

A: OPERATION

1. GENERAL

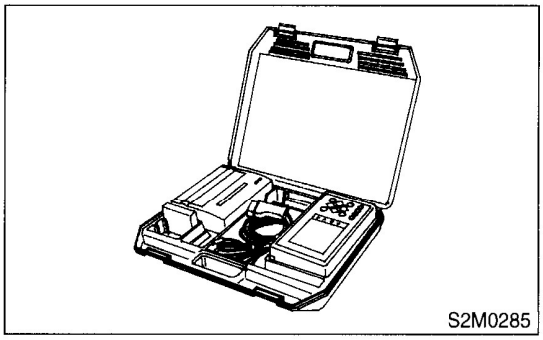
The on-board diagnosis function of the cruise control system uses an external Subaru Select Monitor.
The on-board diagnosis function operates in two categories, which are used depending on the type of problems;
1) Cruise cancel conditions diagnosis
(1) This category of diagnosis requires actual vehicle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

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

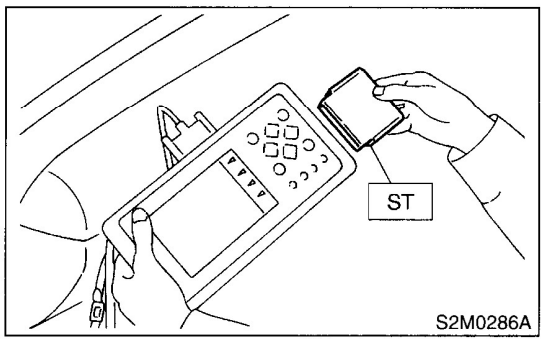
2) Real-time diagnosis
The real-time diagnosis function is used to determine whether or not the input signal system is in good order, according to signal emitted from switches, sensors, etc.
(1) Vehicle cannot be driven at cruise speed because problem occurs in the cruise control system or its associated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

2. CRUISE CANCEL CONDITIONS DIAGNOSIS

1) Prepare Subaru Select Monitor kit.

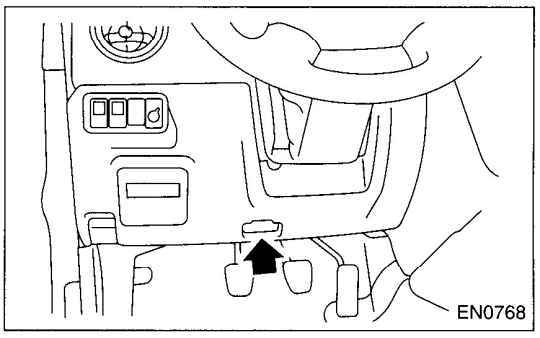

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2) Connect the diagnosis cable to the Subaru Select Monitor.
3) Insert the cartridge into the Subaru Select Monitor.
<Ref. to CC-3, SPECIAL TOOLS, PREPARATION TOOL, General Description.>



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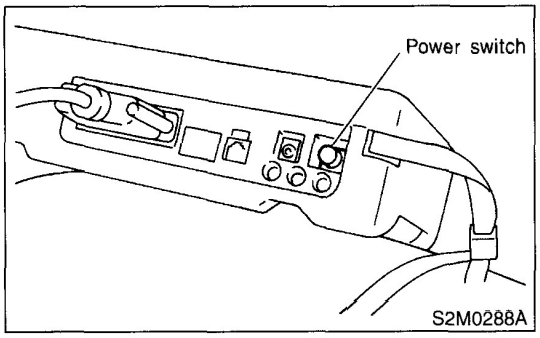
4) Connect the Subaru Select Monitor to the data link connector.
(1) Data link connector located in the lower portion of the instrument panel (on the driver's side).


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

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5) Start the engine and turn the cruise control main switch to ON.
6) Turn the Subaru Select Monitor switch to ON.



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

NOTE:
The diagnostic trouble code 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 vehicle at least 30 km/h (19 MPH) with cruise speed set.
9) If the cruise speed is canceled itself (without doing any cancel operations), a diagnostic trouble code will appear on select monitor display.

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

NOTE:
Diagnostic trouble code will be cleared by turning 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 the [YES] key.
5) On the System Selection Menu display screen, select the {Cruise Control} and press the [YES] key.
6) Press the [YES] key after displayed the information of engine type.
7) On the Cruise Control Diagnosis display screen, select the {Current Data Display & Save} and press the [YES] key.
8) Make sure that normal indication is displayed when controls are operated as indicated below:
• Depress/release the brake pedal. (Stop light switch and brake switch turn ON.)
• Turn ON the "SET/COAST" switch.
• Turn ON the "RESUME/ACCEL" switch.
• Depress/release the clutch pedal. (MT)
• Set the selector lever to P or N. (AT)

NOTE:
• For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.
• For detailed concerning diagnostic trouble codes, refer to the LIST OF DIAGNOSTIC TROUBLE CODE.
<Ref. to CC-26, LIST OF DIAGNOSTIC TROUBLE CODE (DTC), >

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6. Diagnostics Chart with Symptom

A: SYMPTOM CHART

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

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DIAGNOSTICS CHART WITH SYMPTOM

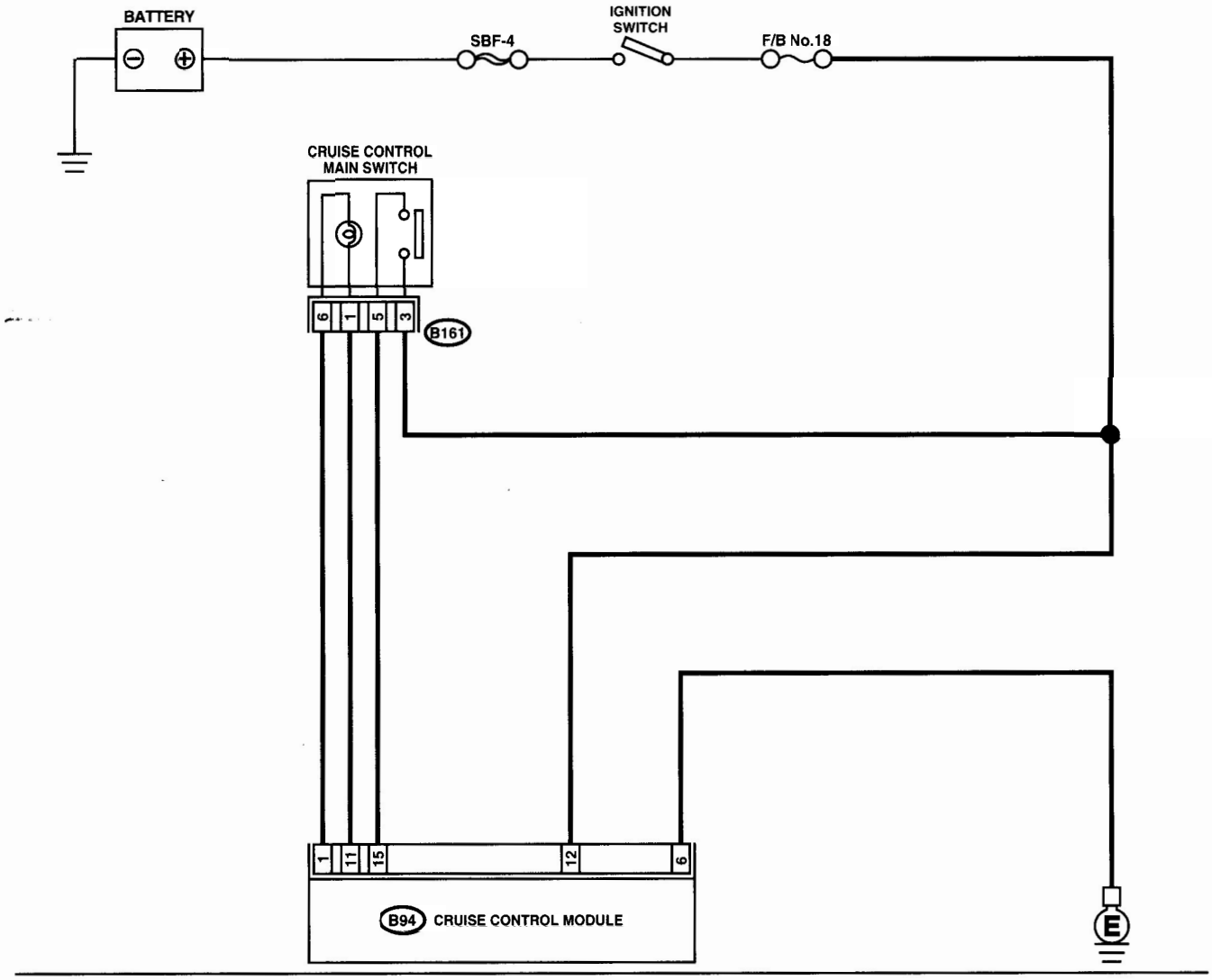
	Symptom	Repair area	Reference
8	Cruise control is not released after clutch pedal has been depressed (MT).	(1) Check clutch switch.	<Ref. to CC-22, CHECK CLUTCH SWITCH (MT), Diagnostics Chart with Symptom.>
		(2) Check motor drive system.	<Ref. to CC-34, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostics Chart with Diagnostic Trouble Code.>
		(3) Check motor clutch drive system.	<Ref. to CC-36, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostics Chart with Diagnostic Trouble Code.>

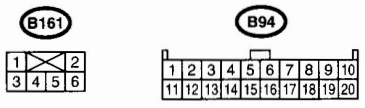
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B: CHECK POWER SUPPLY

TROUBLE SYMPTOM:
Cruise control can be set normally, but indicator does not come on. (When main switch is pressed.)
WIRING DIAGRAM:





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

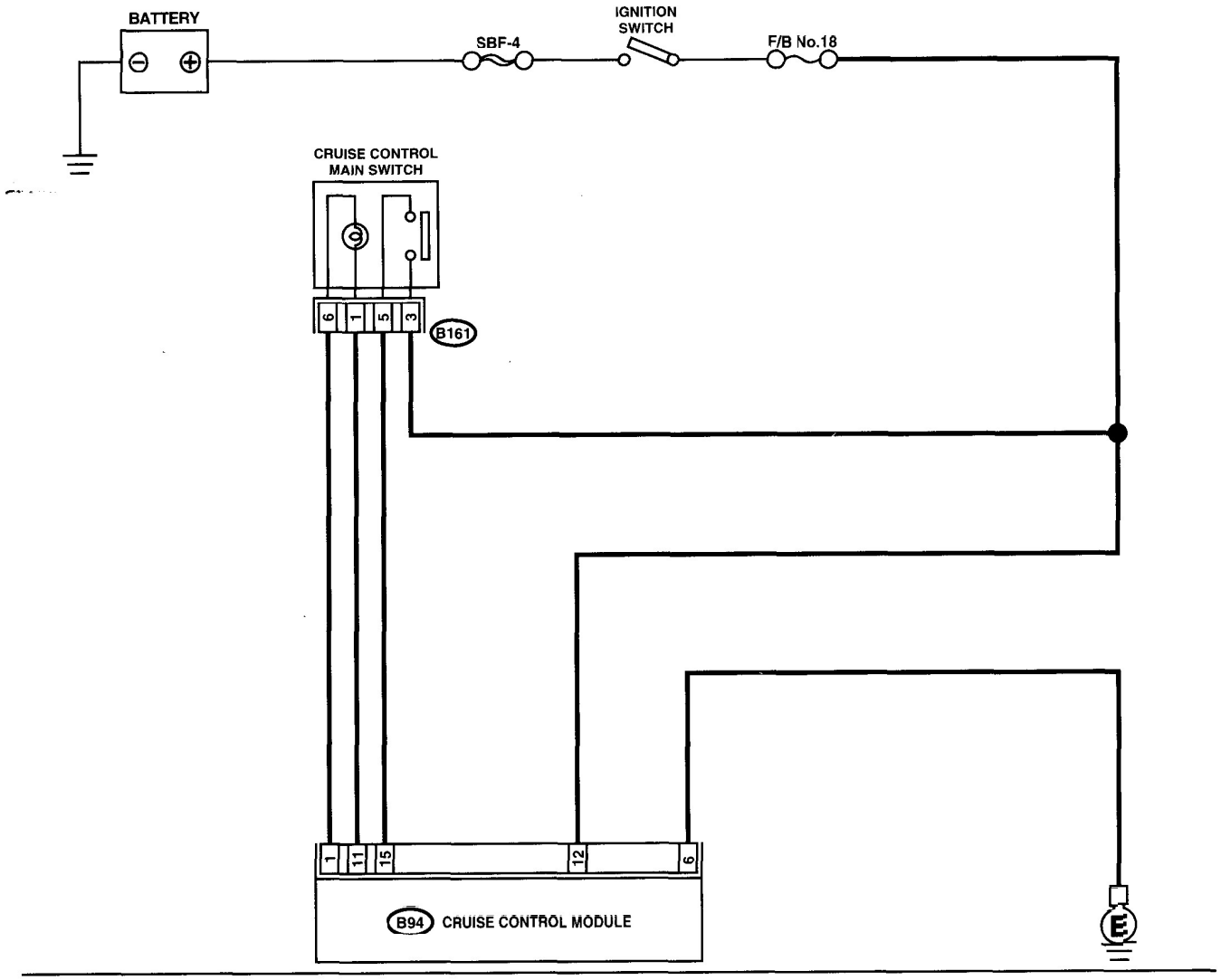
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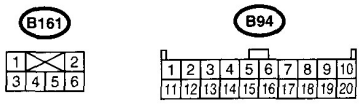
C: CHECK CRUISE CONTROL MAIN SWITCH

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

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

WIRING DIAGRAM:





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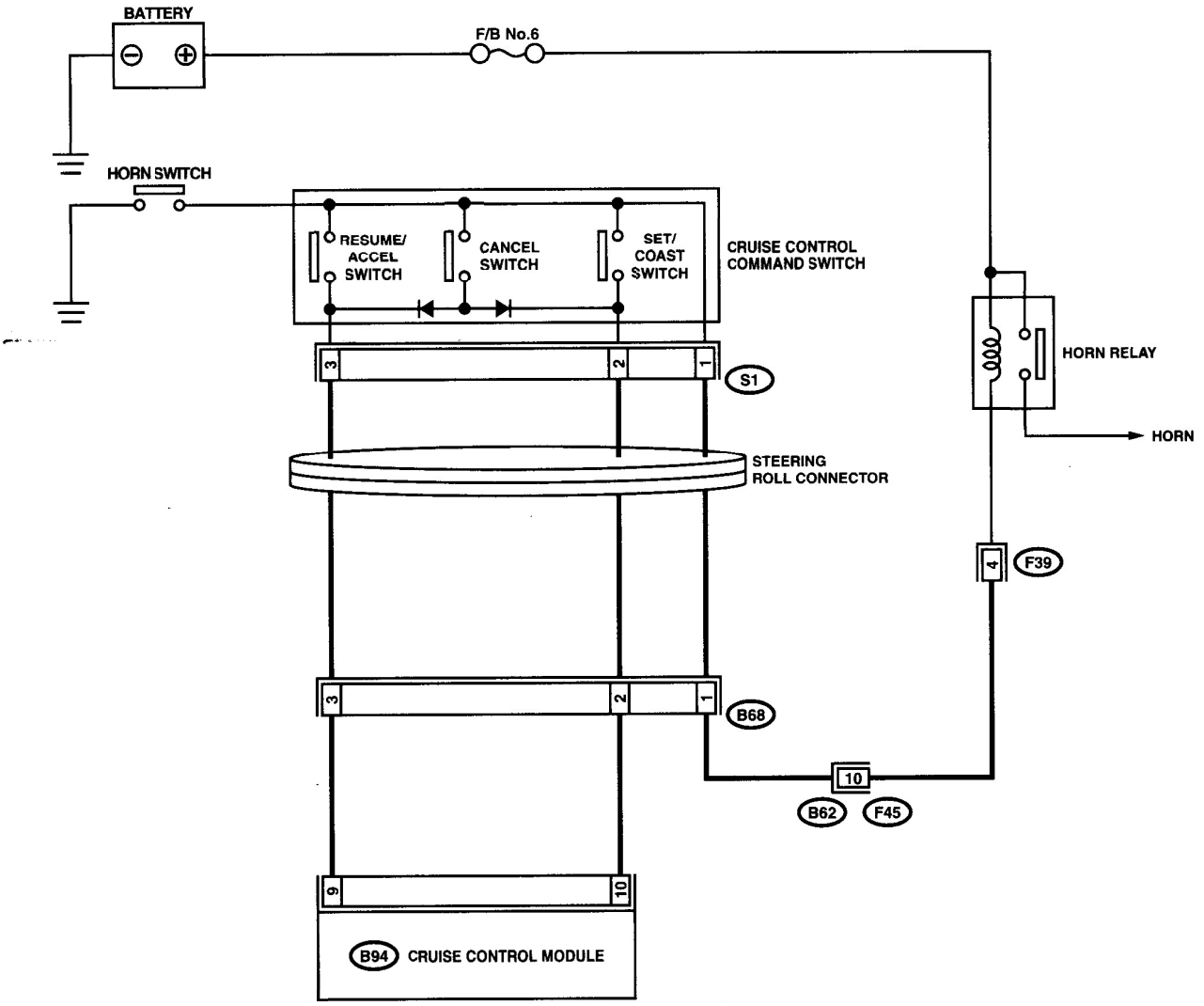
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	Step	Check	Yes	No
1	**CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT.** 1)Disconnect cruise control main switch harness connector. 2)Turn ignition switch ON. 3)Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B161) No. 3 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **2.**	• Check fuse No. 18 (in fuse & relay box). • Check harness for open or short between cruise control main switch and fuse & relay box.
2	**CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT.** 1)Turn ignition switch OFF. 2)Disconnect cruise control module harness connector. 3)Measure resistance between cruise control module harness connector terminal and cruise control main switch harness connector terminal. ***Connector & terminal*** ***(B94) No. 15 — (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 harness.
3	**CHECK CRUISE CONTROL MAIN SWITCH.** Remove and check cruise control main switch. <Ref. to CC-6, Cruise Control Main Switch.>	Is cruise control main switch OK?	Replace cruise control module.	Replace cruise control main switch.

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D: CHECK CRUISE CONTROL COMMAND SWITCH

TROUBLE SYMPTOM:
Cruise control cannot be set. (Cancelled immediately.)
WIRING DIAGRAM:





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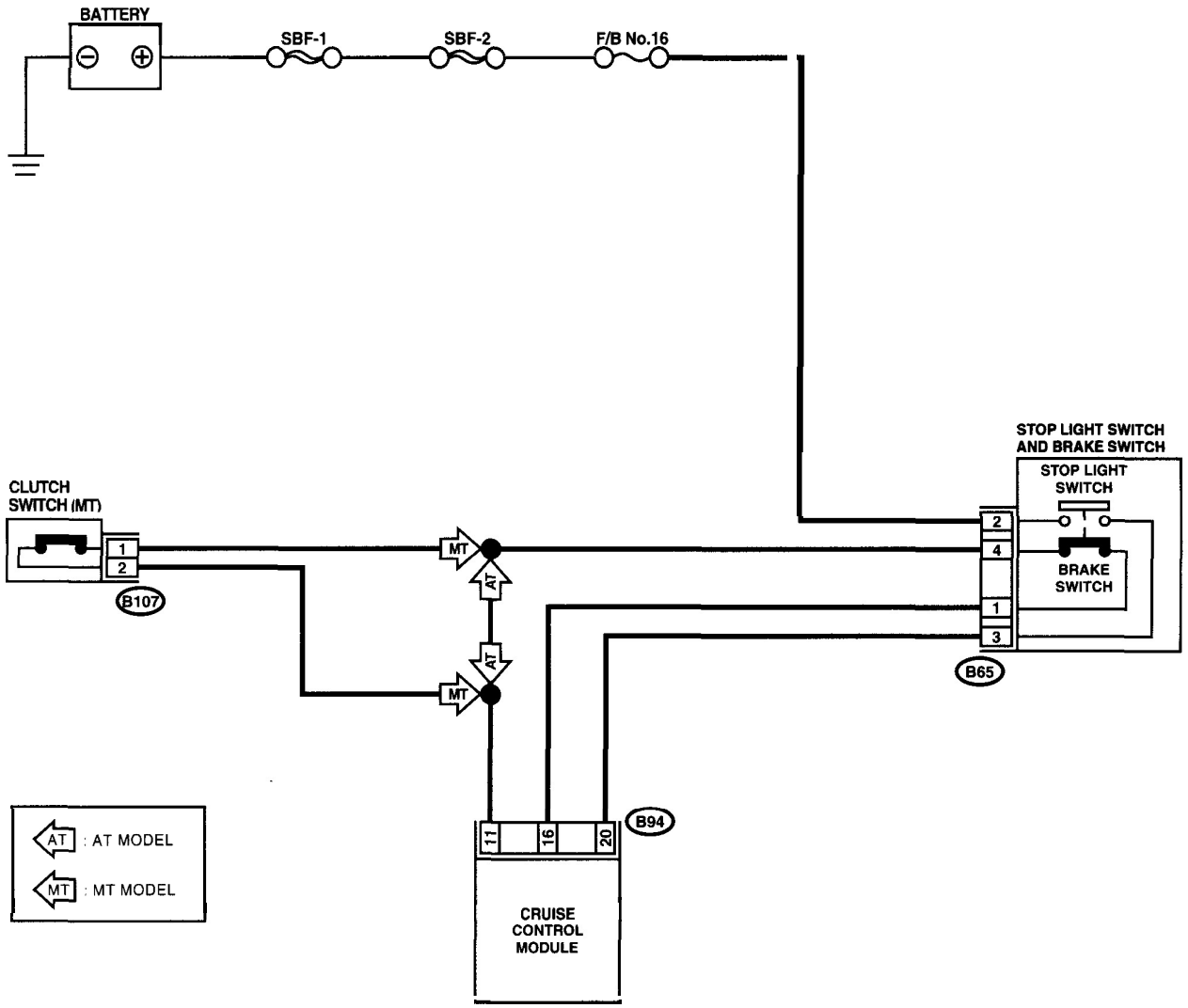
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	Step	Check	Yes	No
1	**CHECK SET/COAST SWITCH CIRCUIT.** 1)Disconnect cruise control module harness connector. 2)Turn ignition switch ON. 3)Measure voltage between harness connector terminal and chassis ground when SET/COAST switch is pressed and not pressed. ***Connector & terminal*** ***(B94) No. 10 (+) — Chassis ground (–):***	Is the 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 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 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 horn operation.	Does horn sound?	Go to step **5.**	• Check fuse No. 6 (in fuse & relay box). • Check horn relay. <Ref. to COM-3, HORN RELAY, INSPECTION, Horn System.> • Check harness for open or short between cruise control command switch and fuse & relay box.
5	**CHECK CRUISE CONTROL COMMAND SWITCH.** Remove and check cruise control command switch. <Ref. to CC-7, Cruise Control Command Switch.>	Is cruise control command switch OK?	Check harness between cruise control command switch and cruise control module.	Replace cruise control command switch.

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E: CHECK STOP LIGHT SWITCH AND BRAKE SWITCH

TROUBLE SYMPTOM:
Cruise control cannot be set.
WIRING DIAGRAM:





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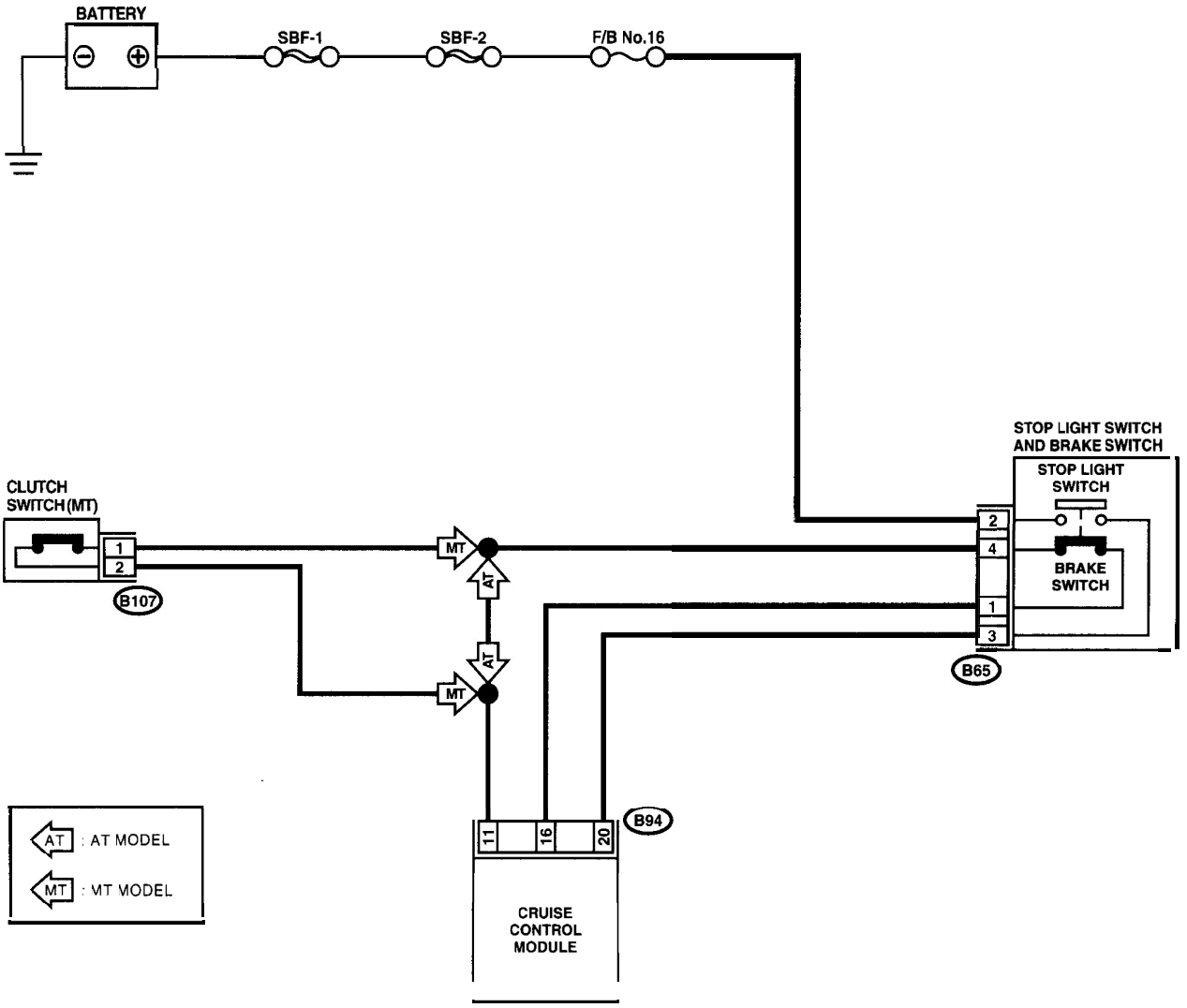
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	Step	Check	Yes	No
1	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1)Disconnect stop light switch and brake switch harness connector. 2)Turn ignition switch ON. 3)Turn cruise control main switch ON. 4)Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 2 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **2.**	• Check fuse No. 16 (in fuse & relay box). • Check harness for open or short between stop light/ brake switch and fuse & relay box.
2	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 4 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	• Check harness for open or short between stop light/ brake switch and cruise control module (AT). • Check clutch switch and the circuit (MT).
3	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1)Turn cruise control main switch and ignition switch OFF. 2)Disconnect cruise control module harness connector. 3)Measure resistance between cruise control module harness connector terminal and stop light switch and brake switch harness connector terminal. ***Connector & terminal*** ***(B94) No. 20 — (B65) No. 3:*** ***(B94) No. 16 — (B65) No. 1:***	Is the resistance less than 10 Ω?	Go to step **4.**	Repair harness.
4	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH.** Remove and check stop light switch and brake switch. <Ref. to CC-8, Stop and Brake Switch.>	Are stop light switch and brake switch OK?	Stop light switch and brake switch circuit are OK.	Replace stop light switch and brake switch.

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F: CHECK CLUTCH SWITCH (MT)

TROUBLE SYMPTOM:
Cruise control cannot be set.
WIRING DIAGRAM:





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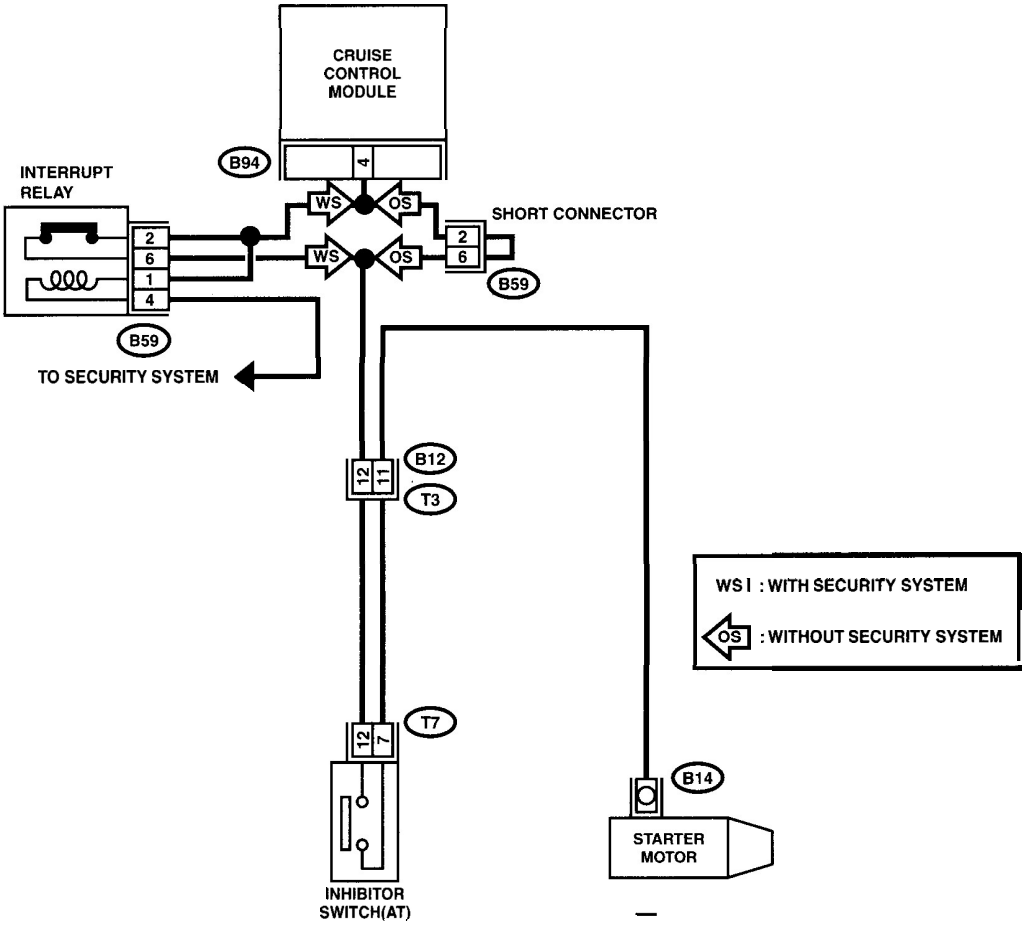
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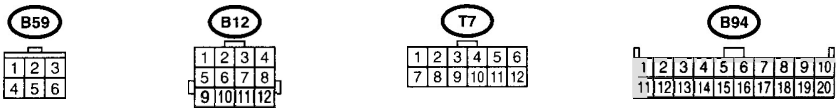
	Step	Check	Yes	No
1	**CHECK CLUTCH SWITCH CIRCUIT.** 1)Disconnect clutch switch harness connector. 2)Turn ignition switch ON. 3)Turn cruise control main switch ON. 4)Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B107) No. 2 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **2.**	Check harness for open or short between clutch switch and cruise control module.
2	**CHECK CLUTCH SWITCH CIRCUIT.** 1)Turn cruise control main switch and ignition switch OFF. 2)Disconnect stop light switch and brake switch harness connector. 3)Measure resistance between clutch switch harness connector terminal and stop light switch and brake switch harness connector terminal. ***Connector & terminal*** ***(B107) No. 1 — (B65) No. 4:***	Is the resistance less than 10 Ω?	Go to step **3.**	Repair harness.
3	**CHECK CLUTCH SWITCH.** Remove and check clutch switch. <Ref. to CC-9, Clutch Switch.>	Is clutch switch OK?	Clutch switch circuit is OK.	Replace clutch switch.

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G: CHECK INHIBITOR SWITCH (AT)

TROUBLE SYMPTOM:
Cruise control cannot be set.
WIRING DIAGRAM:





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	Step	Check	Yes	No
1	**CHECK INHIBITOR SWITCH CIRCUIT.** 1)Disconnect inhibitor switch harness connector. 2)Turn ignition switch ON. 3)Turn cruise control main switch ON. 4)Measure 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 following. • Interrupt relay (with security system) <Ref. to SL-48, Interrupt Relay.> • Harness for open or short between inhibitor switch and cruise control module.
2	**CHECK INHIBITOR SWITCH CIRCUIT.** 1)Turn cruise control main switch and ignition switch OFF. 2)Disconnect starter motor harness connector. 3)Measure resistance between inhibitor switch harness connector terminal and chassis ground. ***Connector & terminal*** ***(T7) No. 7 — (B14) No. 1:***	Is the resistance less than 10 Ω?	Go to step **3.**	Repair harness.
3	**CHECK INHIBITOR SWITCH.** Remove and check inhibitor switch. <Ref. to CC-10, Inhibitor Switch.>	Is inhibitor switch OK?	Inhibitor switch circuit is OK.	Replace inhibitor switch.

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

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DTC	Item	Contents of diagnosis	Reference
39	Motor is overloaded.	Current flows through motor more frequently than under normal conditions.	<Ref. to CC-39, DTC 39 MOTOR IS OVER-LOADED., Diagnostics Chart with Diagnostic Trouble Code.>
2A	Cruise control module is abnormal.	Cruise control module self-diagnosis function senses abnormality.	<Ref. to CC-28, DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostics Chart with Diagnostic Trouble Code.>

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8. Diagnostics Chart with Diagnostic Trouble Code

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

DIAGNOSIS:

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

TROUBLE SYMPTOM:

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

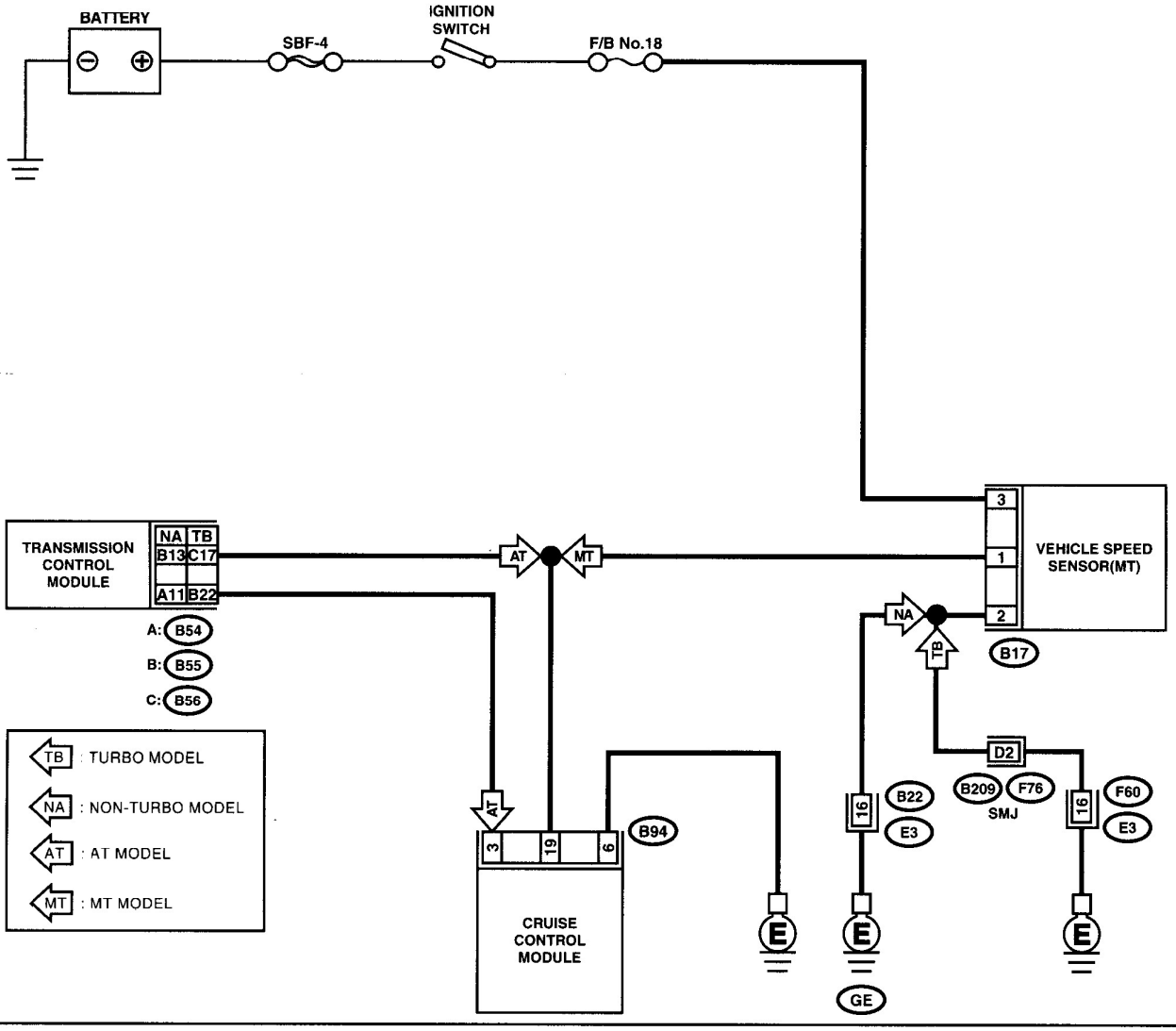
NOTE:
Check the input/output signal and vehicle speed signal with select monitor. When the signals are in good condition, failure is in cruise control module. (Check power supply and ground conditions of cruise control module.)

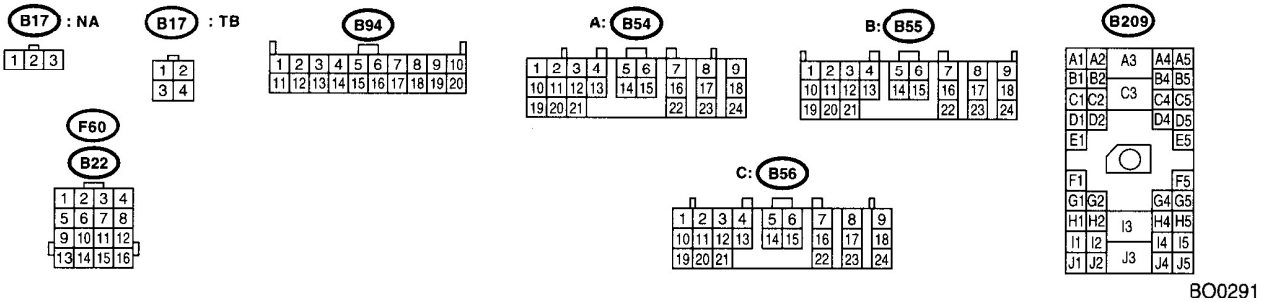
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B: DTC 22 VEHICLE SPEED SENSOR

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





BO0291

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

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	Step	Check	Yes	No
6	**CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND TRANSMISSION CONTROL MODULE.** 1)Disconnect harness connector from transmission control module and cruise control module. 2)Measure resistance between cruise control module harness connector terminal and transmission control module harness connector terminal. **CAUTION:** **To measure the voltage and/or resistance, use a tapered pin with a diameter of less than 0.64 mm (0.025 in). Do not insert the pin more than 5 mm (0.20 in).** ***Connector & terminal*** ***Turbo model:*** ***(B94) No. 19 — (B56) No. 17:*** ***Non-turbo model:*** ***(B94) No. 19 — (B55) No. 13:***	Is the resistance less than 10 Ω?	Go to step **7.**	Repair harness connector between cruise control module and transmission control module.
7	**CHECK TRANSMISSION CONTROL MODULE.** 1)Connect harness connector to transmission control module. 2)Set the vehicle on free roller, or lift-up the vehicle and support with safety stands. **Warning:** **Be careful not to be caught by the running wheels.** 3)Drive the vehicle faster than 10 km/h (6 MPH). 4)Measure voltage between transmission control module harness connector terminal and chassis ground. **CAUTION:** **To measure the voltage and/or resistance, use a tapered pin with a diameter of less than 0.64 mm (0.025 in). Do not insert the pin more than 5 mm (0.20 in).** ***Connector & terminal*** ***Turbo model:*** ***(B56) No. 17 (+) — Chassis ground (–):*** ***Non-turbo model:*** ***(B55) No. 13 (+) — Chassis ground (–):***	Is the voltage less than 1 V ←→ more than 4 V?	Replace cruise control module. <Ref. to CC-5, Cruise Control Module.>	Replace transmission control module. <Ref. to AT-45, Transmission Control Module (TCM).>

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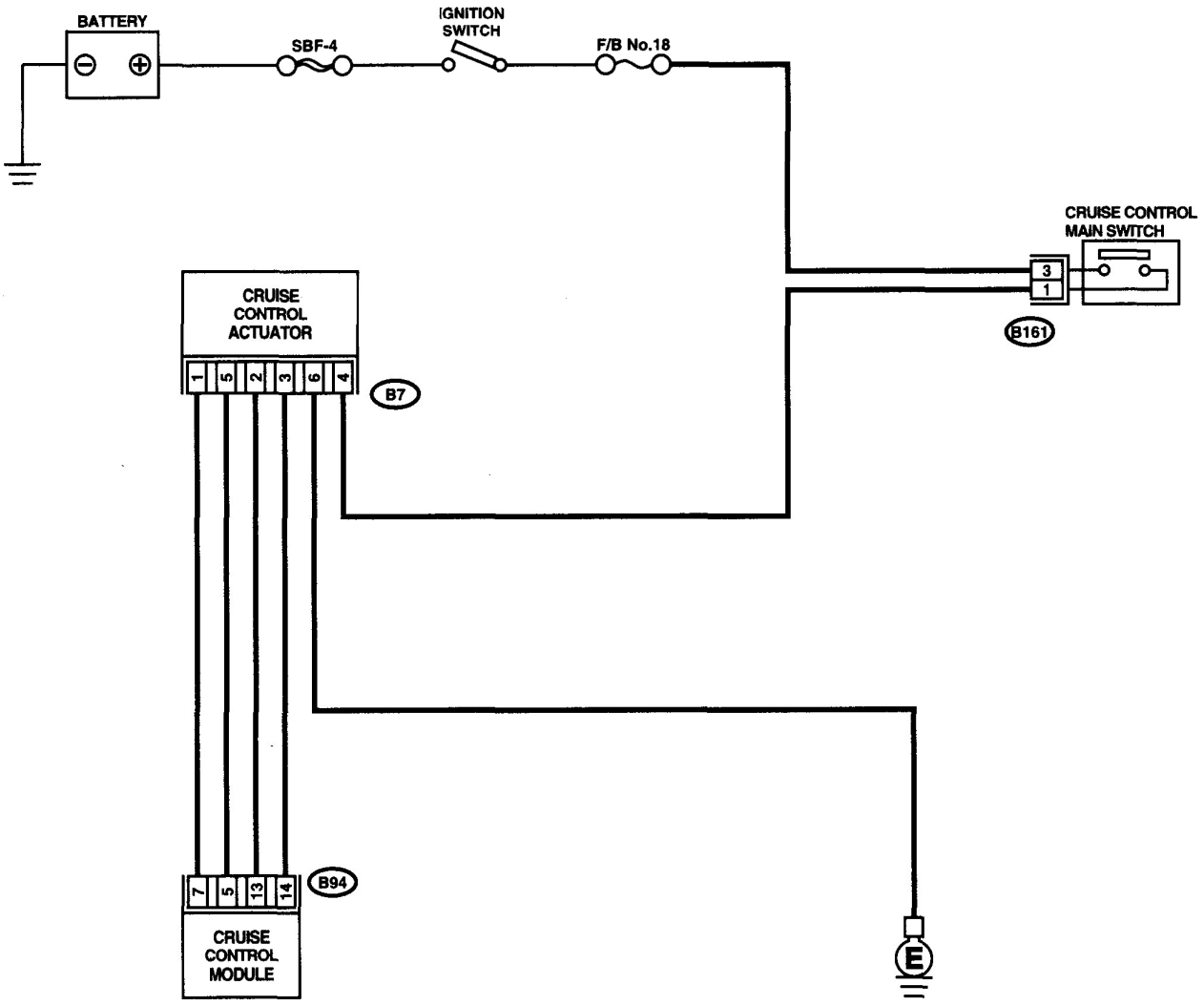
C: DTC 28 WIRING HARNESS OPENED.

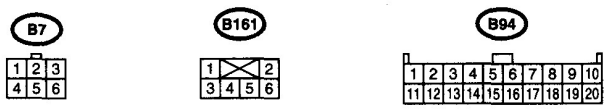
	Step	Check	Yes	No
1	**CHECK BATTERY.** Measure battery specific gravity of electrolyte.	Is battery specific gravity more than 1.250?	Go to step **2.**	Charge or replace battery. Go to step **2.**
2	**CHECK FUSES, CONNECTORS AND HARNESSES.** Check the condition of the main and other fuses, and harnesses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

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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:





BO0292

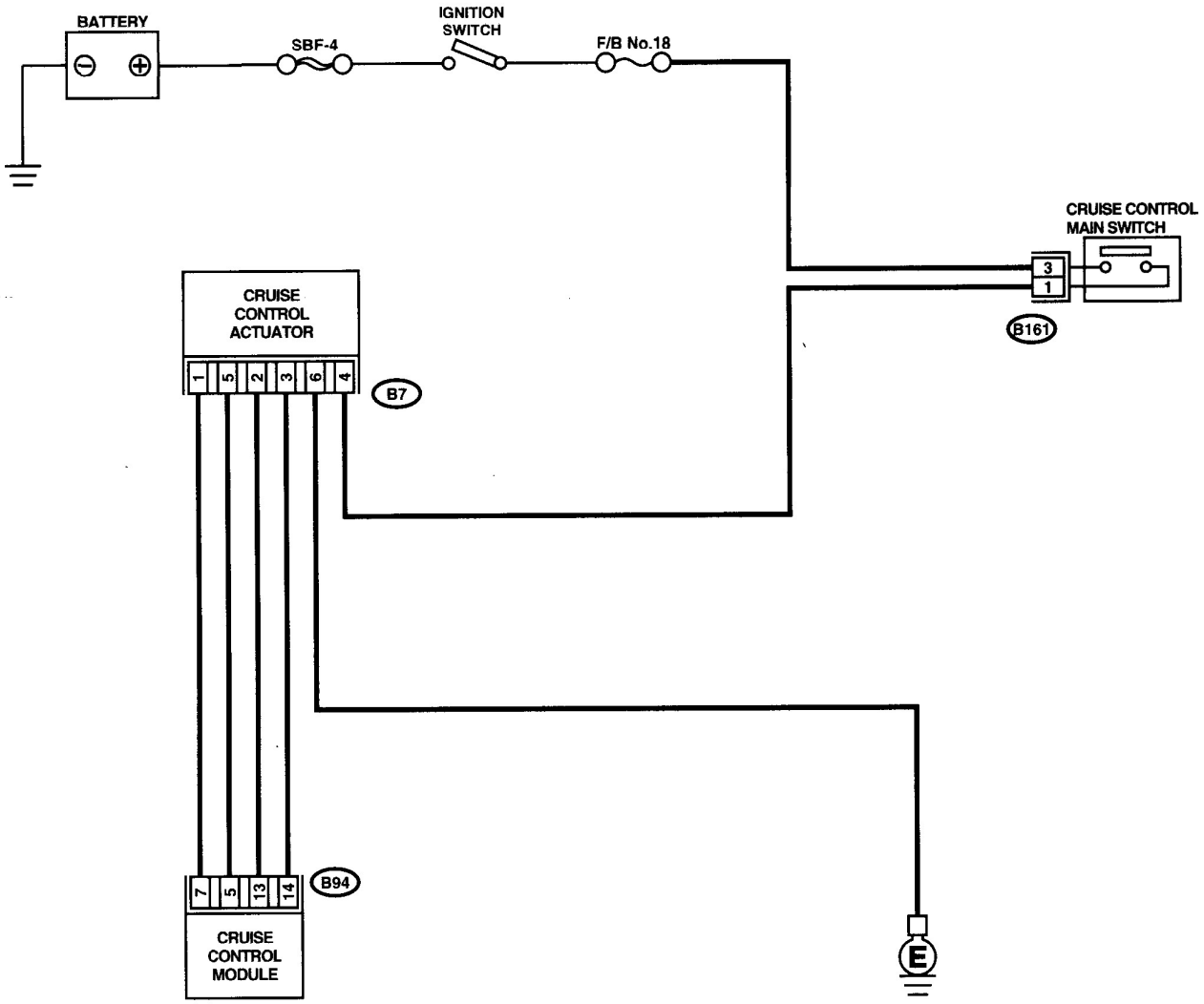
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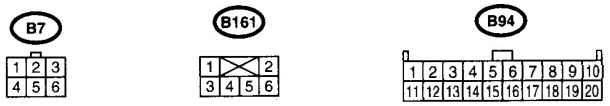
	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1)Turn ignition switch OFF. 2)Disconnect harness connector from cruise control actuator. 3)Turn ignition switch ON. 4)Turn cruise control main switch ON. 5)Measure voltage between cruise control actuator harness connector terminal and chassis ground. ***Terminals***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

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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:





BO0292

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

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

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

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G: DTC 39 MOTOR IS OVERLOADED.

	Step	Check	Yes	No
1	**CHECK THE OPERATING CURRENT TO ACTUATOR MOTOR.** 1)Connect Subaru Select Monitor to data link connector. 2)Try to drive the vehicle while operating the cruise control system. 3)Check the operation current to the cruise control actuator motor.	Is current more than 10A?	Replace cruise control module. <Ref. to CC-5, Cruise Control Module.>	Check the power supply circuit. <Ref. to CC-14, CHECK POWER SUPPLY, Diagnostics Chart with Symptom.>

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OPTION PARTS

OP

Page

Refer to G1831BE SUPPLEMENT for this section.

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OPTION PARTS

OP

Page

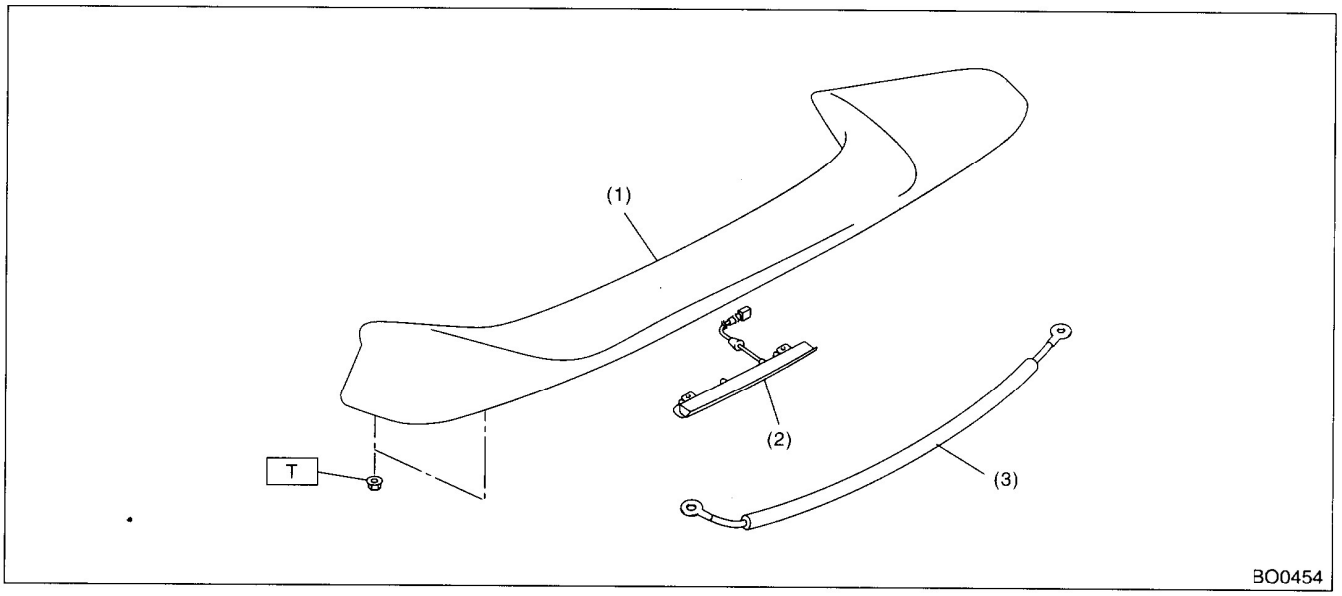
1. General Description 2
2. Rear Spoiler 5
3. Crossbar 6
4. Trailer Hitch 7
5. Rear Differential Protector 8

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1. General Description

A: COMPONENT

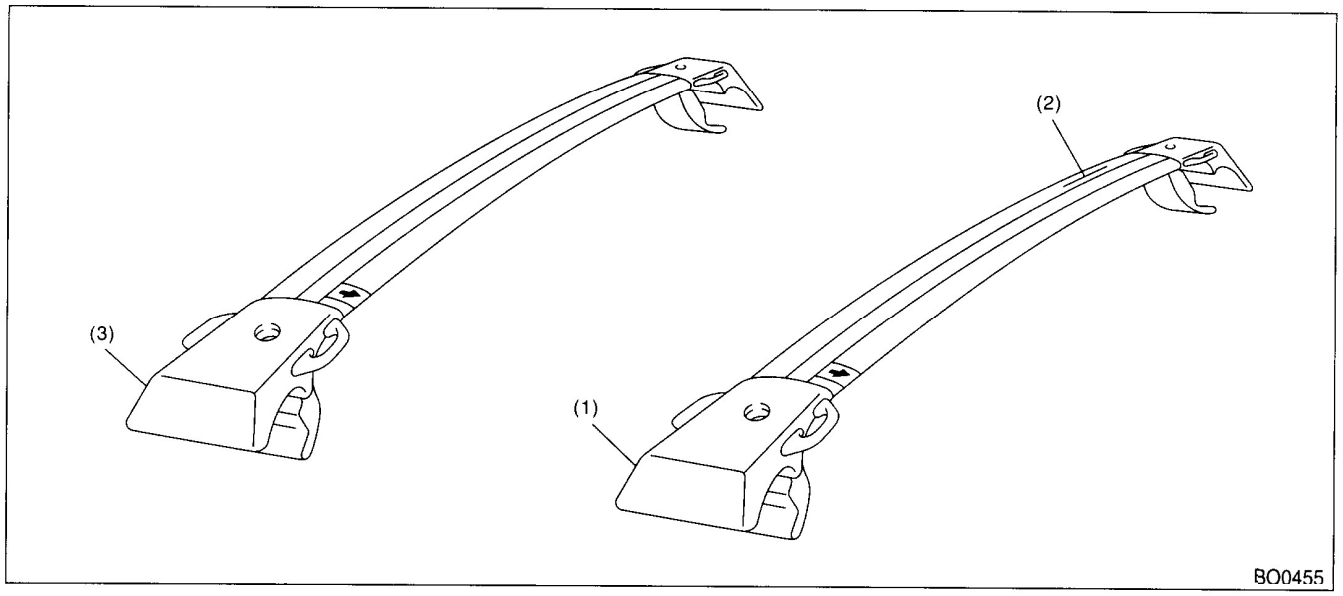
1. REAR SPOILER



(1) Rear spoiler
(2) High mount stop lamp
(3) Retention cable

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

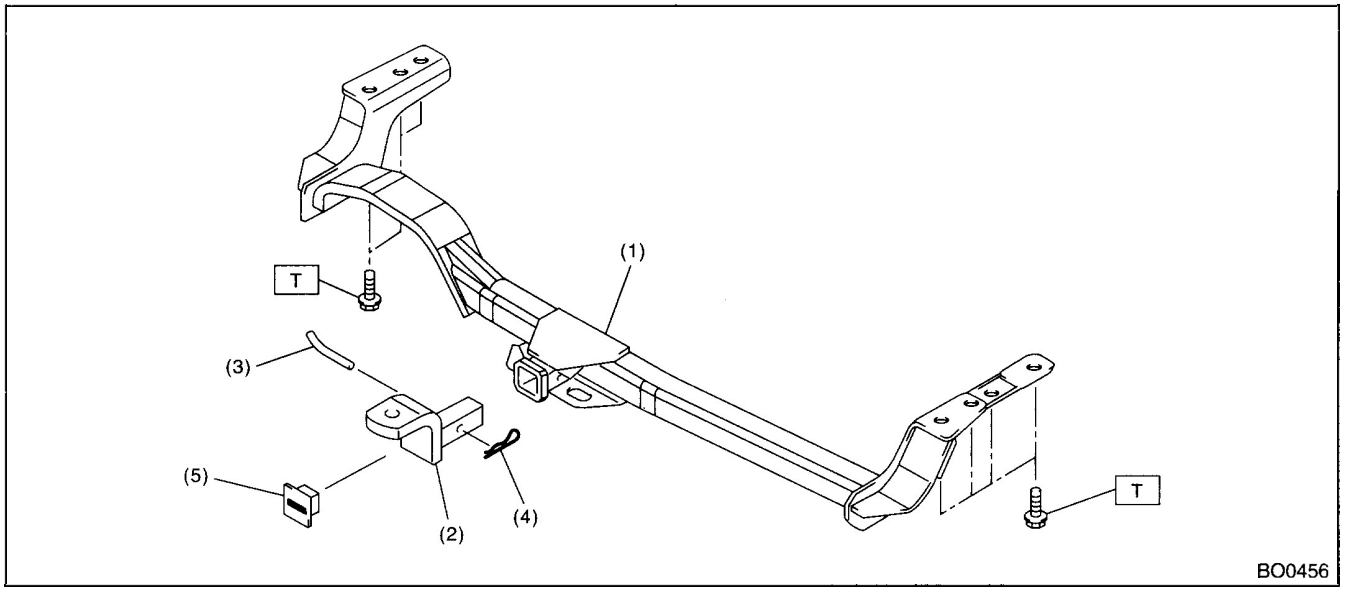
2. CROSSBAR



(1) Front crossbar
(2) Caution label (Front crossbar)
(3) Rear crossbar

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3. TRAILER HITCH

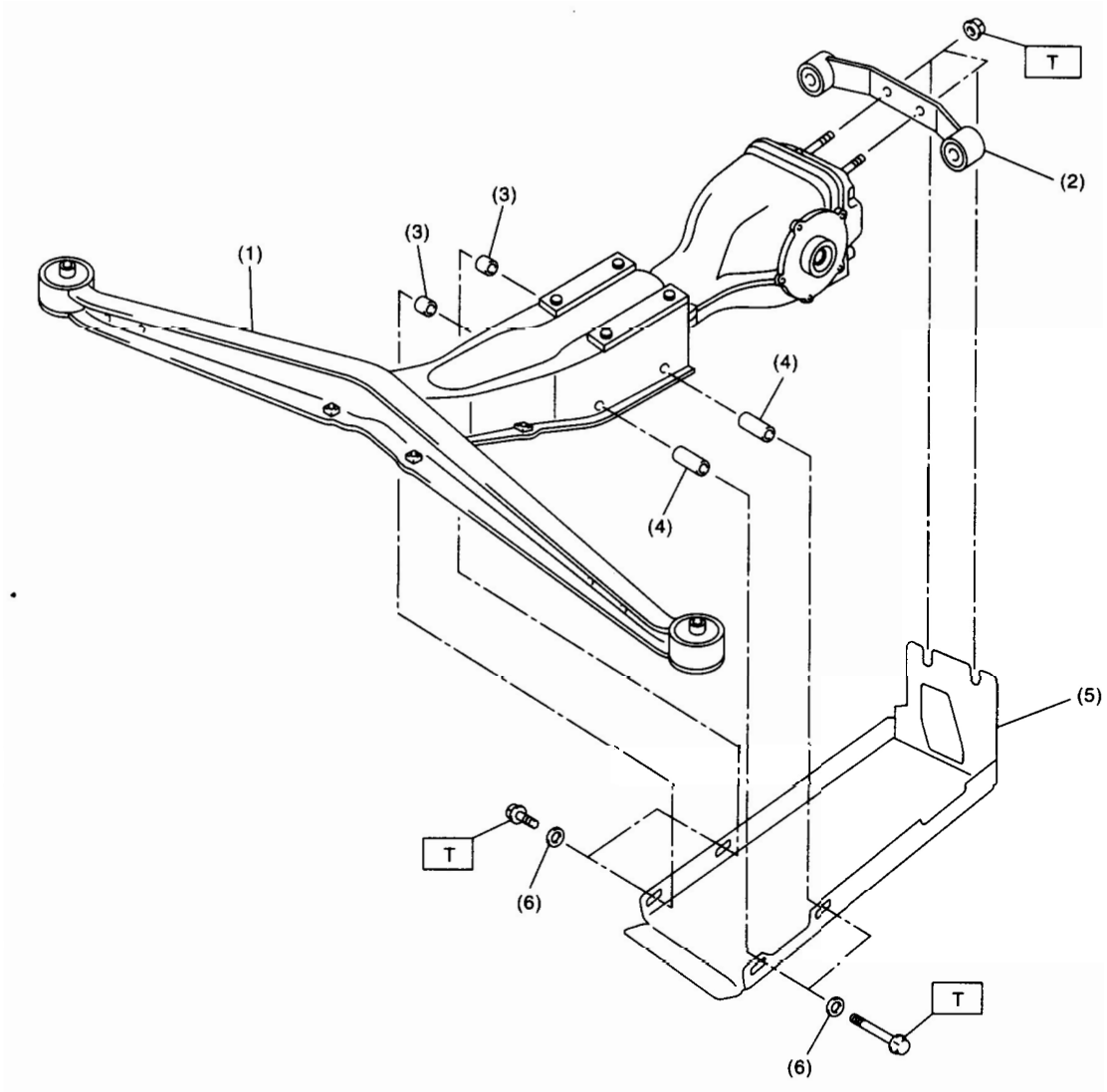


(1) Receiver hitch
(2) Ball mount
(3) Ball mount pin
(4) Ball mount clip
(5) Receiver cover

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

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4. REAR DIFFERENTIAL PROTECTOR



(1) Differential front member
(2) Differential rear member
(3) Spacer (Short)
(4) Spacer (Long)
(5) Rear differential protector
(6) Washer

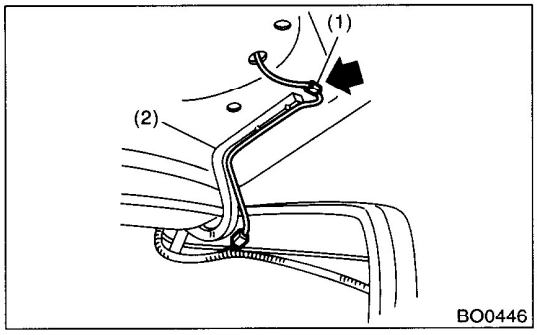
Tightening torque: N·m (kgf-m, ft-lb)
T: 70 (7.1, 51.6)

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2. Rear Spoiler

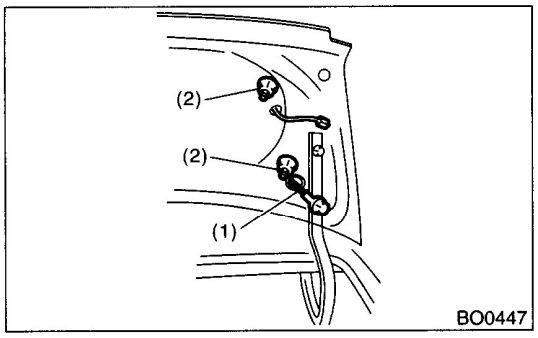
A: REMOVAL

1) Disconnect the ground terminal from battery.
2) Open the trunk lid.
3) Disconnect the connector of high mounted stop-light.



(1) Connector
(2) Trunk hinge

4) Remove the retention cable with the trunk hinge lower side bolt.
5) Remove the mounting nuts of rear spoiler.



(1) Retention cable
(2) Mounting nut

6) Remove the rear spoiler with retention cable.

CAUTION:
Pay attention to avoid damage during removal or installation.

B: INSTALLATION

Install in the reverse order of removal.

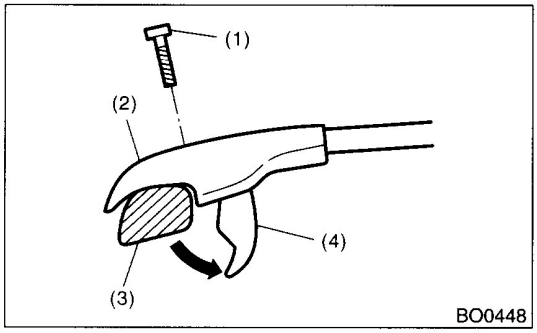
Tightening torque:
Rear spoiler to trunk lid
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)
Retention cable to trunk hinge
13.7 N·m (1.4 kgf-m, 10.1 ft-lb)

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3. Crossbar

A: REMOVAL

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



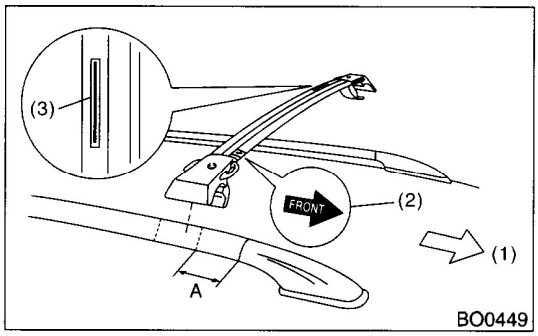
(1) TORX® bolt T30
(2) End support
(3) Roof rail
(4) Lower clamp

CAUTION:
Pay attention to avoid damage to the roof panel during removal or installation.

B: INSTALLATION

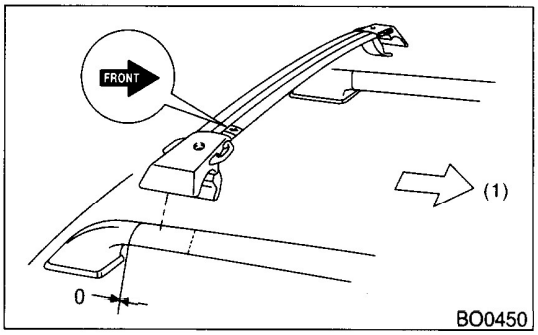
1) Rotate the lower clamp of each end support about 90 degrees downward.
2) Set the front crossbar so that front direction mark on the right side top face of crossbar point in the direction of vehicle front.
3) Place the crossbar end support at position 76.2 mm (3 in) behind the joint of front roof rail support and roof rail.

Length A:
76.2 mm (3 in)



(1) Front of vehicle
(2) Front direction mark
(3) Caution label (Front crossbar)

4) Set the rear crossbar so that front direction mark on the right side top face of crossbar point in the direction of vehicle front.
5) Place the crossbar end support on a joint of rear roof rail support and roof rail.



(1) Front of vehicle
(2) Front direction mark

6) Tighten the end support and clamp using TORX® bolt T30.

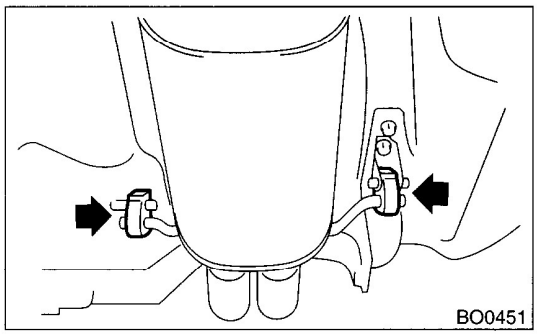
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4. Trailer Hitch

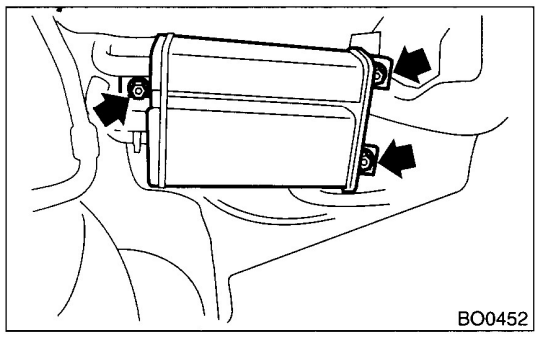
A: REMOVAL

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

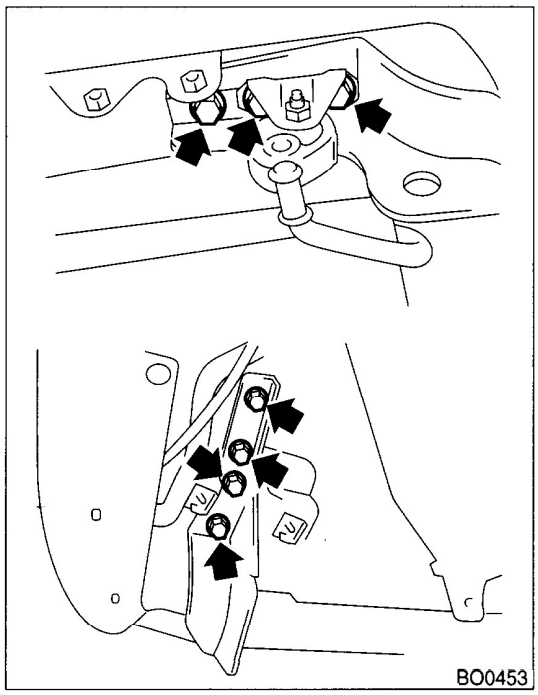
1) Lift-up the vehicle.
2) Remove the rubber cushion from tail pipe.



3) Remove the three nuts and canister.



4) Remove the trailer hitch installation bolts.



5) Remove the trailer hitch while lowering tail pipe.

B: INSTALLATION

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

Install in the reverse order of removal.

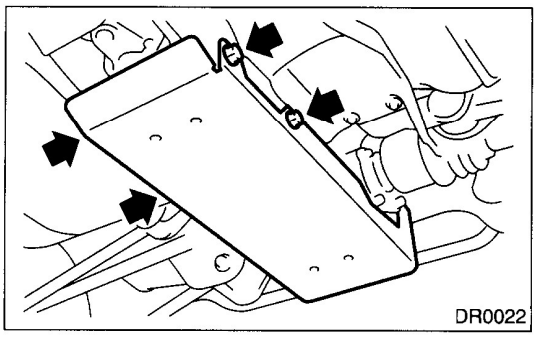
Tightening torque:
Trailer hitch to body:
95 N·m (9.7 kgf-m, 70 ft-lb)
Canister:
23 N·m (2.3 kgf-m, 17 ft-lb)

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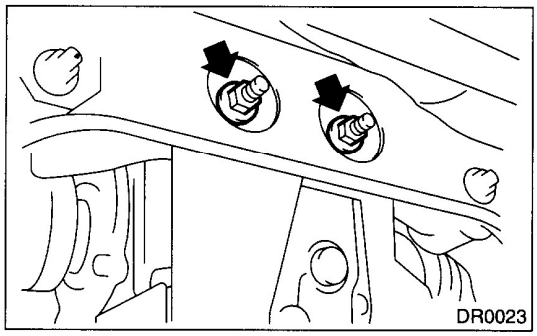
5. Rear Differential Protector

A: REMOVAL

1) Remove the rear exhaust pipe and muffer.
2) Remove the differential front member installation bolts.



3) Loosen the nuts until the rear differential protector can be removed.

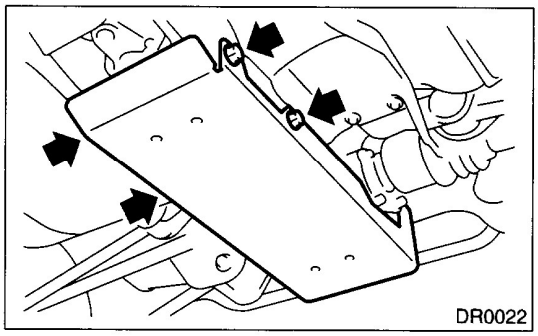


4) Remove the rear differential protector.

B: INSTALLATION

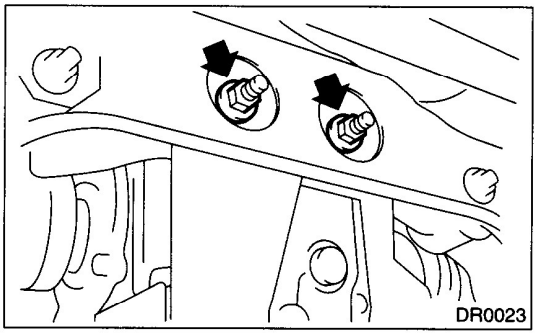
Install in the reverse order of removal.

Tightening torque:
70 N·m (7.1 kgf-m, 51.6 ft-lb)



NOTE:
Install the protector between the nuts and differential rear member.

Tightening torque:
70 N·m (7.1 kgf-m, 51.6 ft-lb)



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