

HVAC SYSTEM

(HEATER, VENTILATOR, AND A/C)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

1. General Description

A: SPECIFICATION

1. HEATER SYSTEM

Item	Specifications	Condition						
Heating capacity	5.0 kW (4,300 kcal/h, 17,062 BTU/h) or more	<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 ℥ (95.1 US gal, 79.2 Imp gal)/h 						
Air flow rate	280 m ³ (9,888 cu ft)/h	Heat mode (FRESH), FULL HOT at 12.5 V						
Max air flow rate	450 m ³ (15,892 cu ft)/h	<ul style="list-style-type: none"> • Temperature control switch: FULL COLD • Blower fan speed: MAX • Mode selector lever: RECIRC 						
Heater core size (height × length × width)	163.9 × 200 × 25.0 mm (6.45 × 7.87 × 0.984 in)	—						
Blower motor	<table border="1"> <tr> <td>Type</td> <td>Magnet motor 200 W or less</td> </tr> <tr> <td>Fan type and size (diameter × width)</td> <td>Sirocco fan type 150 × 75 mm (5.91 × 2.95 in)</td> </tr> </table>	Type	Magnet motor 200 W or less	Fan type and size (diameter × width)	Sirocco fan type 150 × 75 mm (5.91 × 2.95 in)	<table border="1"> <tr> <td>at 12 V</td> </tr> <tr> <td>—</td> </tr> </table>	at 12 V	—
Type	Magnet motor 200 W or less							
Fan type and size (diameter × width)	Sirocco fan type 150 × 75 mm (5.91 × 2.95 in)							
at 12 V								
—								

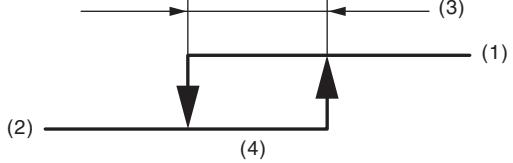
2. A/C SYSTEM

• AUTO A/C MODEL

Item	Specifications										
Type of air conditioner	Reheat air-mix type										
Cooling capacity	5.1 kW (4,385 kcal/h, 17,402 BTU/h)										
Refrigerant	HFC-134a (CH ₂ FCF ₃) [0.5±0.05 kg (0.99±0.11 lb)]										
Compressor	<table border="1"> <tr> <td>Type</td> <td>Vane rotary, fix volume (CR-14)</td> </tr> <tr> <td>Discharge</td> <td>144 cm³ (8.79 cu in)/rev</td> </tr> <tr> <td>Max. permissible speed</td> <td>7,000 rpm</td> </tr> </table>	Type	Vane rotary, fix volume (CR-14)	Discharge	144 cm ³ (8.79 cu in)/rev	Max. permissible speed	7,000 rpm				
Type	Vane rotary, fix volume (CR-14)										
Discharge	144 cm ³ (8.79 cu in)/rev										
Max. permissible speed	7,000 rpm										
Magnet clutch	<table border="1"> <tr> <td>Type</td> <td>Dry, single-disc type</td> </tr> <tr> <td>Power consumption</td> <td>47 W</td> </tr> <tr> <td>Type of belt</td> <td>V-belt 4 PK</td> </tr> <tr> <td>Pulley dia. (effective dia.)</td> <td>125 mm (4.92 in)</td> </tr> <tr> <td>Pulley ratio</td> <td>1.064</td> </tr> </table>	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
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	<table border="1"> <tr> <td>Type</td> <td>Corrugated fin (Sub cool type)</td> </tr> <tr> <td>Core face area</td> <td>0.21 m² (2.26 sq ft)</td> </tr> <tr> <td>Core thickness</td> <td>16 mm (0.63 in)</td> </tr> <tr> <td>Radiation area</td> <td>5.34 m² (57.48 sq ft)</td> </tr> </table>	Type	Corrugated fin (Sub cool type)	Core face area	0.21 m ² (2.26 sq ft)	Core thickness	16 mm (0.63 in)	Radiation area	5.34 m ² (57.48 sq ft)		
Type	Corrugated fin (Sub cool type)										
Core face area	0.21 m ² (2.26 sq ft)										
Core thickness	16 mm (0.63 in)										
Radiation area	5.34 m ² (57.48 sq ft)										
Receiver drier	Effective inner capacity 250 cm ³ (15.26 cu in)										
Expansion valve	Type Internal equalizing										
Evaporator	<table border="1"> <tr> <td>Type</td> <td>Single tank</td> </tr> <tr> <td>Dimensions (W × H × T)</td> <td>255 × 200 × 48 mm (10 × 7.87 × 1.89 in)</td> </tr> </table>	Type	Single tank	Dimensions (W × H × T)	255 × 200 × 48 mm (10 × 7.87 × 1.89 in)						
Type	Single tank										
Dimensions (W × H × T)	255 × 200 × 48 mm (10 × 7.87 × 1.89 in)										
Blower fan	<table border="1"> <tr> <td>Fan type</td> <td>Sirocco fan</td> </tr> <tr> <td>Outer diameter × width</td> <td>150 × 75 mm (5.91 × 2.95 in)</td> </tr> <tr> <td>Power consumption</td> <td>200 W</td> </tr> </table>	Fan type	Sirocco fan	Outer diameter × width	150 × 75 mm (5.91 × 2.95 in)	Power consumption	200 W				
Fan type	Sirocco fan										
Outer diameter × width	150 × 75 mm (5.91 × 2.95 in)										
Power consumption	200 W										

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

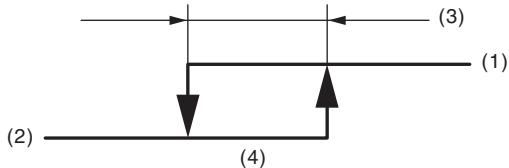
Item		Specifications	
Condenser fan (Sub fan)	Motor type	Magnet	
	Power consumption	120 W	
	Fan outer diameter	320 mm (12.6 in)	
Radiator fan (Main fan)	Motor type	Magnet	
	Power consumption	120 W	
	Fan outer diameter	320 mm (12.6 in)	
Idling speed (A/C ON)		MPFI model	850±100 rpm
Dual switch (Pressure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

• MANUAL A/C MODEL

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

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

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

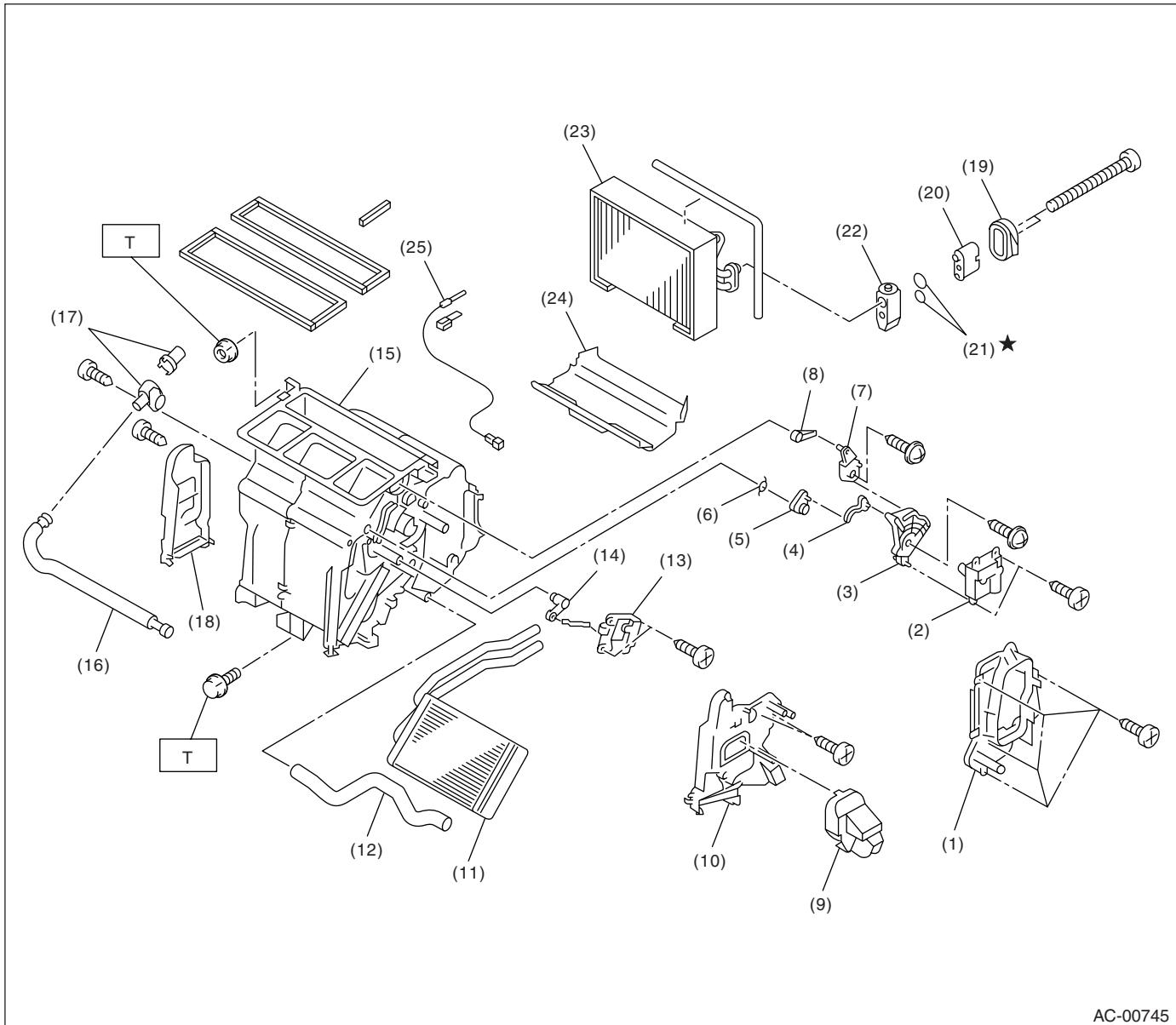
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

B: COMPONENT

1. HEATER COOLING UNIT

• AUTO A/C MODEL



AC-00745

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

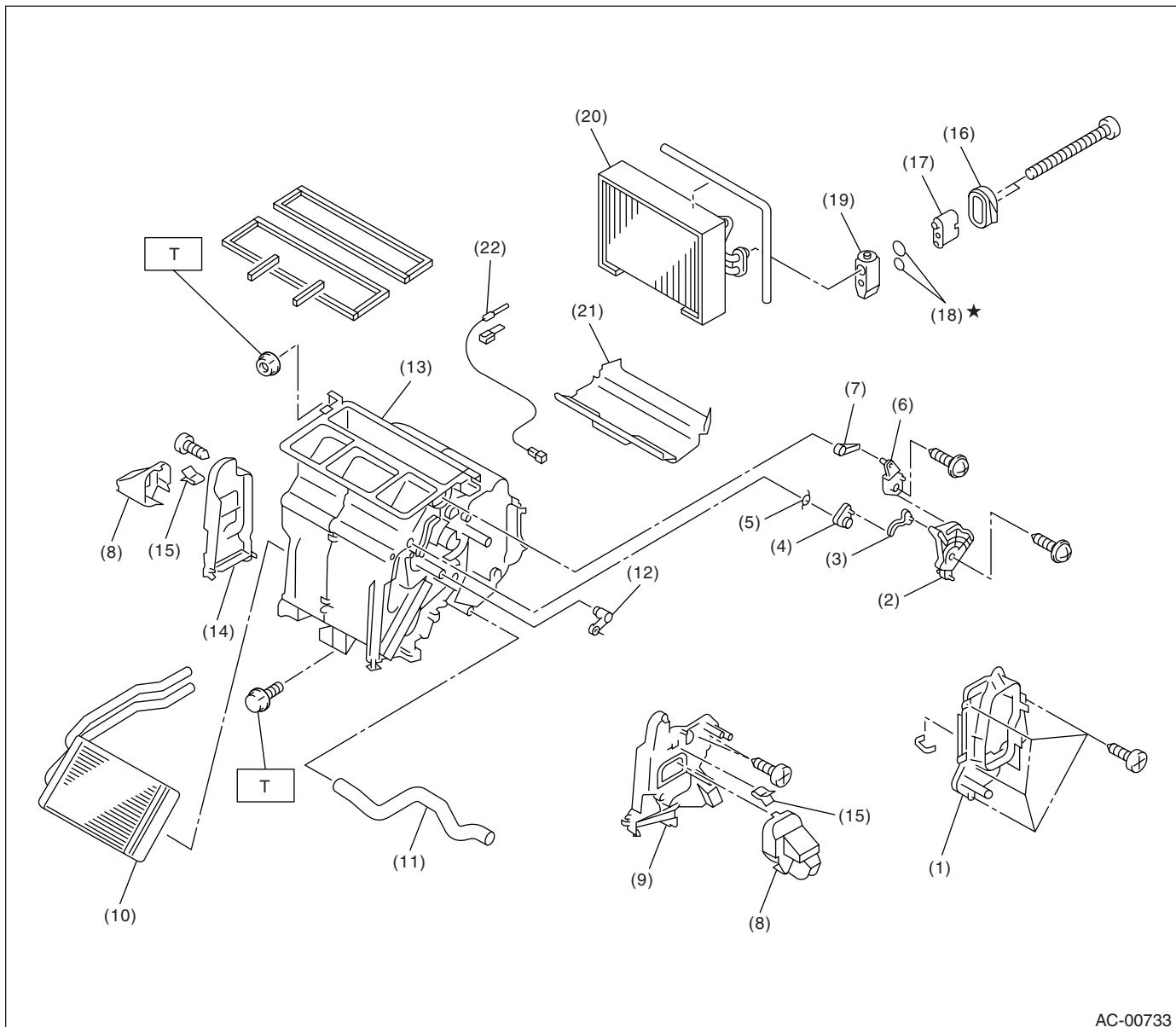
Tightening torque: N·m (kgf·m, ft·lb)

T: 7.4 (0.75, 5.4)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• MANUAL A/C MODEL



AC-00733

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

Tightening torque: N·m (kgf·m, ft-lb)

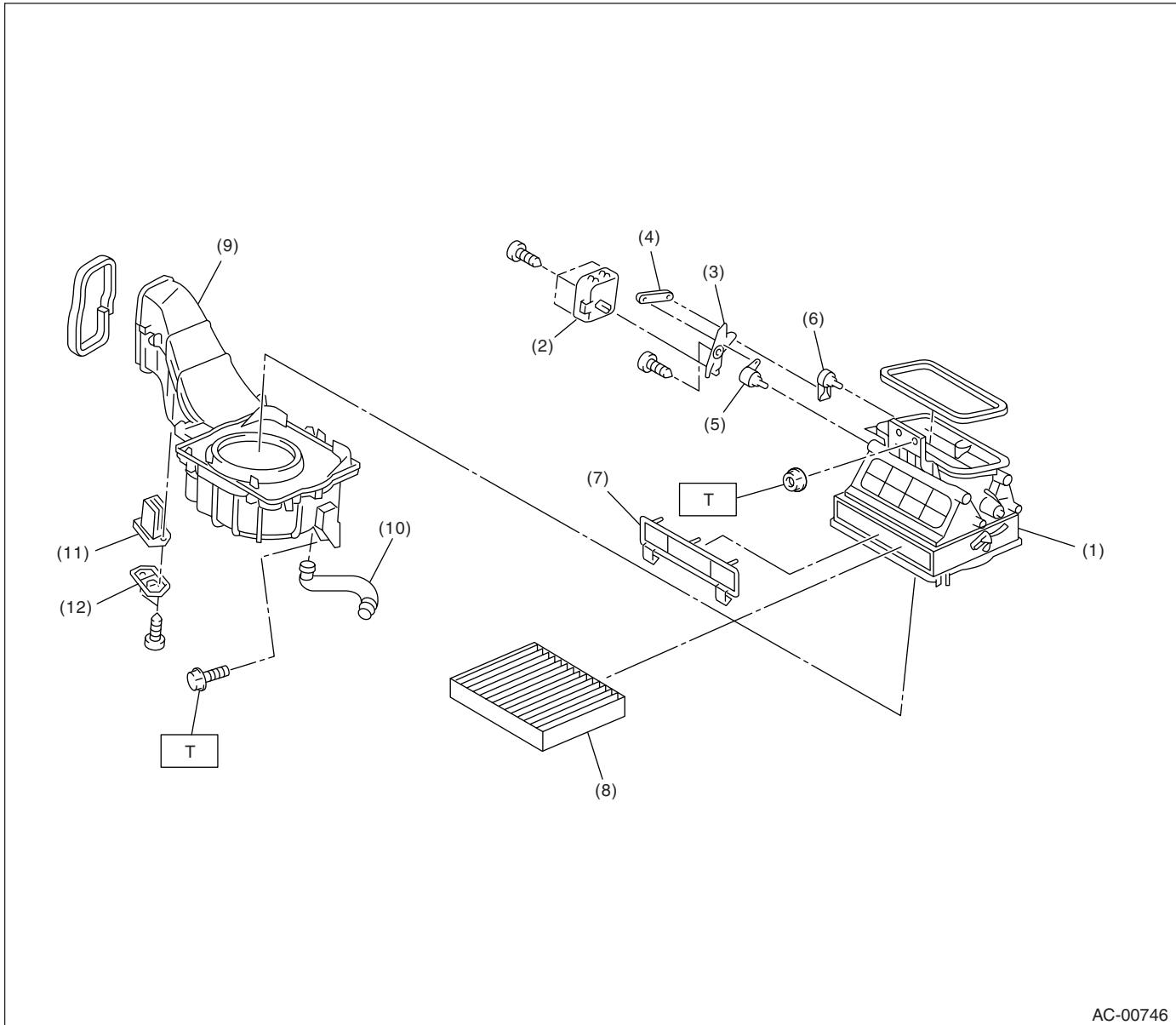
T: 7.4 (0.75, 5.4)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

2. BLOWER MOTOR UNIT

• AUTO A/C MODEL



AC-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 | |

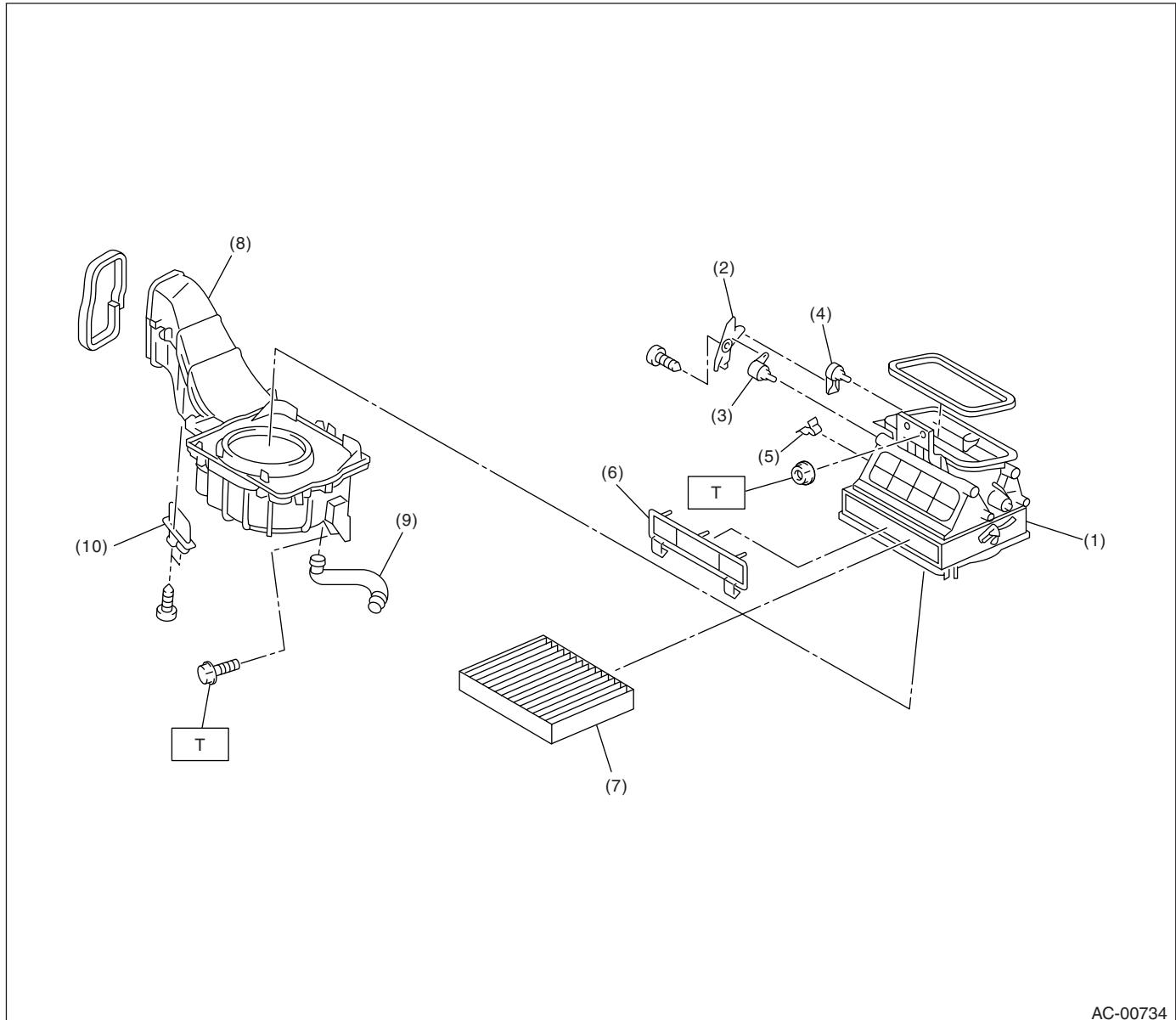
Tightening torque: N·m (kgf-m, ft-lb)

T: 7.4 (0.75, 5.4)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• MANUAL A/C MODEL



AC-00734

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

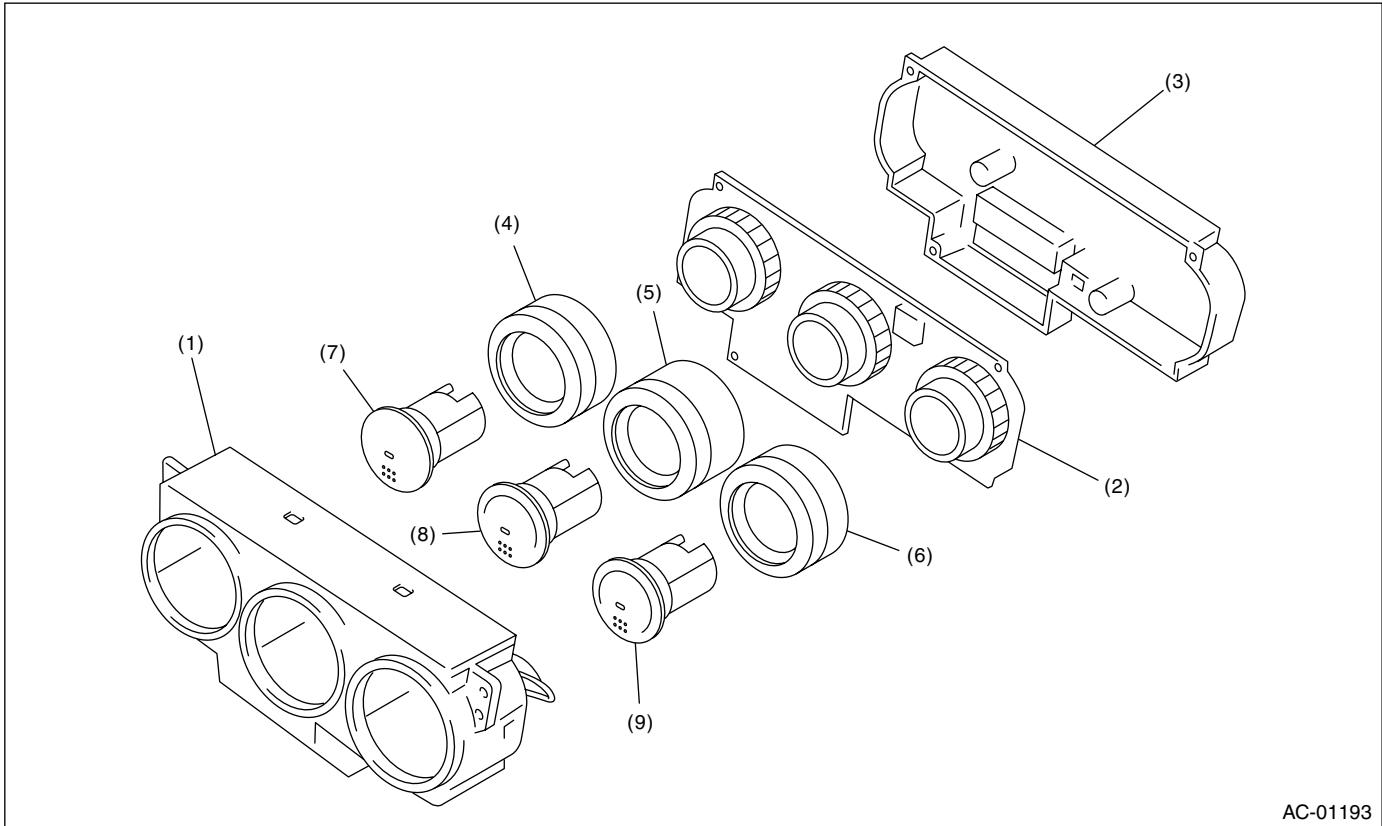
Tightening torque: N·m (kgf·m, ft·lb)
T: 7.4 (0.75, 5.4)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

3. CONTROL UNIT

• AUTO A/C MODEL

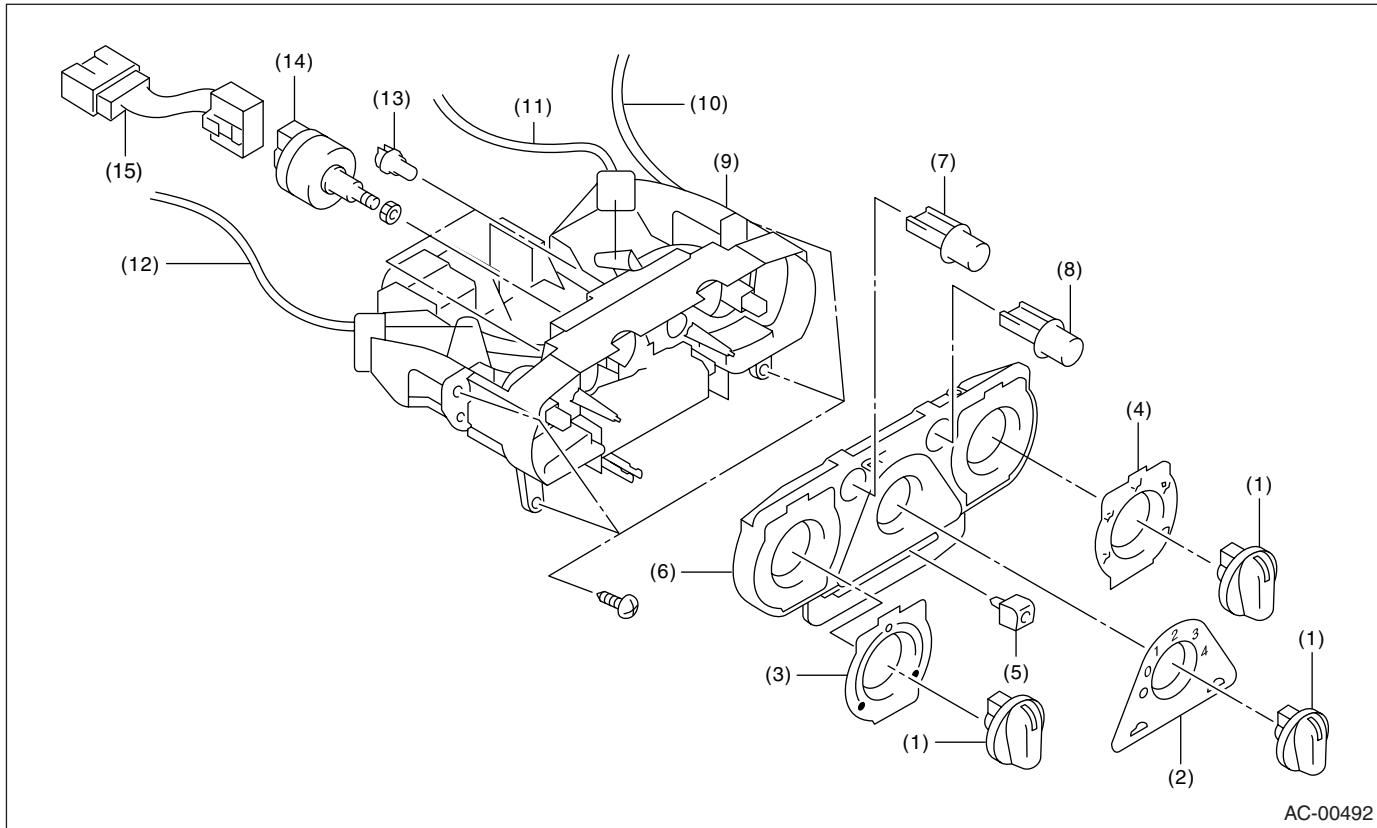


- | | | |
|------------------|------------------------------|---------------------------------|
| (1) Panel | (4) Mode control dial | (7) Rear window defogger switch |
| (2) Switch base | (5) Fan speed control dial | (8) FRESH/RECIRC switch |
| (3) Control case | (6) Temperature control dial | (9) A/C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

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• MANUAL A/C MODEL

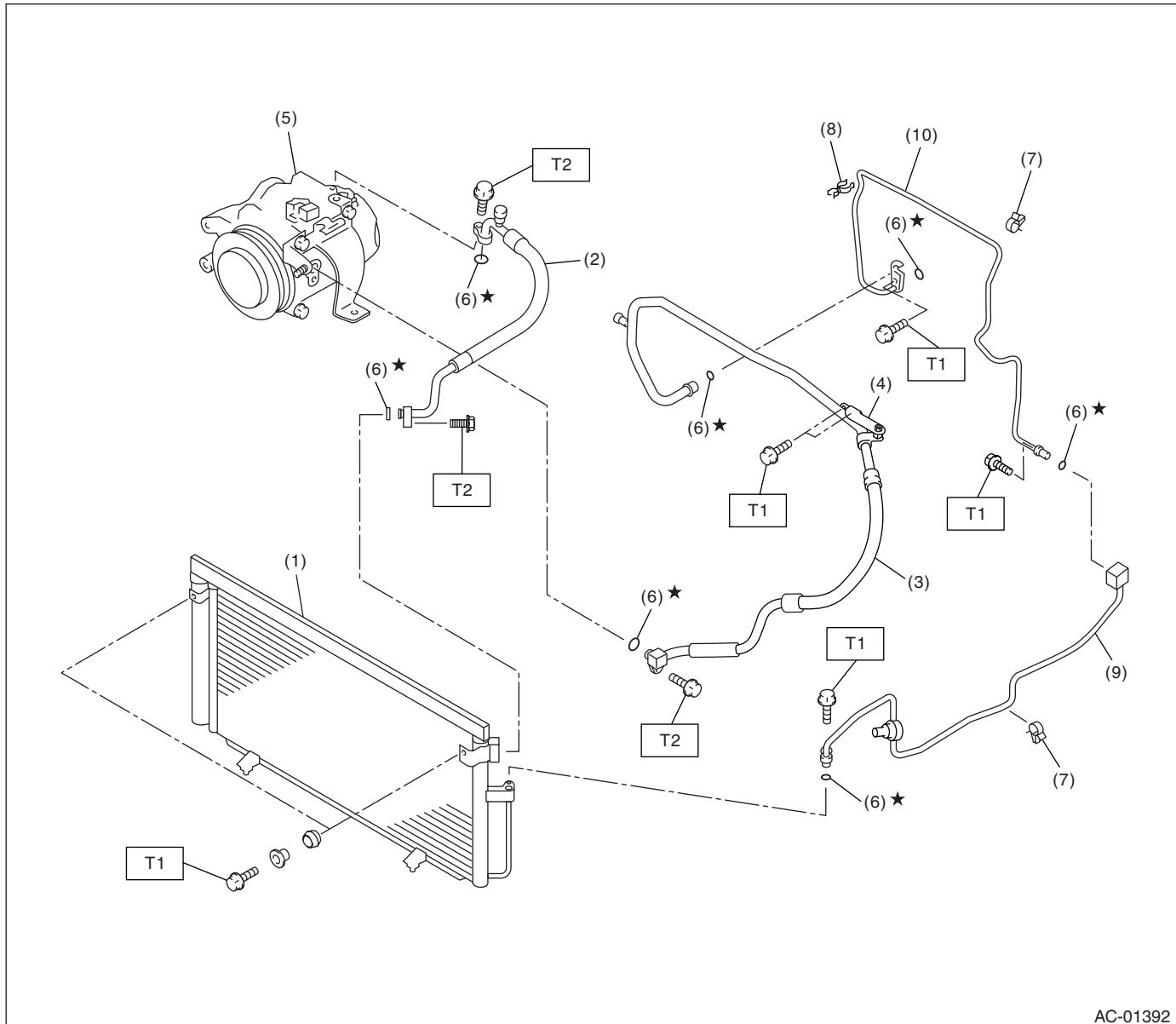


- | | | |
|---------------------------------|---------------------------------|--------------------------------|
| (1) Dial | (6) Heater control panel | (11) Mode cable |
| (2) Fan control plate | (7) A/C switch | (12) Temperature control cable |
| (3) Temperature control plate | (8) Rear window defogger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

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

4. AIR CONDITIONING UNIT



AC-01392

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

Tightening torque: N·m (kgf·m, ft-lb)

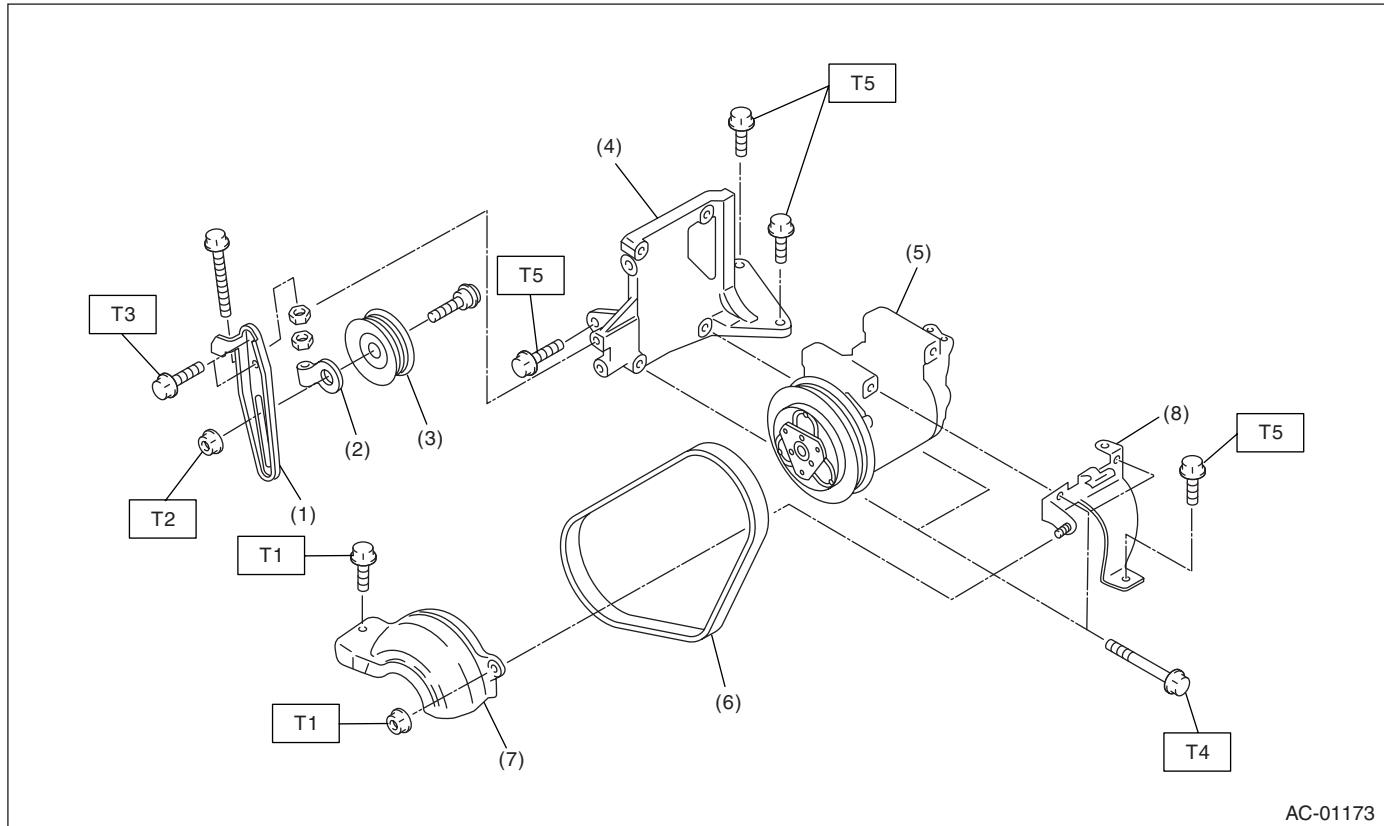
T1: 7.4 (0.75, 5.4)

T2: 15 (1.5, 10.8)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

5. COMPRESSOR



AC-01173

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

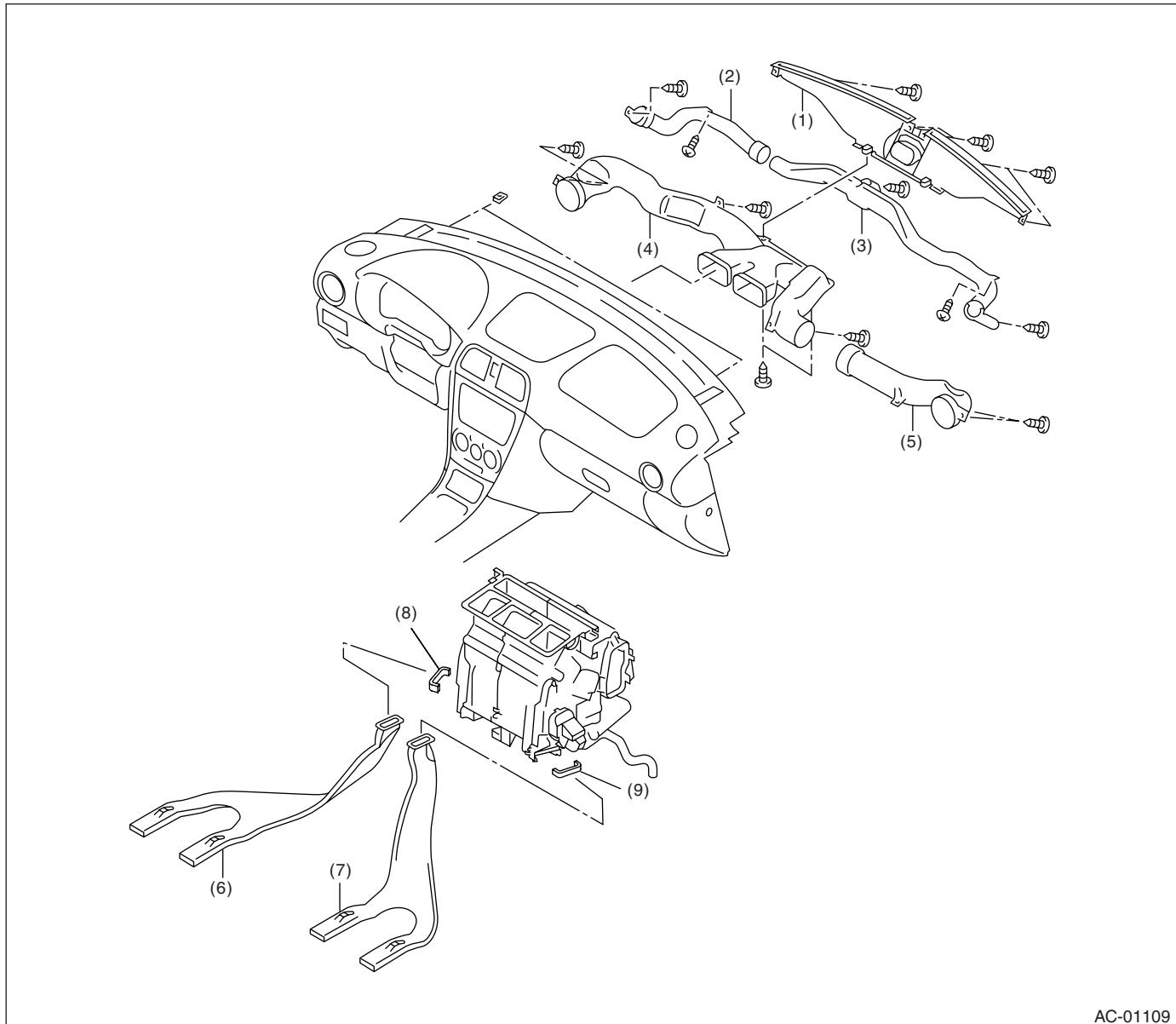
Tightening torque: N·m (kgf·m, ft-lb)

- | |
|------------------------------|
| T1: 7.4 (0.75, 5.4) |
| T2: 22.6 (2.3, 16.6) |
| T3: 23.0 (2.35, 17.0) |
| T4: 28.9 (2.95, 21.3) |
| T5: 35 (3.6, 26) |

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

6. HEATER DUCT



AC-01109

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

General Description

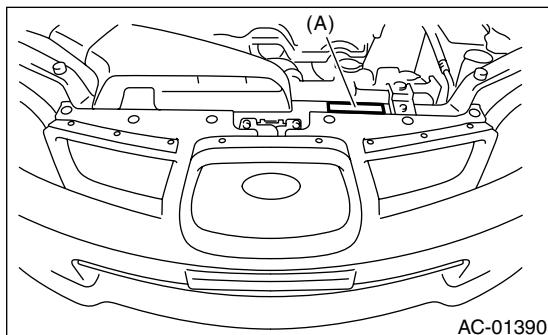
HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

C: CAUTION

1. HFC-134a A/C SYSTEM

- Unlike the old conventional CFC-12 system components, the cooling system components for the HFC-134a system such as the refrigerant and compressor oil are incompatible.
- Vehicles with the HFC-134a system can be identified by the label (A) attached to the vehicle.

Before maintenance, check which A/C system is installed in the vehicle.



2. COMPRESSOR OIL

- HFC-134a compressor oil has no compatibility with that for CFC-12 system.
- Use only the manufacturer-authorized compressor oil for the HFC-134a system; only use DH-PR.
- Do not mix multiple compressor oils.

If CFC-12 compressor oil is used in a HFC-134a A/C system, the compressor may become stuck due to poor lubrication, or the refrigerant may leak due to swelling of rubber parts.

On the other hand, if HFC-134a compressor oil is used in a CFC-12 A/C system, the durability of the A/C system will be lowered.

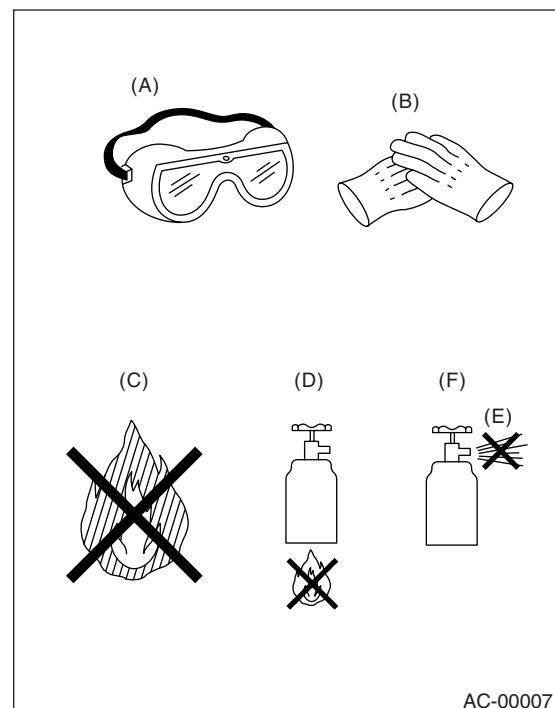
• HFC-134a compressor oil is very hygroscopic. When replacing or installing/removing A/C parts, immediately isolate the oil from the atmosphere using a plug or tape. In order to avoid moisture, store the oil in a container with its cap tightly closed.

3. REFRIGERANT

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

4. HANDLING OF REFRIGERANT

- The refrigerant boils at approx. -30°C (-22°F). When handling it, be sure to wear safety goggles and protective gloves. Direct contact of the refrigerant with skin may cause frostbite. If the refrigerant gets into your eye, avoid rubbing your eyes with your hands. Wash your eye with plenty of water, and receive medical treatment from an eye doctor.
- Do not heat a service can. If a service can is directly heated, or put into boiling water, the inside pressure will become extremely high. This may cause the can to explode. If a service can must be warmed up, use hot water in 40°C (104°F) max.
- Do not drop or impact a service can. (Observe the precautions and operation procedure described on the refrigerant can.)
- When the engine is running, do not open the high-pressure valve of the manifold gauge. The high-pressure gas will back-flow resulting in an explosion of the can.
- Provide good ventilation and do not work in a closed area.
- In order to prevent global warning, avoid releasing HFC-134a into the atmosphere. Using a refrigerant recovery system, discharge and reuse it.



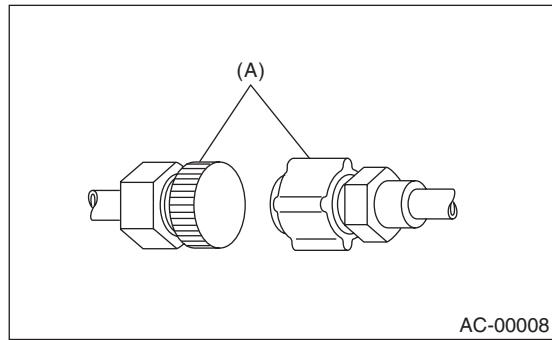
- (A) Safety goggles
- (B) Protective gloves
- (C) Avoid open flame
- (D) No direct heat on container
- (E) Do not discharge
- (F) Loosen

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

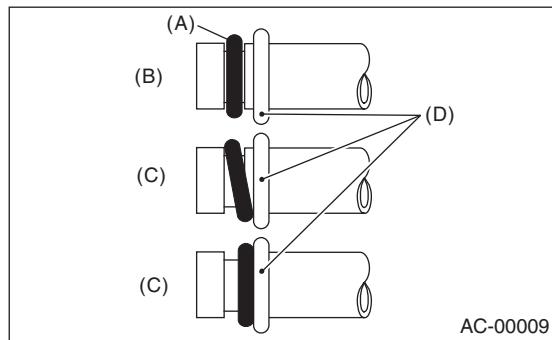
5. O-RING CONNECTIONS

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



(A) Seal

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

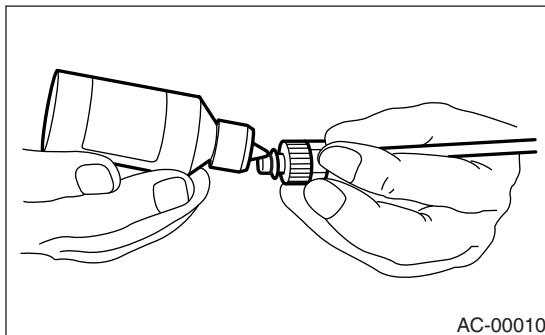


(A) O-ring
(B) OK
(C) NG
(D) Bead

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

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

Apply the oil to the area including the O-rings and tube beads.



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

D: PREPARATION TOOL

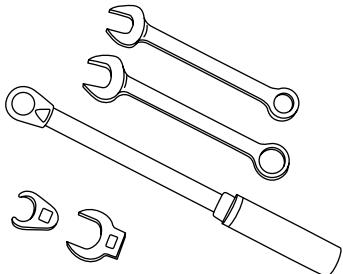
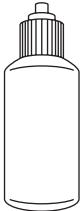
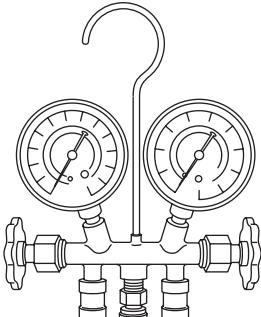
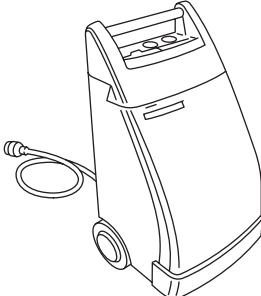
CAUTION:

- When working on vehicles with the HFC-134a system, only use HFC-134a specified tools and parts.
- Do not mix with CFC-12 tools and parts. If HFC-134a and CFC-12 refrigerant or compressor oil is mixed, poor lubrication will result and the compressor itself may be destroyed.
- In order to help prevent mixing HFC-134a and CFC-12 parts and liquid, the tool and screw type and the type of service valves used are different. The gas leak detectors for the HFC-134a and CFC-12 systems must also not be interchanged.

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

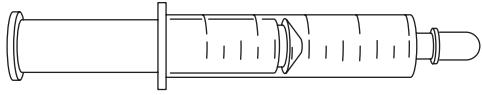
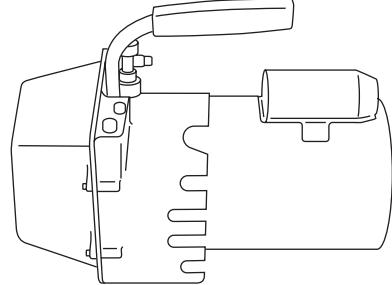
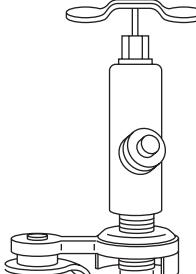
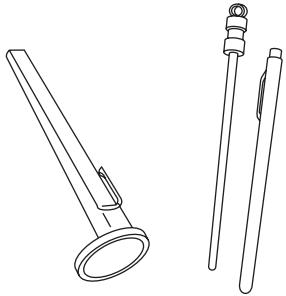
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Description	Tools and Equipment
 AC-00213	<p>Wrench Various WRENCHES will be required to service any A/C system. A 7 to 40 N·m (0.7 to 4.1 kgf-m, 5 to 30 ft-lb) torque wrench with various crowfoot wrenches will be needed. Open end or flare nut wrenches will be needed for back-up on the tube and hose fittings.</p>
 AC-00012	<p>Applicator bottle A small APPLICATOR BOTTLE is recommended to apply refrigerant oil to the various parts. They can be obtained at a hardware or drug store.</p>
 AC-00013	<p>Manifold gauge set A MANIFOLD GAUGE SET (with hoses) can be obtained from either a commercial refrigeration supply house or from an auto shop equipment supplier.</p>
 AC-00014	<p>Refrigerant recovery system A REFRIGERANT RECOVERY SYSTEM is used for the recovery and reuse of A/C system refrigerant after contaminants and moisture have been removed from the refrigerant.</p>

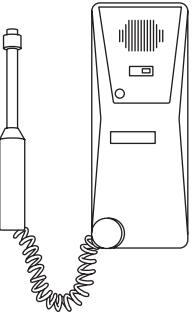
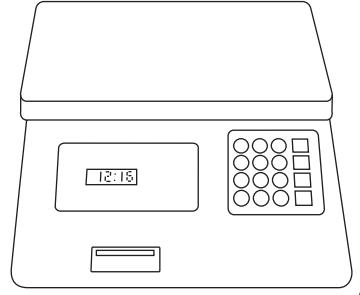
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Description	Tools and Equipment
 AC-00015	Syringe A graduated plastic SYRINGE will be needed to add oil back into the system. The syringe can be found at a pharmacy or drug store.
 AC-00016	Vacuum pump A VACUUM PUMP (in good working condition) is necessary, and may be obtained from either a commercial refrigeration supply house or an automotive equipment supplier.
 AC-00017	Can tap A CAN TAP for the 397 g (14 oz) can is available from an auto supply store.
 AC-00018	Thermometer Pocket THERMOMETERS are available from either industrial hardware store or commercial refrigeration supply houses.

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

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

2. Refrigerant Pressure with Manifold Gauge Set

A: PROCEDURE

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

Standard:

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

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

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

B: INSPECTION

Symptom	Probable cause	Repair order
High-pressure side is unusually high.	<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 vacuuming, 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 vacuuming.
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: PROCEDURE

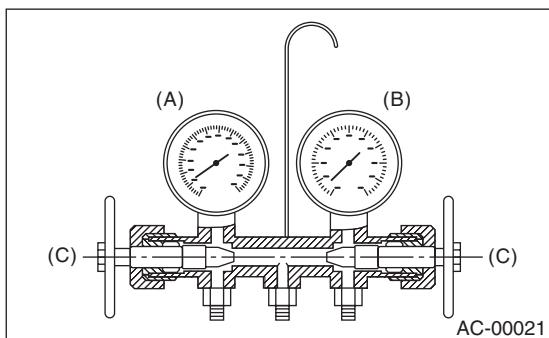
CAUTION:

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

1) Perform the compressor oil return operation.
<Ref. to AC-25, PROCEDURE, Compressor Oil.>

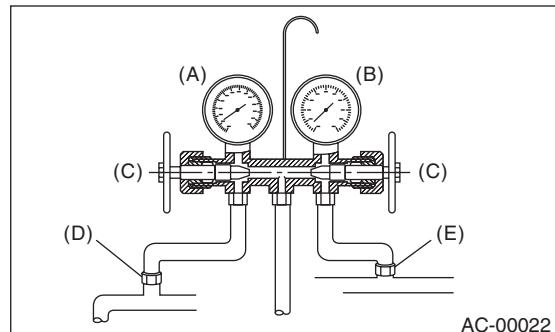
2) Stop the engine.

3) Make sure the valves on low-/high-pressure sides of manifold gauge set are fully closed.



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

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



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

5) Connect the center hose to the refrigerant recovery system.

6) Follow the operation manual to activate the refrigerant recovery system.

Refrigerant Charging Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

4. Refrigerant Charging Procedure

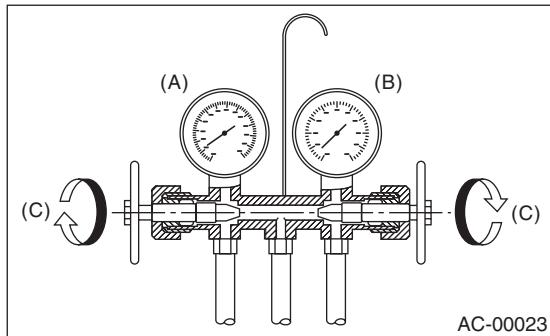
A: PROCEDURE

CAUTION:

- During operation, be sure to wear safety goggles and protective gloves.
- Before charging the refrigerant, evacuate the system to remove small amounts of moisture remaining in the system.
- The moisture in the system can be completely evacuated only under the minimum vacuum level. The minimum vacuum level affects the temperature in the system.
- The list below shows the vacuum values necessary to boil water in various temperature. In addition, the vacuum levels indicated on the gauge are approx. 3.3 kPa (25 mmHg, 0.98 inHg) lower than those measured at 304.8 m (1,000 ft) above sea level.

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

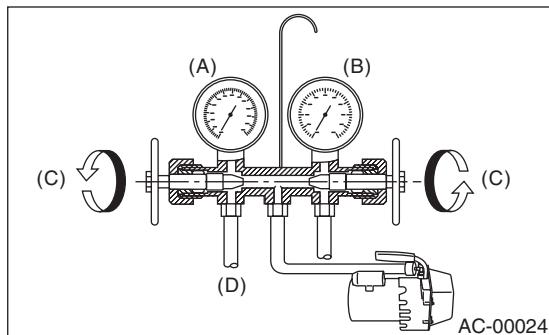
- 1) Close the valves on low-/high-pressure sides of the manifold gauge.



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

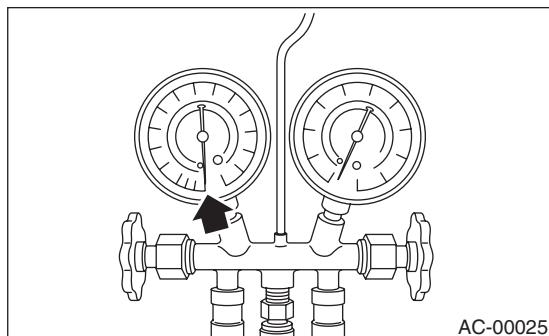
- 2) Install the low-/high-pressure hoses to the corresponding service ports on the vehicle respectively.
- 3) Connect the center hose of the manifold gauge set with the vacuum pump.

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

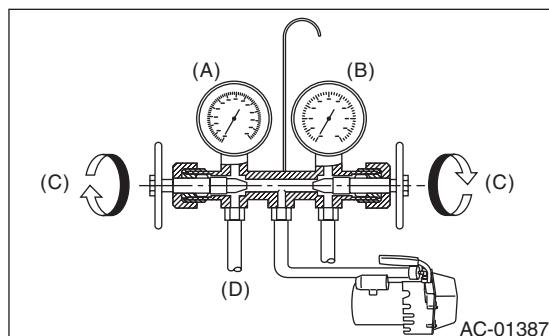


- (A) Low-pressure gauge (Compound pressure gauge)
- (B) High-pressure gauge
- (C) Slowly open
- (D) Vacuum pump turn on

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



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

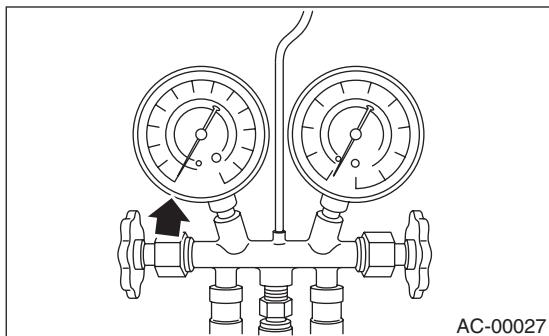


- (A) Low-pressure gauge (Compound pressure gauge)
- (B) High-pressure gauge
- (C) Close
- (D) Vacuum pump turn off

Refrigerant Charging Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

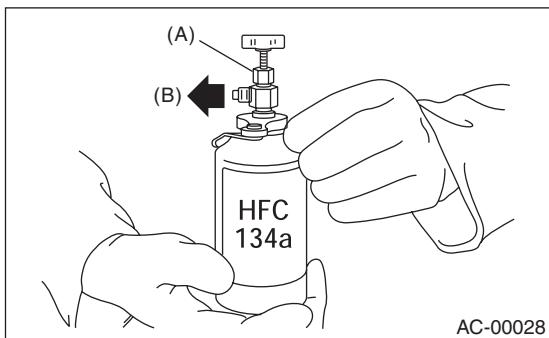
7) Note the low-pressure gauge needle.



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

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

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

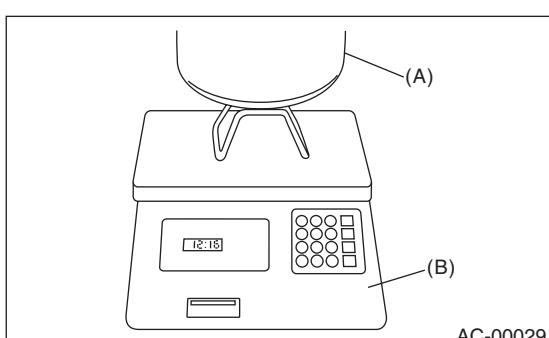


(A) Tap valve

(B) Center manifold hose

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

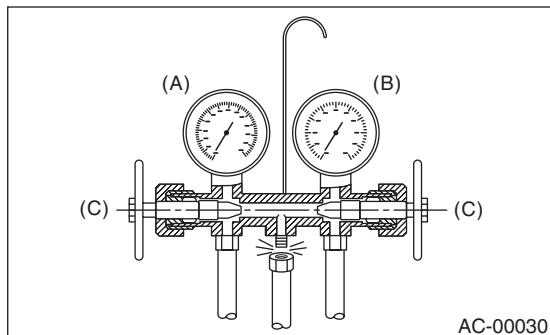
11) When a 13.6 kg (30 lb) refrigerant container is used, measure the refrigerant amount in use using a weighting scale.



(A) Refrigerant container (HFC-134a)

(B) Weight scale

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



(A) Low-pressure gauge (Compound pressure gauge)

(B) High-pressure gauge

(C) Close

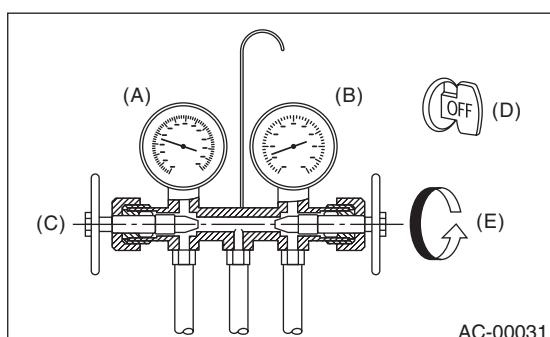
13) Open the valve on the HFC-134a source.

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

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

CAUTION:

Do not open the low-pressure valve.



(A) Low-pressure gauge (Compound pressure gauge)

(B) High-pressure gauge

(C) Close

(D) Ignition switch OFF

(E) Slowly open

CAUTION:

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

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

Refrigerant Charging Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

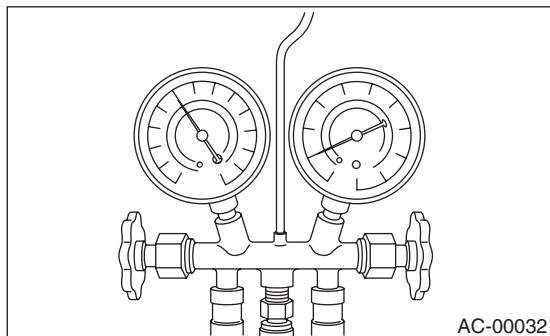
17) After confirming that there are no leaks with the leak test, charge the required amount of refrigerant.

CAUTION:

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

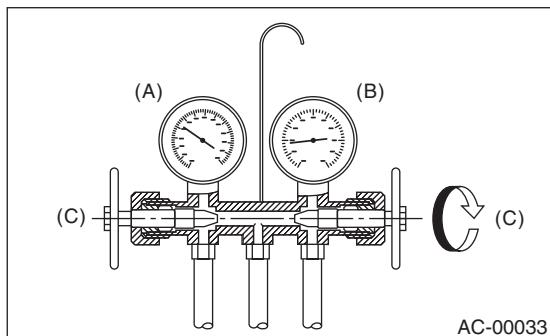
18) Close the high-pressure valve when;

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



AC-00032

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



AC-00033

(A) Low-pressure gauge (Compound pressure gauge)

(B) High-pressure gauge

(C) Close

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

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

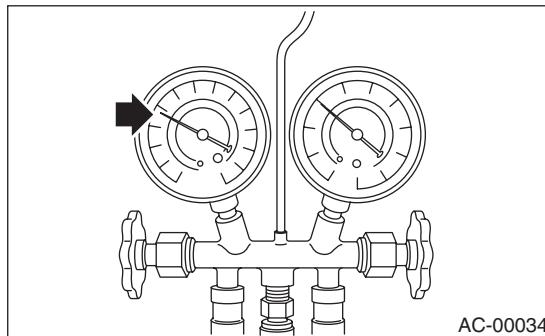
22) Set up the vehicle to the following status:

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

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

CAUTION:

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



AC-00034

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

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

26) Close the valve on the refrigerant source.

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

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

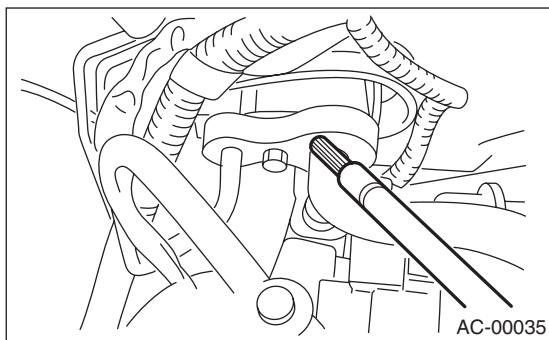
Refrigerant Leak Check

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

5. Refrigerant Leak Check

A: INSPECTION

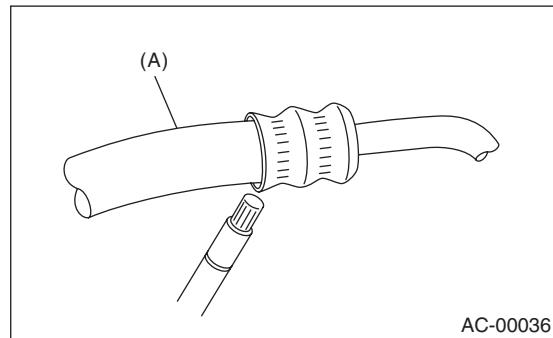
- 1) Operate the A/C system for approx. 10 minutes, and confirm that the high-pressure side shows at least 690 kPa (7.03 kgf/cm², 100 psi). Then stop the engine to start the leak test.
- 2) Starting from the connection between the high-pressure pipe and evaporator, check the system for leaks along the high-pressure side through the compressor. The following items must be checked thoroughly.
 - 3) Check the joint and seam between the pressure switch (dual pressure switch) and high-pressure pipe.
 - 4) Check the connections between the condenser and pipes, and welded joints on the condenser. The leak tester may detect the oil on the condenser fins as a leak.
 - 5) Check the joint between the compressor and hoses.
 - 6) Check the machined area of compressor and other joints on the compressor.
 - 7) Check the compressor shaft seal at the area near the center of compressor clutch pulley. Some shaft seals show a slight amount of leakage about 3 g (0.1 oz) per year. This is not a problem.
 - 8) Starting from the connection between the low-pressure pipe and evaporator, check the system for leakage along the low-pressure side through the compressor. The following items must be checked thoroughly.
 - Connection between two parts
 - Connection between the pipe and plate



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

CAUTION:

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

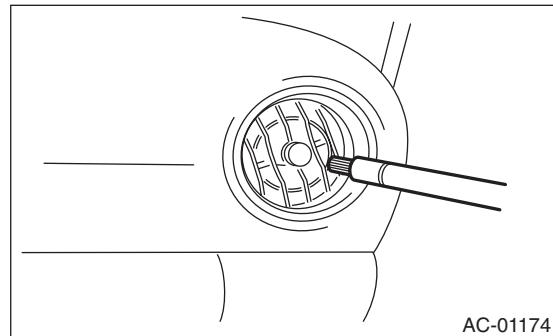


(A) Flexible hose

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

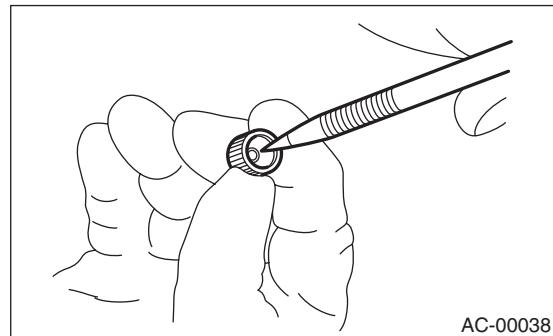
After the test is finished, reconnect the drain hose.

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



- 12) Check the valve in the service port.

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



6. Compressor Oil

A: PROCEDURE

NOTE:

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

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

B: REPLACEMENT

NOTE:

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

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

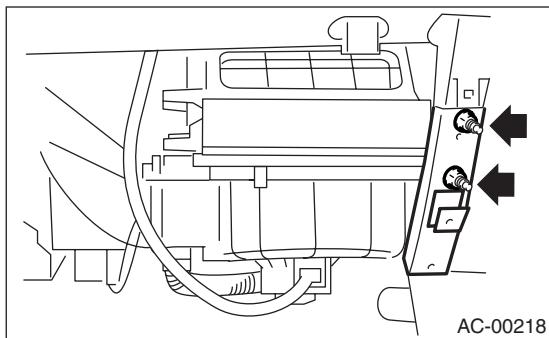
Blower Motor Unit Assembly

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

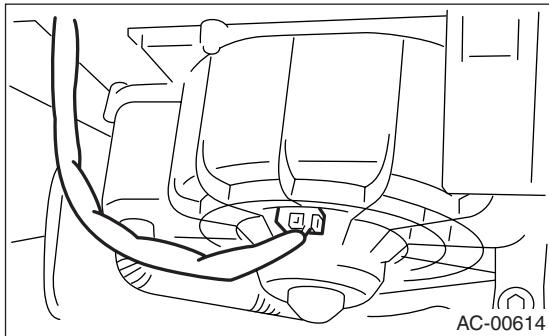
7. Blower Motor Unit Assembly

A: REMOVAL

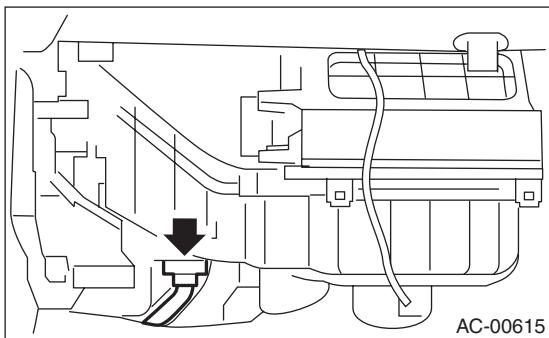
- 1) Disconnect the ground cable from battery.
- 2) Remove the glove box. <Ref. to EI-43, REMOVAL, Glove Box.>
- 3) Loosen the nut to remove the support beam stay.



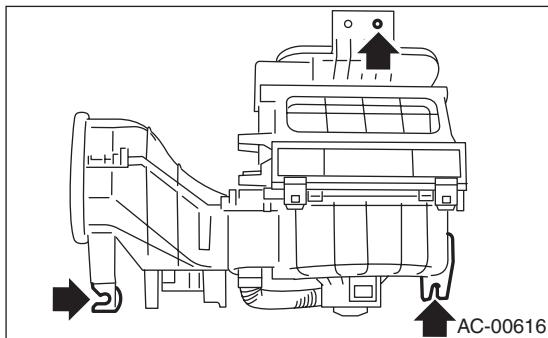
- 4) Disconnect the blower motor connector.



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



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



B: INSTALLATION

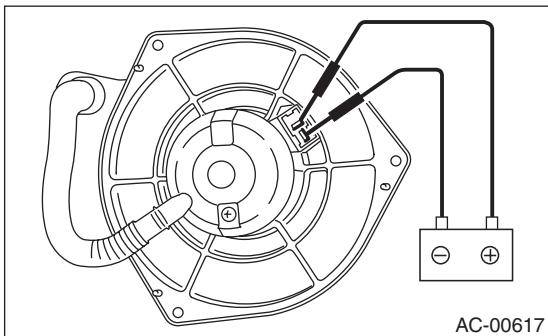
Install in the reverse order of removal.

Tightening torque:

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

C: INSPECTION

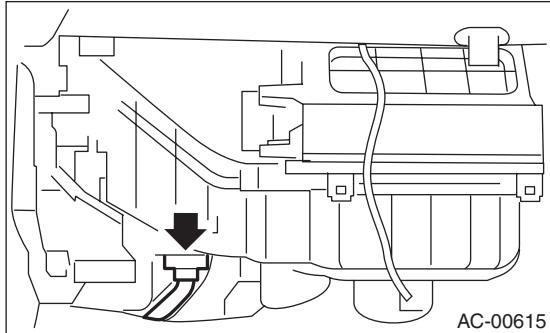
Connect the positive (+) lead from the battery to the motor connector terminal 1 and negative (-) lead to the terminal 2. Make sure the motor runs smoothly.



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 to remove the power transistor.



B: INSTALLATION

Install in the reverse order of removal.

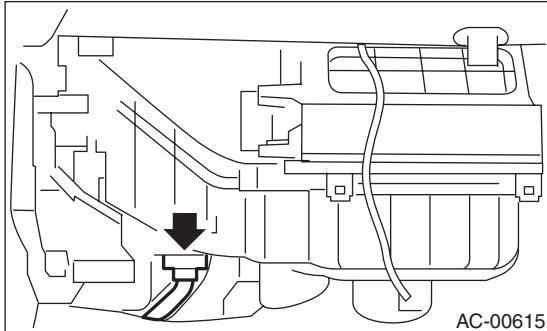
Blower Resistor (Manual A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

9. Blower Resistor (Manual A/C Model)

A: REMOVAL

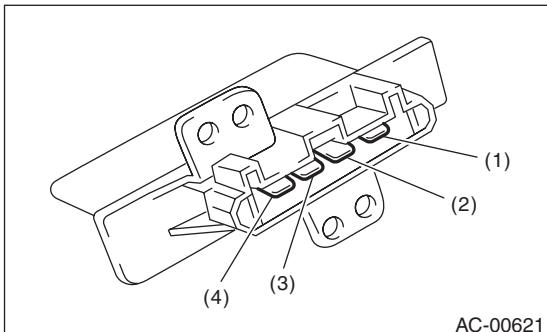
- 1) Remove the glove box. <Ref. to EI-43, REMOVAL, Glove Box.>
- 2) Disconnect the blower resistor connector.
- 3) Loosen the two screws to remove the blower resistor.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION



Measure the blower resistor resistance.

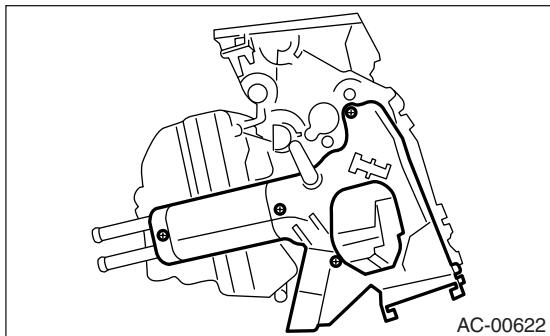
Terminal No.	Standard
3 and 1	Approx. 0.51 Ω
3 and 2	Approx. 2.70 Ω
3 and 4	Approx. 1.43 Ω

If NG, replace the blower resistor.

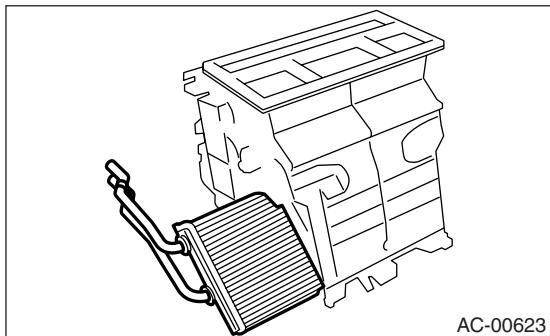
10. Heater Core

A: REMOVAL

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



- 3) Remove the heater core.



B: INSTALLATION

Install in the reverse order of removal.

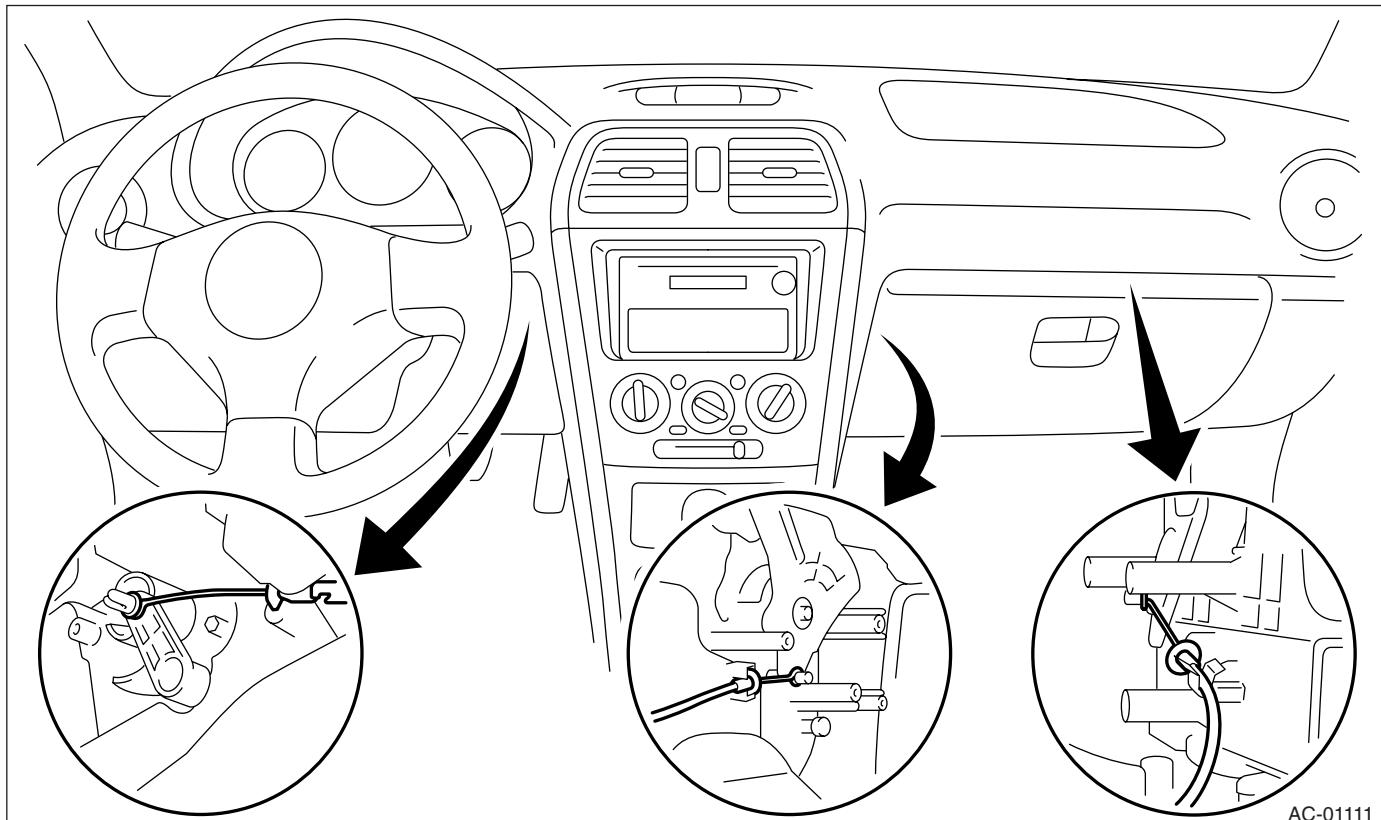
Control Unit (Manual A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

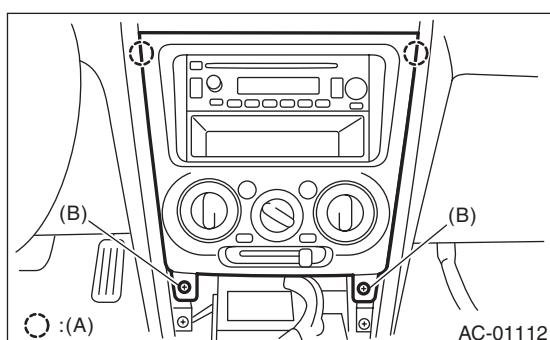
11. Control Unit (Manual A/C Model)

A: REMOVAL

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

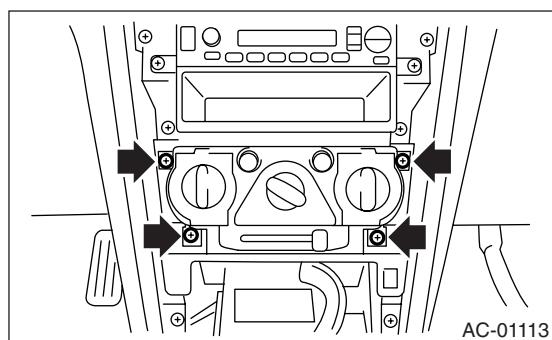


- 5) Remove the console front panel.
- 6) Remove the center console panel.



- (A) Clip
(B) Screw

- 7) Remove four screws.



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

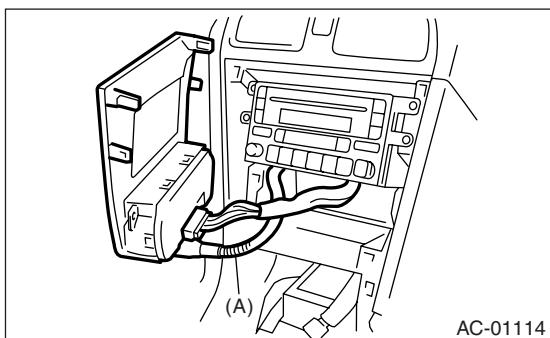
B: INSTALLATION

Install in the reverse order of removal.

12. Control Unit (Auto A/C Model)

A: REMOVAL

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



B: INSTALLATION

Install in the reverse order of removal.

Compressor

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

13. Compressor

A: INSPECTION

1. MAGNETIC CLUTCH CLEARANCE

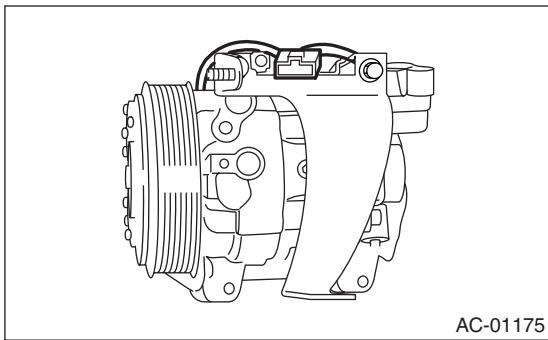
1) Check the clearance of the entire circumference around the drive plate and pulley.

Standard:

0.45 ± 0.15 mm (0.0177 ± 0.0059 in)

2. MAGNETIC CLUTCH OPERATION

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



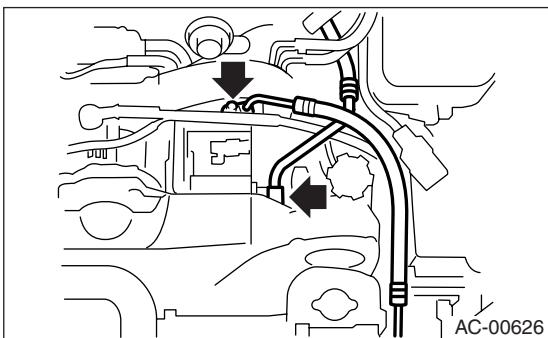
AC-01175

3) Make sure the magnet clutch engages.

If NG, replace the compressor.

B: REMOVAL

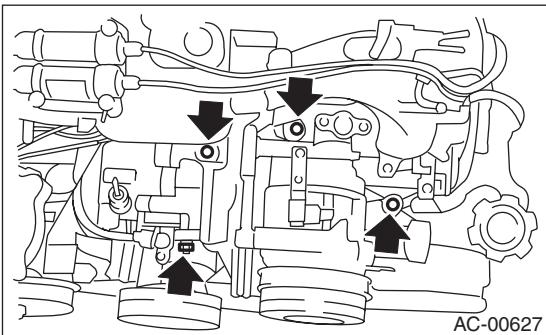
- 1) Perform the compressor oil return operation. <Ref. to AC-25, PROCEDURE, Compressor Oil.>
- 2) Turn the A/C switch OFF and stop the engine.
- 3) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
- 4) Disconnect the ground cable from battery.
- 5) Remove the V-belt. <Ref. to ME(H4SO)-40, REMOVAL, V-belt.> or <Ref. to ME(H4DOTC)-41, REMOVAL, V-belt.>
- 6) Remove the generator. <Ref. to SC(H4SO)-14, REMOVAL, Generator.>
- 7) Remove the low-pressure hose and high-pressure hose.



AC-00626

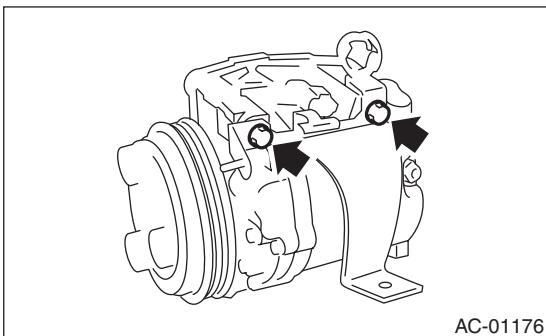
- 8) Disconnect the compressor harness from body harness.

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



AC-00627

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



AC-01176

C: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Replace the O-rings on low-/high-pressure hoses with new ones, then apply compressor oil.
- 3) When replacing compressor, adjust amount of compressor oil. <Ref. to AC-25, PROCEDURE, Compressor Oil.>
- 4) Charge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

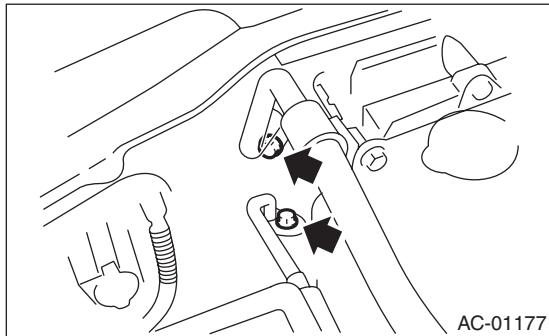
Tightening torque:

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

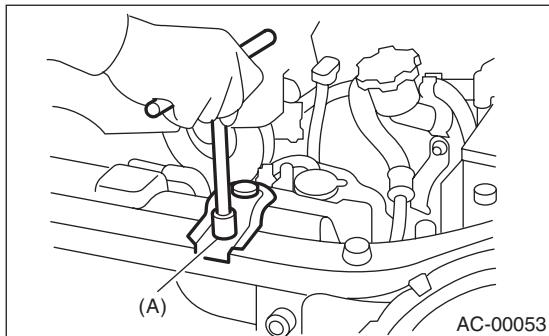
14. Condenser

A: REMOVAL

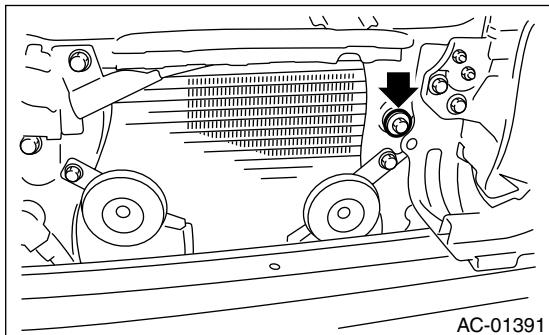
- 1) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
- 2) Disconnect the ground cable from battery.
- 3) Remove the front bumper. <Ref. to EI-24, REMOVAL, Front Bumper.>
- 4) Disconnect the pressure hose and pipe from condenser.



- 5) Remove the radiator bracket (A).



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



CAUTION:

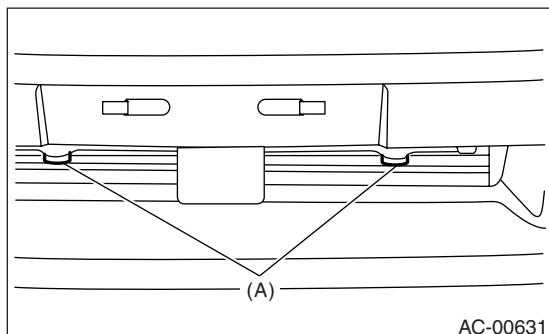
- Be careful not to damage the condenser fins. If a damaged fin is found, repair it using a thin screwdriver.
- If the condenser is replaced, add appropriate amount of compressor oil to the compressor. <Ref. to AC-25, REPLACEMENT, Compressor Oil.>

B: INSTALLATION

- 1) Install in the reverse order of removal.

CAUTION:

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



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

Tightening torque:

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

C: INSPECTION

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

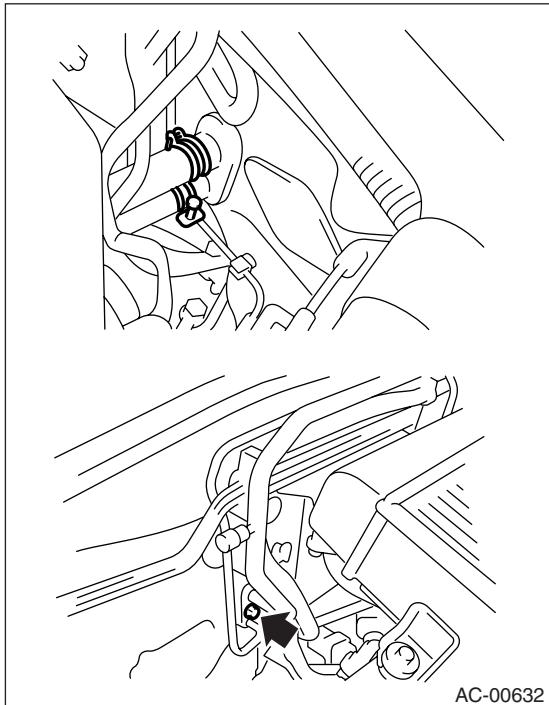
Heater and Cooling Unit

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

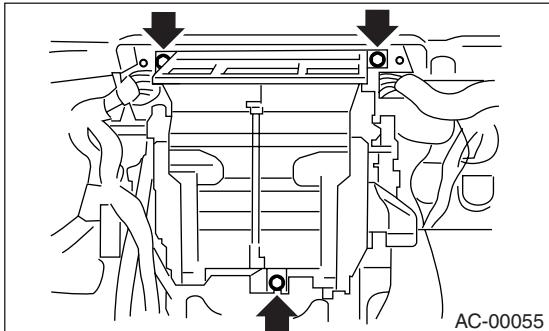
15. Heater and Cooling Unit

A: REMOVAL

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



- 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-26, REMOVAL, Blower Motor Unit Assembly.>
- 8) Disconnect the servo motor connectors.
- 9) Loosen the bolt and nuts to remove the heater and cooling unit.



B: INSTALLATION

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

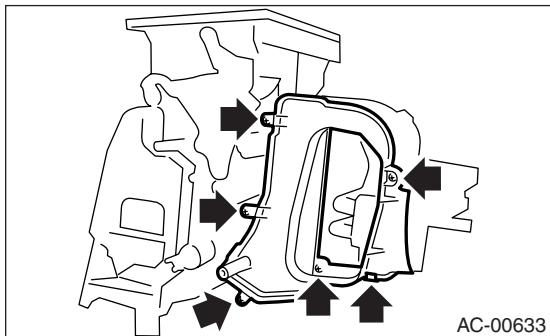
Tightening torque:

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

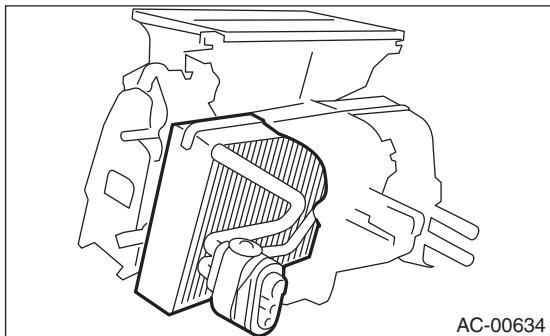
16. Evaporator

A: REMOVAL

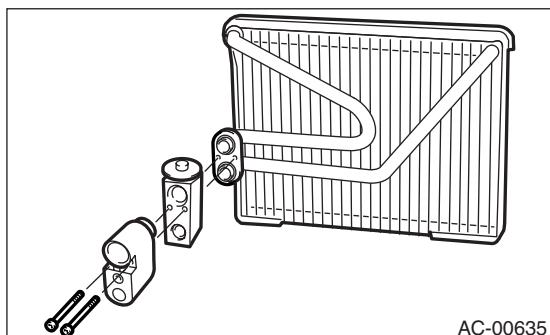
- 1) Remove the heater and cooling unit. <Ref. to AC-34, REMOVAL, Heater and Cooling Unit.>
- 2) Loosen the screws and clip to remove the evaporator cover.



- 3) Remove the evaporator.



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



CAUTION:

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

B: INSTALLATION

Install in the reverse order of removal.

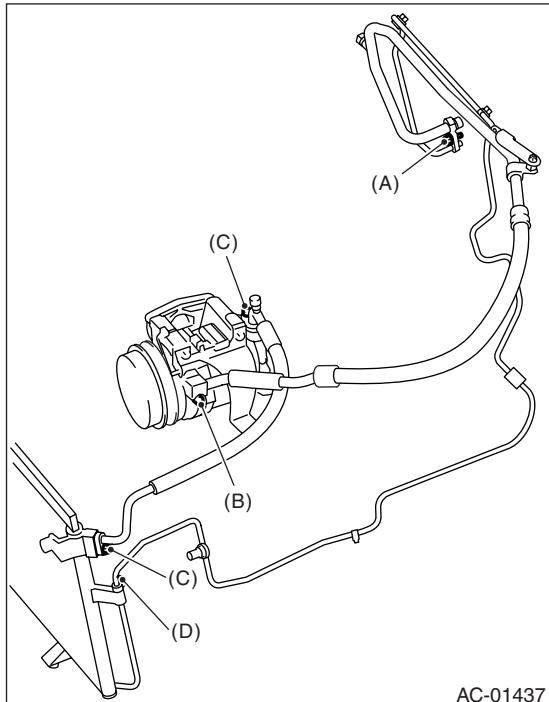
17. Hose and Tube

A: REMOVAL

CAUTION:

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

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



AC-01437

B: INSTALLATION

CAUTION:

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

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

Tightening torque:

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

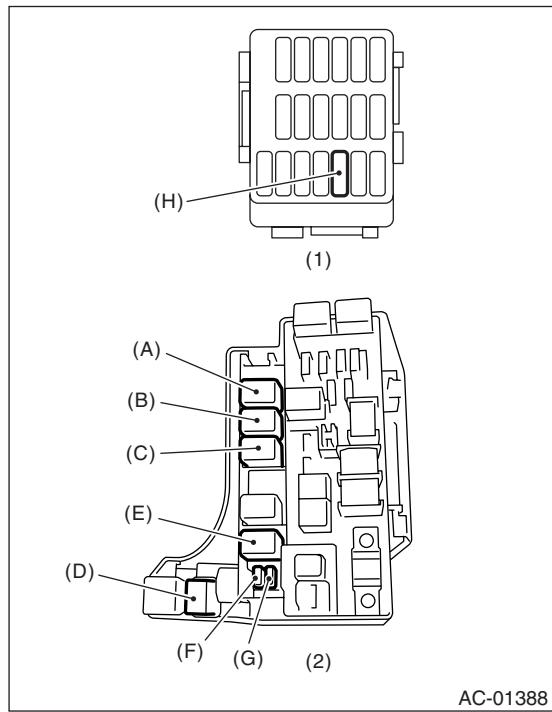
C: INSPECTION

NOTE:

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

18.Relay and Fuse

A: LOCATION

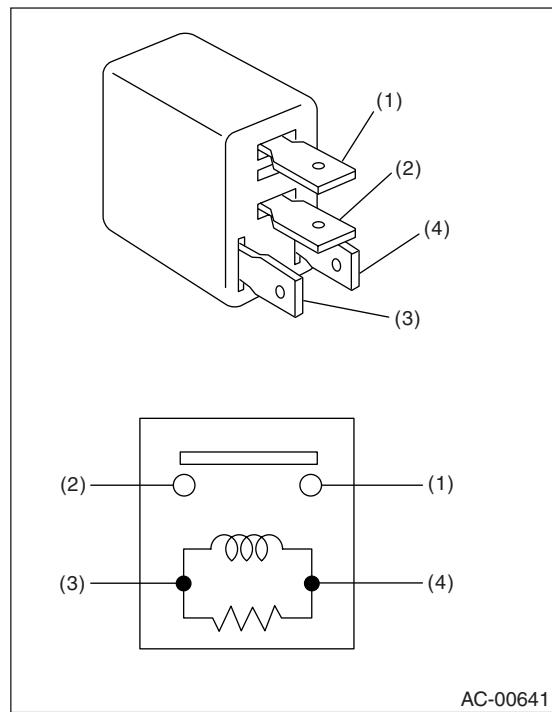


AC-01388

- (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



AC-00641

(3) — (4): Continuity exists.

(1) — (2): No continuity

While applying battery voltage to the terminal between (3) and (4), check continuity between (1) and (2).

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

Pressure Switch (Dual Switch)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

19. Pressure Switch (Dual Switch)

A: INSPECTION

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

NOTE:

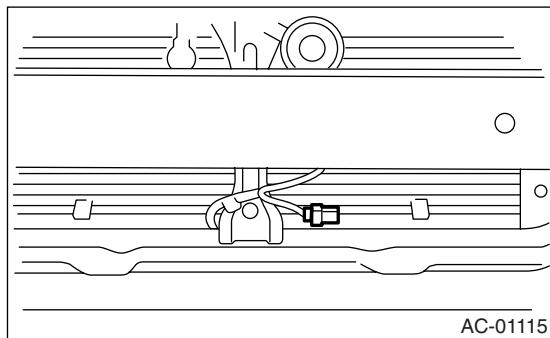
- When the refrigerant pressure becomes excessively high, the high pressure switch turns off the compressor (magnet clutch) to prevent breakage or freeze of evaporator, air conditioner pipe and expansion valve.
- When the refrigerant pressure becomes excessively low, the low pressure switch judges that filling amount is insufficient and turns off the compressor (magnet clutch) to prevent seizure due to compressor rotating.

	Operation	Standard kPa (kgf/cm ² , 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^{+39}_{-25} (2.9 ^{+0.4} _{-0.25} 42 ^{+5.7} _{-3.6})
		Decreasing to 2,200±200 (22.4±2, 319±29)

20. Ambient Sensor

A: REMOVAL

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



B: INSTALLATION

Install in the reverse order of removal.

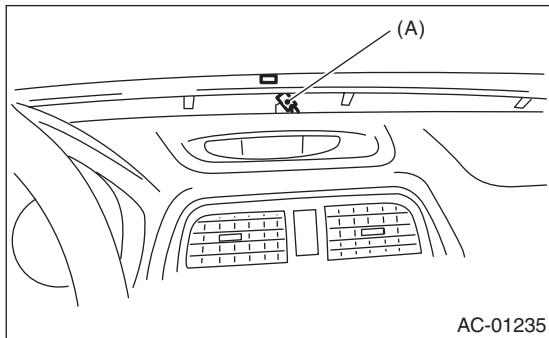
C: INSPECTION

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

21. Sunload Sensor (Auto A/C Model)

A: REMOVAL

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



CAUTION:

Do not damage the sensors and interior trims when removing them.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

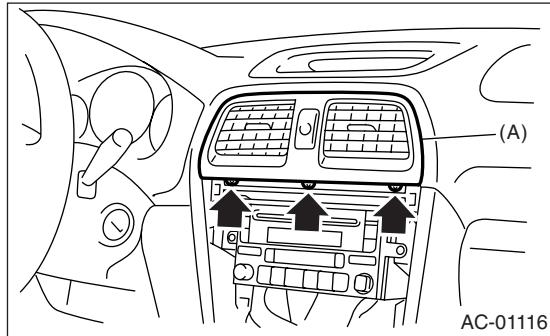
<Ref. to AC(diag)-28, SUNLOAD SENSOR, Diagnostic Procedure for Sensors.>

22. Air Vent Grille

A: REMOVAL

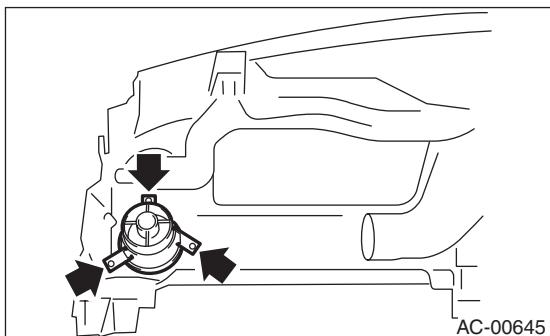
1. CENTER GRILLE

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



2. SIDE GRILLE

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



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

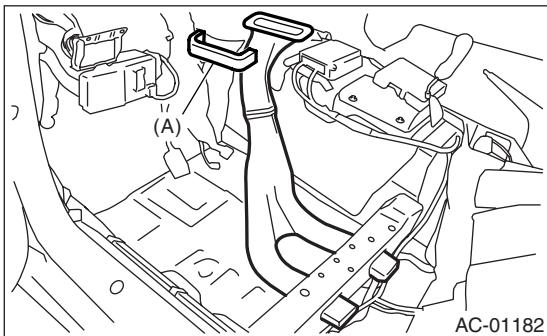
The direction and amount of air should be adjusted smoothly.

The adjustment should be kept in each position.

23. Heater Duct

A: REMOVAL

- 1) Remove the front seats. <Ref. to SE-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 foot rest.
- 5) Remove the clips from floor mat.
- 6) Remove the mat hook.
- 7) Remove the mat from toe board area.
- 8) Remove the rear heater duct cover (A). Draw out the rear heater duct from the unit assembly and slide it forward to remove.



B: INSTALLATION

Install in the reverse order of removal.

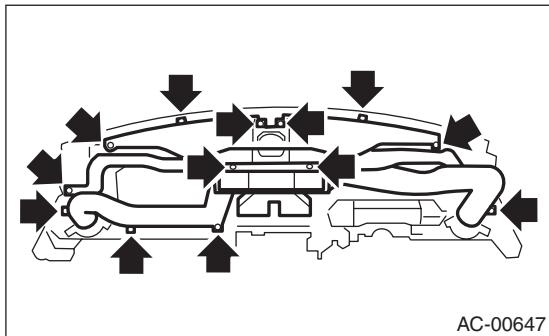
NOTE:

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

24. Heater Vent Duct

A: REMOVAL

- 1) Remove the instrument panel. <Ref. to EI-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	Doesn't move.	Fuse
		Blower motor relay
		Blower motor
		Blower motor resistor
		Blower switch
		Wire harness
	Strange noise.	Blower motor
Compressor	Doesn't move.	Refrigerant
		Fuse
		Air conditioning relay
		Magnet clutch
		Compressor
		Pressure switch
		A/C switch
		Blower switch
		Wire harness
	Noise	V-Belt
		Magnet clutch
		Compressor
Cold air not emitted.		Refrigerant
		V-Belt
		Magnet clutch
		Compressor
		Pressure switch
		A/C switch
		Blower switch
		Wire harness
		Heater duct
		Heater vent duct
Warm air not emitted.		Engine coolant
		Blower switch
		Heater core
Temperature of air from vents does not change.		Engine coolant
		Air mix actuator (Auto A/C)
		Wire harness (Auto A/C)
		Temperature control cable (Manual A/C)
Unable to switch blow vents.		Mode actuator (Auto A/C)
		Air flow switch (Auto A/C)
		Wire harness (Auto A/C)
		Mode cable (Manual A/C)
Unable to switch suction vents.		Air inlet select switch (Auto A/C)
		FRESH/RECIRC actuator (Auto A/C)
		Wire harness (Auto A/C)
		Intake cable (Manual A/C)