
GROUP 55

HEATER, AIR CONDITIONER AND VENTILATION

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GENERAL INFORMATION

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The heater and A/C system incorporating the heater and cooling unit has reduced ventilation resistance to increase air volume and reduce noise. The Manual A/C is equipped as standard on ES models. The automatic A/C is equipped as standard for VR-X models, and it is optionally equipped on ES models.

FEATURES

IMPROVEMENTS IN COMFORT

- Installation of two-layer blow full air mix heater
- Adoption of low noise, large air volume heater and A/C system
- Adoption of air filter to improve air quality in the passenger compartment

IMPROVEMENTS IN OPERATION
PERFORMANCE

- Large rotary control to improve controllability
- Enlarging the figures on the heater control panel improves the visibility.

RELIABLE VISUAL FIELD
(IMPROVEMENT IN SAFETY)

- Achievement of ventilation system to defog windows by increasing the fresh air intake duct area on the front deck and adopting a large air vent
- Windshield defogging speed improvement derived from increase in air volume and wind speed by adopting a blower type defroster and high performance heater

IMPROVEMENTS IN FUEL ECONOMY

- Optimisation of engine idle speed according to A/C load
- Installation of sub-cooling type condenser to improve heat exchanging efficiency

GLOBAL ENVIRONMENT PROTECTION

- Adoption of HFC refrigerant
- Reduction of refrigerant amount by using sub-cooling type condenser

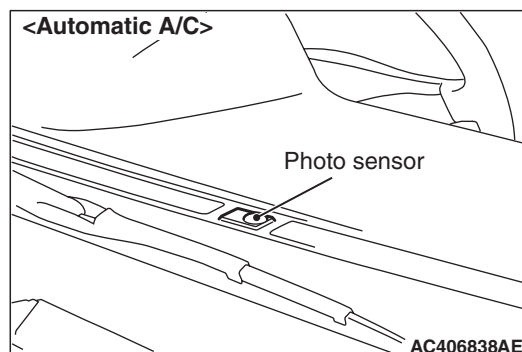
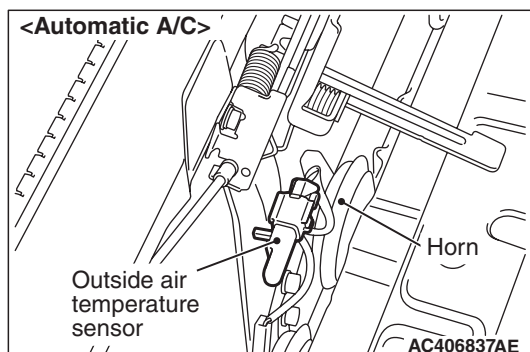
IMPROVEMENTS IN SERVICEABILITY

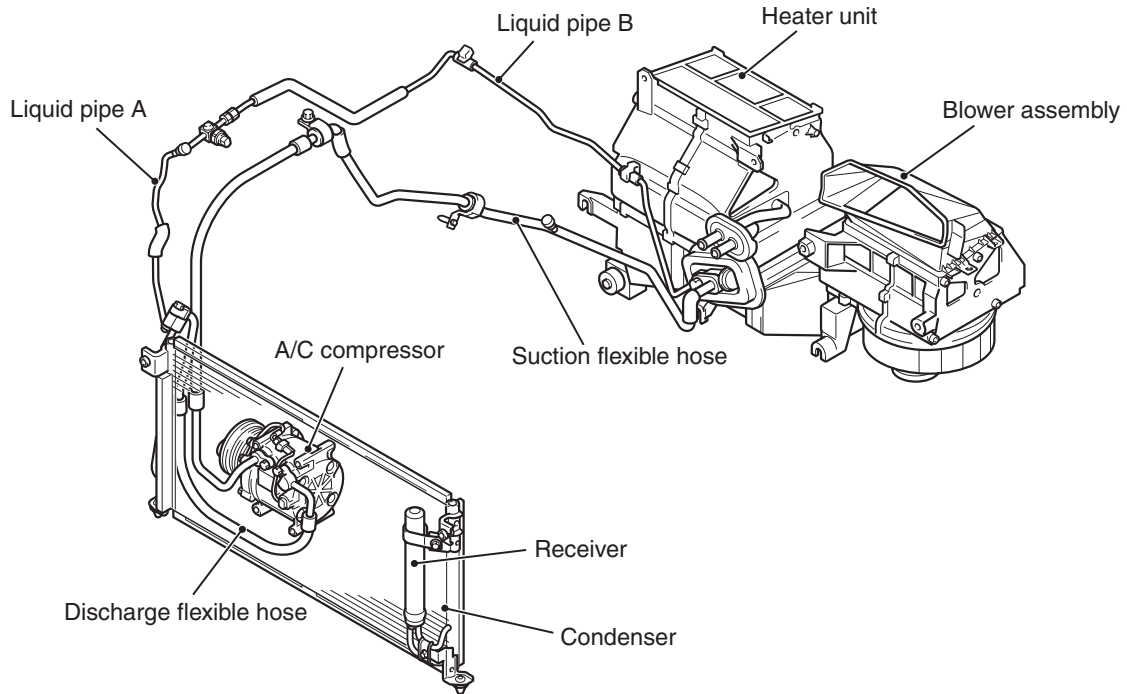
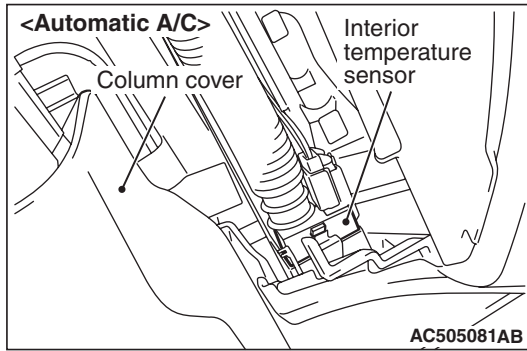
- Integration of condenser with receiver

SPECIFICATION

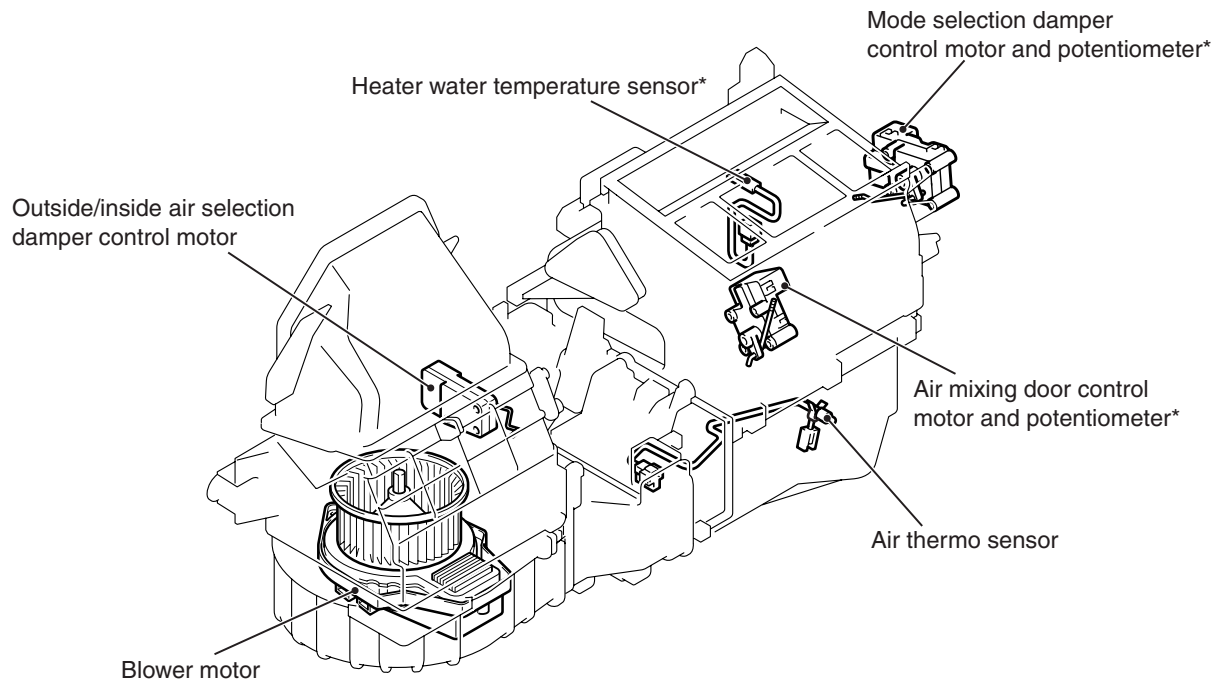
Item		Specification
Heater unit type		Two-layer full blow air mix method
Heater control type		Rotary type
A/C switch type		Push button type
Compressor type		MSC90CA
Cooling output		5.5 kW
Heating output		5.0 kW
Refrigerant	Type	R134a (HFC-134a)
	Charge quantity g	480 –520

CONSTRUCTION DIAGRAM





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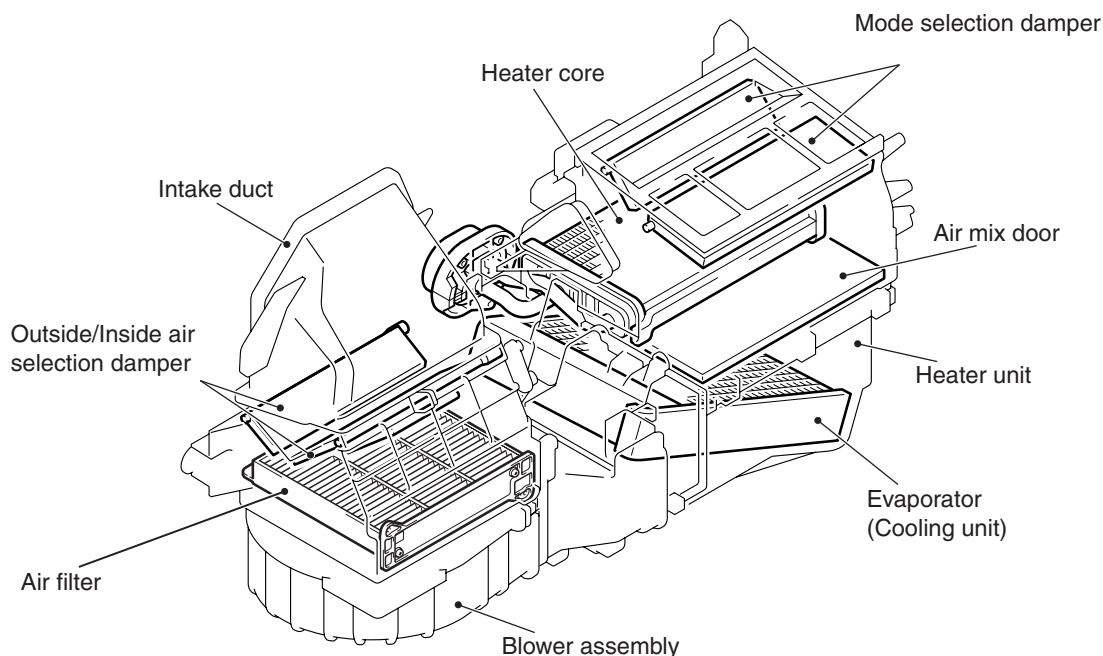
NOTE : *Indicates a vehicle with automatic A/C.

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HEATER AND A/C SYSTEM

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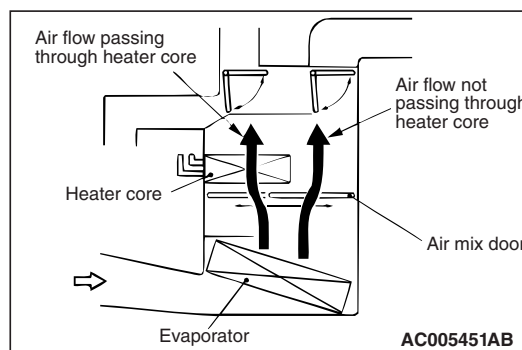
BLOWER ASSEMBLY AND HEATER UNIT



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The following blower and heater unit has been adopted to increase air volume, reduce noise, improve A/C performance, as well as improve the passenger compartment environment.

- Installation of two-layer blow full air mix heater
- Incorporation of heater and cooling units
- Increase in the fresh air intake duct area size of the blower assembly and optimisation of its shape
- Large-size heater core to improve the heating performance (Heating output: 5.0kW)
- Adopting the thinner evaporator and enlarging its surface area improves the air-conditioning function (Cooling output: 5.5kW)
- Adoption of air filter to improve air quality in the passenger compartment

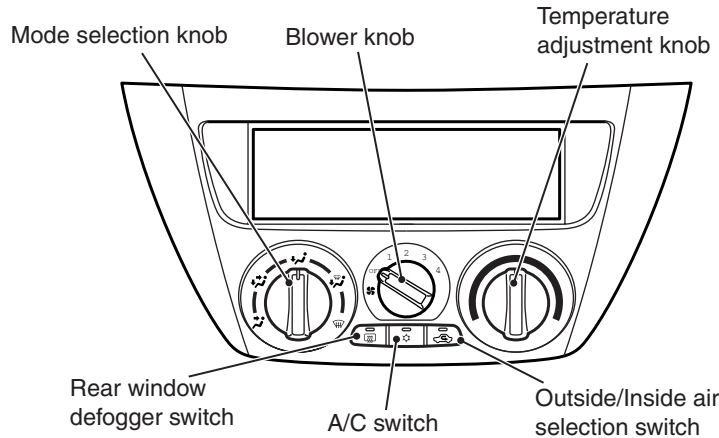
TWO-LAYER BLOW FULL AIR MIX
HEATER

In the heater unit, there are two layers of air; one which passes through the heater core, and another which does not pass through the core. One air mix door is used for temperature control. The two-layer blow full mix heater with low ventilation resistance has increased air volume and has reduced noise.

HEATER CONTROL

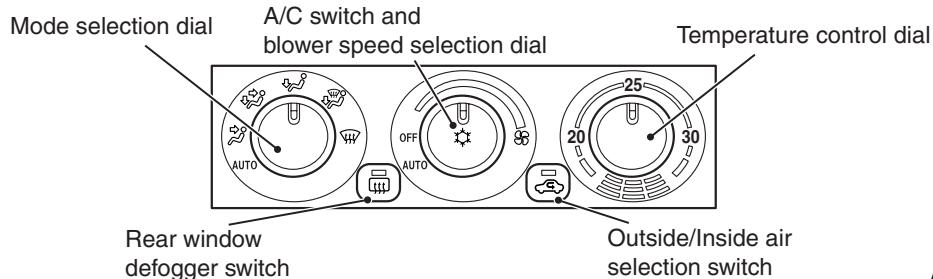
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HEATER AND A/C CONTROL MANUAL A/C



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AUTOMATIC A/C



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Adoption of the following heater and A/C control has improved operation performance and visibility observation.

- Use of rotary control
- Incorporation of rear window defogger switch with timer
- Use of a large knobs has improved operation performance
- Improved appearance by incorporating the centre panel

- Adopting the push button for air selection switch improves maneuverability.
 - Enlarging the figures improves the visibility.
- A/C-ECU integrated in the control panel controls the system as follows.

REAR WINDOW DEFOGGER TIMER

When the rear window defogger switch is turned to ON with the ignition switch ON, the rear window defogger automatically turns off after approximately 20 minutes to prevent the battery discharge.

A/C COMPRESSOR

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MAGNETIC CLUTCH WITH THERMAL FUSE

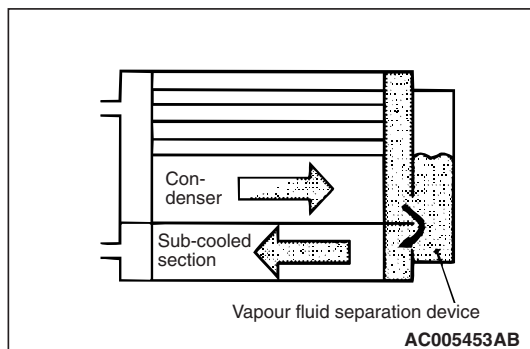
A thermal fuse is installed in the A/C compressor field core. If the compressor fails and locks, the thermal fuse will be blown due to friction heat produced by the drive belt and locked compressor. This deenergizes the magnetic clutch and allows the compres-

sor to run freely.
Fuse temperature: 184°C

CONDENSER

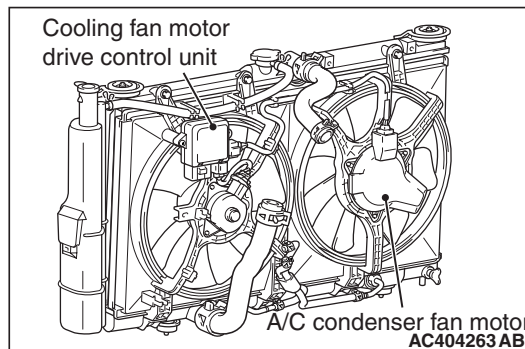
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CONDENSER



The heat exchange efficiency has been improved with the adoption of a sub-cooling type condenser added with a sub-cooled section. The reduction of line connections by incorporating the condenser and receiver reduces the possibility of refrigerant gas leakage and increases serviceability.

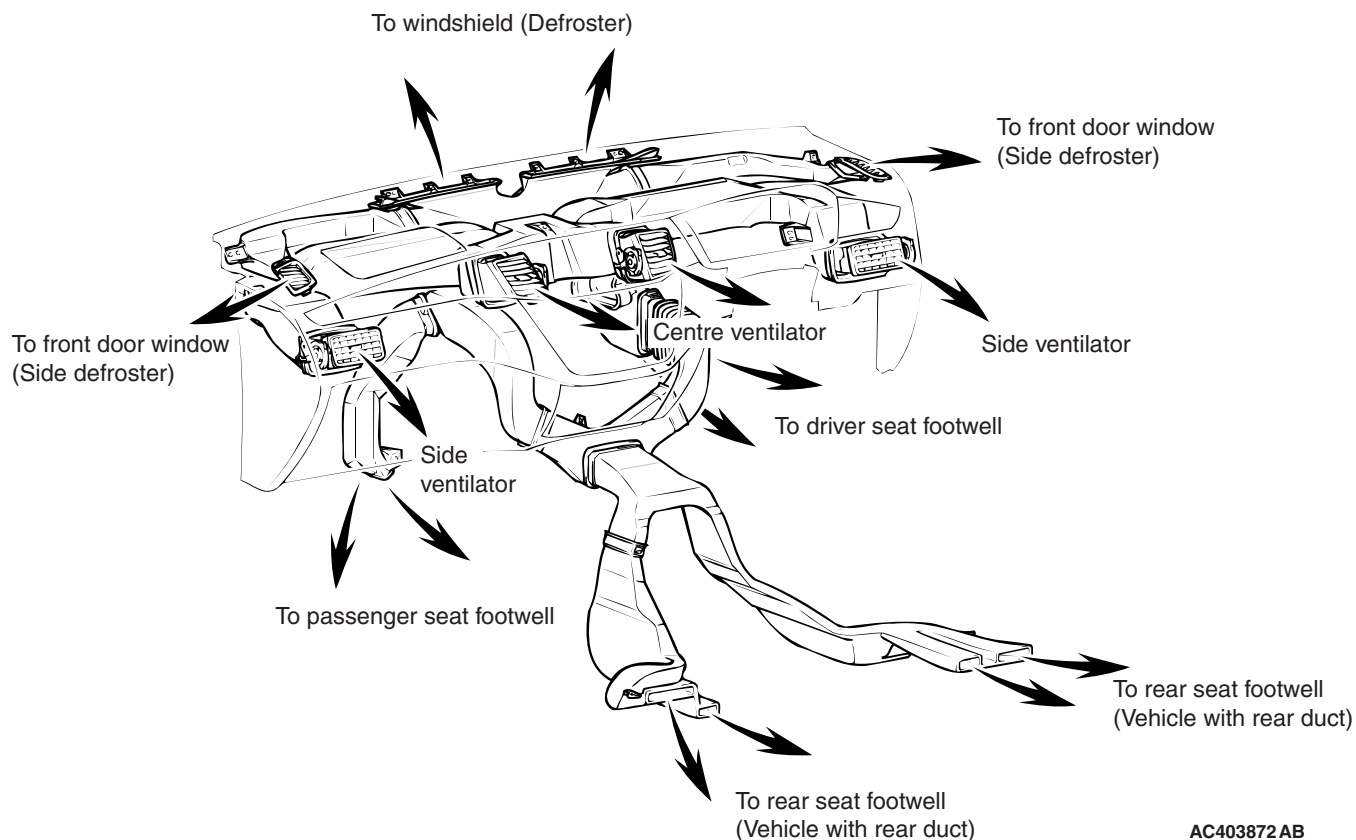
COOLING FAN LOAD CONTROL



Depending on the A/C loads, the cooling fan motor drive control unit controls the cooling fan rotation speed to mitigate external noise at the intermediary stage as well as reducing the alternator load to improve the fuel economy.

DUCT

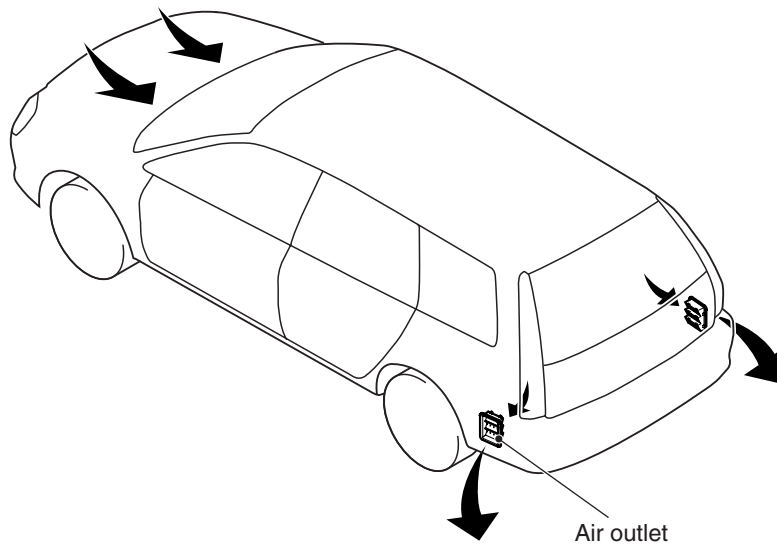
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An intensive airflow defroster increases the volume and velocity of airflow for faster fogging removal.

VENTILATION SYSTEM

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The open air intake on the front deck and the air outlet inside the rear bumper have been enlarged to increase the air volume for ventilation.

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