

BODY SECTION

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

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

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

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

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)	AC
HVAC SYSTEM (AUTO A/C) (DIAGNOSTIC)	AC
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AIRBAG SYSTEM (DIAGNOSTIC)	AB
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BODY SECTION

CRUISE CONTROL SYSTEM CC

CRUISE CONTROL SYSTEM (DIAGNOSTIC) CC(H4SO)

CRUISE CONTROL SYSTEM (DIAGNOSTIC) CC(H4DOTC)

CRUISE CONTROL SYSTEM (DIAGNOSTIC) CC(H4DOTC 2.5)

IMMOBILIZER (DIAGNOSTIC) IM

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

AC

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General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

1. General Description

A: SPECIFICATION

1. HEATER SYSTEM

Item		Specifications	Condition
Heating capacity		5.0 kW (4,300 kcal/h, 17,062 BTU/h) or more	<ul style="list-style-type: none"> • 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		480 m ³ (16,951 cu ft)/h	<ul style="list-style-type: none"> • Temperature control switch: FULL COLD • Blower fan speed: 4th position • Mode selector lever: RECIRC
Heater core size (height×length×width)		134.1×224.3×32 mm (5.28×8.83×1.26 in)	—
Blower motor	Type	Auto A/C (Brushless motor) 230 W or less	12.5 V
		Manual A/C (Cylinder motor) 260 W or less	12.5 V
	Fan type and size (diameter×width)	Sirocco fan type 150×75 mm (5.91×2.95 in)	—

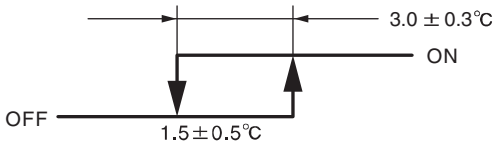
2. A/C SYSTEM

• AUTO A/C MODEL

Item		Specifications
Type of air conditioner		Reheat air-mix type
Cooling capacity		5.1 kW (4,386 kcal/h, 17,403 BTU/h)
Refrigerant		HFC-134a (CH ₂ FCF ₃) [0.6±0.05 kg (1.32±0.11 lb)]
Compressor	Type	Vane rotary, fix volume (DKV-14G)
	Discharge	140 cm ³ (8.54 cu in)/rev
	Max. permissible speed	7,000 rpm
Magnet clutch	Type	Dry, single-disc type
	Power consumption	38 W (DC 12 V-25°C)
	Type of belt	V-belt 4 PK
	Pulley dia. (effective dia.)	125 mm (4.92 in)
	Pulley ratio	1.064
Condenser	Type	Corrugated fin (Sub cool type)
	Core face area	0.234 m ² (2.52 sq ft)
	Core thickness	16 mm (0.63 in)
	Radiation area	5.6 m ² (62.28 sq ft)
Receiver drier	Effective inner capacity	220 cm ³ (13.42 cu in)
Expansion valve	Type	External equalizing
Evaporator	Type	Single tank
	Dimensions (W×H×T)	176.5×266×60 mm (6.95×10.47×2.36 in)
Blower fan	Fan type	Sirocco fan
	Outer diameter×width	150×75 mm (5.91×2.95 in)
	Power consumption	230 W or less at 12.5 V

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

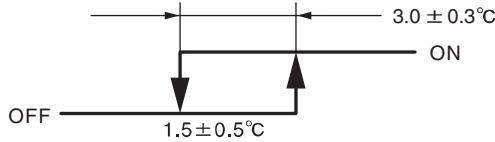
Item		Specifications	
Condenser fan (Sub fan)	Motor type	Magnet	
	Power consumption	2.5 L turbo model and turbo AT model for EC and EK: 120 W at 12 V Other model than above: 70 W at 12 V	
	Fan outer diameter	320 mm (12.6 in)	
Radiator fan (Main fan)	Motor type	Magnet	
	Power consumption	2.5 L turbo model and turbo AT model for EC and EK: 120 W at 12 V Other model than above: 70 W at 12 V	
	Fan outer diameter	320 mm (12.6 in)	
Idling speed (A/C ON)		MPFI model	800±100 rpm
Triple switch (Pressure switch)	Low-pressure switch operating pressure	ON → OFF	177±25 kPa (1.80±0.25 kg/cm ² , 25.60±3.56 psi)
		OFF → ON	206±30 kPa (2.10±0.31 kg/cm ² , 29.86±4.41 psi)
	High-pressure switch operating pressure	ON → OFF	2,940±200 kPa (29.98±2.03 kg/cm ² , 426.32±28.87 psi)
		OFF → ON	590±200 kPa (6.02±2.03 kg/cm ² , 85.6±28.87 psi)
	Middle pressure switch operating pressure	ON → OFF	1370±120 kPa (13.97±1.22 kg/cm ² , 198.65±17.35 psi)
		OFF → ON	1,770±100 kPa (18.05±1.02 kg/cm ² , 256.81±14.50 psi)
Thermo control amplifier working temperature (Evaporator outlet air)			
		AC-00082	

• **MANUAL A/C MODEL**

Item		Specifications	
Type of air conditioner		Reheat air-mix type	
Cooling capacity		5.1 kW (4,386 kcal/h, 17,403 BTU/h)	
Refrigerant		HFC-134a (CH ₂ FCF ₃) [600±50 g (1.32±0.11 lb)]	
Compressor	Type	Vane rotary, fix volume (DKV-14G)	
	Discharge	140 cm ³ (8.54 cu in)/rev	
	Max. permissible speed	7,000 rpm	
Magnet clutch	Type	Dry, single-disc type	
	Power consumption	38 W (DC12 V — 25°C)	
	Type of belt	V-belt 4 PK	
	Pulley dia. (effective dia.)	125 mm (4.92 in)	
	Pulley ratio	1.064	

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Item		Specifications	
Condenser	Type	Corrugated fin (Sub cool type)	
	Core face area	0.234 m ² (2.52 sq ft)	
	Core thickness	16 mm (0.63 in)	
	Radiation area	5.6 m ² (6.26 sq ft)	
Receiver drier	Effective inner capacity	220 cm ³ (13.42 cu in)	
Expansion valve	Type	External equalizing	
Evaporator	Type	Single tank	
	Dimensions (W×H×T)	176.5×266×60 mm (6.95×10.47×2.36 in)	
Blower fan	Fan type	Sirocco fan	
	Outer diameter×width	150×75 mm (5.91×2.95 in)	
	Power consumption	260 W or less at 12.5 V	
Condenser fan (Sub fan)	Motor type	Magnet	
	Power consumption	2.5 L turbo model and turbo AT model for EC and EK: 120 W at 12 V Other model than above: 70 W at 12 V	
	Fan outer diameter	320 mm (12.6 in)	
Radiator fan (Main fan)	Motor type	Magnet	
	Power consumption	2.5 L turbo model and turbo AT model for EC and EK: 120 W at 12 V Other model than above: 70 W at 12 V	
	Fan outer diameter	320 mm (12.6 in)	
Idling speed (A/C ON)		MPFI model 800±100 rpm	
Triple switch (Pressure switch)	Low-pressure switch operating pressure	ON → OFF	177±25 kPa (1.80±0.25 kg/cm ² , 25.60±3.56 psi)
		OFF → ON	206±30 kPa (2.10±0.31 kg/cm ² , 29.86±4.41 psi)
	High-pressure switch operating pressure	ON → OFF	2,940±200 kPa (29.98±2.03 kg/cm ² , 426.32±28.87 psi)
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	Middle pressure switch operating pressure	ON → OFF	1,370±120 kPa (13.97±1.22 kg/cm ² , 198.65±17.35 psi)
		OFF → ON	1,770±100 kPa (18.05±1.02 kg/cm ² , 256.81±14.50 psi)
Thermo control amplifier working temperature (Evaporator outlet air)		 <p style="text-align: center;">AC-00082</p>	

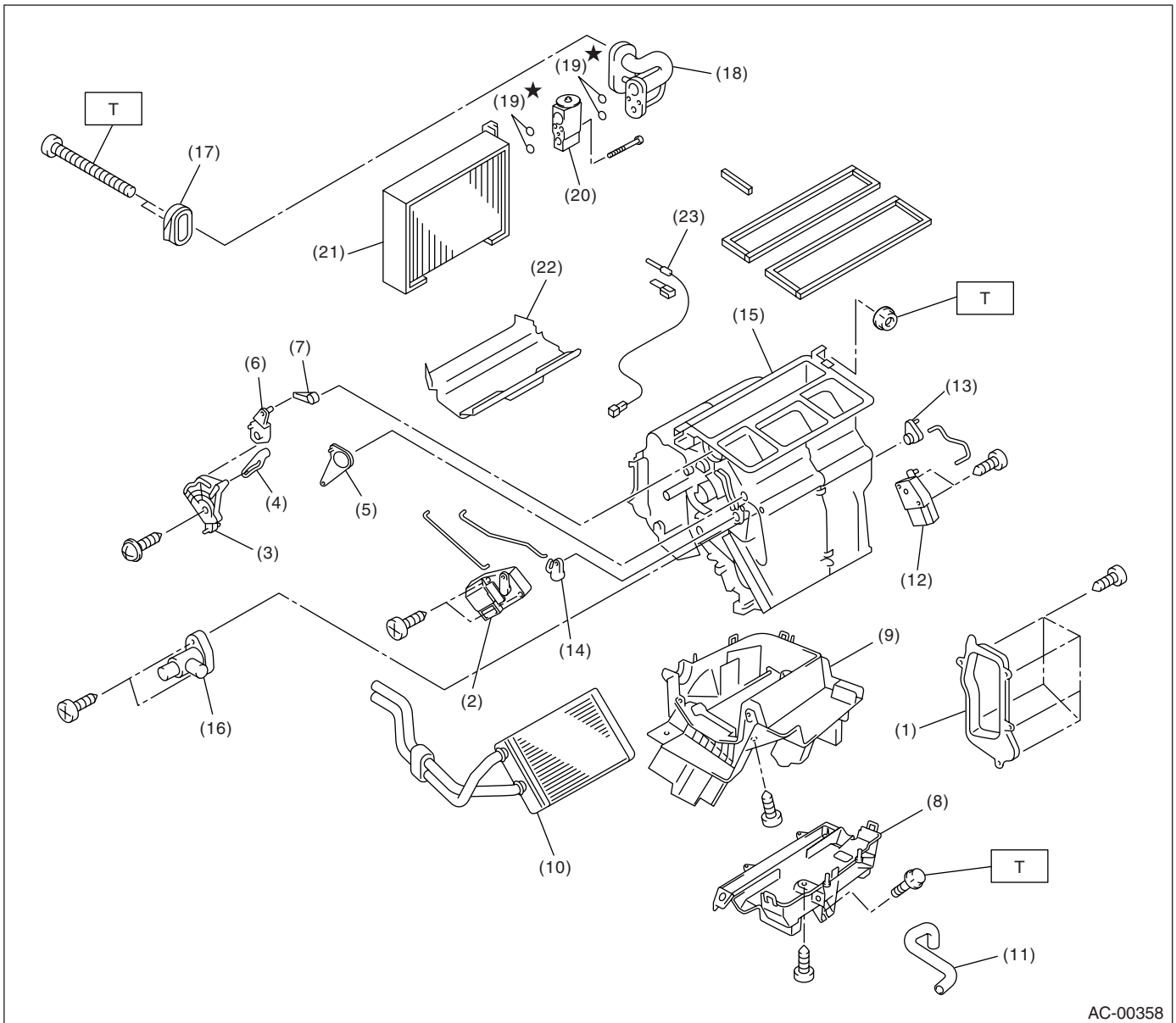
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

B: COMPONENT

1. HEATER COOLING UNIT

• LHD MODEL WITH AUTO A/C



- | | | |
|------------------------|--------------------------|------------------------|
| (1) Evaporator cover | (10) Heater core | (19) O-ring |
| (2) Mode actuator | (11) Drain hose | (20) Expansion valve |
| (3) Mode main lever | (12) Mix actuator | (21) Evaporator |
| (4) Vent door lever | (13) Mix door lever | (22) Evaporator lining |
| (5) Foot door lever | (14) Foot door lever (B) | (23) Evaporator sensor |
| (6) Mode actuator link | (15) Upper case | |
| (7) Defroster lever | (16) Aspirator | |
| (8) Foot duct | (17) Packing | |
| (9) Lower case | (18) Cooling unit pipe | |

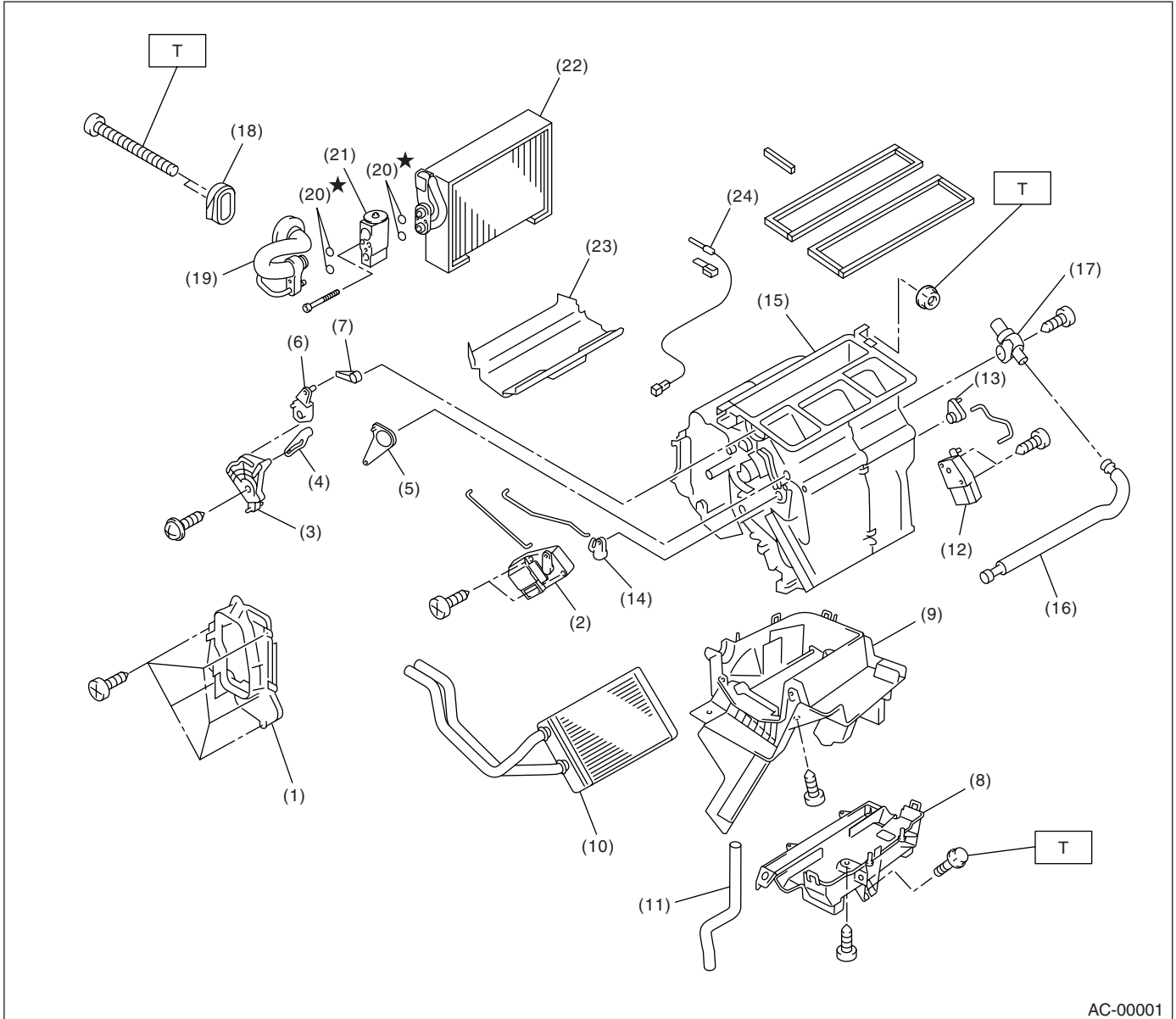
Tightening torque: N·m (kgf·m, ft·lb)

T: 7.5 (0.76, 5.5)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• RHD MODEL WITH AUTO A/C



- | | | |
|-------------------------|--------------------------|------------------------|
| (1) Evaporator cover | (10) Heater core | (19) Cooling unit pipe |
| (2) Mode actuator | (11) Drain hose | (20) O-ring |
| (3) Mode main lever | (12) Mix actuator | (21) Expansion valve |
| (4) Vent door lever | (13) Mix door lever | (22) Evaporator |
| (5) Foot door lever (A) | (14) Foot door lever (B) | (23) Evaporator lining |
| (6) Mode actuator link | (15) Upper case | (24) Evaporator sensor |
| (7) Defroster lever | (16) Aspirator hose | |
| (8) Foot duct | (17) Aspirator | |
| (9) Lower case | (18) Packing | |

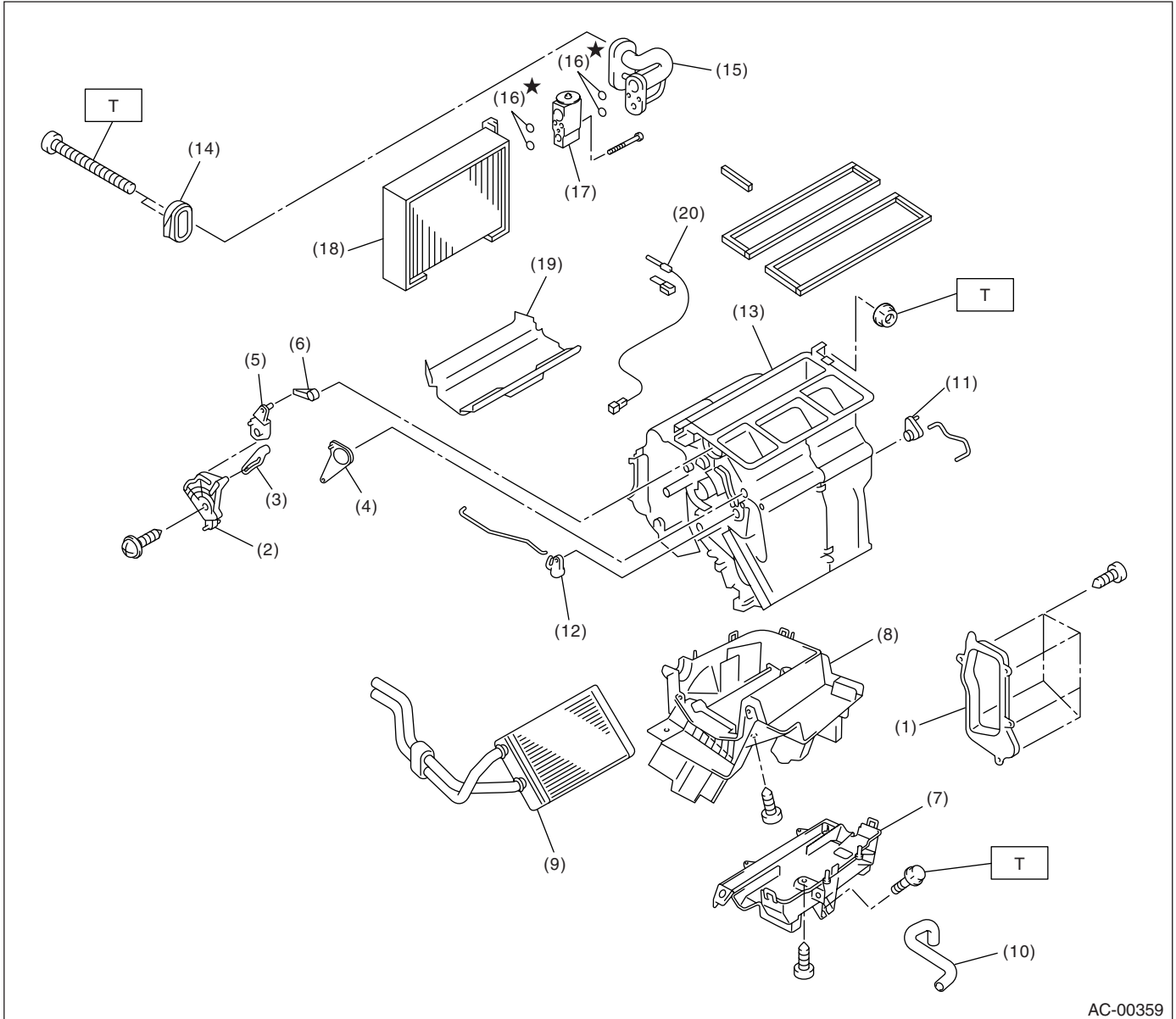
Tightening torque: N·m (kgf·m, ft·lb)

T: 7.5 (0.76, 5.5)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• LHD MODEL WITH MANUAL A/C



- | | | |
|------------------------|-------------------------|------------------------|
| (1) Evaporator cover | (9) Heater core | (17) Expansion valve |
| (2) Mode main lever | (10) Drain hose | (18) Evaporator |
| (3) Vent door lever | (11) Mix actuator lever | (19) Evaporator lining |
| (4) Foot door lever | (12) Foot door lever | (20) Evaporator sensor |
| (5) Mode actuator link | (13) Upper case | |
| (6) Defroster lever | (14) Packing | |
| (7) Foot duct | (15) Cooling unit pipe | |
| (8) Lower case | (16) O-ring | |

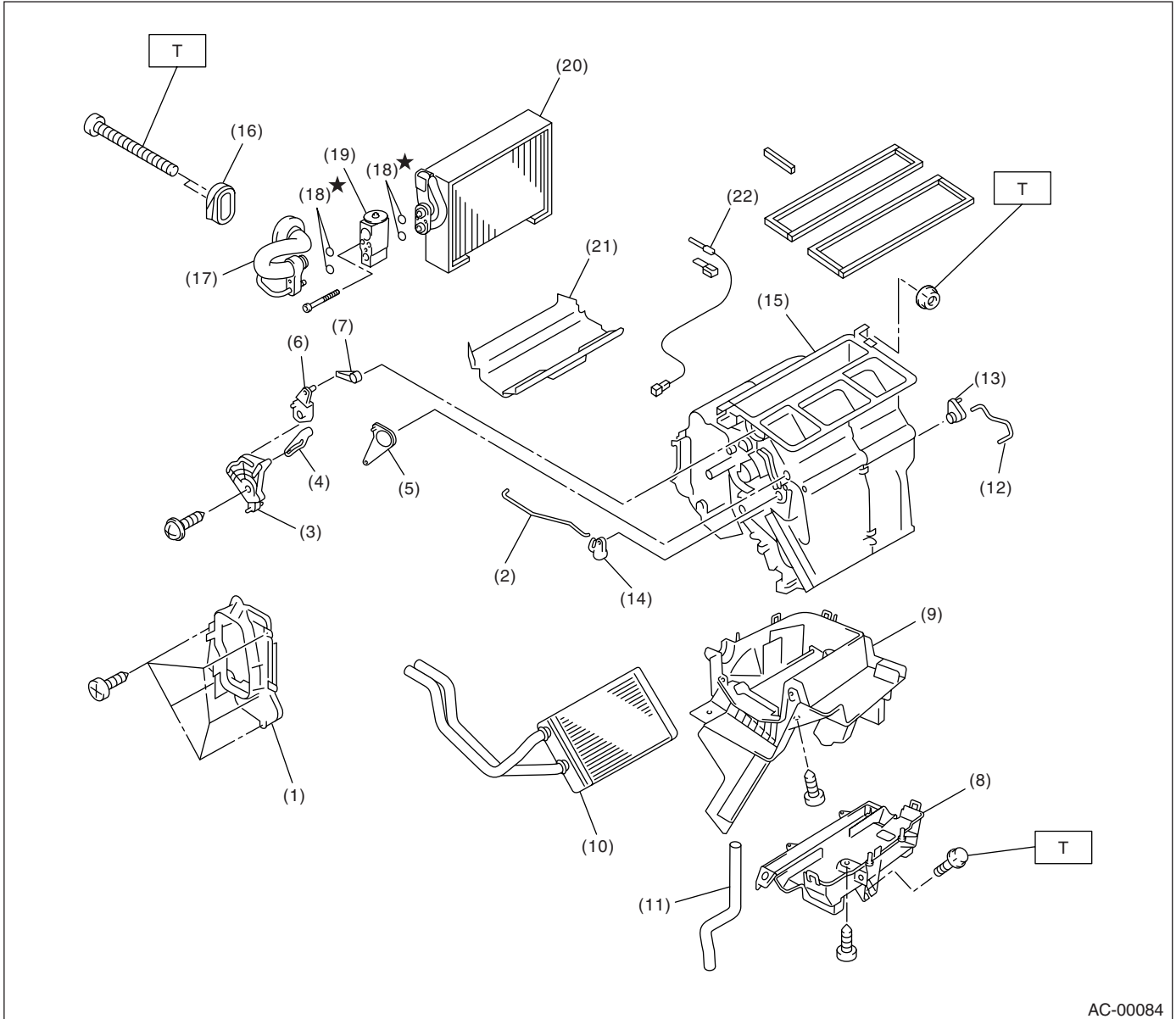
Tightening torque: N·m (kgf·m, ft·lb)

T: 7.5 (0.76, 5.5)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• RHD MODEL WITH MANUAL A/C



AC-00084

- | | | |
|-------------------------|-------------------------|------------------------|
| (1) Evaporator cover | (10) Heater core | (19) Expansion valve |
| (2) Side rod | (11) Drain hose | (20) Evaporator |
| (3) Mode actuator lever | (12) Mix actuator rod | (21) Evaporator lining |
| (4) Vent door lever | (13) Mix actuator lever | (22) Evaporator sensor |
| (5) Foot door lever | (14) Foot door lever | |
| (6) Mode actuator link | (15) Upper case | |
| (7) Defroster lever | (16) Packing | |
| (8) Foot duct | (17) Cooling unit pipe | |
| (9) Lower case | (18) O-ring | |

Tightening torque: N·m (kgf·m, ft·lb)

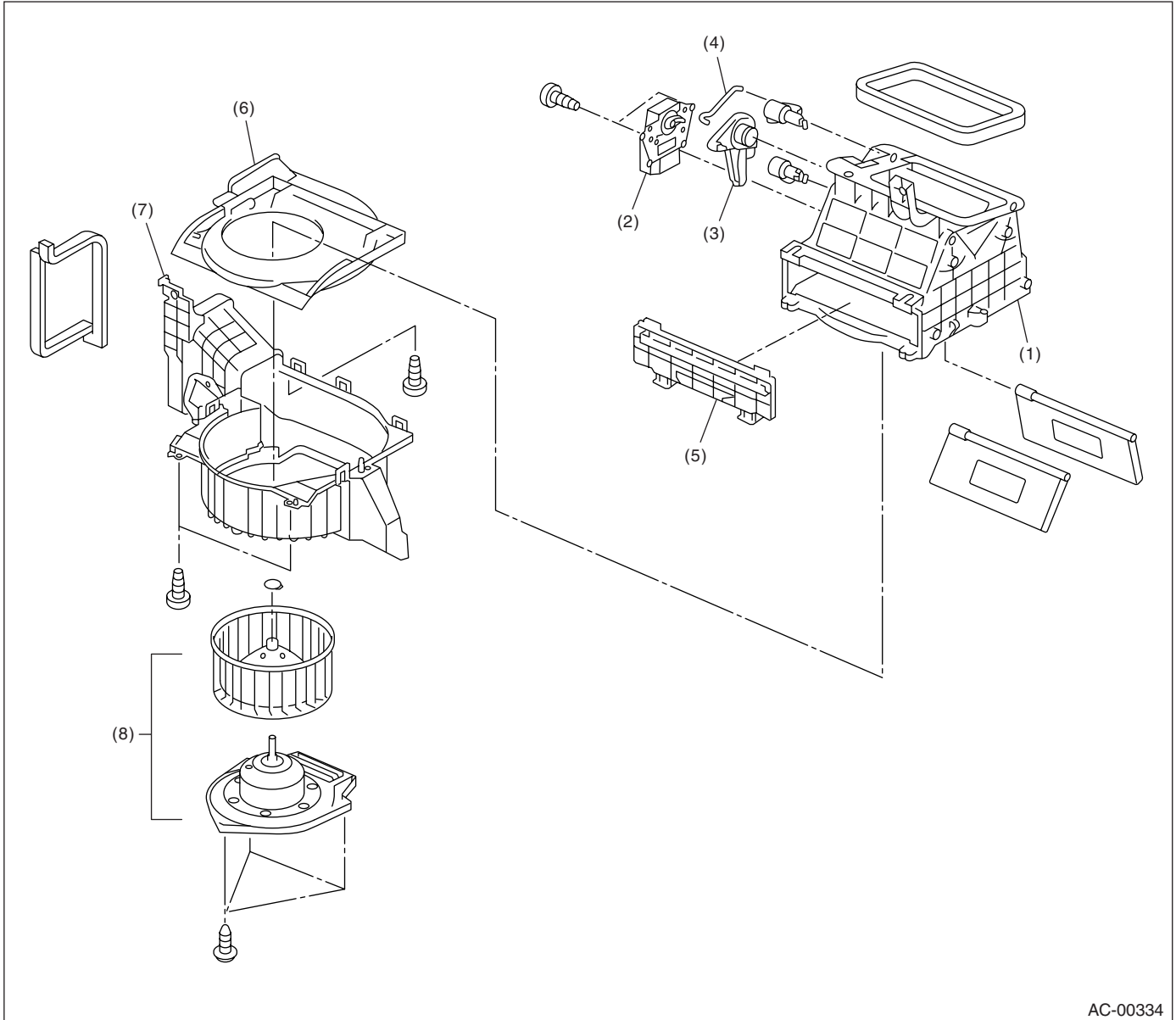
T: 7.5 (0.76, 5.5)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

2. BLOWER MOTOR UNIT

• LHD MODEL WITH AUTO A/C



- (1) Upper case
- (2) Air inlet select actuator
- (3) Air inlet select link

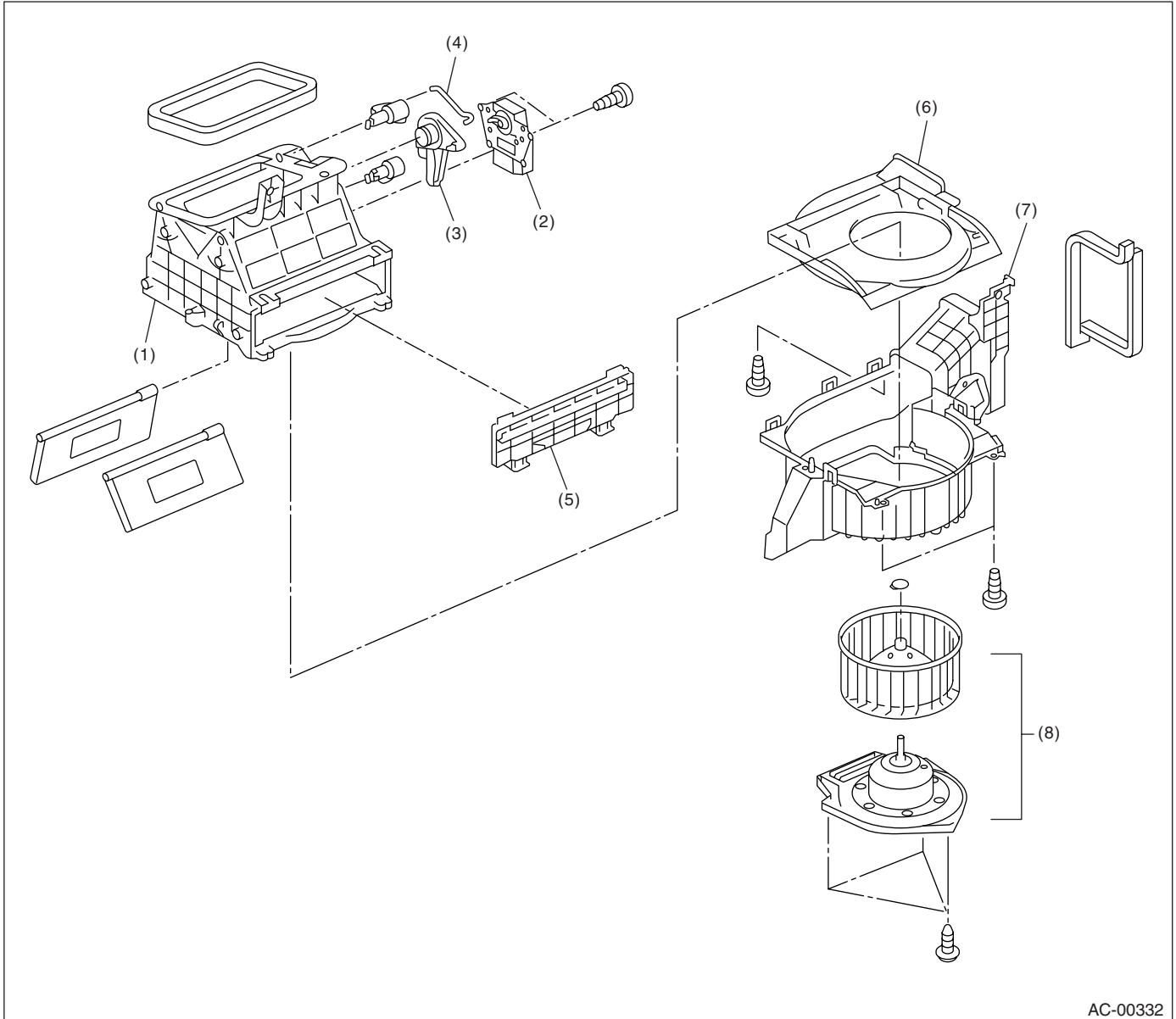
- (4) Link lever
- (5) Filter cover
- (6) Cover

- (7) Lower case
- (8) Blower motor ASSY

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• RHD MODEL WITH AUTO A/C



AC-00332

- (1) Upper case
- (2) Air inlet select actuator
- (3) Air inlet select link

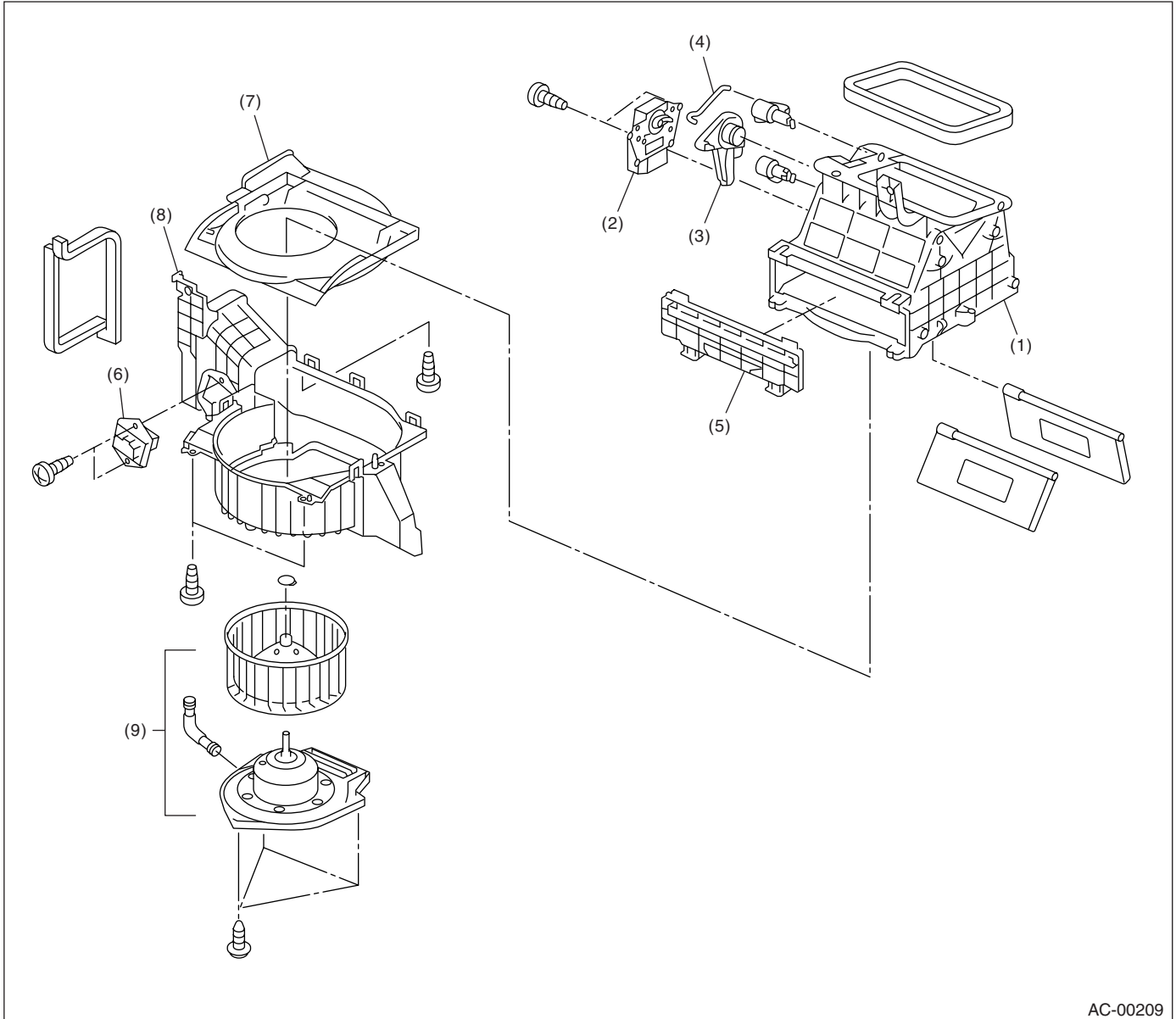
- (4) Link lever
- (5) Filter cover
- (6) Cover

- (7) Lower case
- (8) Blower motor ASSY

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• LHD MODEL WITH MANUAL A/C



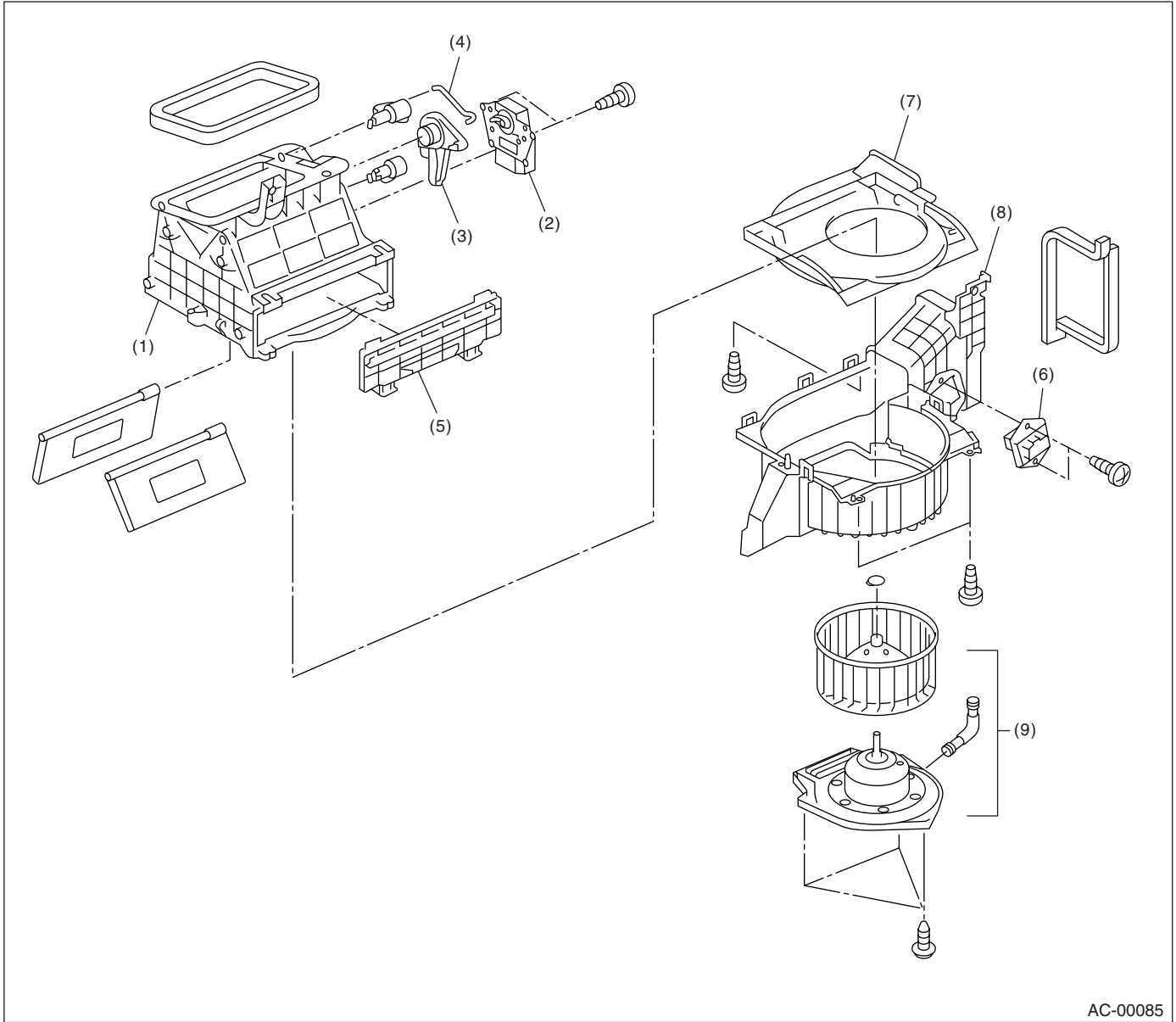
AC-00209

- | | | |
|-------------------------------|---------------------|-----------------------|
| (1) Upper case | (4) Link rod | (7) Cover |
| (2) Air inlet select actuator | (5) Filter cover | (8) Lower case |
| (3) Air inlet select link | (6) Blower resistor | (9) Blower motor ASSY |

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• RHD MODEL WITH MANUAL A/C



AC-00085

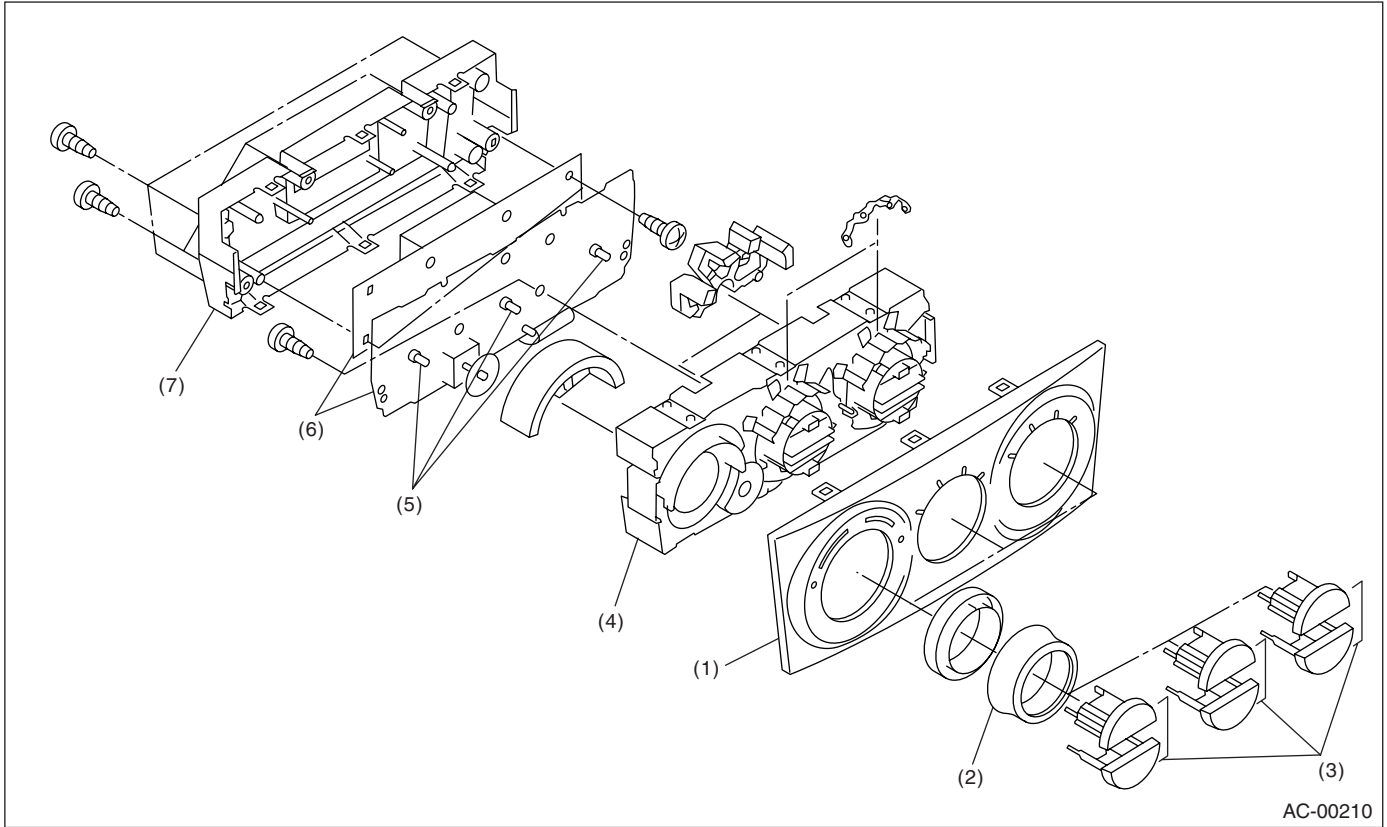
- | | | |
|-------------------------------|---------------------------|-----------------------|
| (1) Upper case | (4) Air inlet select link | (7) Cover |
| (2) Air inlet select actuator | (5) Filter cover | (8) Lower case |
| (3) Air inlet select lever | (6) Blower resistor | (9) Blower motor ASSY |

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

3. CONTROL UNIT

• AUTO A/C MODEL

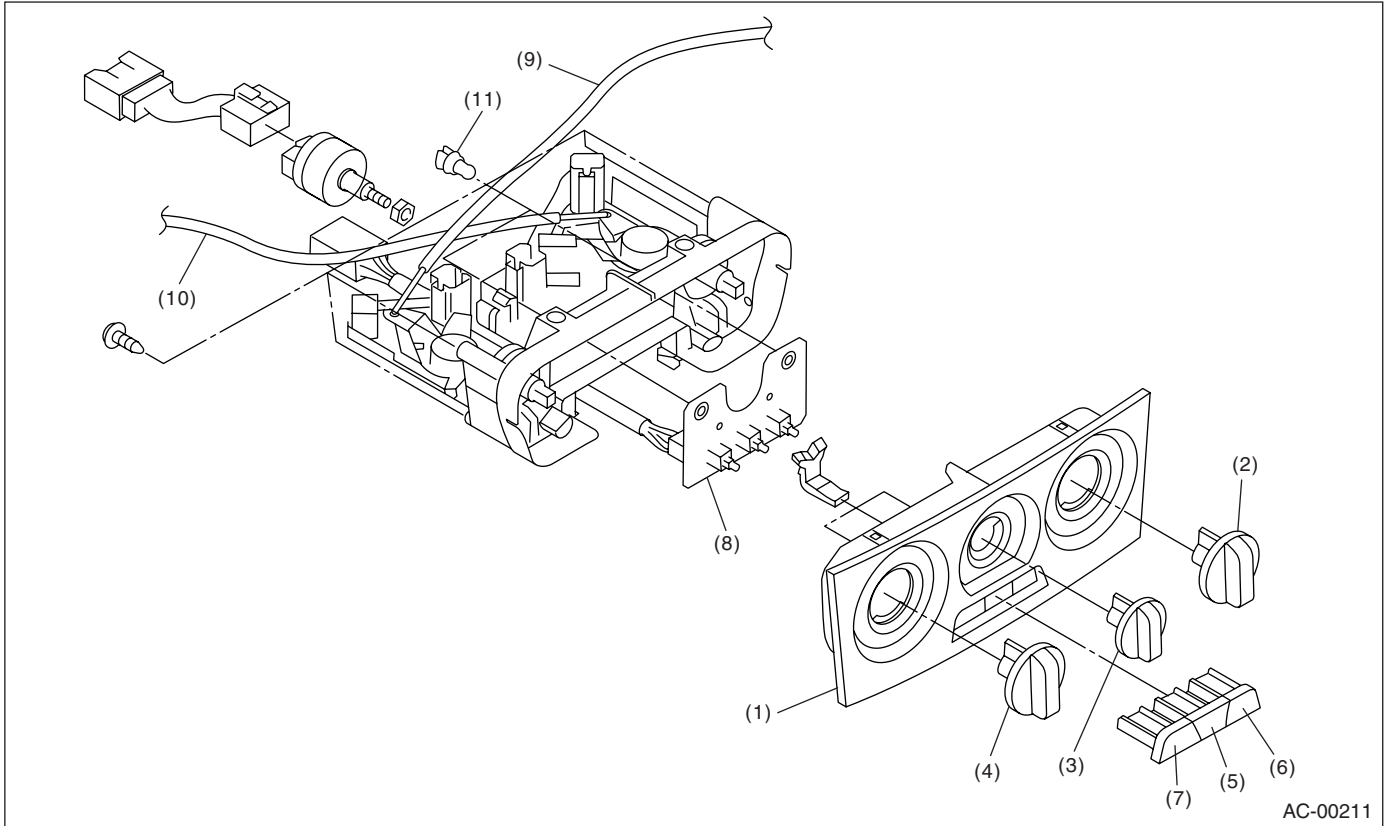


- | | | |
|------------------|--------------------------|-------------------------|
| (1) Panel | (4) Control case (front) | (7) Control case (rear) |
| (2) Control dial | (5) Bulb | |
| (3) Switch | (6) Control unit circuit | |

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• LHD MODEL WITH MANUAL A/C

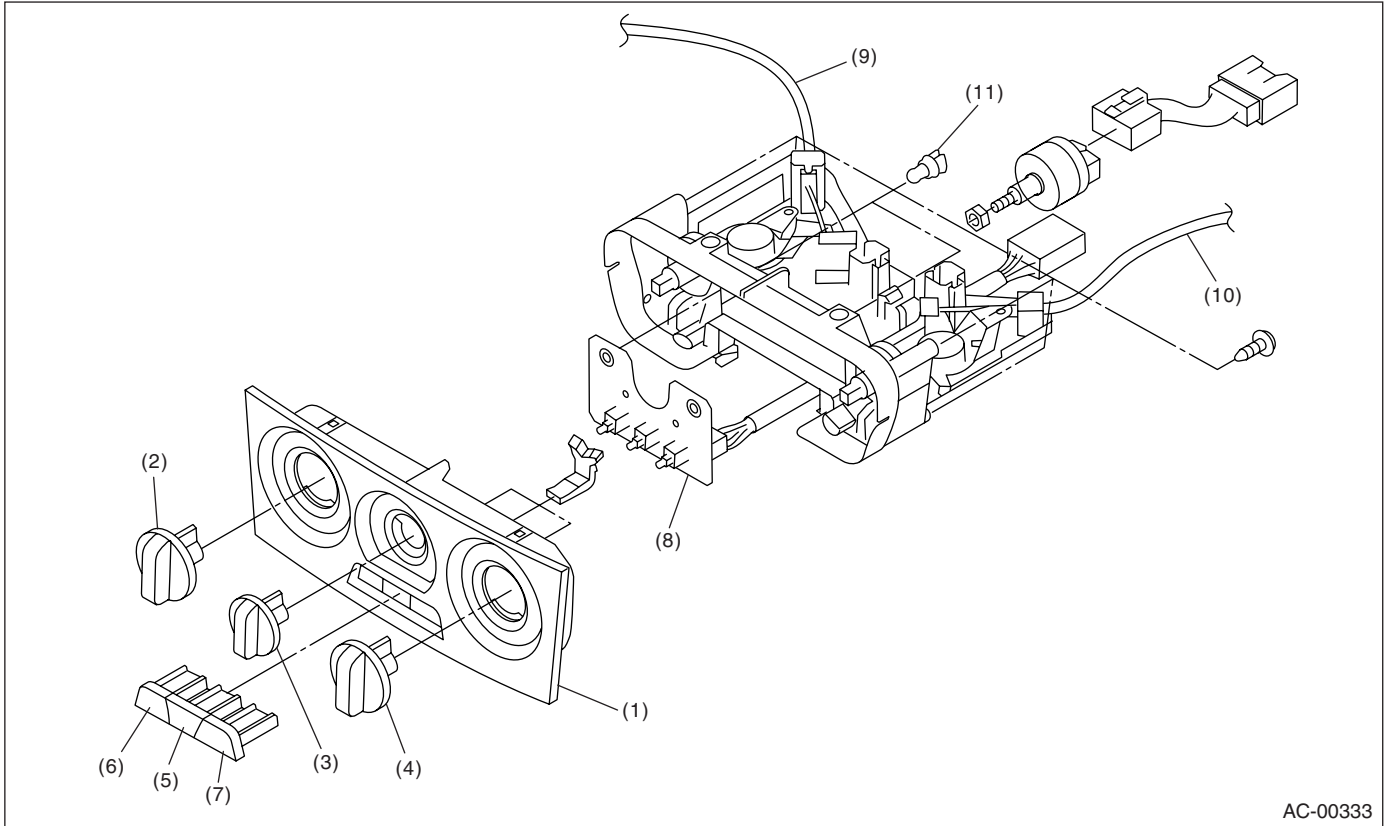


- | | | |
|------------------------------|-----------------------------|--------------------------------|
| (1) Panel | (5) A/C switch | (9) Mode control cable |
| (2) Temperature control dial | (6) Air inlet select switch | (10) Temperature control cable |
| (3) Fan dial | (7) Rear defogger switch | (11) Bulb |
| (4) Mode control dial | (8) Switch circuit board | |

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• RHD MODEL WITH MANUAL A/C



AC-00333

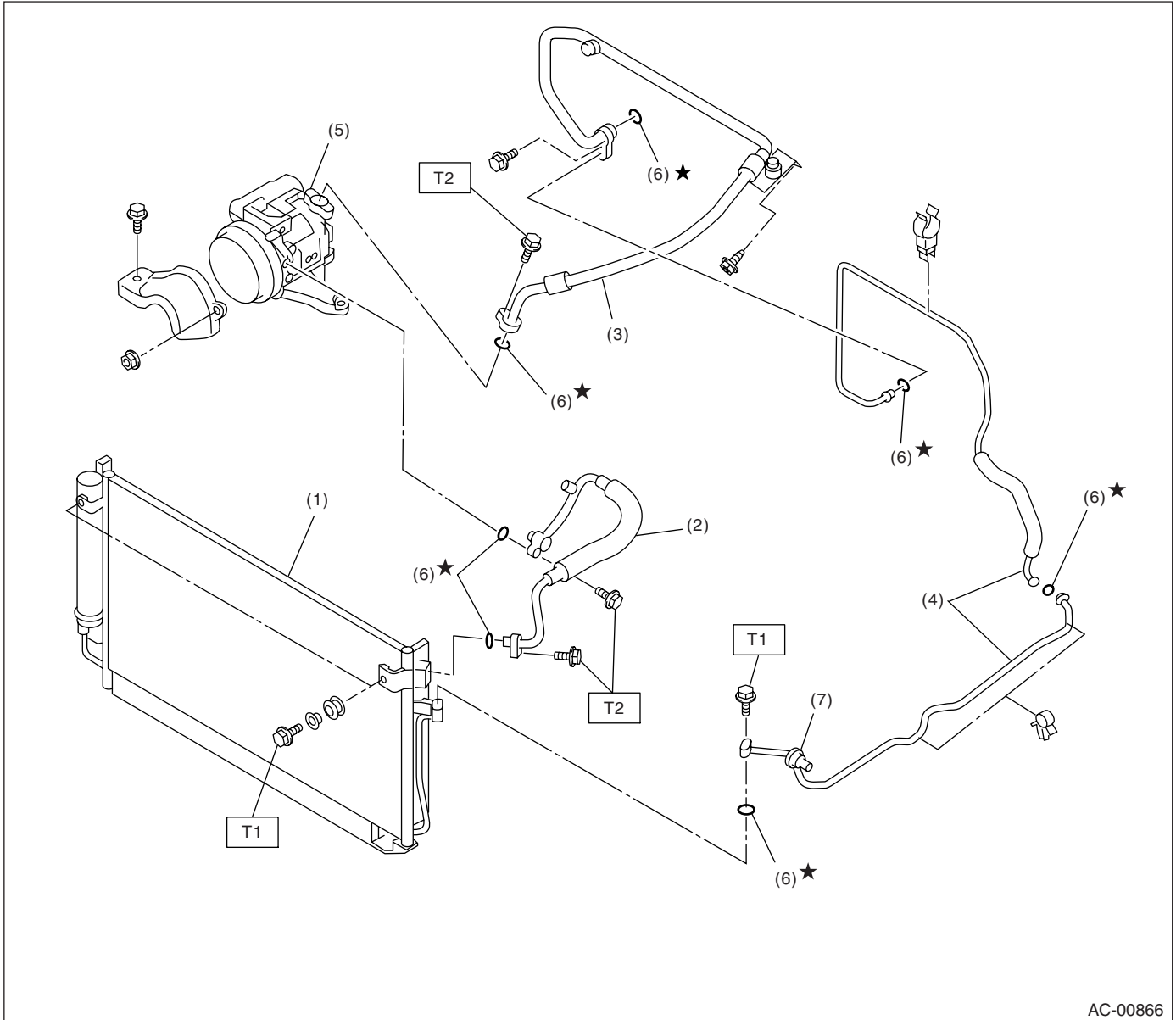
- | | | |
|------------------------------|-----------------------------|--------------------------------|
| (1) Panel | (5) A/C switch | (9) Mode control cable |
| (2) Mode control dial | (6) Rear defogger switch | (10) Temperature control cable |
| (3) Fan dial | (7) Air inlet select switch | (11) Bulb |
| (4) Temperature control dial | (8) Switch circuit board | |

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

4. AIR CONDITIONING UNIT

• LHD MODEL



AC-00866

- | | |
|------------------------|----------------------------|
| (1) Condenser | (5) Compressor |
| (2) High-pressure hose | (6) O-ring |
| (3) Low-pressure hose | (7) Triple pressure switch |
| (4) Pipe | |

Tightening torque: N·m (kgf·m, ft·lb)

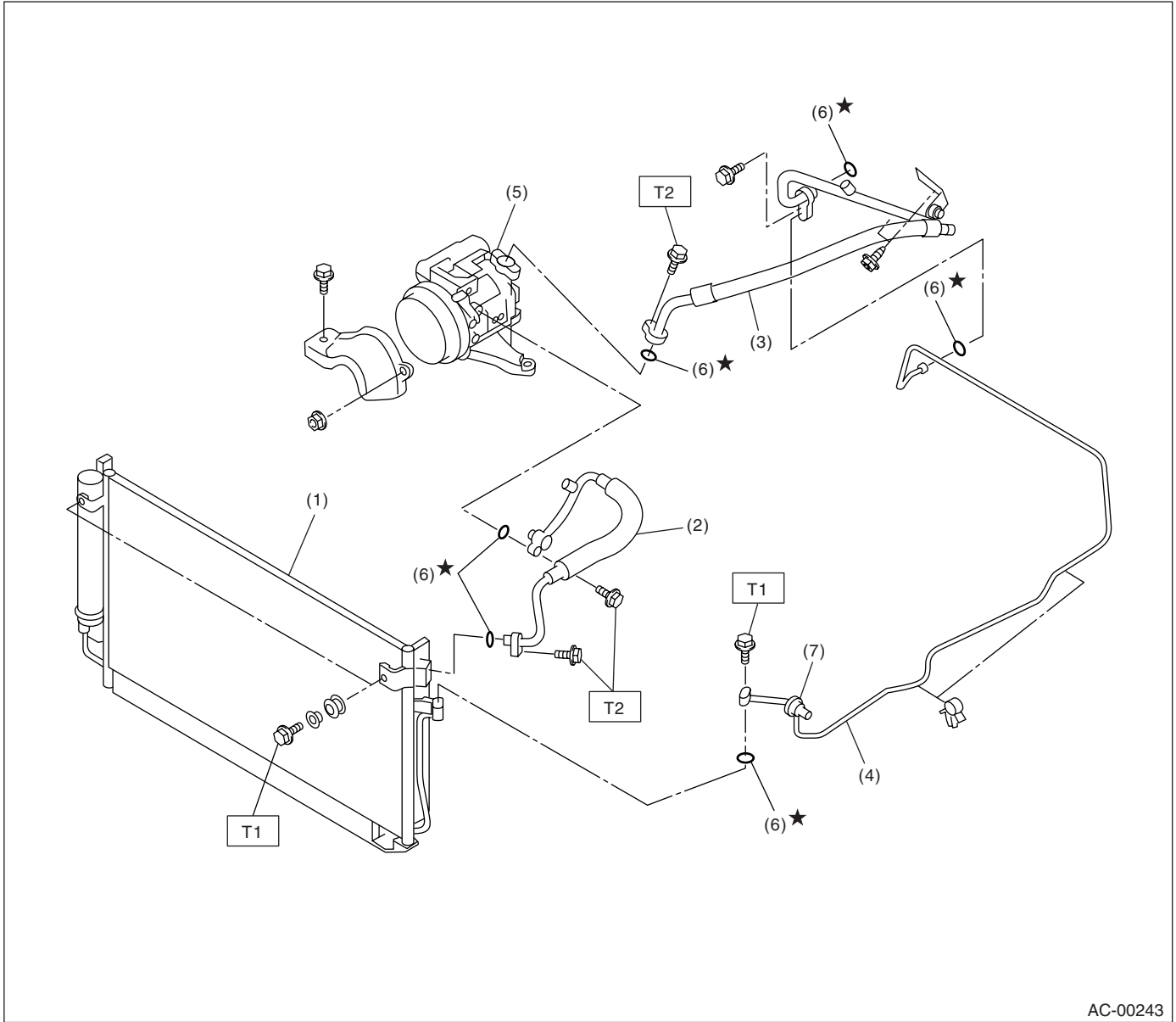
T1: 7.4 (0.75, 5.4)

T2: 15 (1.5, 10.8)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• RHD MODEL



AC-00243

- | | |
|------------------------|----------------------------|
| (1) Condenser | (5) Compressor |
| (2) High-pressure hose | (6) O-ring |
| (3) Low-pressure hose | (7) Triple pressure switch |
| (4) Pipe | |

Tightening torque: N·m (kgf·m, ft·lb)

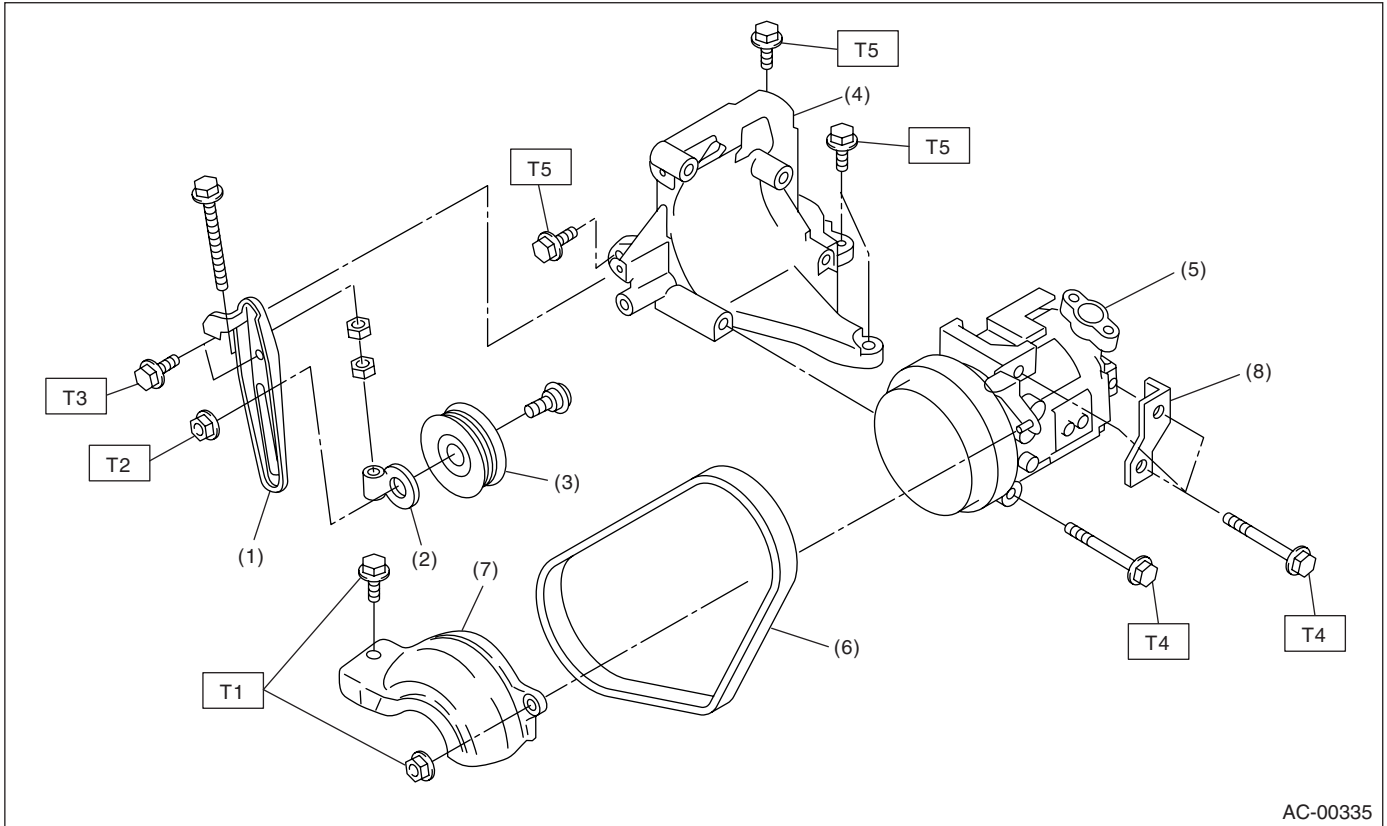
T1: 7.4 (0.75, 5.4)

T2: 15 (1.5, 10.8)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

5. COMPRESSOR



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

- (7) Compressor belt cover (Non-turbo model)
- (8) Compressor stay

Tightening torque: N·m (kgf·m, ft·lb)

T1: 4.0 (0.40, 2.95)

T2: 22.6 (2.3, 16.6)

T3: 23.0 (2.35, 17.0)

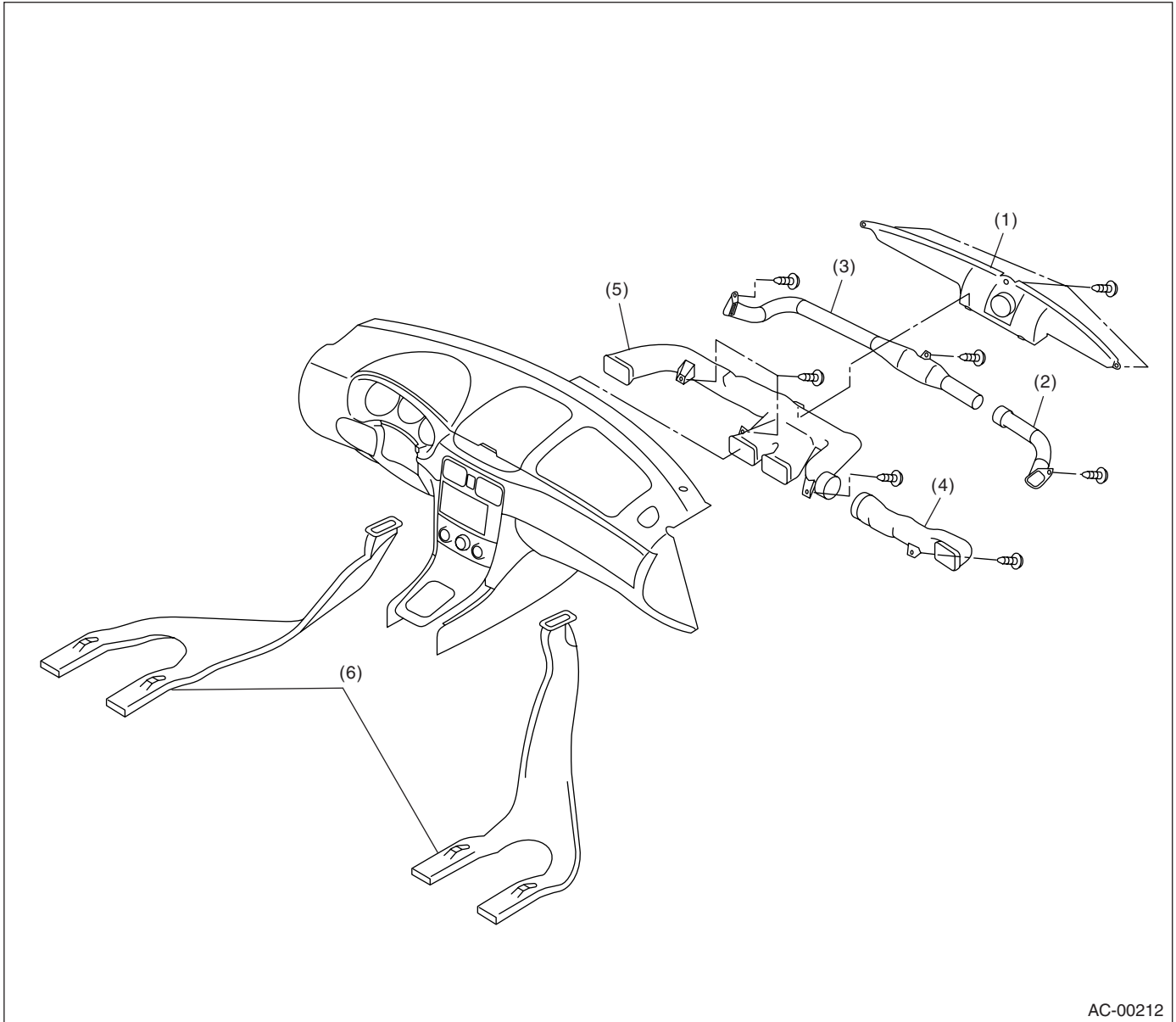
T4: 28.9 (2.95, 21.3)

T5: 35 (3.6, 26)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

6. HEATER DUCT



(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

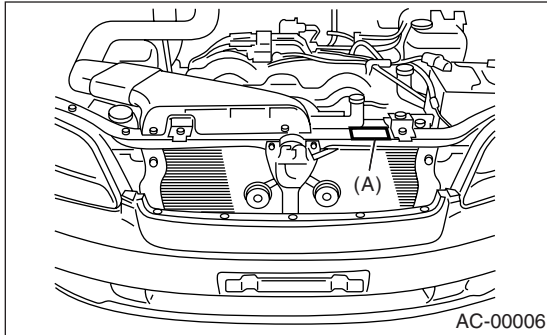
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

C: CAUTION

1. HFC-134a A/C SYSTEM

- The cooling system components for the HFC-134a system such as the refrigerant and compressor oil are different from the old conventional HFC-12 system components and they are incompatible with each other.
- Vehicles with the HFC-134a system can be identified by the label (A) attached to the vehicle. Before maintenance, check which A/C system is installed in the vehicle.



2. COMPRESSOR OIL

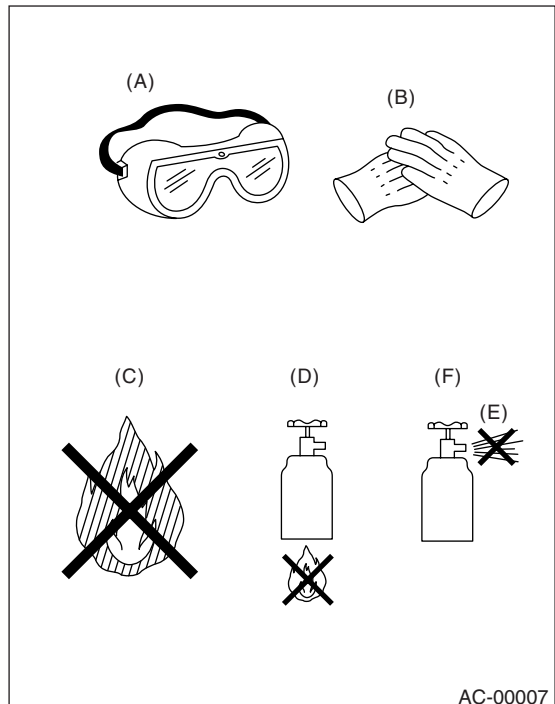
- HFC-134a compressor oil has no compatibility with that for R12 system.
 - Use only the manufacturer-authorized compressor oil for the HFC-134a system; only use ZXL200PG.
 - Do not mix multiple compressor oils.
- If HFC-12 compressor oil is used in a HFC-134a A/C system, the compressor may become stuck due to poor lubrication, or the refrigerant may leak due to swelling of rubber parts.
- On the other hand, if HFC-134a compressor oil is used in a HFC-12 A/C system, the durability of the A/C system will be lowered.
- HFC-134a compressor oil is very hygroscopic. When replacing or installing/removing A/C parts, immediately isolate the oil from the atmosphere using a plug or tape. In order to avoid moisture, store the oil in a container with its cap securely 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.
- Provide good ventilation and do not work in a closed area.
- In order to prevent global warming, avoid releasing HFC-134a into the atmosphere. Using a refrigerant recovery system, discharge and reuse it.



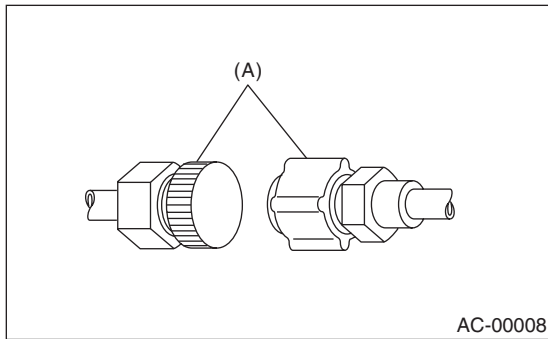
- (A) Goggles
- (B) Gloves
- (C) Avoid open flame
- (D) No direct heat on container
- (E) Do not discharge
- (F) Loosen

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

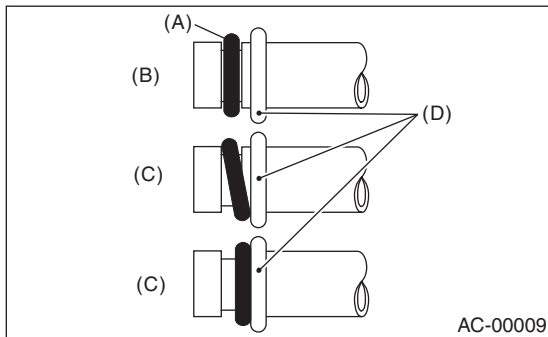
5. O-RING CONNECTIONS

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



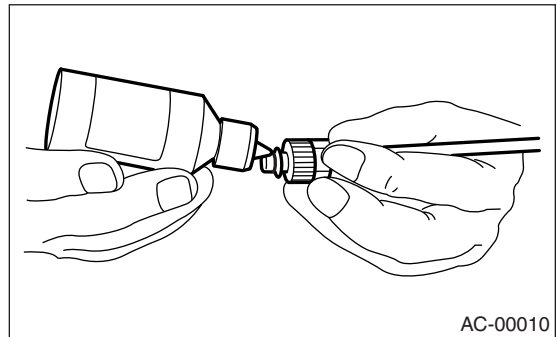
(A) Seal

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



- (A) O-ring
- (B) OK
- (C) NG
- (D) Beard

- Use compressor 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 compressor oil to the bead of tube.



- After tightening, use a clean cloth to remove excess compressor oil from the connections and any oil which may have run on the vehicle body or other parts.
- If any leakage is suspected after tightening, do not retighten the connections, disconnect the connections, remove the O-rings, and check the O-rings, threads, and connections.

D: PREPARATION TOOL

CAUTION:

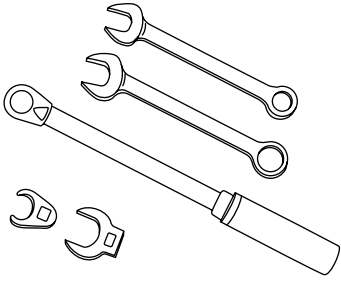
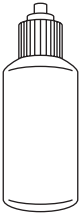
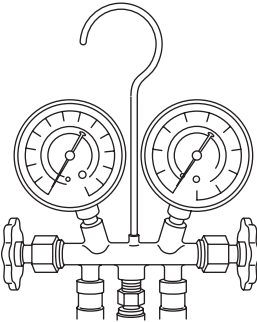
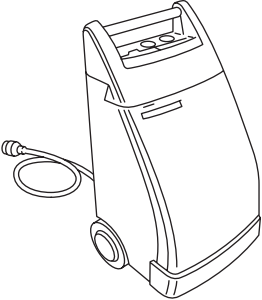
When working on vehicles with the HFC-134a system, only use HFC-134a specified tools and parts. Do not mix with CFC-12 tools and parts. If HFC-134a and CFC-12 refrigerant or compressor oil is mixed, poor lubrication will result and the compressor itself may be destroyed.

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

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

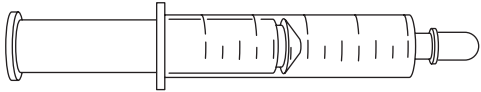
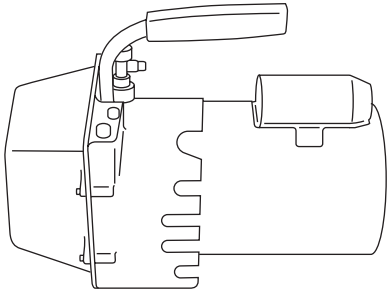
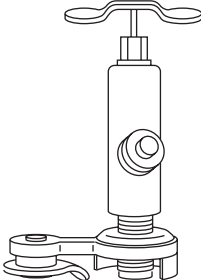
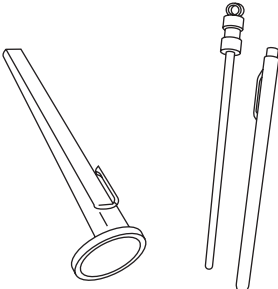
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Illustration	Tools and Equipment
 <p style="text-align: right;">AC-00213</p>	<p>Wrench</p> <p>Various WRENCHES will be required to service any A/C system. A 7 to 40 N·m (0.7 to 4.1 kgf-m, 5 to 30 ft-lb) torque wrench and various crow-foot wrenches will be needed. Open end or flare nut wrenches will be needed for back-up on the tube and hose fittings.</p>
 <p style="text-align: right;">AC-00012</p>	<p>Applicator bottle</p> <p>A small APPLICATOR BOTTLE is recommended to apply refrigerant oil to the various parts. They can be available at a hardware or drug store.</p>
 <p style="text-align: right;">AC-00013</p>	<p>Manifold gauge set</p> <p>A MANIFOLD GAUGE SET (with hoses) can be available at from either a refrigerant supplier or an automotive equipment supplier.</p>
 <p style="text-align: right;">AC-00014</p>	<p>Refrigerant recovery system</p> <p>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.</p>

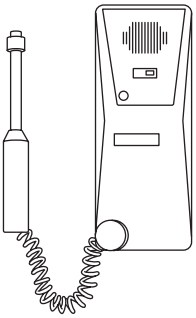
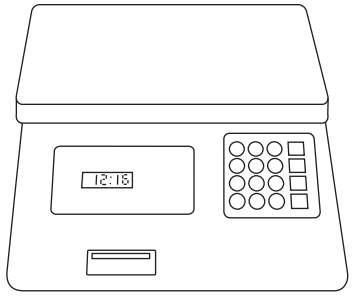
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Illustration	Tools and Equipment
 <p data-bbox="605 533 699 554">AC-00015</p>	<p data-bbox="743 199 829 220">Syringe</p> <p data-bbox="743 233 1471 285">A graduated plastic SYRINGE will be needed to add oil back into the system. The syringe can be available at a pharmacy or a drug store.</p>
 <p data-bbox="605 905 699 926">AC-00016</p>	<p data-bbox="743 569 899 590">Vacuum pump</p> <p data-bbox="743 602 1487 688">A VACUUM PUMP (in good working condition) is necessary, and can be available at either a refrigerant supplier or an automotive equipment supplier.</p>
 <p data-bbox="605 1276 699 1297">AC-00017</p>	<p data-bbox="743 938 829 959">Can tap</p> <p data-bbox="743 972 1446 1031">A CAN TAP for the 397 g (14 oz) can is available at an automotive equipment supplier.</p>
 <p data-bbox="605 1654 699 1675">AC-00018</p>	<p data-bbox="743 1308 891 1329">Thermometer</p> <p data-bbox="743 1341 1487 1400">Pocket THERMOMETERS are available at either a industrial hardware store or a refrigerant suppliers.</p>

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Illustration	Tools and Equipment
 <p>AC-00019</p>	<p>Electronic leak detector</p> <p>An ELECTRONIC LEAK DETECTOR can be available at either a specialty tool supplier or an A/C equipment supplier.</p>
 <p>AC-00020</p>	<p>Weight scale</p> <p>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.</p>

Refrigerant Pressure with Manifold Gauge Set

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

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 speed to 1,500 rpm.
- 6) Turn ON the A/C switch.
- 7) Turn the temperature control dial to MAX COOL.
- 8) Set the air inlet select switch to RECIRC position.
- 9) Turn the fan dial to HI.
- 10) Read the gauge.

Standard:

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

High pressure: 1,471 — 1,667 kPa (15 — 17 kg/cm², 213 — 242 psi)

Ambient temperature: 30 — 35°C (86 — 95°F)

B: INSPECTION

Symptom	Probable cause	Repair order
High-pressure side is unusually high.	<ul style="list-style-type: none">• Defective condenser fan motor• Clogged condenser fin• Too much refrigerant• Air inside the system• Defective receiver dryer	<ul style="list-style-type: none">• Replace the fan motor.• Clean the condenser fin.• Discharge refrigerant.• Replace the receiver dryer.• After reevacuating the receiver dryer, charge appropriate amount of refrigerant.
High-pressure side is unusually low.	<ul style="list-style-type: none">• Defective compressor• Not enough refrigerant• Clogged expansion valve• Expansion valve frozen temporarily by moisture	<ul style="list-style-type: none">• Replace the compressor.• Check for leaks.• Replace the expansion valve.• Fully evacuate the expansion valve.
Low-pressure side is unusually high.	<ul style="list-style-type: none">• Defective compressor• Defective expansion valve• Too much refrigerant	<ul style="list-style-type: none">• Replace the compressor.• Replace the expansion valve.• Discharge refrigerant.
Low-pressure side is unusually low.	<ul style="list-style-type: none">• Not enough refrigerant• Clogged expansion valve• Expansion valve frozen temporarily by moisture• Saturated receiver dryer	<ul style="list-style-type: none">• Check for leaks.• Replace the expansion valve.• Replace the receiver dryer.

Refrigerant Recovery Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

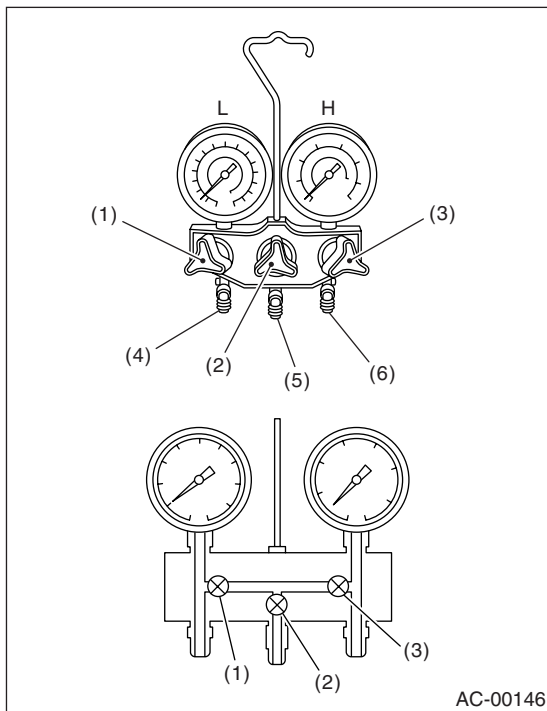
3. Refrigerant Recovery Procedure

A: OPERATION

CAUTION:

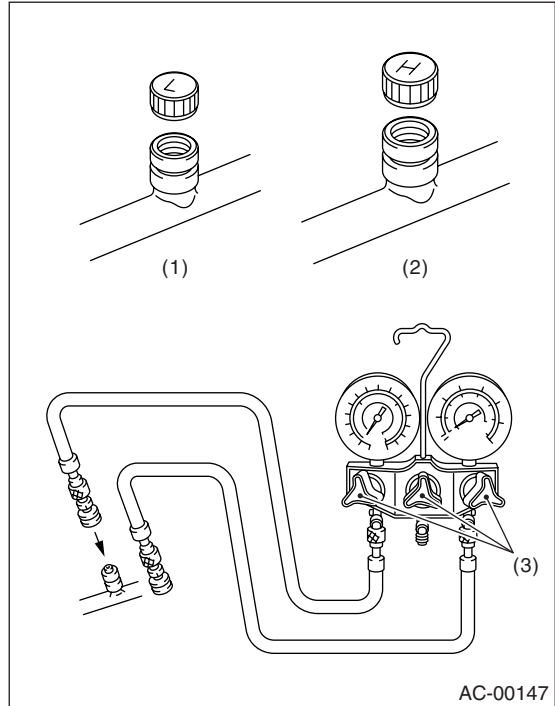
- During operation, be sure to wear safety goggles and protective gloves.
- Connect the refrigerant recovery system with the manifold gauge set set to discharge the refrigerant from the A/C system and reuse it.
- When reusing the discharged refrigerant, keep service cans on hand. Because the discharge 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-31, OPERATION, Compressor Oil.>
- 2) Stop the engine.
- 3) Make sure the valves on low-/high-pressure sides of manifold gauge set are fully closed.



- L: Low-pressure gauge
- H: High-pressure gauge
- (1) Low-pressure valve
- (2) Vacuum pump valve
- (3) High-pressure valve
- (4) For low-pressure
- (5) For vacuum pump
- (6) For high-pressure

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



- (1) Low-pressure service port
- (2) High-pressure service port
- (3) Close

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

Refrigerant Charging Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

4. Refrigerant Charging Procedure

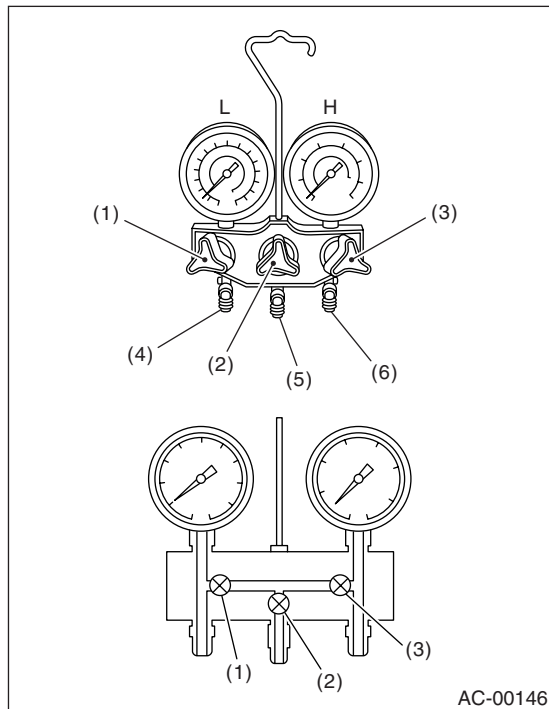
A: OPERATION

CAUTION:

- During operation, be sure to wear safety goggles and protective gloves.
- If air is mixed in refrigeration cycle, poor cooling may result, and also if moisture is mixed in refrigeration cycle, clogging (freezing) or rust may result.

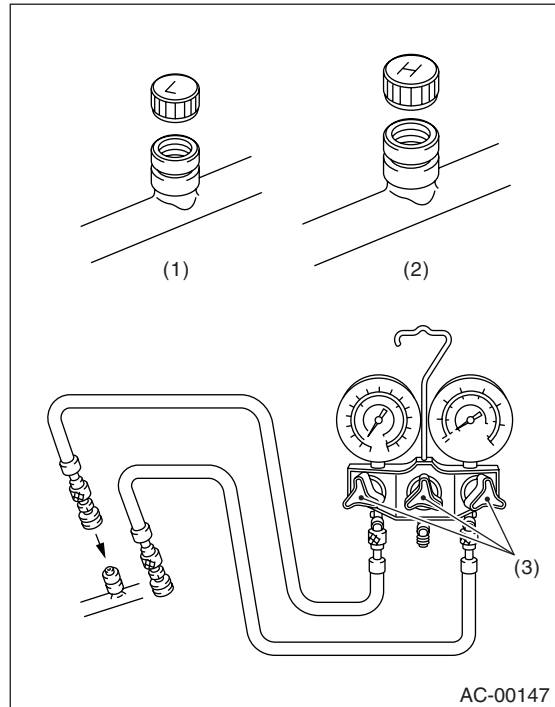
Before charging the refrigerant, evacuate the system using vacuum pump to remove air and moisture in the system. Moisture can be evaporated and removed easily even at normal temperature, if the system is evacuated using vacuum pump.

1) Close all valves of manifold gauge.



- L: Low-pressure gauge
- H: High-pressure gauge
- (1) Low-pressure valve
- (2) Vacuum pump valve
- (3) High-pressure valve
- (4) For low-pressure
- (5) For vacuum pump
- (6) For high-pressure

2) Install the low-/high-pressure hoses to corresponding service ports on vehicle.

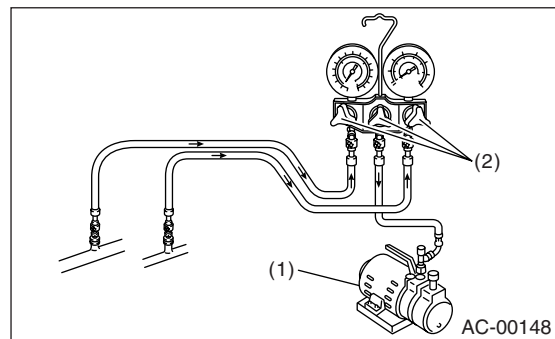


- (1) Low-pressure service port
- (2) High-pressure service port
- (3) Close

CAUTION:

Be sure that the hoses are securely connected.

- 3) Connect the center hose of manifold gauge with vacuum pump.
- 4) Activate the vacuum pump and then open the valves on low-/high-pressure sides.



- (1) Vacuum pump
- (2) Open

CAUTION:

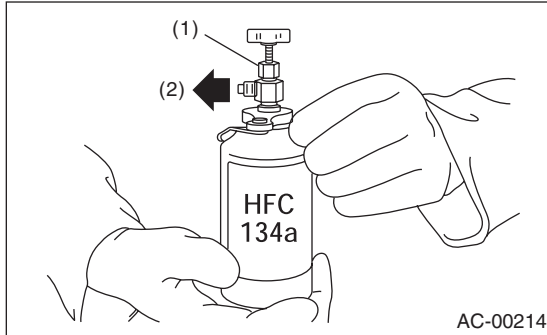
Be sure to evacuate the system using vacuum pump.

- 5) After at least 5 minutes of evacuation, if the low-pressure gauge reading shows 100.0 kPa (750 mmHg, 29.5 inHg) or higher, close the valves on center hose to stop the vacuum pump.

Refrigerant Charging Procedure

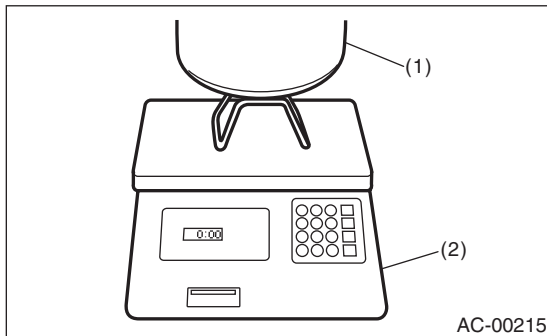
HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

- 6) Leave it at least 5 to 10 minutes after closing the valves on low-/high-pressure sides, and then check the low-pressure gauge reading for any changes. When the gauge reading changes, this is a sign of leakage. Check the pipe or hose connector points, and repair if necessary. Repeat the procedure from 1) after repairing the faulty part.
- 7) If there are no leaks, further evacuate the system 20 to 30 minutes.
- 8) Close all valves and stop the vacuum pump.
- 9) Following the can tap operation manual instructions, install it to refrigerant can.



- (1) Tap valve
- (2) To center manifold hose

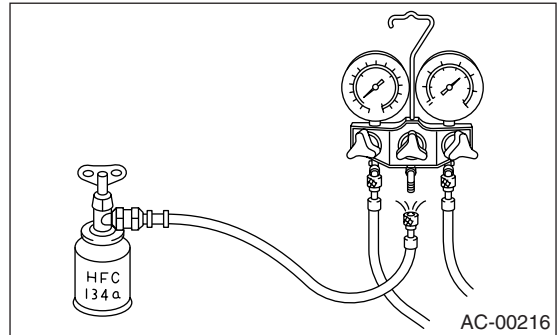
- 10) Disconnect the vacuum pump from center hose, and connect the hose to tap valve.
- 11) When a 13.6 kg (30 lb) refrigerant container is used, measure the refrigerant amount in use using a weighting scale before connecting to center hose.



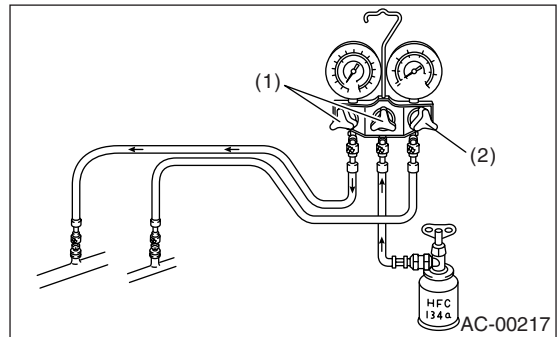
- (1) Refrigerant container (HFC-134a)
- (2) Weighting scale

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

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



- 14) Make sure that the high-pressure valve of manifold gauge is closed, and then open the low-pressure side valve only to charge the refrigerant.



- (1) Open
- (2) Close

CAUTION:

Do not open the high-pressure valve. Be sure to open the low-pressure valve.

- 15) Close the low-pressure valve when the low-pressure gauge reading reaches 200 kPa (1,500 mmHg, 59.1 inHg).
- 16) Using a leak tester, check the system for refrigerant leaks.
- 17) After confirming that there are no leaks with the leak test, charge the required amount of refrigerant.
- 18) If the HFC-134a source is empty, close the low-pressure valve and then close the valve on can tap before replacing the empty source. Restart charging operation after replacing the HFC-134a source with a new one and purging.
- 19) Close the low-pressure valve if the charge rate of refrigerant becomes worse.
- 20) Confirm that both the low-/high-pressure valves are closed. Start the engine with A/C switch OFF.
- 21) Quickly repeat A/C switch ON-OFF cycles a few times to prevent initial compressor damage.

Refrigerant Charging Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

22) Set up the vehicle to the following status:

- A/C switch ON
- Engine running at 1,500 rpm
- Blower speed setting to "HI"
- Temperature setting to "MAX COOL"
- Air inlet setting to "RECIRC"
- Window open

23) Open the low-pressure valve and charge the specified amount of refrigerant.

24) Close all valves and disconnect the hoses from service port after charging the refrigerant.

25) Install the cap to service port.

Refrigerant Leak Check

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

5. Refrigerant Leak Check

A: INSPECTION

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

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

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

4) Check the connections between the condenser and pipes, and welded joints on the condenser.

The leak tester may detect the oil on the condenser fins as a leak.

5) Check the joint between the compressor and hoses.

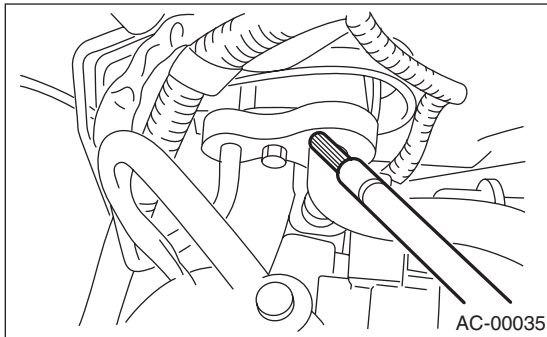
6) Check the machined area of compressor and other joints on the compressor.

7) Check the compressor shaft seal at the area near the center of compressor clutch pulley.

Some shaft seals show a slight amount of leakage about 28 g (1.0 oz) per year. This is not a problem.

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

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

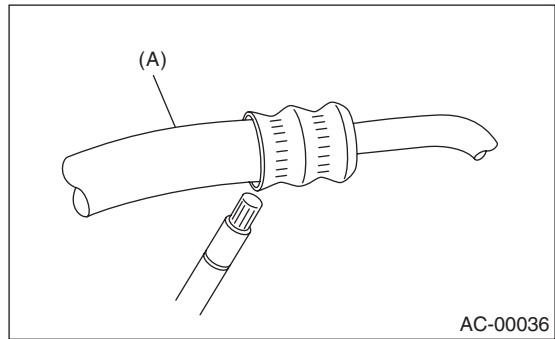


9) Visually check the rubber area of the flexible hose for cracks.

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

CAUTION:

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

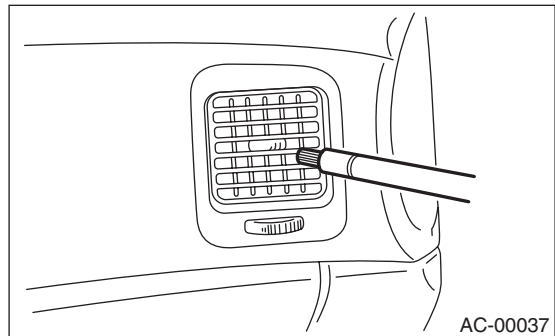


(A) Flexible hose

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

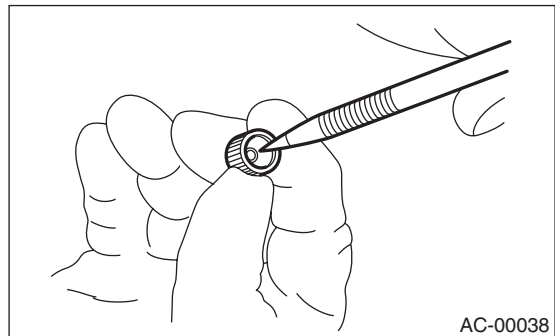
After the test is finished, reconnect the drain hose.

11) Turn the ignition switch to ON, and run the blower at high speed for 1 minute. Stop the blower to check the ventilation grille on the instrument panel. While moving the tester closer to the grille, run the blower for 1 or 2 seconds, then stop it. Check the grille at that point for at least 10 seconds.



12) Check the valve in the service port.

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



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 speed to 1,500 rpm.
- 2) Turn ON the A/C switch.
- 3) Turn the temperature control dial to MAX COOL.
- 4) Set the air inlet select switch to RECIRC position.
- 5) Turn the fan dial 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 (same as the amount of remaining oil in removed component).
- When replacing the compressor, the new compressor will already have the specified amount of oil in it. 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	Approx. 50 cm ³ (1.7 US fl oz, 1.8 Imp fl oz)
Condenser	Approx. 30 cm ³ (1.0 US fl oz, 1.1 Imp fl oz)
Hose	Approx. 10 cm ³ (0.4 US fl oz, 0.4 Imp fl oz)
Receiver dryer	Approx. 10 cm ³ (0.4 US fl oz, 0.4 Imp fl oz)

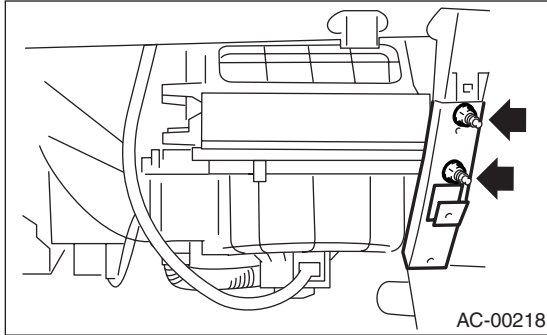
Blower Motor Unit Assembly

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

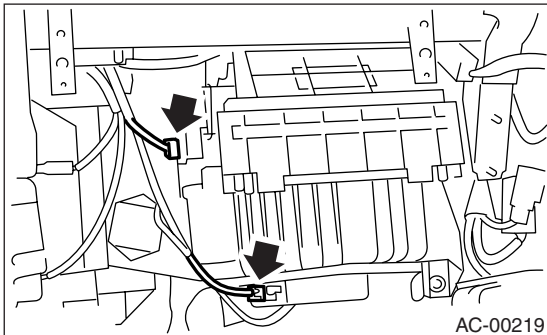
7. Blower Motor Unit Assembly

A: REMOVAL

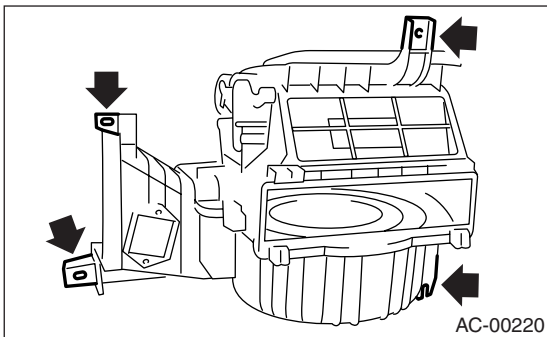
- 1) Disconnect the ground cable from battery.
- 2) Remove the glove box. <Ref. to EI-37, REMOVAL, Glove Box.>
- 3) Loosen the nut to remove the support beam stay.



- 4) Disconnect the connectors of blower motor and intake actuator resistor.



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



B: INSTALLATION

Install in the reverse order of removal.

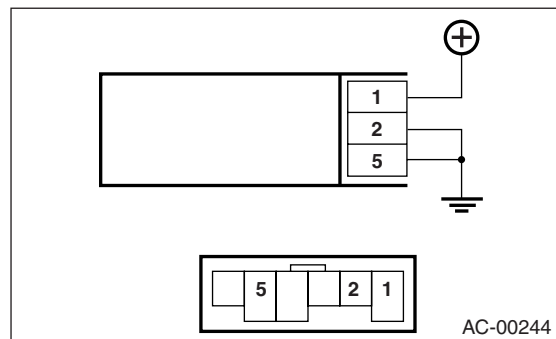
Tightening torque:

Refer to **COMPONENT in General Description**. <Ref. to AC-5, HEATER COOLING UNIT, COMPONENT, General Description.> <Ref. to AC-9, BLOWER MOTOR UNIT, COMPONENT, General Description.>

C: INSPECTION

Inspection of Auto A/C Brush-less Motor Operation

Connect the motor connector terminal 1 from the battery to the positive (+) lead and terminal 2 and 5 at the same time to the negative (-) lead. Make sure the motor runs smoothly.



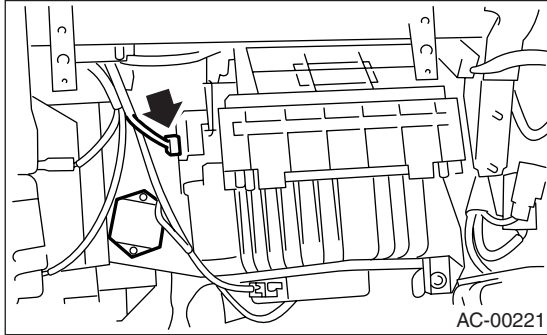
Blower Resistor (Manual A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

8. Blower Resistor (Manual A/C Model)

A: REMOVAL

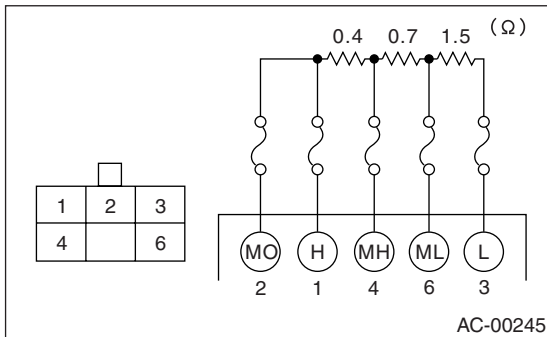
- 1) Remove the glove box. <Ref. to EI-37, REMOVAL, Glove Box.>
- 2) Disconnect the blower resistor connector.
- 3) Remove the two screws to remove blower resistor.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION



Measure the blower resistor resistance.

Terminal No.	Standard
3 and 6	Approx. 0.4 Ω
3 and 4	Approx. 1.1 Ω
2 and 1	Approx. 2.6 Ω

If NG, replace the blower resistor.

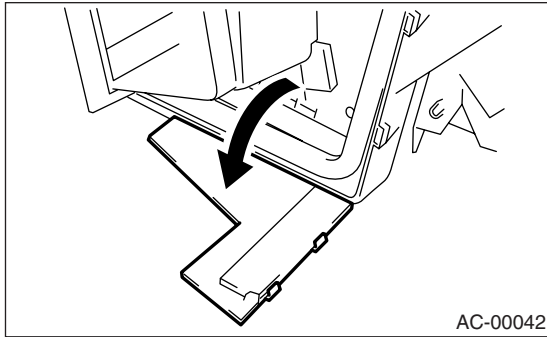
Heater Core

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

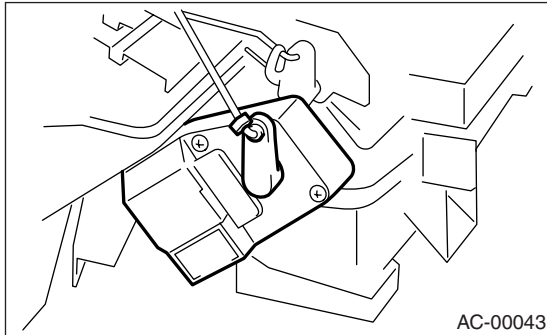
9. Heater Core

A: REMOVAL

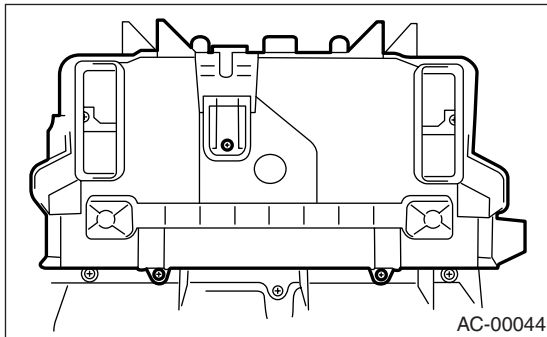
- 1) Remove the heater cooling unit. <Ref. to AC-39, REMOVAL, Heater Cooling Unit.>
- 2) Remove the screws to remove the heater core pipe cover (RHD model).



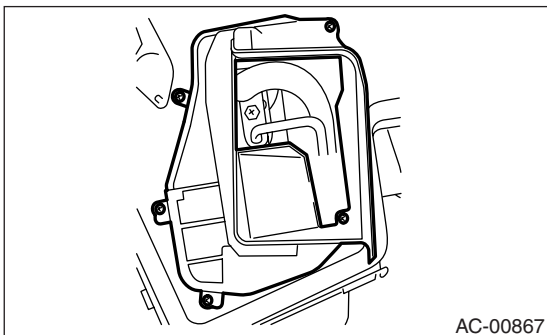
- 3) Remove the screws to remove mode actuator.



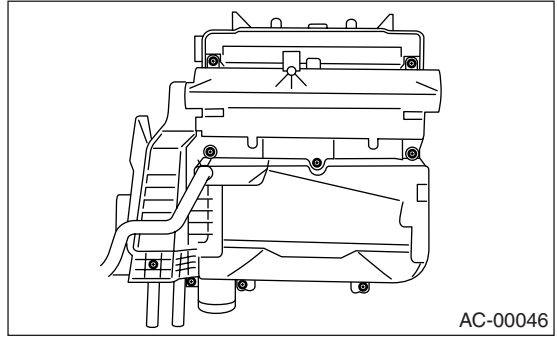
- 4) Remove the screws to remove foot duct.



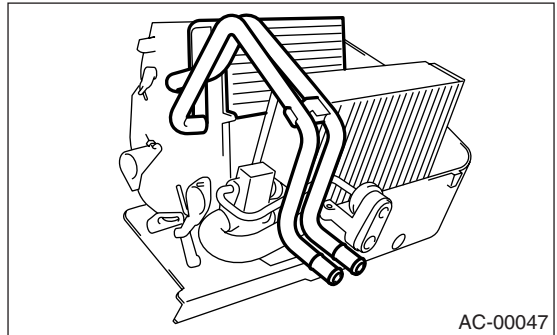
- 5) Remove the screws to remove evaporator cover.



- 6) Remove the screws to remove lower case.



- 7) Remove the heater core.



B: INSTALLATION

Install in the reverse order of removal.

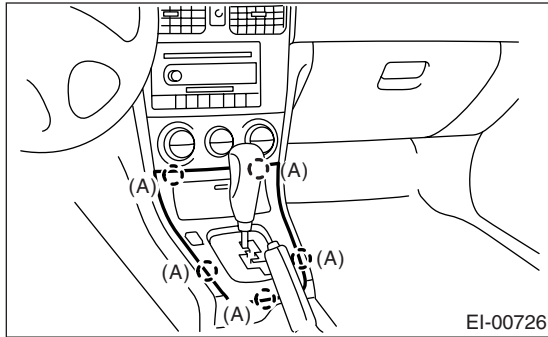
Control Unit

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

10. Control Unit

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) In case of manual A/C, remove the mode cable and air-mix cable from links of heater unit.
- 3) Remove the console front cover.

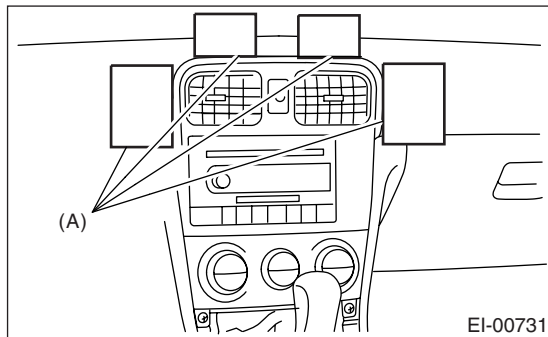


(A) Hook

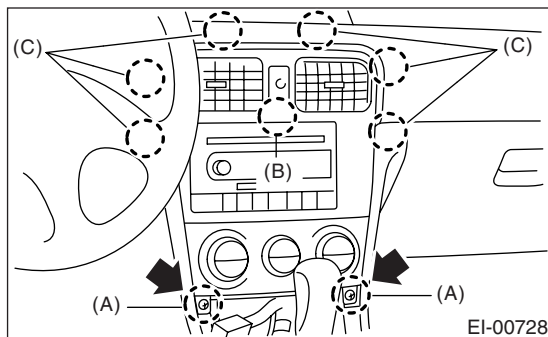
- 4) Apply the thick protective tape (A) to instrument panel pad to protect the surface of it.

NOTE:

Also apply the protective tape to the deep inside portion between center console panel and instrument panel pad.



- 5) Loosen the screws.

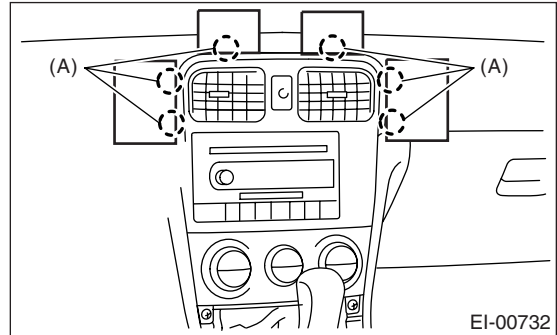


- (A) Screw
- (B) Clip
- (C) Claw

- 6) Insert the flat tip screwdriver to the position (A) and release the claw with pulling out the lower portion of center console panel.

CAUTION:

Do not insert the flat tip screwdriver into any portion except for indicated in the figure. The instrument panel may be damaged.



(A) Inserting position of flat tip screwdriver

- 7) Remove the four screws on rear side of center console panel, and then remove the control unit.

B: INSTALLATION

Install in the reverse order of removal.

Compressor

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

11. Compressor

A: INSPECTION

1. MAGNETIC CLUTCH CLEARANCE

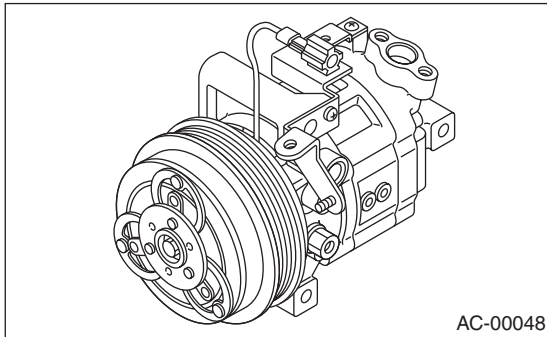
1) Check the clearance of the entire circumference around the drive plate and pulley.

Standard:

0.3 — 0.6 mm (0.0118 — 0.0236 in)

2. MAGNETIC CLUTCH OPERATION

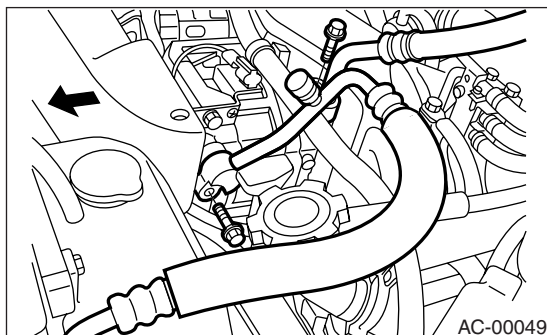
- 1) Disconnect the compressor connector.
- 2) Connect the battery positive (+) terminal to the No. 3 terminal of the compressor connector.



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

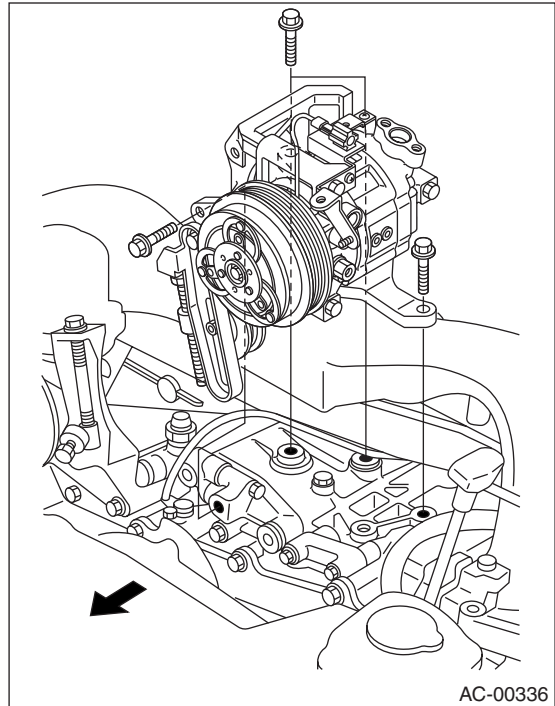
B: REMOVAL

- 1) Perform the compressor oil return operation. <Ref. to AC-31, OPERATION, Compressor Oil.>
- 2) Turn the A/C switch OFF and stop the engine.
- 3) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-26, OPERATION, Refrigerant Recovery Procedure.>
- 4) Disconnect the ground cable from battery.
- 5) Remove the V-belt. <Ref. to ME(H4SO)-43, REMOVAL, V-belt.> <Ref. to ME(H4DOTC)-52, REMOVAL, V-belt.>
- 6) Remove the generator. <Ref. to SC(H4SO)-15, REMOVAL, Generator.>
- 7) Remove the low-pressure hose and high-pressure hose.

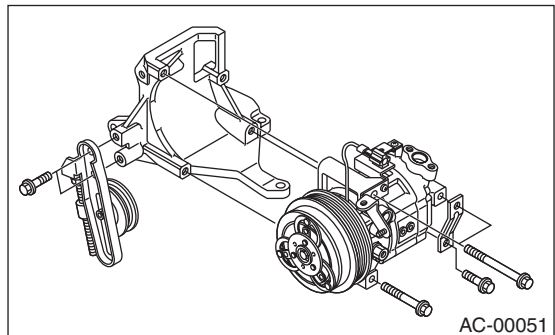


8) Disconnect the compressor harness from body harness.

9) Remove 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 compressor, adjust amount of compressor oil. <Ref. to AC-31, OPERATION, Compressor Oil.>
- 4) Charge refrigerant. <Ref. to AC-27, OPERATION, Refrigerant Charging Procedure.>

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to AC-16, AIR CONDITIONING UNIT, COMPONENT, General Description.> <Ref. to AC-18, COMPRESSOR, COMPONENT, General Description.>

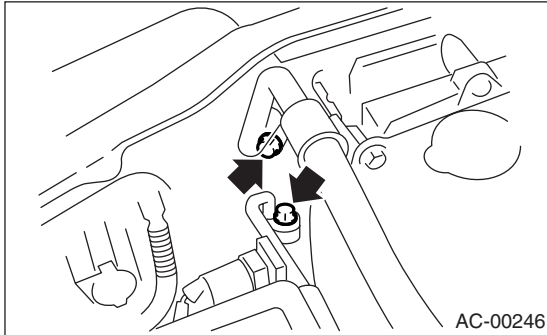
Condenser

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

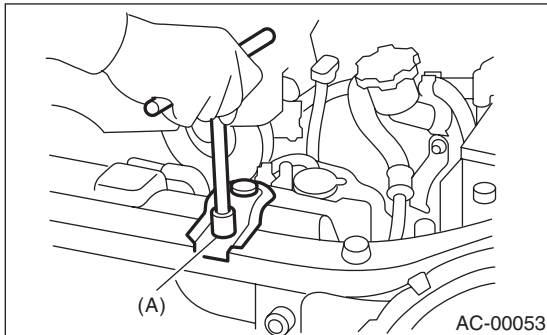
12. Condenser

A: REMOVAL

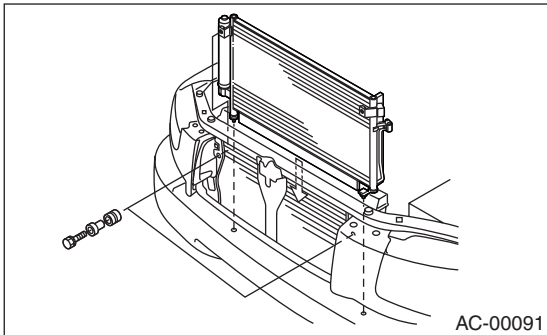
- 1) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-26, OPERATION, Refrigerant Recovery Procedure.>
- 2) Disconnect the ground cable from battery.
- 3) Disconnect the pressure hose and pipe from condenser.



- 4) Remove the radiator bracket (A).



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



CAUTION:

Be careful not to damage the radiator fins and condenser fins. If a damaged fin is found, repair it using a thin screwdriver.

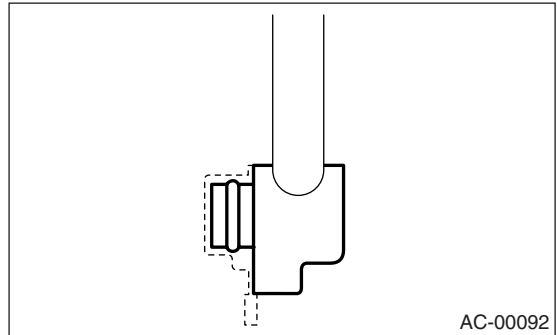
If the condenser is replaced, add appropriate amount of compressor oil to the compressor. <Ref. to AC-31, REPLACEMENT, Compressor Oil.>

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 has been fitted into holes on radiator panel.



- 2) Charge refrigerant. <Ref. to AC-27, OPERATION, Refrigerant Charging Procedure.>

Tightening torque:

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

<Ref. to AC-16, AIR CONDITIONING UNIT, **COMPONENT**, *General Description*.>

<Ref. to CO(H4SO)-7, RADIATOR AND RADIATOR FAN, **COMPONENT**, *General Description*.>

C: INSPECTION

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

Condenser (Sub Fan)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

13. Condenser (Sub Fan)

A: REMOVAL

<Ref. to CO(H4SO)-35, REMOVAL, Radiator Main Fan and Fan Motor.>

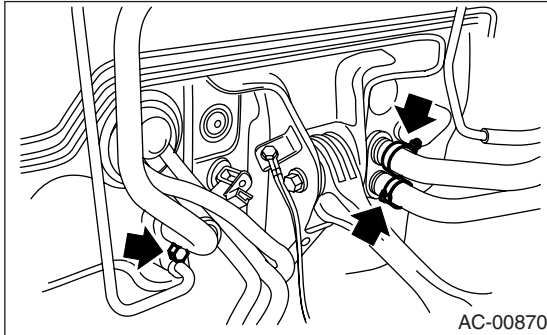
B: INSTALLATION

<Ref. to CO(H4SO)-37, INSTALLATION, Radiator Main Fan and Fan Motor.>

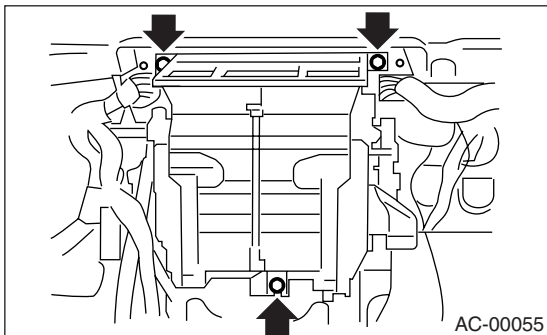
14.Heater Cooling Unit

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-26, OPERATION, Refrigerant Recovery Procedure.>
- 3) Drain the engine coolant from radiator.
- 4) Remove the bolt securing expansion valve and pipe in engine compartment. Release the heater hose clamps in engine compartment to remove the hoses.



- 5) Remove the instrument panel. <Ref. to EI-40, REMOVAL, Instrument Panel Assembly.>
- 6) Remove the support beam.
- 7) Remove the blower motor unit assembly. <Ref. to AC-32, REMOVAL, Blower Motor Unit Assembly.>
- 8) Disconnect the servo motor connectors.
- 9) Remove 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-27, OPERATION, Refrigerant Charging Procedure.>

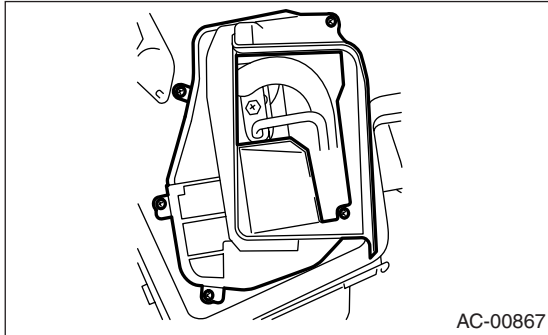
Tightening torque:

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

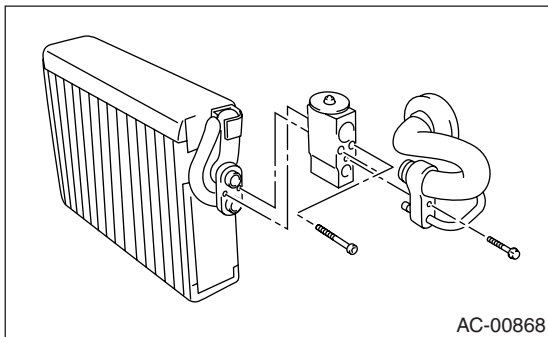
15. Evaporator

A: REMOVAL

- 1) Perform the refrigerant recovery operation, and then disconnect the toe board area A/C pipe. <Ref. to AC-26, OPERATION, Refrigerant Recovery Procedure.>
- 2) Remove the glove box.
- 3) Remove blower motor unit assembly. <Ref. to AC-32, REMOVAL, Blower Motor Unit Assembly.>
- 4) Loosen the screws and remove evaporator cover.



- 5) Remove the A/C pipes in unit.
- 6) Rotate the upper part of evaporator tilt toward the front vehicle and the lower part tilt toward the interior, respectively. Then pull out the heater case to the left side.
- 7) Remove the two bolts to remove expansion valve.



CAUTION:

If the evaporator is replaced, add appropriate amount of compressor oil to evaporator. <Ref. to AC-31, REPLACEMENT, Compressor Oil.>

B: INSTALLATION

Install in the reverse order of removal.

NOTE:

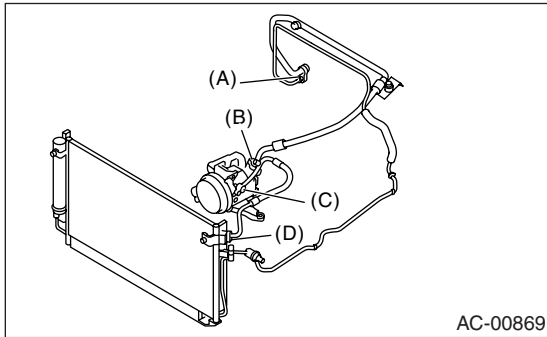
Replace the O-ring for A/C pipe with a new one, and then apply compressor oil.

16.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 foreign matters from entering.
- 1) Disconnect the ground cable from battery.
 - 2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-26, 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 vehicle.
 - 8) Remove the high-pressure hose attaching bolts (C).
 - 9) Disconnect the high-pressure hose from compressor.
 - 10) Disconnect the high-pressure hose from condenser.
 - 11) Remove the high-pressure hose from vehicle.
 - 12) Remove the high-pressure tube attaching bolt (D).
 - 13) Remove the high-pressure tube from vehicle.



B: INSTALLATION

CAUTION:

- When disconnecting/connecting hoses, do not apply an excessive force to them. Confirm that no torsion and excessive tension exists after installing.
- Seal the disconnected hose with a plug or vinyl tape to prevent foreign matters from entering.
- Replace the o-rings for hoses and pipes with new ones, and then apply compressor oil.

- 1) Install in the reverse order of removal.
- 2) Charge refrigerant. <Ref. to AC-27, OPERATION, Refrigerant Charging Procedure.>

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to AC-16, AIR CONDITIONING UNIT, COMPONENT, General Description.>

C: INSPECTION

NOTE:

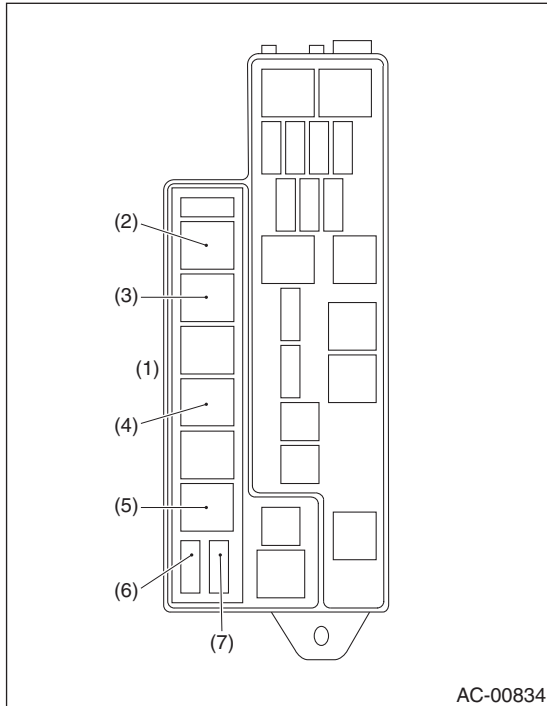
Check the hoses for cracks, damage and expansion. If any failure is found, replace them with new ones.

Relay and Fuse

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

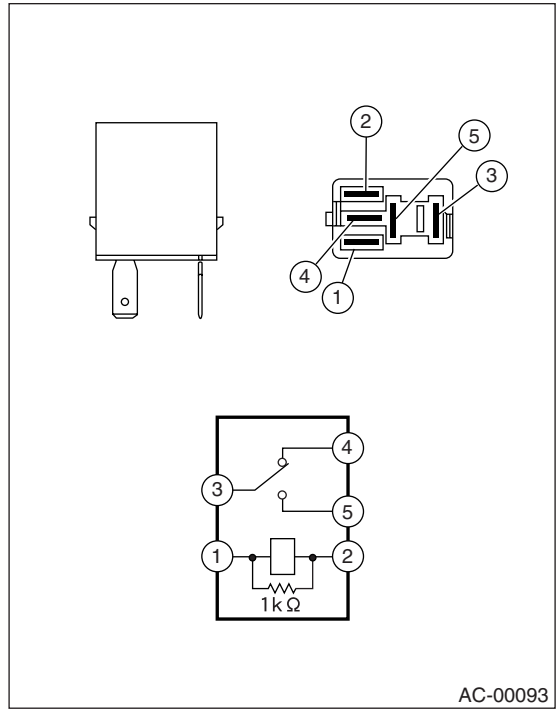
17. Relay and Fuse

A: LOCATION



- (1) Main fuse box (M/B)
- (2) Main fan relay
- (3) Sub fan relay
- (4) A/C relay
- (5) Fan mode relay
- (6) Main fan fuse
- (7) Sub fan fuse

B: INSPECTION



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

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

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

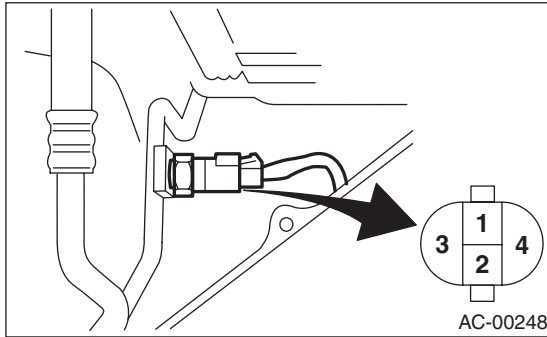
Pressure Switch (Triple Pressure Switch)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

18. Pressure Switch (Triple Pressure 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.	Pressure increases up to 2,940±200 (30.0±2, 427±28).
			Pressure decreases down to 177±25 (1.8±0.3, 26±4).
		Turns ON.	Pressure increases up to 206±30 (2.1±0.3, 30±4).
			Pressure decreases down to 2,350±200 (24±2, 341±28).
Middle pressure switch	3 and 4	Turns OFF.	Pressure decreases down to 1,370±120 (14±1, 199±14).
		Turns ON.	Pressure increases up to 1,770±100 (18±1, 256±14).

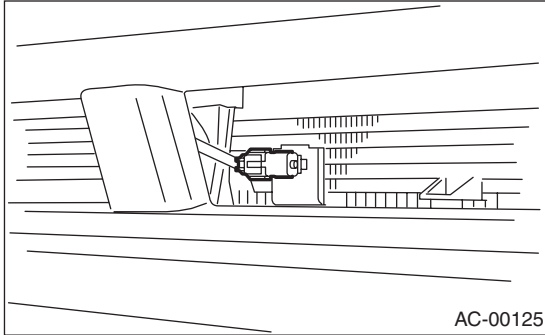
Ambient Sensor (Auto A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

19. Ambient Sensor (Auto A/C Model)

A: REMOVAL

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



B: INSTALLATION

Install in the reverse order of removal.

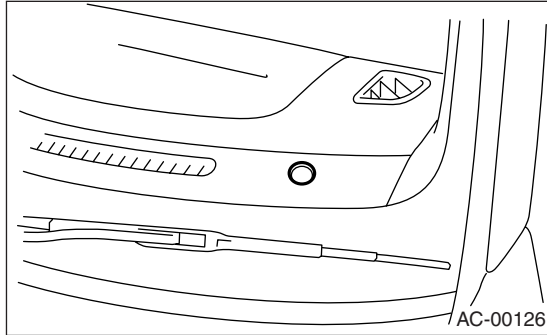
C: INSPECTION

<Ref. to AC-32, AMBIENT SENSOR, Diagnostic Procedure for Sensors.>

20. Sunload Sensor (Auto A/C Model)

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Disconnect the sunload sensor connector.



CAUTION:

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

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

<Ref. to AC-39, SUNLOAD SENSOR, Diagnostic Procedure for Sensors.>

Air Vent Grille

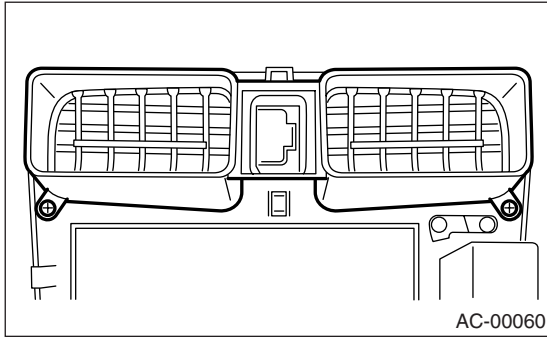
HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

21. Air Vent Grille

A: REMOVAL

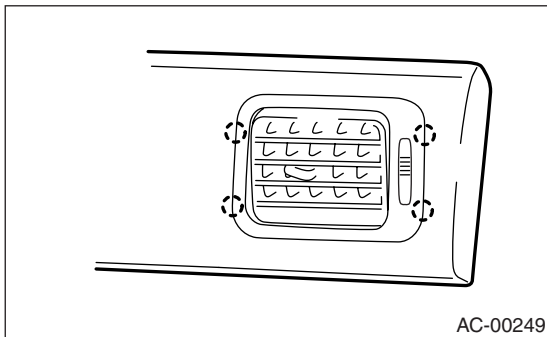
1. CENTER GRILLE

- 1) Disconnect the ground cable from battery.
- 2) Remove the center console panel. <Ref. to EI-40, REMOVAL, Instrument Panel Assembly.>
- 3) Loosen the two screws to remove the center air vent grille.



2. SIDE GRILLE

Remove the side vent grille by prying four points.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

- 1) Check that the direction and amount of air can be adjusted smoothly.
- 2) Check that the adjustment can be kept in each position.

22.Heater Duct

A: REMOVAL

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

B: INSTALLATION

Install in the reverse order of removal.

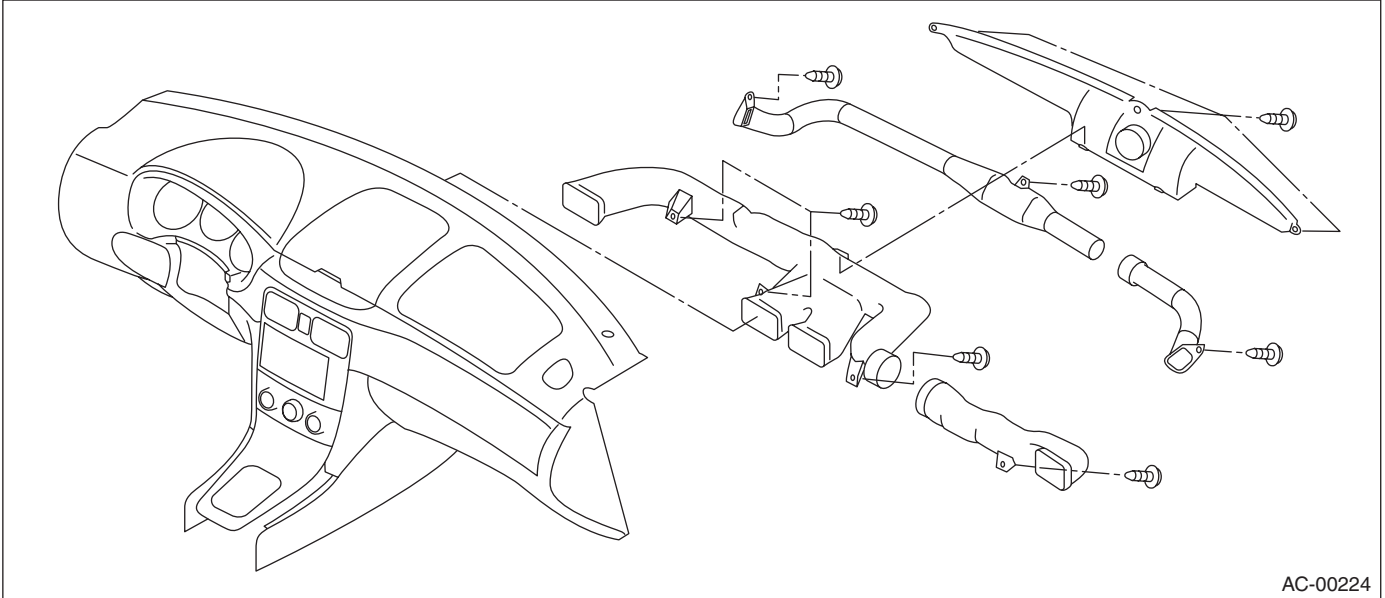
Heater Vent Duct

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

23.Heater Vent Duct

A: REMOVAL

- 1) Remove the instrument panel. <Ref. to EI-40, REMOVAL, Instrument Panel Assembly.>
- 2) Remove the screws.
- 3) Remove the heater vent duct.



B: INSTALLATION

Install in the reverse order of removal.

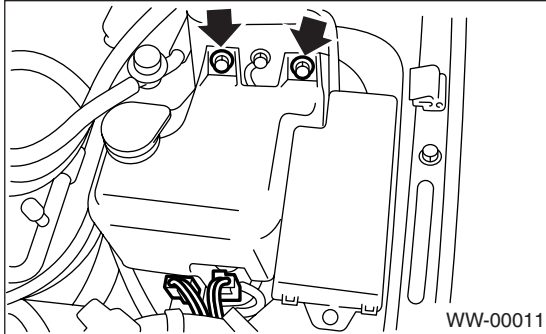
Heater Cock Solenoid Valve

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

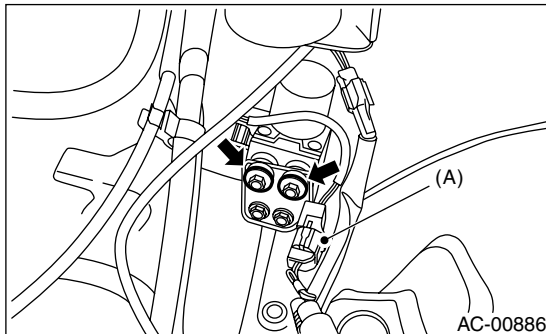
24.Heater Cock Solenoid Valve

A: REMOVAL

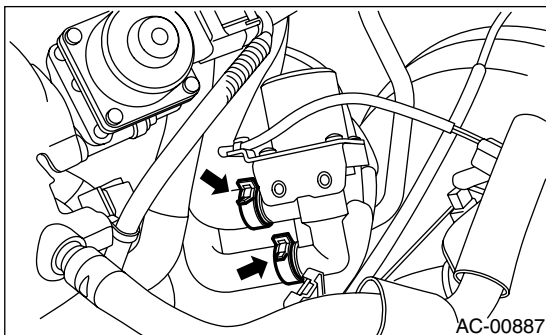
- 1) Drain the engine coolant.
<Ref. to CO(H4SO)-19, DRAINING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>
- 2) Remove the battery.
- 3) Remove the two bolts and disconnect harness connector, and move the washer tank forward.



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



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

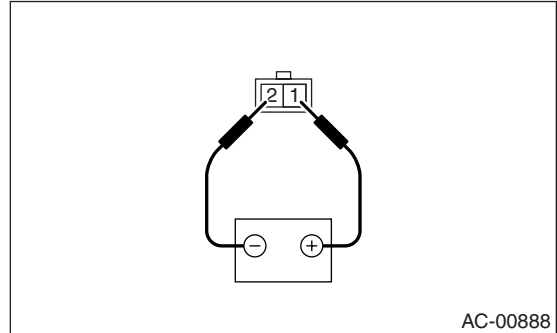


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

- 1) Remove the heater cock solenoid valve. <Ref. to AC-49, REMOVAL, Heater Cock Solenoid Valve.>
- 2) Connect the positive terminal of battery to No. 1 terminal of heater cock solenoid valve, and the ground terminal to No. 2 terminal. Check that the heater cock solenoid valve opens and closes normally.



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

General Diagnostics

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

25. General Diagnostics

A: INSPECTION

Symptom		Repair order
Blower motor	Does not run.	Fuse
		Blower motor relay
		Wiring harness
		Blower motor
		Blower motor resistor (Manual A/C model)
	Blower switch	
	Noise	Blower motor
Compressor	Does not run.	Refrigerant
		Fuse
		A/C relay
		Wiring harness
		Magnet clutch
		Compressor
		Pressure switch
		A/C switch
	Blower switch	
		Noise
		Magnet clutch
		Compressor
Condenser fan	Does not run.	Fuse
		Sub fan relay
		Wiring harness
		Noise
Cold air not emitted.		Refrigerant
		V-Belt
		Magnet clutch
		Compressor
		Pressure switch
		Blower fan relay, Blower motor
		A/C switch
		Blower switch
		Wiring harness
		Heater duct
		Heater vent duct
		Control unit
		Expansion valve
		Evaporator
	Air mix actuator (Auto A/C), Temperature control cable (Manual A/C)	
Warm air not emitted.		Engine coolant
		Aspirator hose
		Blower switch
		Air mix actuator (Auto A/C), Temperature control cable (Manual A/C)
		Heater core
		Heater cock solenoid valve (Non-turbo model for EC/EK)

General Diagnostics

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Symptom	Repair order
Temperature of air from vents does not change.	Wiring harness
	Air mix actuator (Auto A/C), Temperature control cable (Manual A/C)
	Temperature adjustment switch
Unable to switch blow vents.	Wiring harness
	Mode actuator (Auto A/C), Mode control cable (Manual A/C)
	Mode switch
Unable to switch suction vents.	Wiring harness
	FRESH/RECIRC actuator
	Air inlet select switch

General Diagnostics

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)
