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

# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## 1. General Description

### A: SPECIFICATION

#### 1. HEATER SYSTEM

Item		Specification	Condition
Heating capacity		5.0 kW (4,300 kcal/h, 17,062 BTU/h) or more	<ul style="list-style-type: none"><li>• Mode selector switch: HEAT</li><li>• Temperature control switch: FULL HOT</li><li>• Temperature difference between hot water and inlet air: 65°C (149°F)</li><li>• How water flow rate: 360 ℓ (95.1 US gal, 79.2 Imp gal)/h</li></ul>
Air flow rate		280 m <sup>3</sup> (9,888 cu ft) /h	Heat mode (FRESH), FULL HOT at 12.5 V
Max air flow rate		450 m <sup>3</sup> (15,892 cu ft)/h	<ul style="list-style-type: none"><li>• Temperature control switch: FULL COLD</li><li>• Blower fan speed: Maximum air flow</li><li>• Mode selector lever: Recirculate</li></ul>
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	12 V
	Fan type and size (diameter × width)	Sirocco fan type 150 × 75 mm (5.91 × 2.95 in)	—

# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## 2. A/C SYSTEM

### Auto A/C model

Item		Specification	
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 <sub>2</sub> FCF <sub>3</sub> ) [0.5±0.05 kg (0.99±0.11 lb)]	
Compressor	Type	Vane rotary, fix volume (CR-14)	
	Discharge	144 cm <sup>3</sup> (8.79 cu in)/rev	
	Max. permissible speed	7,000 rpm	
Magnet clutch	Type	Dry, single-disc type	
	Power consumption	47 W	
	Type of belt	V-belt 4 PK	
	Pulley dia. (effective dia.)	125 mm (4.92 in)	
	Pulley ratio	1.064	
Condenser	Type	Corrugated fin (Sub cool type)	
	Core face area	0.21 m <sup>2</sup> (2.26 sq ft)	
	Core thickness	16 mm (0.63 in)	
	Radiation area	5.34 m <sup>2</sup> (57.48 sq ft)	
Receiver drier	Effective inner capacity	250 cm <sup>3</sup> (15.26 cu in)	
Expansion valve	Type	Internally 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	
Condenser fan (Sub fan)	Motor type	Magnet	
	Power consumption	120 W	
	Fan outer diameter	320 mm (12.6 in)	
Radiator fan (Main fan)	Motor type	Magnet	
	Power consumption	120 W	
	Fan outer diameter	320 mm (12.6 in)	
Idling speed (A/C ON)		MPFI model 850±100 rpm	
Dual switch (pressure switch)	Low-pressure switch operating pressure	ON → OFF	278±29 kPa (2.83±0.3 kgf/cm <sup>2</sup> , 40.3±4.2 psi)
		OFF → ON	287 <sup>+39</sup> <sub>-25</sub> kPa (2.9 <sup>+0.4</sup> <sub>-0.25</sub> kgf/cm <sup>2</sup> , 42 <sup>+5.7</sup> <sub>-3.6</sub> psi)
	High-pressure switch operating pressure	ON → OFF	2,800±100 kPa (29±1 kgf/cm <sup>2</sup> , 406±15 psi)
		OFF → ON	600±200 kPa (6.12±2 kgf/cm <sup>2</sup> , 87±29 psi)
Thermo-control amplifier working temperature (Evaporator outlet air)		<p style="text-align: right;">AC-00601</p> <ol style="list-style-type: none"> <li>1. ON</li> <li>2. OFF</li> <li>3. 2.5±0.5°C (36.5±0.9°F)</li> <li>4. 1.5±0.5°C (35±0.9°F)</li> </ol>	

# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## Manual A/C model

Item		Specification	
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 <sub>2</sub> FCF <sub>3</sub> ) [0.5±0.05 kg (1.10±0.11 lb)]	
Compressor	Type	Vane rotary, fix volume (CR-14)	
	Discharge	144 cm <sup>3</sup> (8.79 cu in) per rotation	
	Max. permissible speed	7,000 rpm	
Magnet clutch	Type	Dry, single-disc type	
	Power consumption	47 W	
	Type of belt	V-belt 4 PK	
	Pulley dia. (effective dia.)	125 mm (4.92 in)	
	Pulley ratio	1.064	
Condenser	Type	Corrugated fin (Sub cool type)	
	Core face area	0.21 m <sup>2</sup> (2.26 sq ft)	
	Core thickness	16 mm (0.63 in)	
	Radiation area	5.34 m <sup>2</sup> (57.48 sq ft)	
Receiver drier	Effective inner capacity	250 cm <sup>3</sup> (15.26 cu in)	
Expansion valve	Type	Externally 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	
Condenser fan (Sub fan)	Motor type	Magnet	
	Power consumption	120 W	
	Fan outer diameter	320 mm (12.6 in)	
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Thermo control amplifier working temperature (Evaporator outlet air)		<p style="text-align: right;">AC-00601</p> <p>1. ON 2. OFF 3. 1.5±0.5°C (35±0.9°F) 4. 3.0±0.5°C (37±0.9°F)</p>	

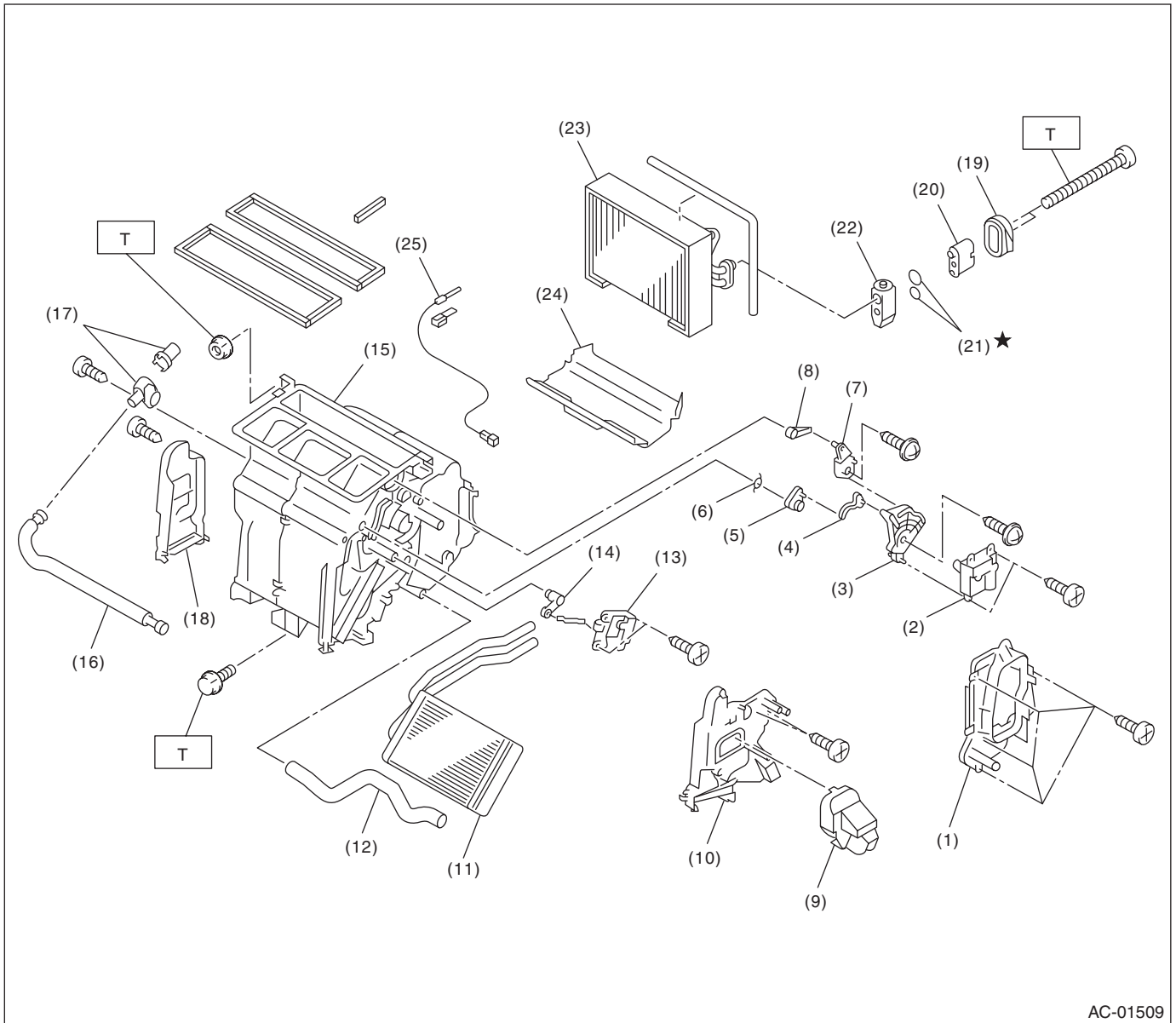
# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## B: COMPONENT

### 1. HEATER COOLING UNIT

Auto A/C model



AC-01509

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

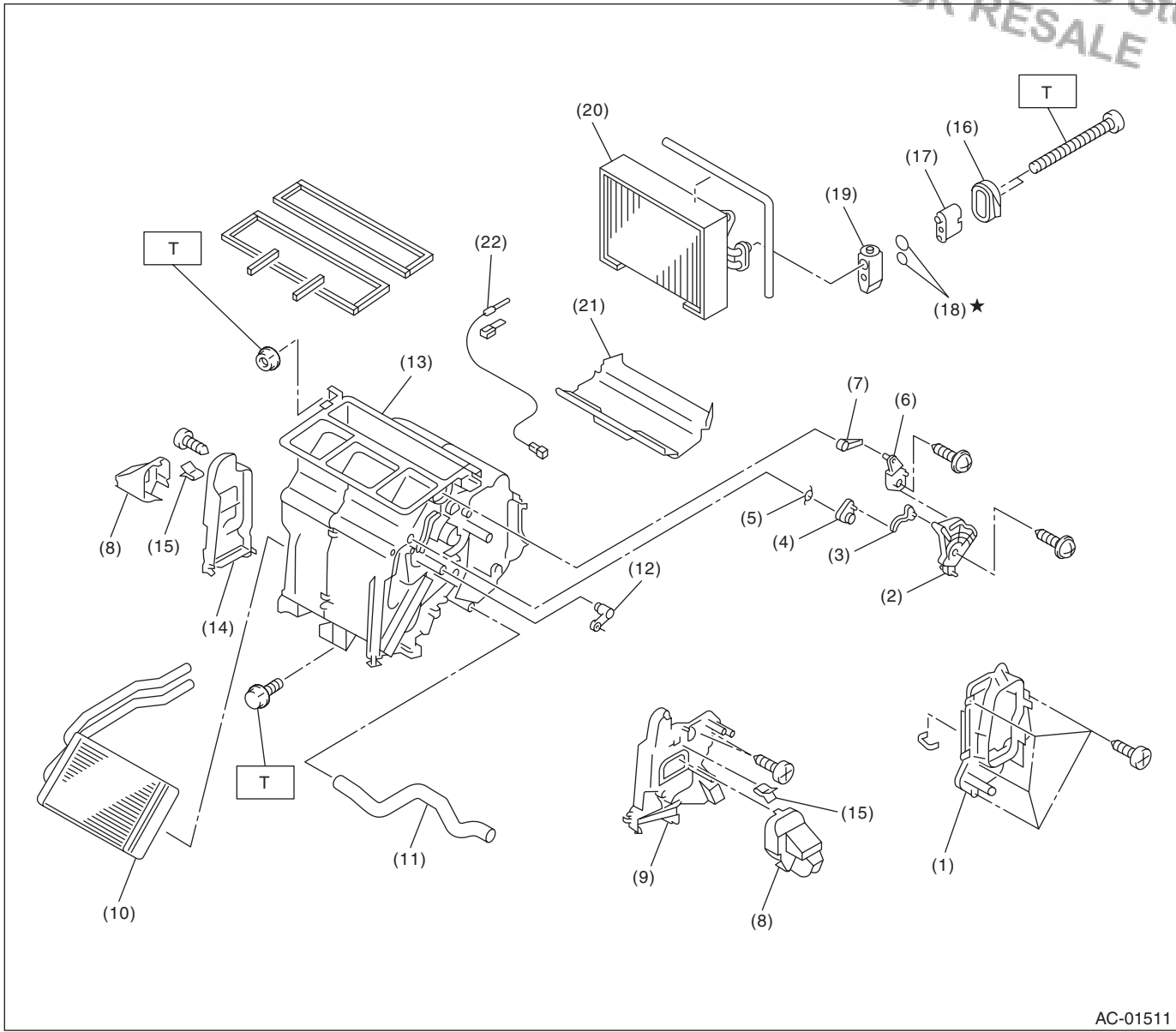
**Tightening torque: N·m (kgf·m, ft·lb)**

**T: 7.5 (0.76, 5.5)**

# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## Manual A/C model



AC-01511

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

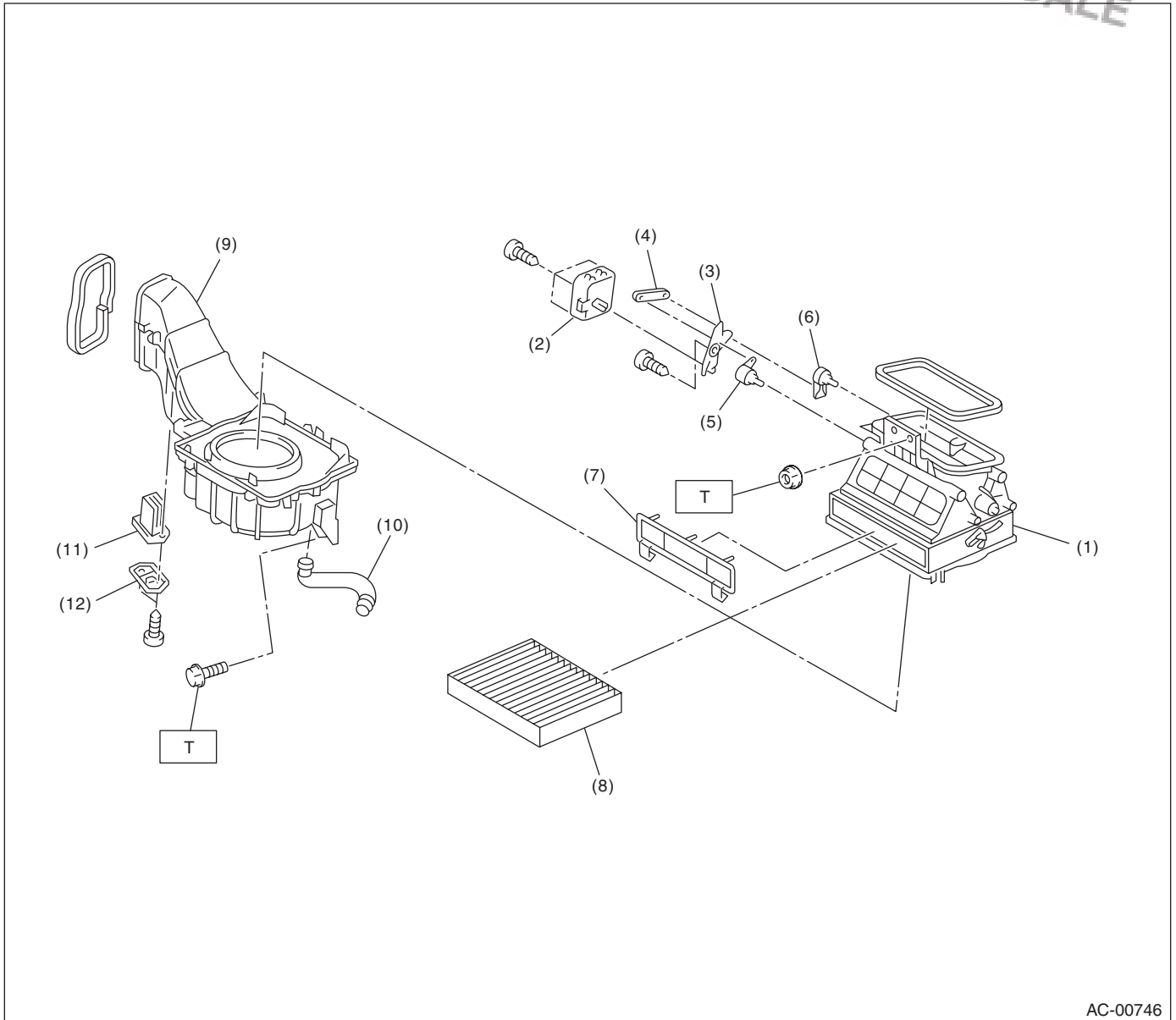
**Tightening torque: N·m (kgf·m, ft·lb)**  
**T: 7.5 (0.76, 5.5)**

# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## 2. BLOWER MOTOR UNIT

Auto A/C model



AC-00746

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

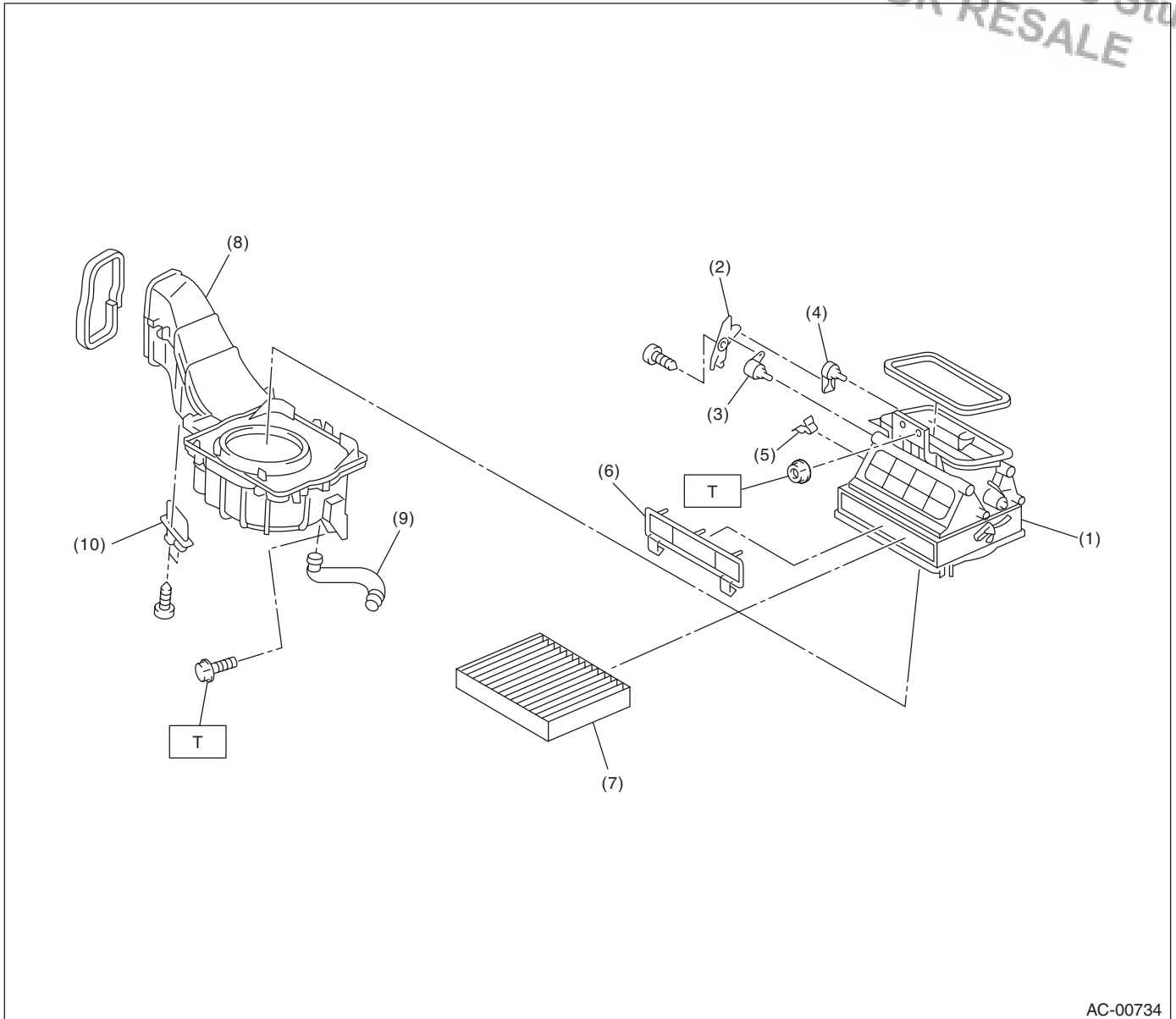
**Tightening torque: N·m (kgf·m, ft·lb)**  
**T: 7.5 (0.76, 5.5)**

# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## Manual A/C model

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AC-00734

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

**Tightening torque: N·m (kgf-m, ft-lb)**  
**T: 7.5 (0.76, 5.5)**

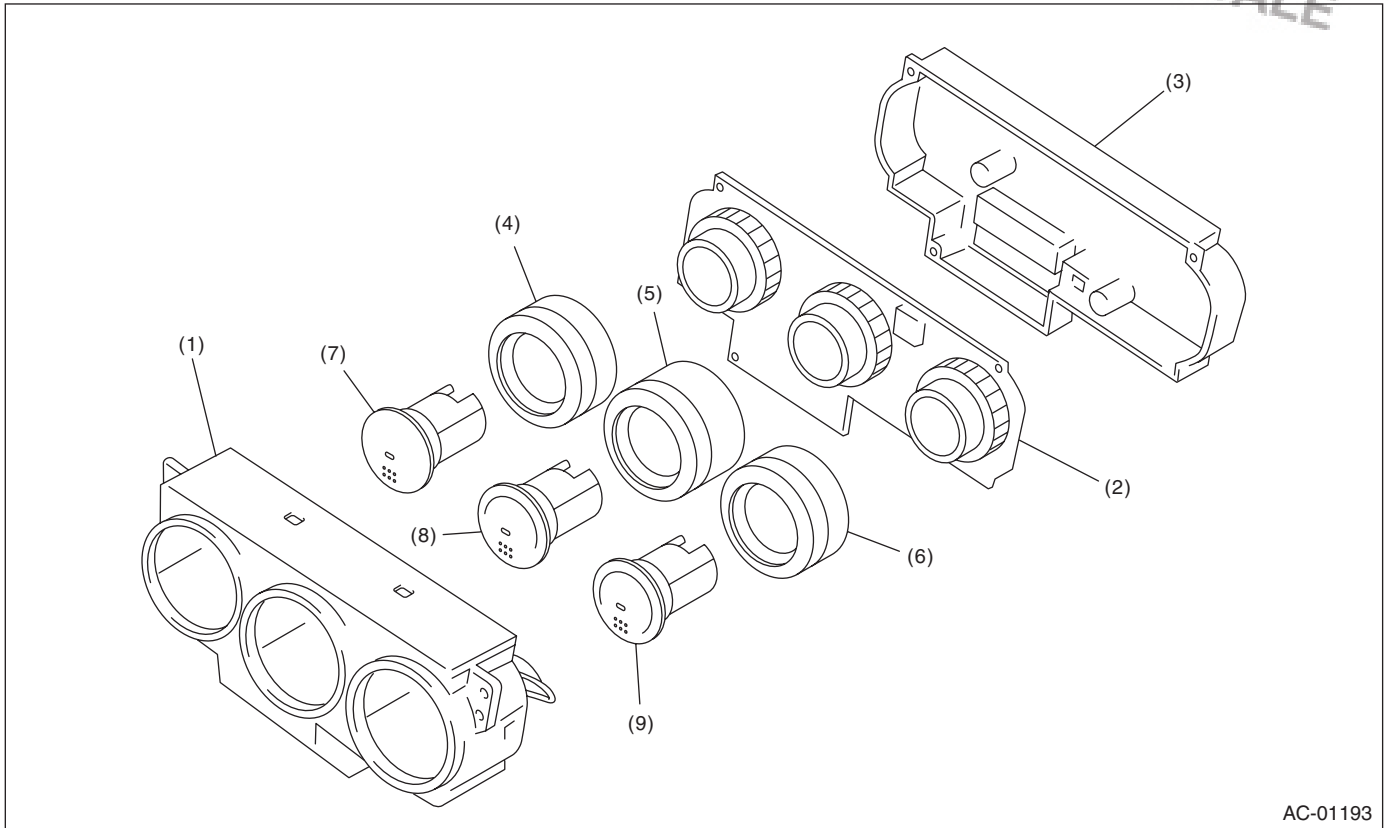


# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## 3. CONTROL MODULE

Auto A/C model



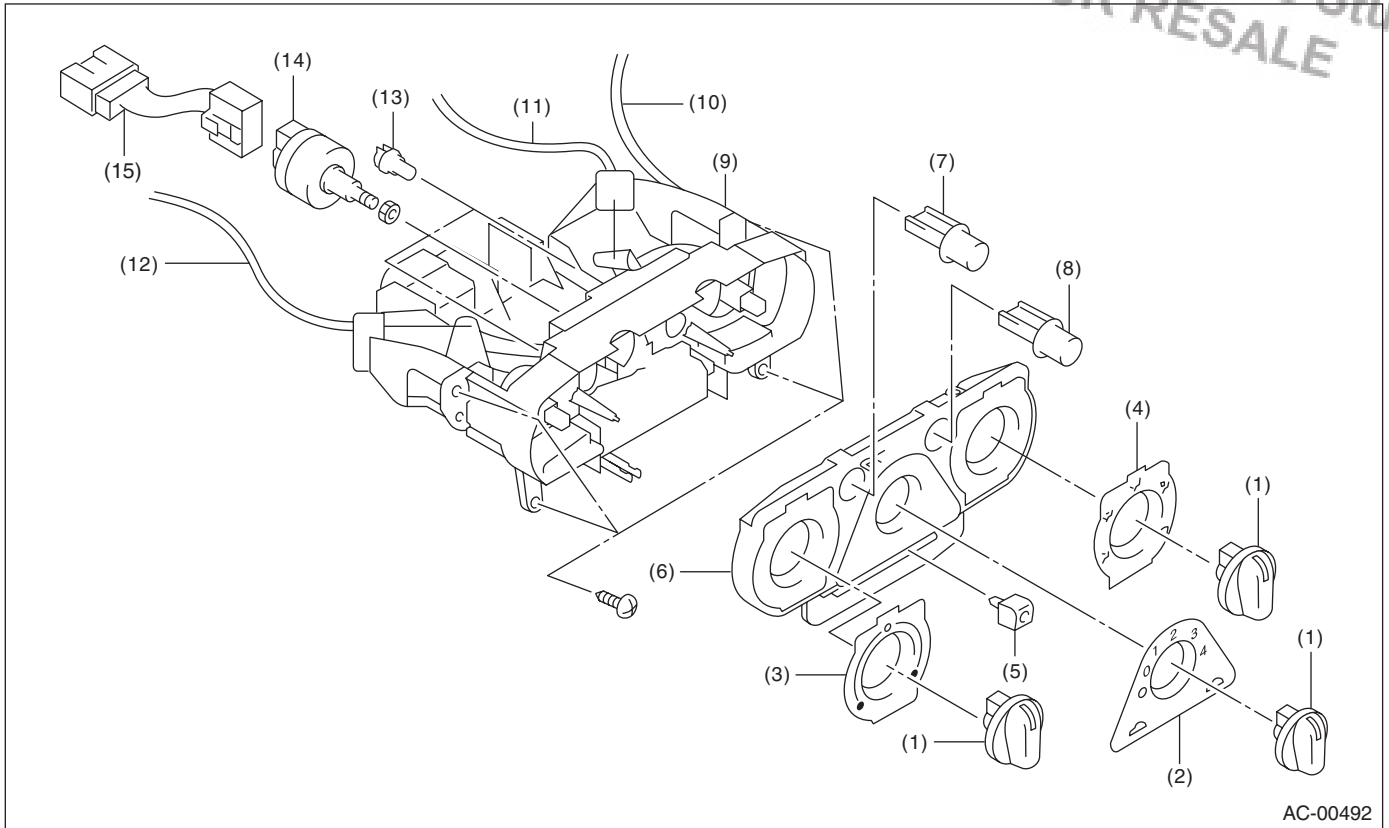
AC-01193

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

# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## Manual A/C model

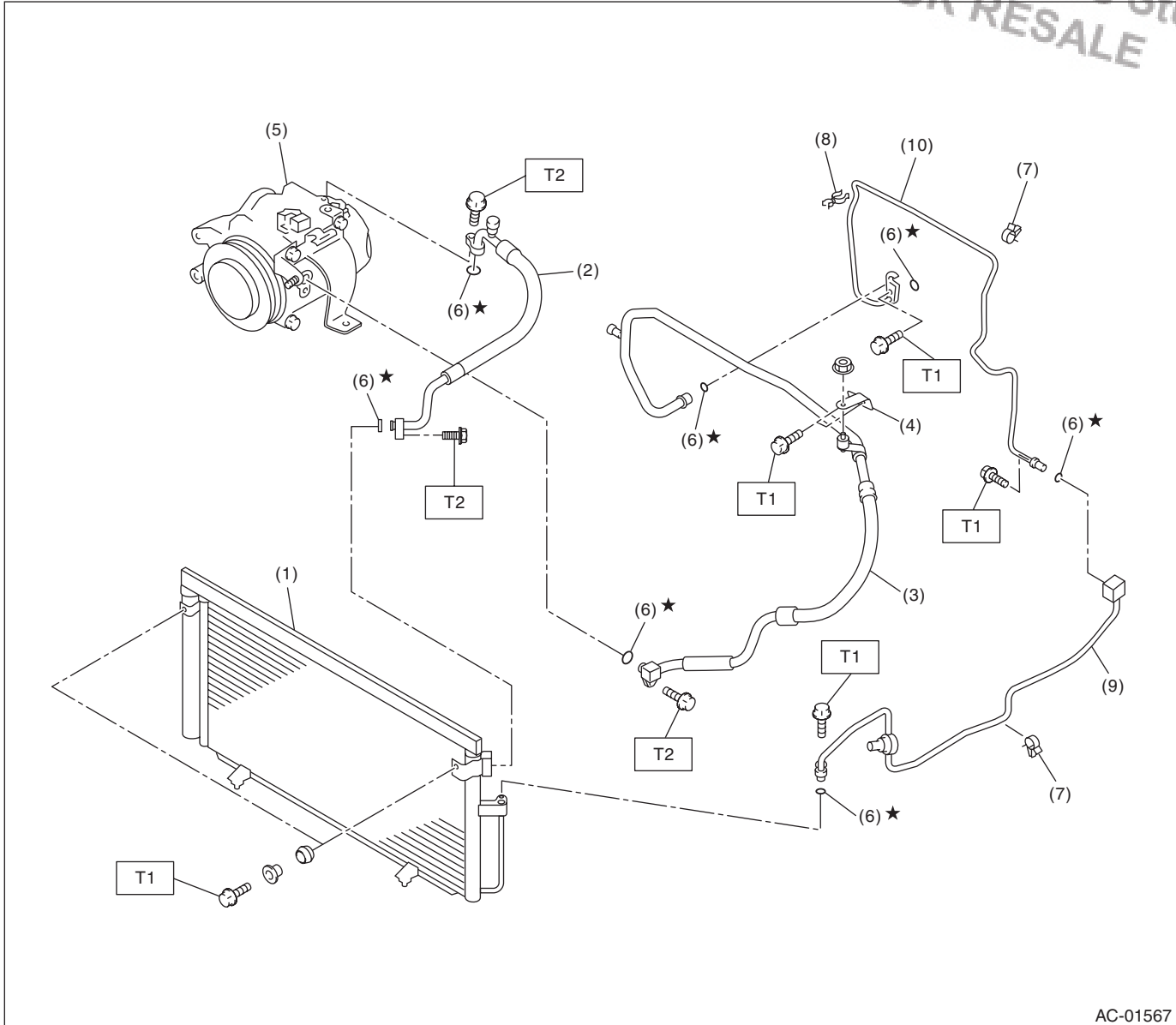


- |                                 |                                 |                                |
|---------------------------------|---------------------------------|--------------------------------|
| (1) Dial                        | (6) Heater control panel        | (11) Mode switch cable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

# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## 4. AIR CONDITIONING UNIT



AC-01567

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

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

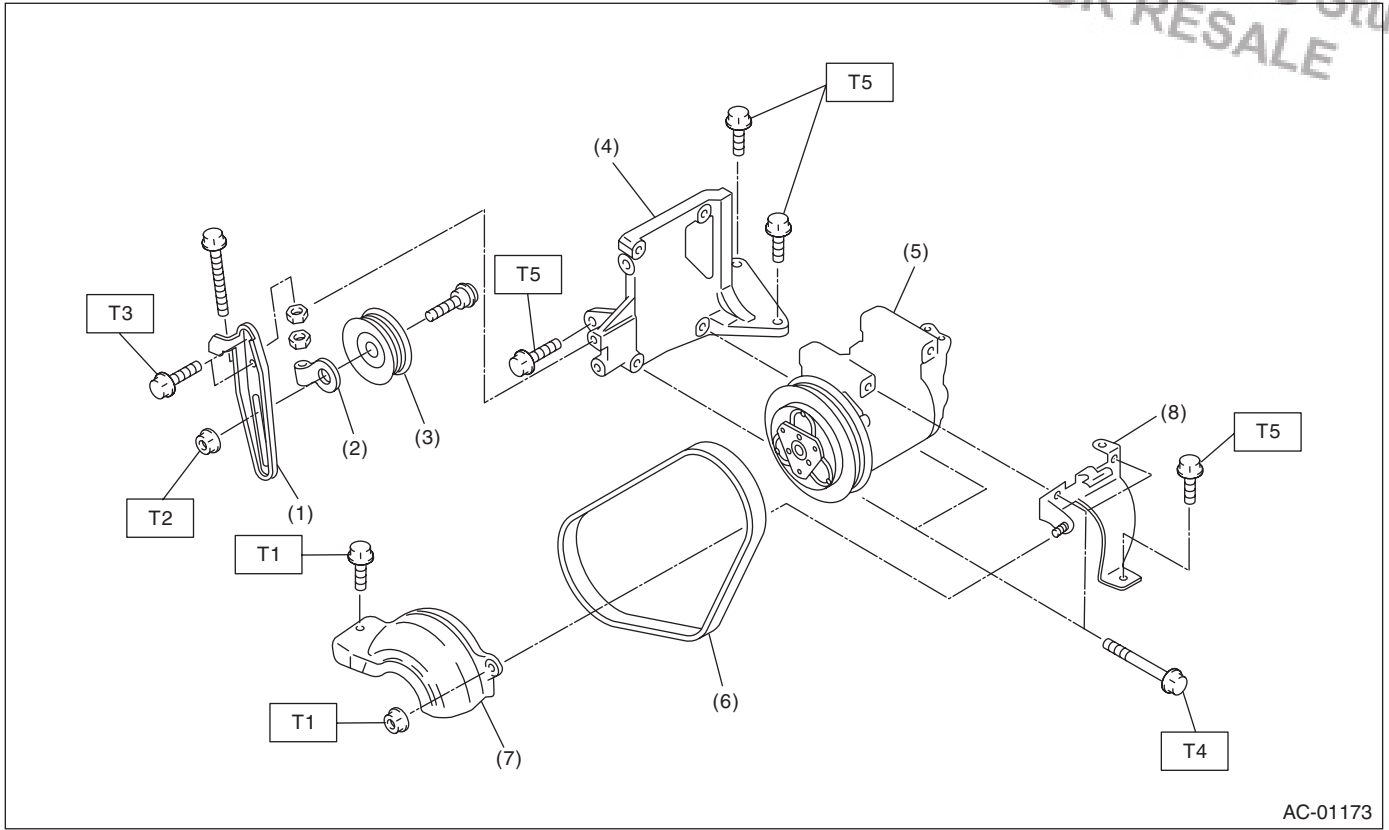
**T1: 7.5 (0.76, 5.5)**

**T2: 15 (1.5, 10.8)**

# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## 5. COMPRESSOR



AC-01173

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

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

**T1: 7.5 (0.76, 5.5)**

**T2: 22.6 (2.3, 16.6)**

**T3: 23.0 (2.35, 17.0)**

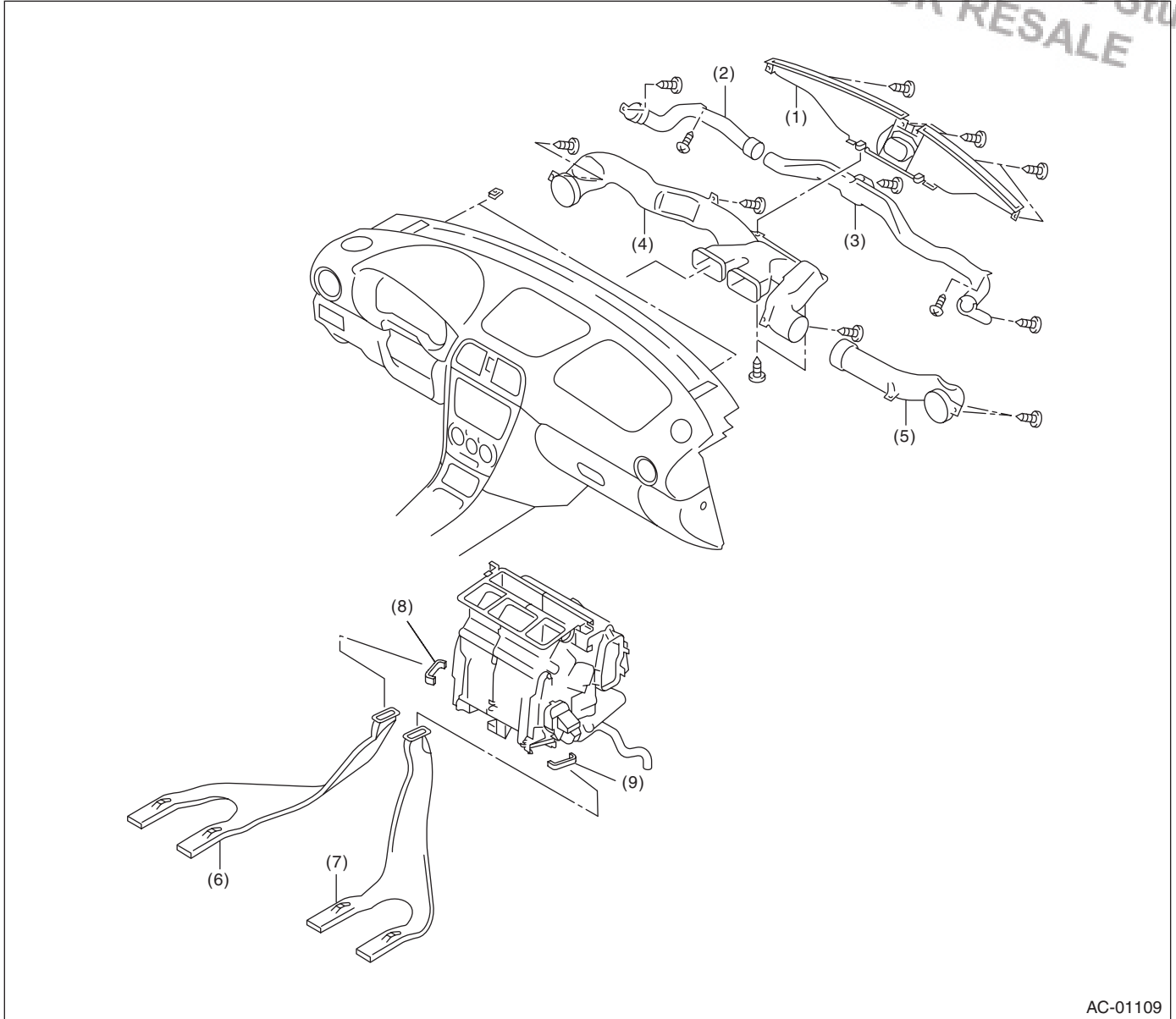
**T4: 28.9 (2.95, 21.3)**

**T5: 35 (3.6, 26)**

# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## 6. HEATER DUCT



AC-01109

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

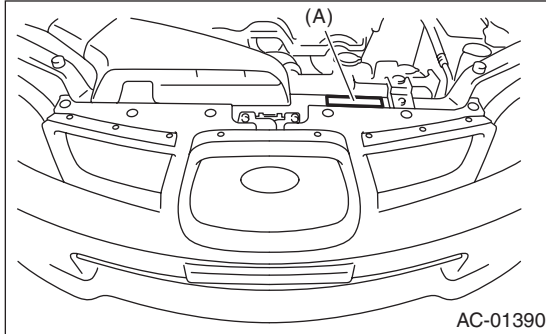
# General Description

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

### C: CAUTION

#### 1. HFC-134A A/C SYSTEM

- The cooling system components for the HFC-134a system such as the refrigerant and compressor oil are different from the conventional CFC-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 to the vehicle.



#### 2. COMPRESSOR OIL

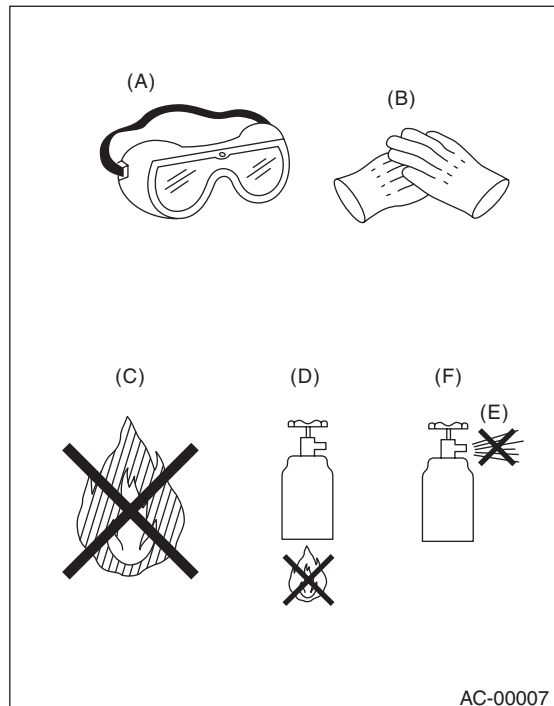
- HFC-134a compressor oil has no compatibility with that of CFC-12 system.
  - Use only the manufacturer-authorized compressor oil for the HFC-134a system; only use DH-PR.
  - Do not mix multiple compressor oils.
- If CFC-12 compressor oil is used in the HFC-134a A/C system, the compressor may become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

#### 3. REFRIGERANT

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

#### 4. HANDLING OF REFRIGERANT

- The refrigerant boils at approx.  $-30^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$ ). When handling it, be sure to wear protective 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 warm water of  $40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ) or less.
- 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 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 recycle the gas.



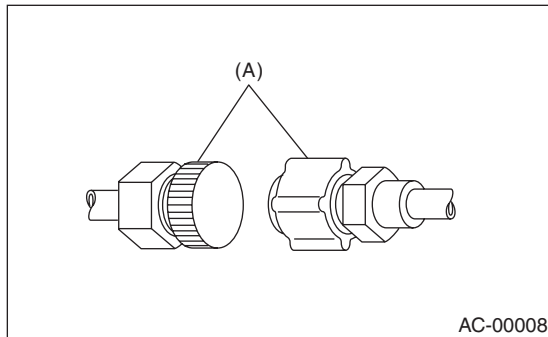
- (A) Goggles
- (B) Gloves
- (C) Avoid open flame
- (D) No direct heat on container
- (E) Do not discharge
- (F) Loosen

# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

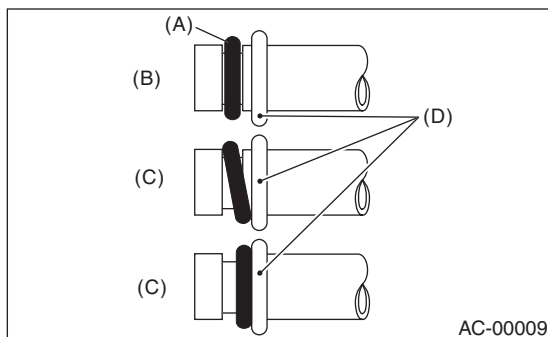
## 5. O-RING CONNECTIONS

- Always use a new O-ring.
- In order to keep the O-rings free of lint which will cause a refrigerant gas leak, perform work without using gloves or waste cloths.
- Apply compressor oil to O-rings to avoid sticking, before installation.
- Use a torque wrench to tighten the O-ring fittings. Over-tightening will result in damage of the O-ring and deformation of the tube end.
- If the operation is interrupted before completing a pipe connection; recap the tubes, components and fittings with a plug or tape to prevent dirt 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 straight against the groove of the tube.

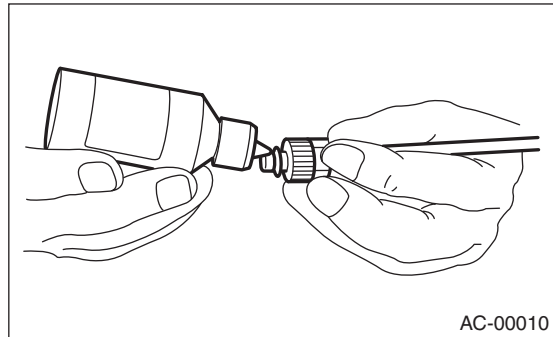


- (A) O-ring
- (B) OK
- (C) NG
- (D) Groove

- Use oil specified in the service manual to lubricate the O-rings.

Apply oil to the top and sides of O-rings before installation.

Apply the oil to the O-ring and end of the tube.



- After tightening, use a clean cloth to remove the 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 further tighten the connections, but disconnect the connections, remove the O-rings, and check the O-rings, threads, and connections.

## D: PREPARATION TOOL

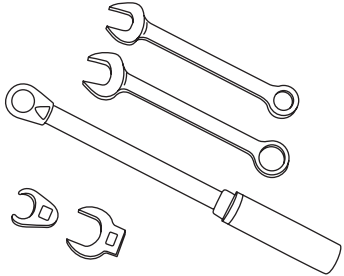
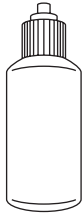
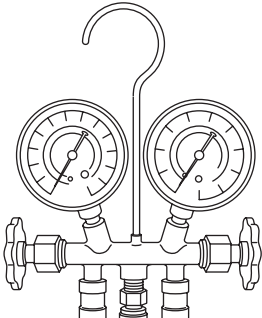
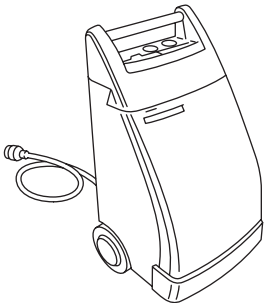
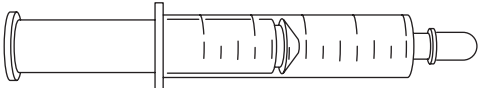
### CAUTION:

- When working on vehicles with HFC-134a system, only use HFC-134a specified tools and parts.
- Do not mix CFC-12 tools and parts. If HFC-134a and CFC-12 refrigerant or compressor oil is mixed, it will result in poor lubrication and the compressor itself may be damaged.
- In order to prevent the mixture of 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

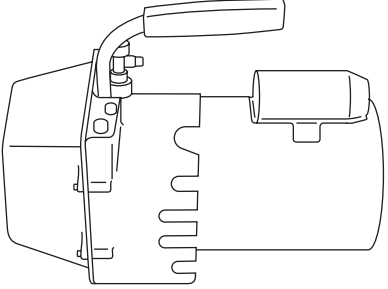
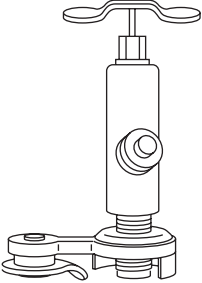
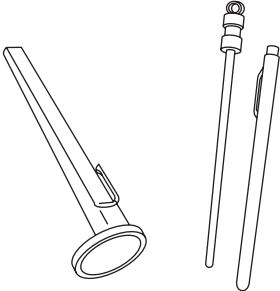
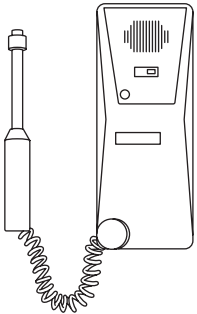
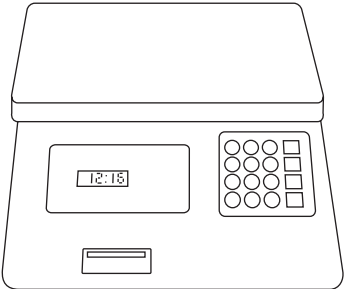
## HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Illustration	Tools and Equipment
 <p style="text-align: right;">AC-00213</p>	<p><b>WRENCH</b></p> <p>Various <b>WRENCHES</b> will be required to service any A/C system. 7 — 40 N·m (0.7 — 4.1 kgf-m, 5 — 30 ft-lb) torque wrench and various crowfoot wrenches will be needed. Open end or flare nut wrenches will be needed to hold the tube and hose fittings.</p>
 <p style="text-align: right;">AC-00012</p>	<p>Applicator bottle</p> <p>A small <b>APPLICATOR BOTTLE</b> is recommended to apply refrigerant oil to the various parts. It 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 <b>MANIFOLD GAUGE SET</b> (with hoses) can be obtained at 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 <b>REFRIGERANT RECOVERY SYSTEM</b> is used for the recovery and recycling of A/C system refrigerant after contaminants and moisture have been removed from the refrigerant.</p>
 <p style="text-align: right;">AC-00015</p>	<p>Syringe</p> <p>A graduated plastic <b>SYRINGE</b> will be needed to add oil into the system again. A syringe can be available at a pharmacy or drug store.</p>



# General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Illustration	Tools and Equipment
 <p>AC-00016</p>	<p>Vacuum pump</p> <p>A <b>VACUUM PUMP</b> (in good working condition) is necessary, and may be obtained from either a refrigerant supplier or an automotive equipment supplier.</p>
 <p>AC-00017</p>	<p>Can tap</p> <p>A <b>CAN TAP</b> for the 397 g (14 oz.) can is available at an automotive equipment supplier.</p>
 <p>AC-00018</p>	<p>Thermometer</p> <p>A Pocket <b>THERMOMETERS</b> are available from either industrial hardware stores or commercial refrigeration supply houses.</p>
 <p>AC-00019</p>	<p>Electronic leak detector</p> <p>An <b>ELECTRONIC LEAK DETECTOR</b> 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 <b>WEIGHT SCALE</b> 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: PROCEDURE

- 1) Place the vehicle in the shade and windless condition.
- 2) Open the front hood.
- 3) Connect the manifold gauge set.
- 4) Open the front windows and close all doors.
- 5) Increase the engine to 1,500 rpm.
- 6) Turn the A/C switch to ON.
- 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: 127 — 196 kPa (1.3 — 2.0 kgf/cm<sup>2</sup>, 18 — 28 psi)**

**High: 1,471 — 1,667 kPa (15 — 17 kgf/cm<sup>2</sup>, 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"> <li>• Defective condenser fan motor</li> <li>• Clogged condenser fin</li> <li>• Too much refrigerant</li> <li>• Air inside the system</li> <li>• Defective receiver dryer</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the fan motor.</li> <li>• Clean the condenser fin.</li> <li>• Discharge refrigerant.</li> <li>• Replace the receiver dryer.</li> <li>• After evacuating again, charge an appropriate amount of refrigerant.</li> </ul>
High-pressure side is unusually low.	<ul style="list-style-type: none"> <li>• Defective compressor</li> <li>• Not enough refrigerant</li> <li>• Clogged expansion valve</li> <li>• Expansion valve frozen temporarily by moisture.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the compressor.</li> <li>• Check for leaks.</li> <li>• Replace the expansion valve.</li> <li>• Fully evacuate the expansion valve.</li> </ul>
Low-pressure side is unusually high.	<ul style="list-style-type: none"> <li>• Defective compressor</li> <li>• Defective expansion valve</li> <li>• Too much refrigerant</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the compressor.</li> <li>• Replace the expansion valve.</li> <li>• Discharge refrigerant.</li> </ul>
Low-pressure side is unusually low.	<ul style="list-style-type: none"> <li>• Not enough refrigerant</li> <li>• Clogged expansion valve</li> <li>• Expansion valve frozen temporarily by moisture.</li> <li>• Saturated receiver dryer</li> </ul>	<ul style="list-style-type: none"> <li>• Check for leaks.</li> <li>• Replace the expansion valve.</li> <li>• Replace the receiver dryer.</li> </ul>

# Refrigerant Recovery Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

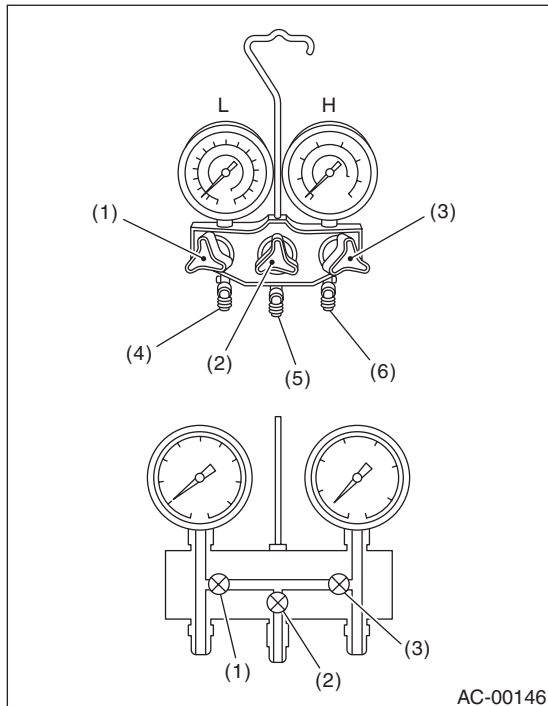
## 3. Refrigerant Recovery Procedure

### A: PROCEDURE

#### CAUTION:

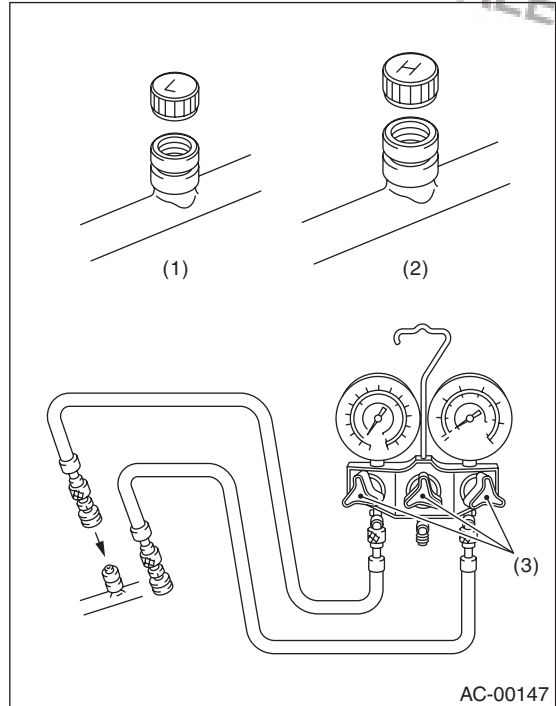
- During operation, be sure to wear protective goggles and protective gloves.
- Connect the refrigerant recovery system with the manifold gauge set to discharge the refrigerant from the A/C system and recycle the gas.
- When recycling the discharged refrigerant, keep service cans on hand. Because the recovery 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-24, PROCEDURE, 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 side service port
- (2) High-pressure side 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: PROCEDURE

#### CAUTION:

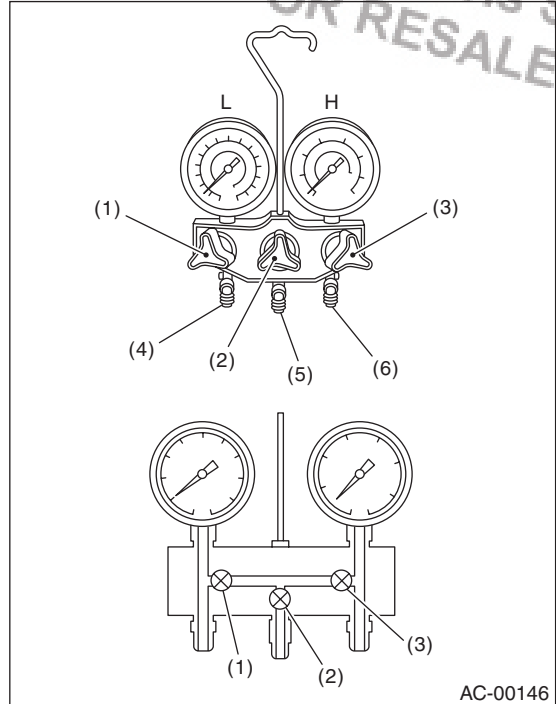
- During work, be sure to wear protective goggles and protective gloves.
- Air in the cycle can cause inadequate cooling, and moisture can cause clogging (freezing) and rust in the cycle.

To remove this air and moisture, perform a vacuum pull with a vacuum pump before filling with refrigerant. By making the condition inside of the system a vacuum, moisture will boil and evaporate so it can be removed.

- The list below shows the vacuum values necessary to boil water at various temperatures. 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 all valves of the manifold gauge.

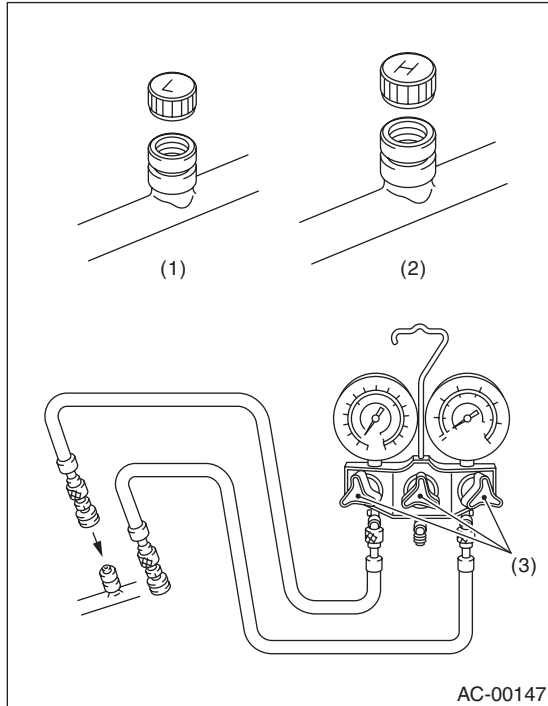


- L: Low pressure gauge
- H: High-pressure gauge
- (1) Low pressure valve
- (2) Vacuum pump valve
- (3) High pressure valve
- (4) For low pressure
- (5) For vacuum pump
- (6) For high pressure

# Refrigerant Charging Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

2) Install the low pressure hose and high pressure hoses to the corresponding service ports on the vehicle.



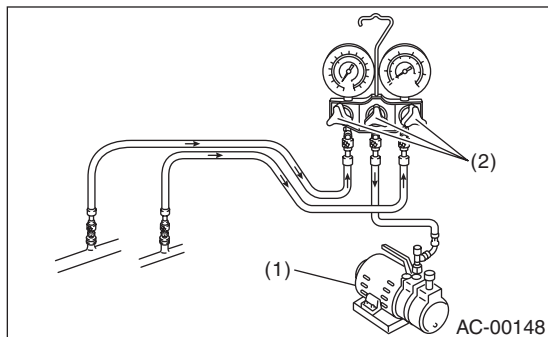
- (1) Low-pressure side service port
- (2) High-pressure side service port
- (3) Close

**CAUTION:**

**Confirm that they are securely connected.**

3) Connect the center manifold hose of the manifold gauge to the vacuum pump.

4) Operate the vacuum pump and open the low pressure side and high pressure side valves. Next, open the center manifold hose valve, and start the vacuum pull.



- (1) Vacuum pump
- (2) Open

**CAUTION:**

**Always use a vacuum pump when performing the vacuum pull.**

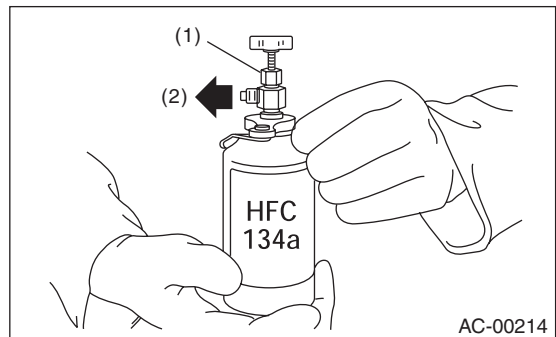
5) Perform the vacuum pull for 5 minutes or more, and when the low pressure gauge needle reaches 100.0 kPa (750 mmHg, 29.5 inHg) or above, close the center manifold hose valve, and stop the vacuum pump.

6) Leave it for 5 to 10 minutes after closing the low and high pressure valves, and inspect that there is no change in the low pressure gauge needle. If there is a change, this indicates a leak. Inspect and repair the pipe and hose connections. After repairing the problem, repeat again from step 1).

7) If there is no leak, continue vacuum pull for an additional 20 to 30 minutes.

8) Close all valves and stop the vacuum pump.

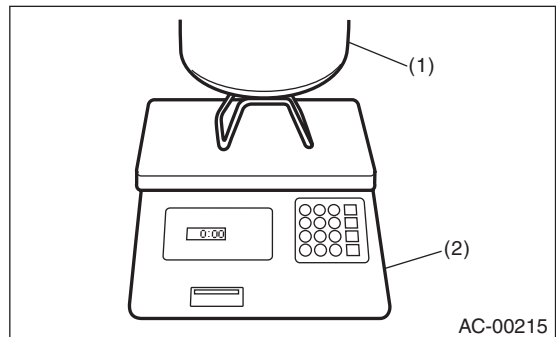
9) Follow the can tap operation manual, attach to the refrigerant can.



- (1) Tap valve
- (2) Center manifold hose

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

11) When using a refrigerant collection container, measure the amount of refrigerant with the measurement unit and connect with the center manifold hose.



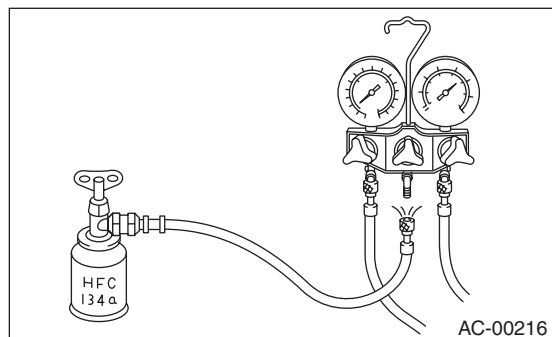
- (1) Refrigerant collection container
- (2) Weight scale

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

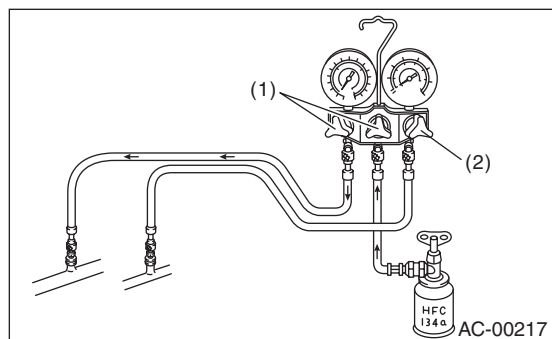
# Refrigerant Charging Procedure

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

13) Loosen the center manifold hose connection on the manifold gauge for a few seconds (if there is a purge valve on the manifold gauge, push this instead.) to purge air in the center hose using refrigerant pressure.



14) Open the high pressure and low pressure valves to fill with refrigerant.



- (1) Open
- (2) Open

### CAUTION:

**When filling with the engine running, do not open the high pressure side valve. Always fill from the low pressure side.**

15) When the gauge needle reaches approximately 200 kPa (1,500 mmHg, 59.1 inHg), close all valves.

16) Using a leak tester, check the system for refrigerant leaks.

17) After confirming that there is no refrigerant leak, fill the refrigerant to the specified amount.

18) If the HFC-134a supply container becomes empty, close all valves, close the valve of the can tap, and replace the empty container. After replacing with a new HFC-134a supply container, perform air purge and restart the filling process.

19) If the refrigerant filling efficiency worsens, close all valves.

20) Confirm that the low pressure and high pressure side valves are closed. Turn the A/C switch to OFF and start the engine.

21) To prevent damage to the compressor, press the ON-OFF of the A/C switch quickly several times.

22) Set up the vehicle to the following status:

### CAUTION:

**When filling with the engine running, do not open the high pressure side valve. Always fill from the low pressure side.**

- 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 side valve and fill with refrigerant to the specified amount.

24) After filling with refrigerant, close all valves and disconnect the hose from the service port.

25) Attach the cap of the service port.

## 5. Refrigerant Leak Check

### A: PROCEDURE

1) Operate the A/C system for approx. 10 minutes, and check that the high-side pressure shows at least 690 kPa (7.03 kgf/cm<sup>2</sup>, 100 psi). Then stop the engine to start the leak test.

2) Starting from the connection between 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 pressure switch (dual switch) and high-pressure pipe.

4) Check the connections between 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 compressor and hoses.

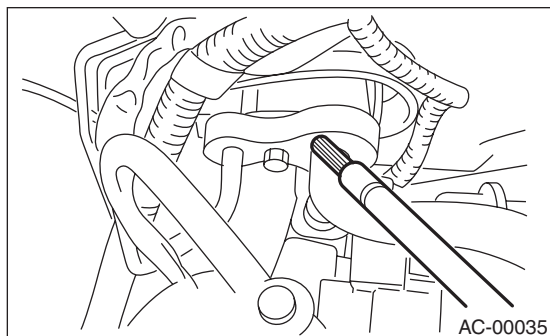
6) Check the machined area of the compressor and other joints on the compressor.

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

Some shaft seals will show a slight amount of leakage, about 3 g (0.1 oz) per year. This is not a problem.

8) Starting from the connection between 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 2 parts
- Connection between pipe and plate

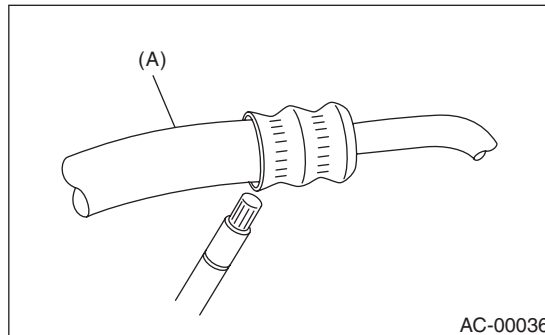


9) Visually check the rubber area of the flexible hose for cracks.

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

### CAUTION:

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

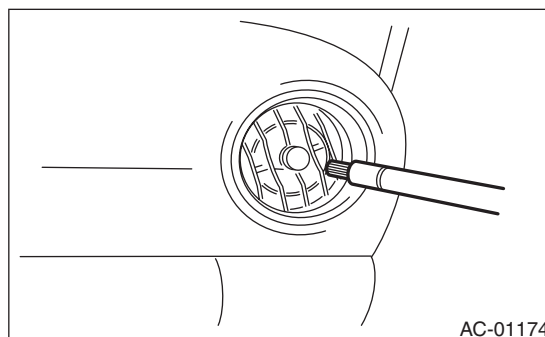


(A) Flexible hose

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

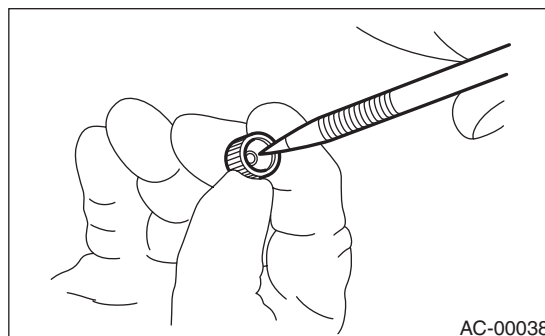
After the test is finished, reconnect the drain hose.

11) Turn the ignition key to the ON position, and run the blower at high speed for approx. 1 minute. Stop the blower to check the ventilation grill on the instrument panel. While moving the tester closer to the grill, run the blower for 1 or 2 seconds, then stop it. Check the grill 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.



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## 6. Compressor Oil

### A: PROCEDURE

**NOTE:**

Before making repairs, perform 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 the A/C switch to ON.
- 3) Turn the temperature control switch to MAX COOL.
- 4) Put in RECIRC position.
- 5) Turn the blower control switch to HI.
- 6) Leave in this condition for 10 minutes.

### B: REPLACEMENT

**NOTE:**

- After replacing the component, add an appropriate amount of compressor oil.
- When replacing the compressor, the new compressor will already have the specified amount of oil in it. Adjust the amount of oil so that the amount of oil in the new compressor is the same as the amount in the removed compressor. (Measure the amount of oil remaining in the removed compressor accurately. Empty the oil from the new compressor in a clean container, then refill the new compressor with the same amount of oil that was in the removed compressor.)

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



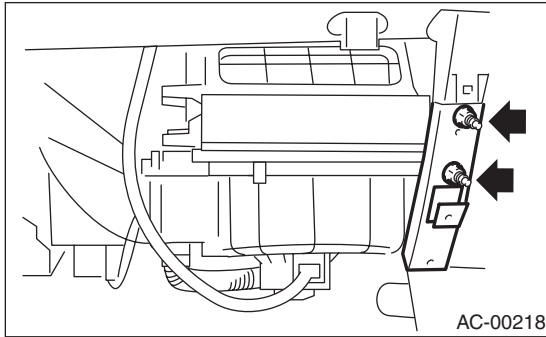
# Blower Motor Unit Assembly

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

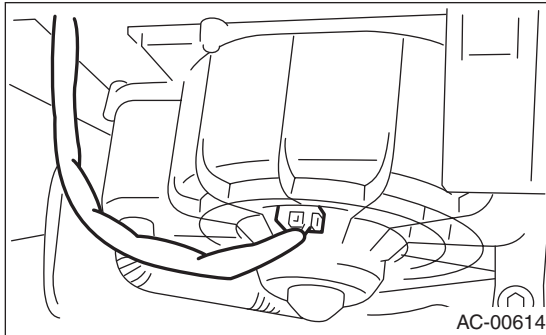
## 7. Blower Motor Unit Assembly

### A: REMOVAL

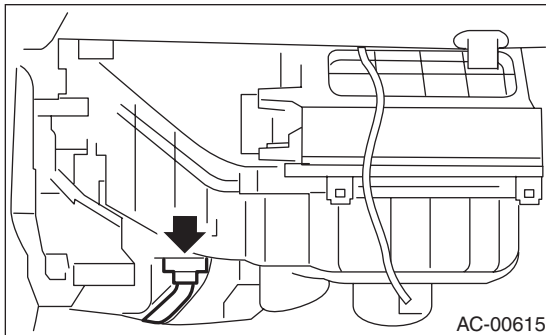
- 1) Disconnect the ground cable from the battery.
- 2) Remove the glove box. <Ref. to EI-43, REMOVAL, Glove Box.>
- 3) Loosen the nut to remove the support beam stay.



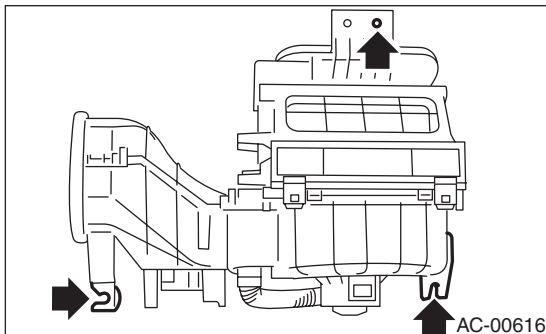
- 4) Disconnect the blower motor connector.



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



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



### B: INSTALLATION

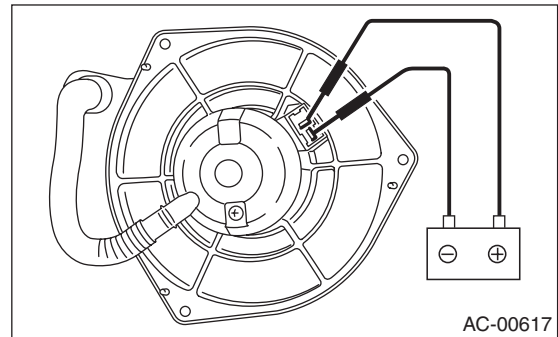
Install in the reverse order of removal.

#### Tightening torque:

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

### C: INSPECTION

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



## Power Transistor (Auto A/C Model)

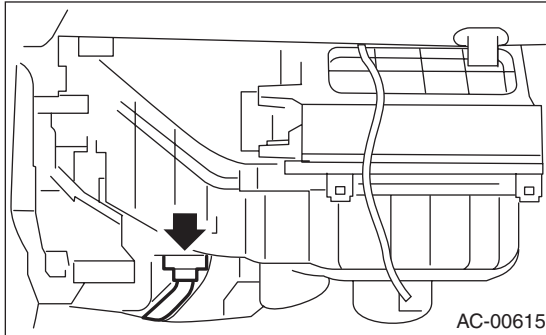
HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

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### 8. Power Transistor (Auto A/C Model)

#### A: REMOVAL

- 1) Remove the glove box. <Ref. to EI-43, REMOVAL, Glove Box.>
- 2) Disconnect the power transistor connector.
- 3) Loosen the two screws and remove the power transistor.



#### B: INSTALLATION

Install in the reverse order of removal.

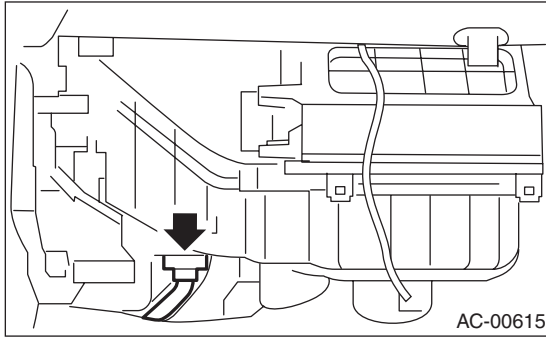
# Blower Resistor (Manual A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## 9. Blower Resistor (Manual A/C Model)

### A: REMOVAL

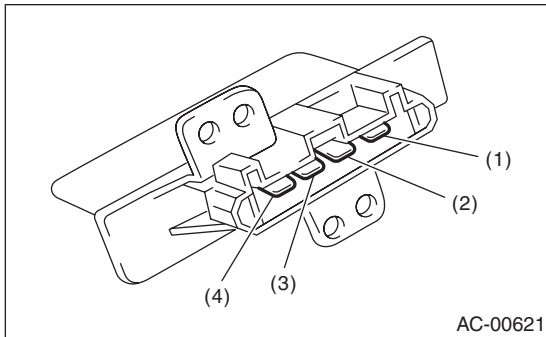
- 1) Remove the glove box. <Ref. to EI-43, REMOVAL, Glove Box.>
- 2) Disconnect the blower resistor connector.
- 3) Loosen the two screws and remove the blower resistor.



### 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 $\Omega$
3 and 2	Approx. 2.70 $\Omega$
3 and 4	Approx. 1.43 $\Omega$

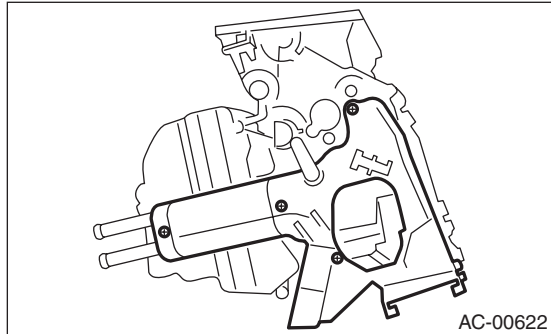
If NG, replace the blower resistor.

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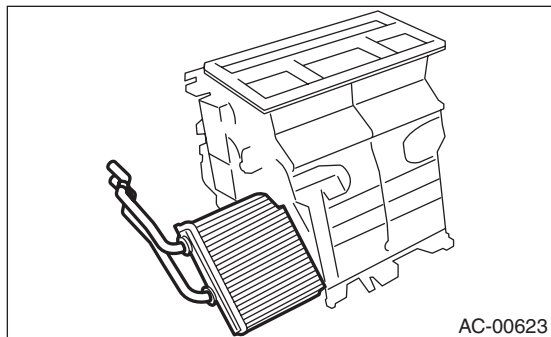
## 10.Heater Core

### A: REMOVAL

- 1) Remove the heater and cooling unit. <Ref. to AC-33, REMOVAL, Heater and Cooling Unit.>
- 2) Loosen the screws to remove heater core cover.



- 3) Remove the heater core.



### B: INSTALLATION

Install in the reverse order of removal.

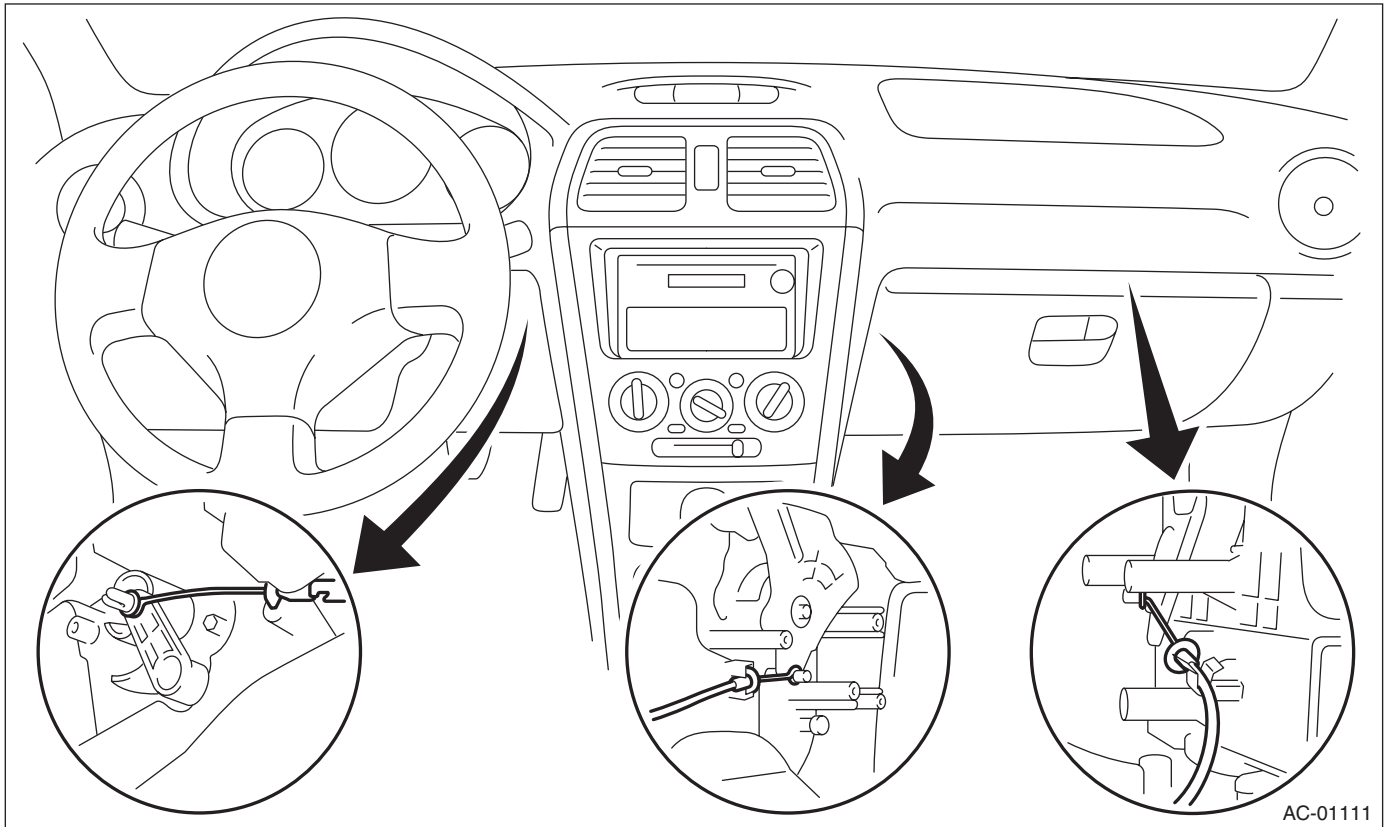
# Control Unit (Manual A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

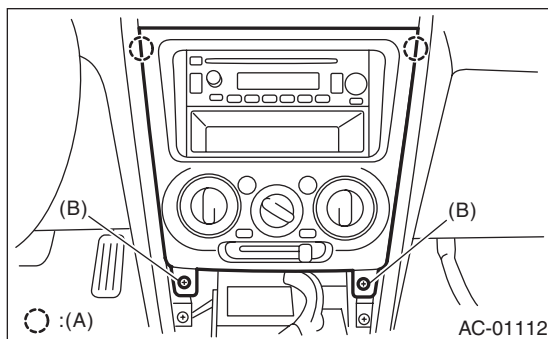
## 11. Control Unit (Manual A/C Model)

### A: REMOVAL

- 1) Disconnect the ground cable from the battery.
- 2) Remove the glove box. <Ref. to EI-43, REMOVAL, Glove Box.>
- 3) Remove the lower panel. <Ref. to EI-47, Instrument Panel Assembly.>
- 4) Remove the control cables.

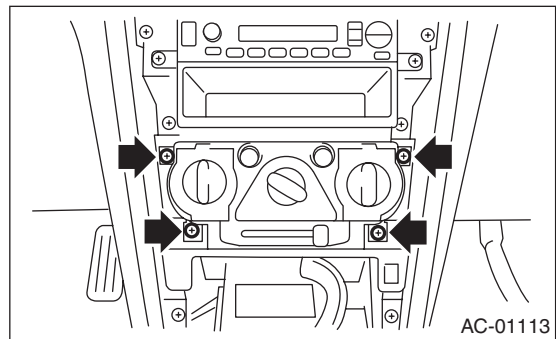


- 5) Remove the console front panel.
- 6) Remove the center console panel.



- (A) Clip
- (B) Screw

- 7) Remove the four screws.



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

### B: INSTALLATION

Install in the reverse order of removal.

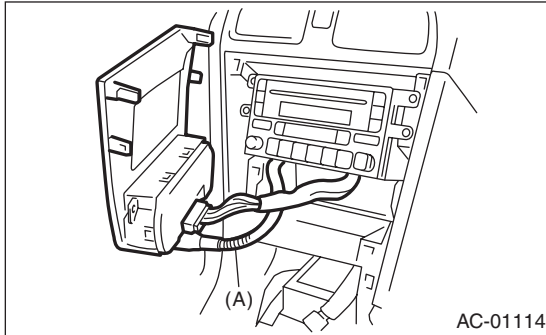
## Control Unit (Auto A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

### 12. Control Unit (Auto A/C Model)

#### A: REMOVAL

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



#### B: INSTALLATION

Install in the reverse order of removal.

## 13. Compressor

### A: INSPECTION

#### 1. MAGNETIC CLUTCH CLEARANCE

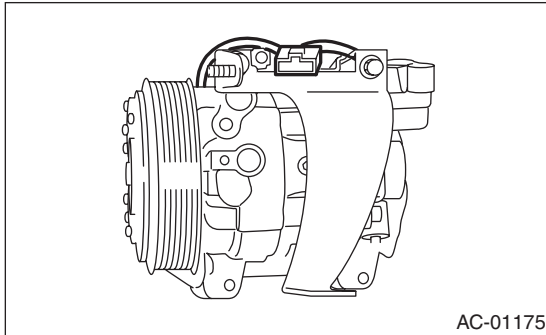
1) Check the clearance of the entire circumference around the drive plate and pulley.

**Standard:**

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

#### 2. MAGNETIC CLUTCH OPERATION

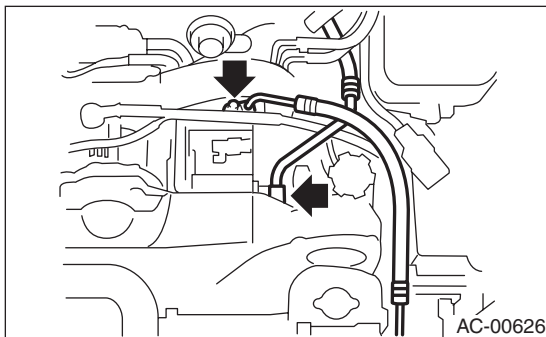
1) Disconnect the compressor connector.  
2) Connect the battery positive (+) lead to the terminal of compressor connector.



3) Confirm the magnet clutch engagement. If there is a problem, replace the compressor.

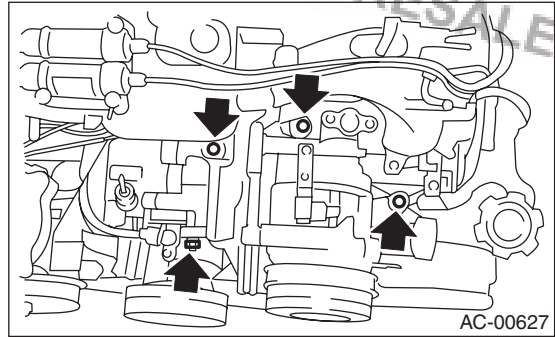
### B: REMOVAL

1) Perform the compressor oil return operation. <Ref. to AC-24, PROCEDURE, Compressor Oil.>  
2) Turn the A/C switch to OFF and stop the engine.  
3) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-19, PROCEDURE, Refrigerant Recovery Procedure.>  
4) Disconnect the ground cable from the battery.  
5) Remove the V-belts. <Ref. to ME(H4SO)-39, REMOVAL, V-belt.> or <Ref. to ME(H4DOTC)-44, REMOVAL, V-belt.>  
6) Remove the generator. <Ref. to SC(H4SO)-14, REMOVAL, Generator.>  
7) Remove the low-pressure hose and high-pressure hose.

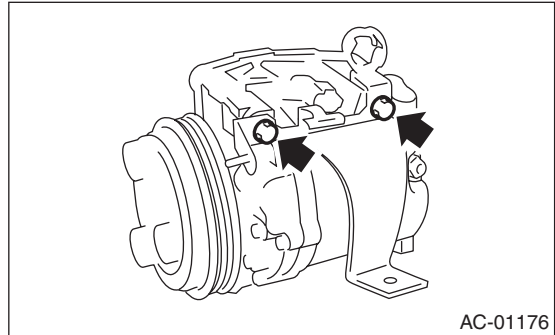


8) Disconnect the compressor harness from the body harness.

9) Loosen the bolts and remove the compressor bracket.



10) Loosen the bolts, then remove the bracket from the compressor.



### C: INSTALLATION

1) Install in the reverse order of removal.  
2) Replace the O-rings on low-/high-pressure hoses with new parts, then apply compressor oil.  
3) After replacing the compressor, adjust the amount of compressor oil. <Ref. to AC-24, PROCEDURE, Compressor Oil.>  
4) Charge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Charging Procedure.>

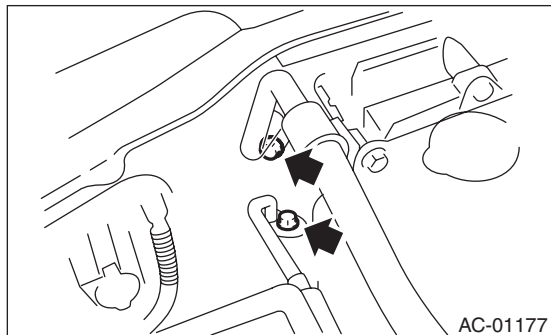
**Tightening torque:**

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

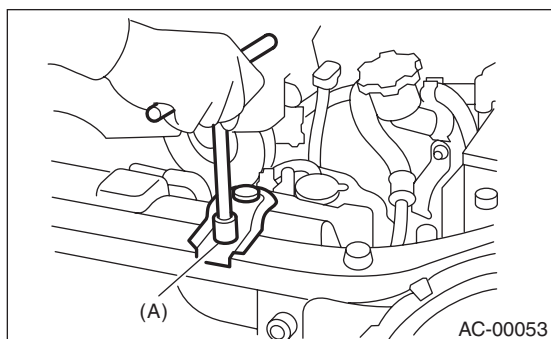
### 14. Condenser

#### A: REMOVAL

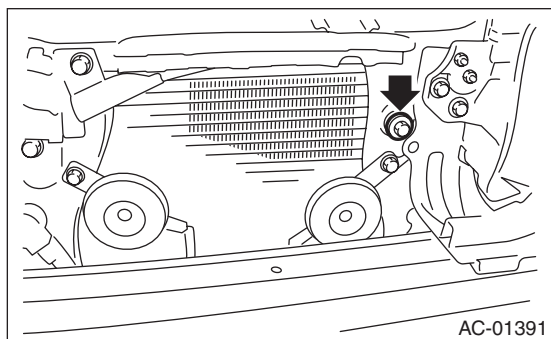
- 1) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-19, PROCEDURE, Refrigerant Recovery Procedure.>
- 2) Disconnect the ground cable from the battery.
- 3) Disconnect the pressure hose and pipe from the condenser.



- 4) Remove the radiator bracket (A).



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



#### CAUTION:

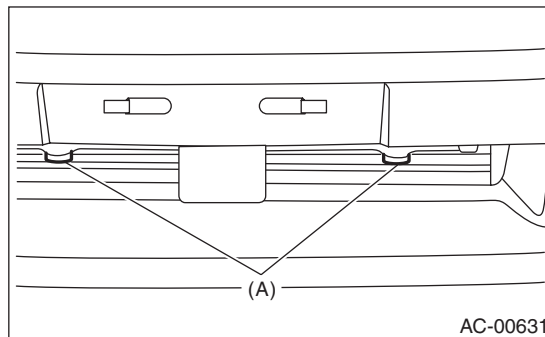
- Be careful not to damage the radiator and condenser fins. If a damaged fin is found, repair it using a thin screwdriver.
- If the condenser is replaced, add appropriate amount of compressor oil to the compressor. <Ref. to AC-24, REPLACEMENT, Compressor Oil.>

#### B: INSTALLATION

- 1) Install in the reverse order of removal.

#### CAUTION:

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



- 2) Charge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Charging Procedure.>

#### Tightening torque:

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

#### C: INSPECTION

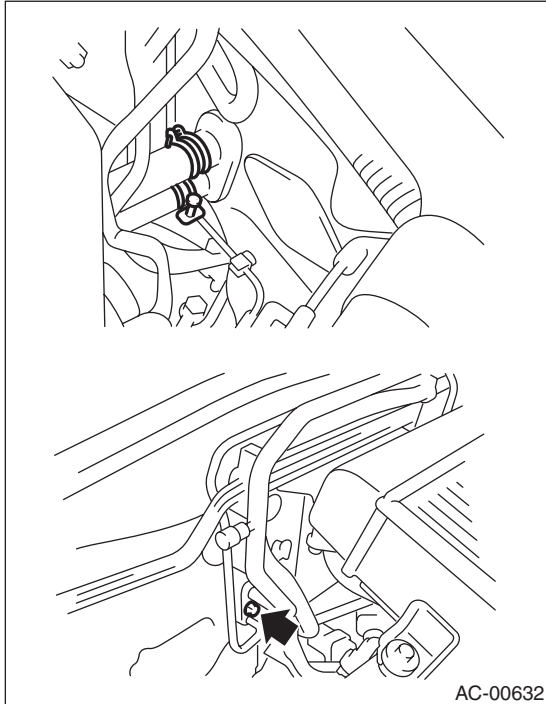
- 1) Confirm that no dust or insects are found on the condenser fins. Air-blow or flush fins with water as needed.
- 2) Confirm that no oil leakage from the condenser. If a failure is found, replace the condenser with a new part.



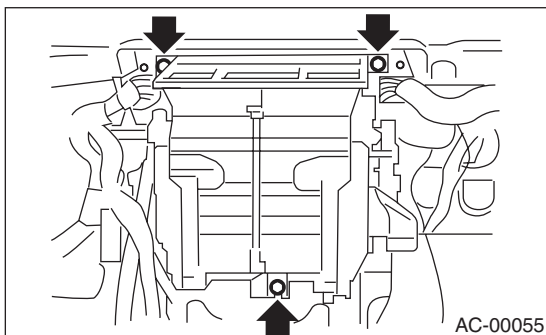
## 15. Heater and Cooling Unit

### A: REMOVAL

- 1) Disconnect the ground cable from the battery.
- 2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-19, PROCEDURE, Refrigerant Recovery Procedure.>
- 3) Drain engine coolant from the radiator.
- 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-47, REMOVAL, Instrument Panel Assembly.>
- 6) Remove the support beam.
- 7) Remove the blower motor unit assembly. <Ref. to AC-25, REMOVAL, Blower Motor Unit Assembly.>
- 8) Disconnect the servo motor connector.
- 9) Loosen the bolt and nuts and remove the heater and cooling unit.



### B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Charge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Charging Procedure.>

#### Tightening torque:

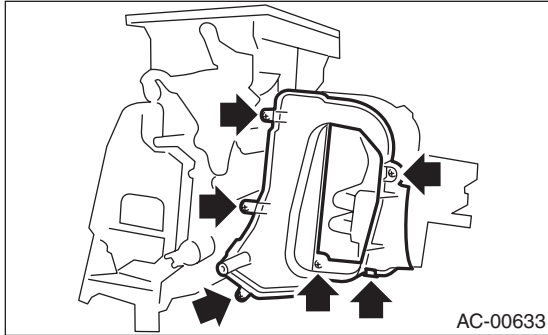
Refer to "COMPONENT" of "General Description". <Ref. to AC-5, HEATER COOLING UNIT, COMPONENT, General Description.>

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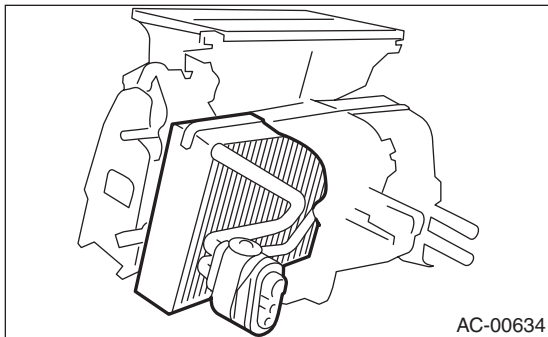
### 16. Evaporator

#### A: REMOVAL

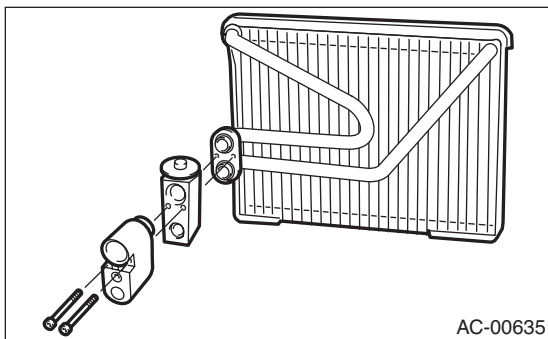
- 1) Remove the heater and cooling unit. <Ref. to AC-33, REMOVAL, Heater and Cooling Unit.>
- 2) Loosen the screws and clip to remove the evaporator cover.



- 3) Remove the evaporator.



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



#### CAUTION:

If the evaporator is replaced, add an appropriate amount of compressor oil to evaporator. <Ref. to AC-24, REPLACEMENT, Compressor Oil.>

#### B: INSTALLATION

Install in the reverse order of removal.

#### NOTE:

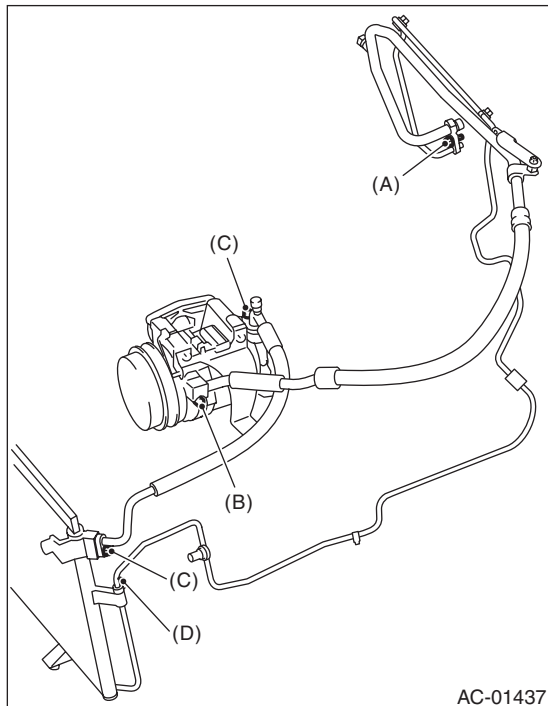
Replace the pipe O-rings with new rings, and apply compressor oil.

## 17.Hose and Tube

### A: REMOVAL

**CAUTION:**

- When disconnecting/connecting hoses, do not apply an excessive force to them. After installing, check that no torsion or excessive tension applied to the hoses.
  - Seal the disconnected hose with a plug or vinyl tape to prevent dirt from entering.
- 1) Disconnect the ground cable from the battery.
  - 2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-19, PROCEDURE, Refrigerant Recovery Procedure.>
  - 3) Remove the evaporator unit attachment 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 pipe attachment bolt (D).
  - 13) Remove the high-pressure pipe from the vehicle.



### B: INSTALLATION

**CAUTION:**

- When disconnecting/connecting hoses, do not apply an excessive force to them. After installing, check that no torsion or excessive tension applied to the hoses.
  - Seal the disconnected hose with a plug or vinyl tape to prevent dirt from entering.
- 1) Install in the reverse order of removal.
  - 2) Charge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Charging Procedure.>

**Tightening torque:**

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

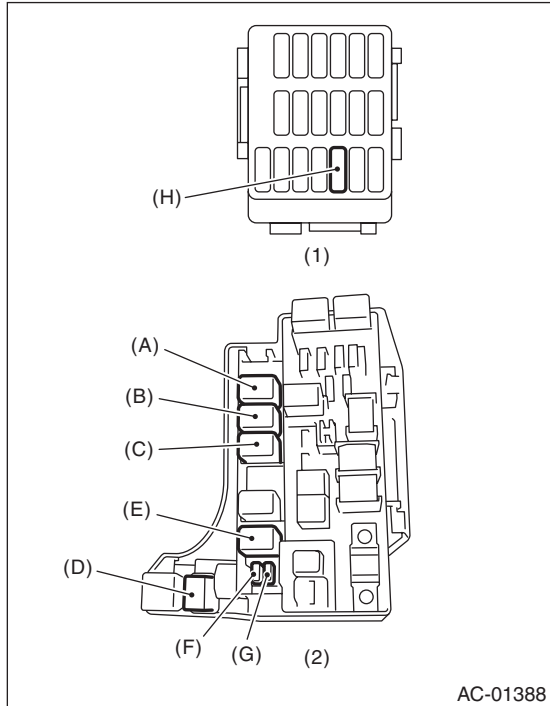
### C: INSPECTION

**NOTE:**

If any cracks, damage, or expansion are found in the hose, replace it with new parts.

# 18. Relay and Fuse

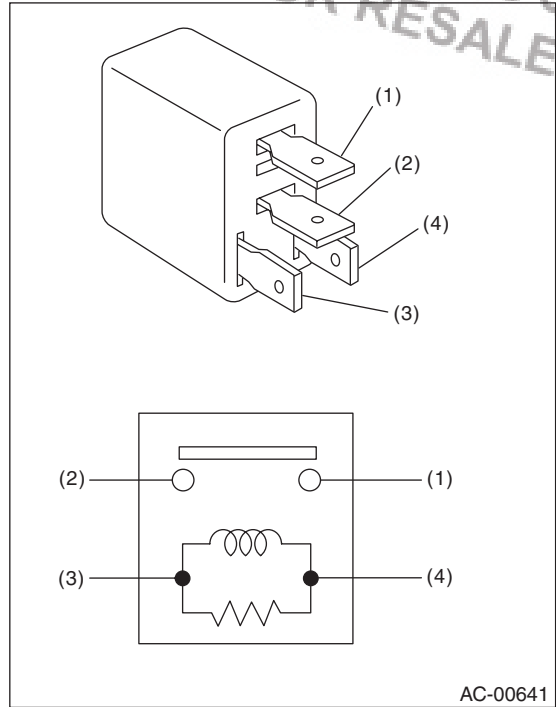
## A: LOCATION



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

Main fan relay 1	(A)
Main fan relay 2	(B)
Sub fan relay 1	(C)
Sub fan relay 2	(E)
A/C relay	(D)
Main fan fuse	(F)
Sub fan fuse	(G)
A/C Fuse	(H)

## B: INSPECTION



- (3) — (4): Continuity exists
- (1) — (2): Continuity does not exist

While applying battery voltage to the terminal between (3) and (4), check continuity between (1) and (2).  
If no continuity exists, replace the relay with a new part.

# Pressure Switch (Dual Switch)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## 19. Pressure Switch (Dual Switch)

### A: INSPECTION

- 1) Connect the manifold gauge to the service valve on the high-pressure side.
- 2) Start the air conditioner, and check the operating pressure of switch by turning the compressor (magnet clutch) to ON/OFF.

NOTE:

- High pressure switch turns the compressor (magnet clutch) to OFF when the refrigerant pressure becomes extremely high to prevent the evaporator, air conditioner piping and expansion valve from getting damaged or frozen.
- Low pressure switch turns the compressor (magnet clutch) to OFF, judging as low refrigerant level when the refrigerant pressure becomes extremely low, to prevent the possible seizure if the compressor rotates.

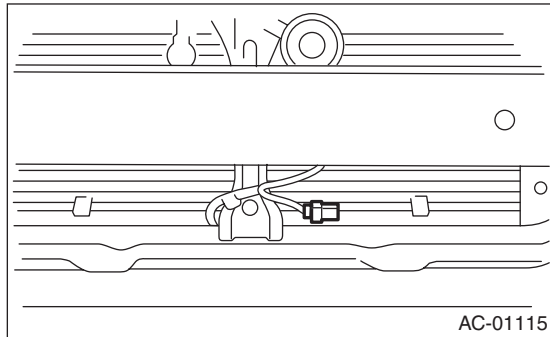
	Operation	Standard kPa (kgf/cm <sup>2</sup> , psi)
High and low pressure switch	Turns OFF.	Increasing to 2,800±100 (29±1, 406±15)
		Decreasing to 278±29 (2.83±0.3, 40.3±4.2)
	Turns ON.	Increasing to 287 <sup>+39</sup> <sub>-25</sub> (2.9 <sup>+0.4</sup> <sub>-0.25</sub> , 42 <sup>+5.7</sup> <sub>-3.6</sub> )
		Decreasing to 2,200±200 (22.4±2, 319±29)

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## 20. Ambient Sensor

### A: REMOVAL

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



### B: INSTALLATION

Install in the reverse order of removal.

### C: INSPECTION

<Ref. to AC(diag)-25, AMBIENT SENSOR, Diagnostic Procedure for Sensors.>

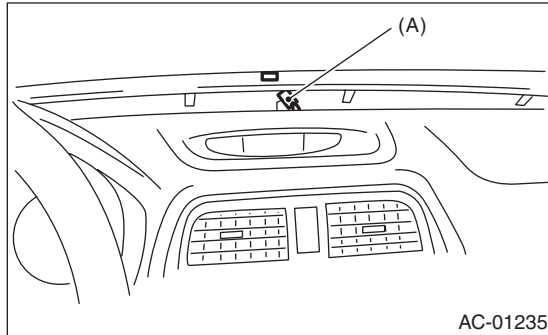
## Sunload Sensor (Auto A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

### 21. Sunload Sensor (Auto A/C Model)

#### A: REMOVAL

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



#### CAUTION:

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

#### B: INSTALLATION

Install in the reverse order of removal.

#### C: INSPECTION

<Ref. to AC(diag)-29, SUNLOAD SENSOR, Diagnostic Procedure for Sensors.>

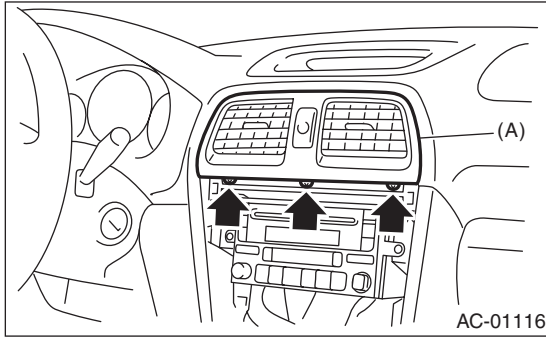
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## 22. Air Vent Grille

### A: REMOVAL

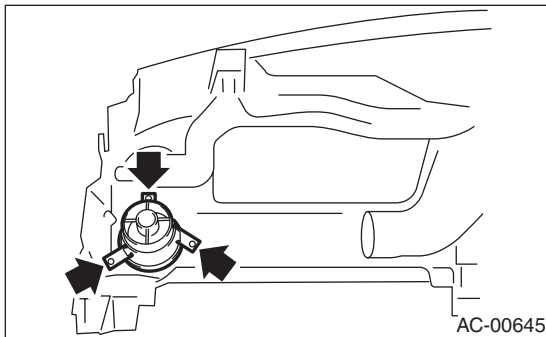
#### 1. CENTER GRILLE

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



#### 2. SIDE GRILLE

- 1) Disconnect the ground cable from the battery.
- 2) Remove the heater vent duct. <Ref. to AC-42, 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

Check that the direction and amount of air can be adjusted smoothly.

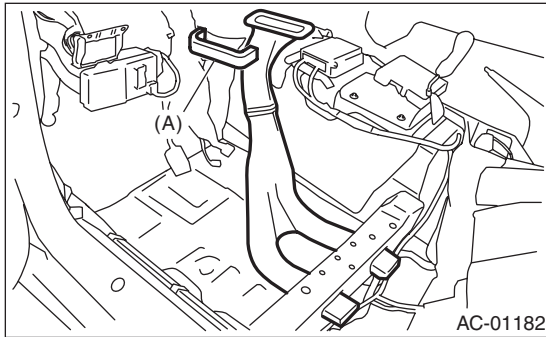
Check that the adjustment can be maintained in each position.



## 23.Heater Duct

### A: REMOVAL

- 1) Remove the front seats. <Ref. to SE-7, REMOVAL, Front Seat.>
- 2) Remove the console box. <Ref. to EI-46, Console Box.>
- 3) Remove the side sill front cover, side sill rear cover and center pillar lower trim. <Ref. to EI-51, REMOVAL, Lower Inner Trim.>
- 4) Remove the footrest.
- 5) Remove the clips from the floor mat.
- 6) Remove the floor mat hook.
- 7) Peel the mat from toe board area.
- 8) Remove the rear heater duct cover (A). Draw out the rear heater duct from the unit assembly and slide it forward to remove.



### B: INSTALLATION

Install in the reverse order of removal.

#### NOTE:

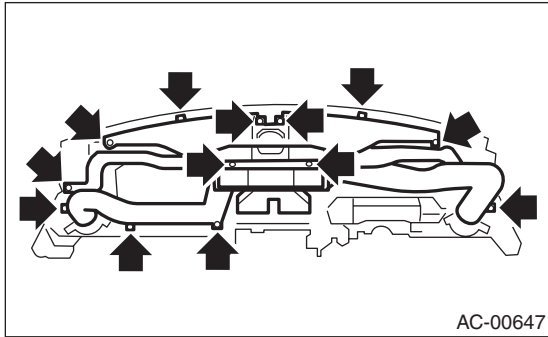
- Secure the mat firmly with hook and Velcro tape.
- Insert the mat edge firmly into the groove of side sill cover.

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## 24.Heater Vent Duct

### A: REMOVAL

- 1) Remove the instrument panel. <Ref. to EI-47, REMOVAL, Instrument Panel Assembly.>
- 2) Remove the screws.
- 3) Remove the heater vent duct.



### B: INSTALLATION

Install in the reverse order of removal.

# General Diagnostic Table

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

## 25. General Diagnostic Table

### A: INSPECTION

Symptom		Repair order
Blower motor	Does not operate.	Fuse
		Blower motor relay
		Blower motor
		Blower motor resistor (manual A/C only)
		Blower switch
	Wiring harness	
	Noise	Blower motor
Compressor	Does not operate.	Refrigerant
		Fuse
		Air conditioning relay
		Magnet clutch
		Compressor
		Pressure switch
		A/C switch
		Blower switch
		Wiring harness
	Noise	V-belt
		Magnet clutch
		Compressor
Cold air not emitted.	Refrigerant	
	V-belt	
	Magnet clutch	
	Compressor	
	Pressure switch	
	A/C switch	
	Blower switch	
	Wiring harness	
	Heater duct	
	Heater vent duct	
Warm air not emitted.	Engine coolant	
	Blower switch	
	Heater core	
Temperature of air from vents does not change.	Engine coolant	
	Air mix actuator (Auto A/C)	
	Wiring harness (Auto A/C)	
	Temperature control cable (Manual A/C)	
Unable to switch blow vents.	Mode actuator (Auto A/C)	
	Air flow switch (Auto A/C)	
	Wiring harness (Auto A/C)	
	Mode switch cable (manual A/C)	
Unable to switch suction vents.	Air inlet select switch (auto A/C)	
	Intake door actuator (auto A/C)	
	Wiring harness (Auto A/C)	
	Intake cable (manual A/C)	

# General Diagnostic Table

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

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