AIR CONDITIONING

■ DESCRIPTION

1. General

- The new Fortuner/Hilux SW4 uses an air conditioning system. For details on the provision, see Equipment List on page MO-23.
- For the manual control type, a rotary switch type heater control panel is used.
- For the automatic control type, a push switch type heater control panel is used.
- The air conditioning unit has been made compact and lightweight by placing the evaporator and the heater core horizontally, above and below in the unit, and using a film type slide door for the air mix door.
- A compact, lightweight, and highly efficient straight flow (full-path flow) aluminum heater core is used.
- The sub-cool accelerator system has been provided. This system consists of inner and outer pipes, and is capable of improving the cooling performance because of its effective heat exchanging design.
- An RS (Revolutionary super-slim Structure) revolutionary-slim structure evaporator is used.
- A compact, lightweight, and low-noise swash plate type compressor is used.
- The heat exchange efficiency has been improved through the use of the sub-cool condenser.
- The PTC (Positive Temperature Coefficient) heater system contains a PTC heater that heats the air that has passed through the heater core to ensure the proper heater performance.
- A clean air filter (high efficiency type) is used in order to provide the cabin with clean air and improve ergonomics.
- An air inlet duct, which takes air into the cabin from outside, is used in the rear cooler unit to achieve cooling performance efficiency, and to prevent external odors from entering into the cabin.

2. Performance and Specifications

Cooler

▶ Performance ◀

Destination				Thailand, Indonesia, Philippines, Malaysia
Cooler	Cooling Capacity	Front	W	4600/5200*1/5300*2
		Rear	W	2830
	Air Flow Volume	Front	m^3/h	470
		Rear	m^3/h	260
	Power Consumption	Front	W	Less than 220
		Rear	W	Less than 180

*1: TMMIN made (models for Indonesia)
*2: TMMIN made (models for Philippines)

▶ Specifications ◀

Destination					Thailand, Indonesia, Philippines, Malaysia
Ventilation	Blower	Front	Motor Type		K62F-12.5T
			Fan Type		Semi Shroud Fan
			Fan Size Dia. × H	mm (in.)	155 × 65 (6.1 × 2.6)
		Rear	Motor Type		K62F-13.5W
			Fan Type		Semi Shroud Fan
			Fan Size Dia. × H	mm (in.)	150 × 70 (5.9 × 2.8)
Cooler	Condenser	Type			Multi-flow (Sub-cool)
		Size W × H × L		mm (in.)	620 × 530.2 × 16 (24.4 × 20.9 × 0.6)
		Fin Pitch		mm (in.)	3.55 (0.14)
	Evaporator	Front	Type		RS (Revolutionary super-slim Structure)
			Size W × H × L	mm (in.)	226.1 × 241 × 38 (8.9 × 9.5 × 1.5)
			Fin Pitch	mm (in.)	3.0 (0.12)
		Rear	Type		RS (Revolutionary super-slim Structure)
			Size W × H × L	mm (in.)	118.9 × 251 × 38 (4.7 × 9.9 × 1.5)
			Fin Pitch	mm (in.)	3.0 (0.12)
	Compressor	Type	Single		10S11C
			Dual		10S15C
	Refrigerant	Type			HFC134a (R134a)
		Volume	Single	g	450
			Dual	g	750

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Air Conditioning

▶ Performance ◀

Destination				Central and South America, Vietnam and ANCOM	South Africa and General Countries	G.C.C. Countries
Heater	Heat Output		W	5200	5000	5000*1/5150
	Air Flow Volume		m^3/h	320	←	315/320*1
	Power Consumption		W	Less than 190	←	←
PTC Heater	Heat Output		W	450	—	—
Air Conditioning	Cooling Capacity	Front	W	4800/5200*2	4600	5400
		Rear	W	2830	←	←
	Air Flow Volume	Front	m^3/h	470	←	460
		Rear	m^3/h	260	←	←
	Power Consumption	Front	W	Less than 220*2/230	Less than 220	←
		Rear	W	Less than 180	←	←

*1: Models with heater
*2: Models for Vietnam

▶ Specifications ◀

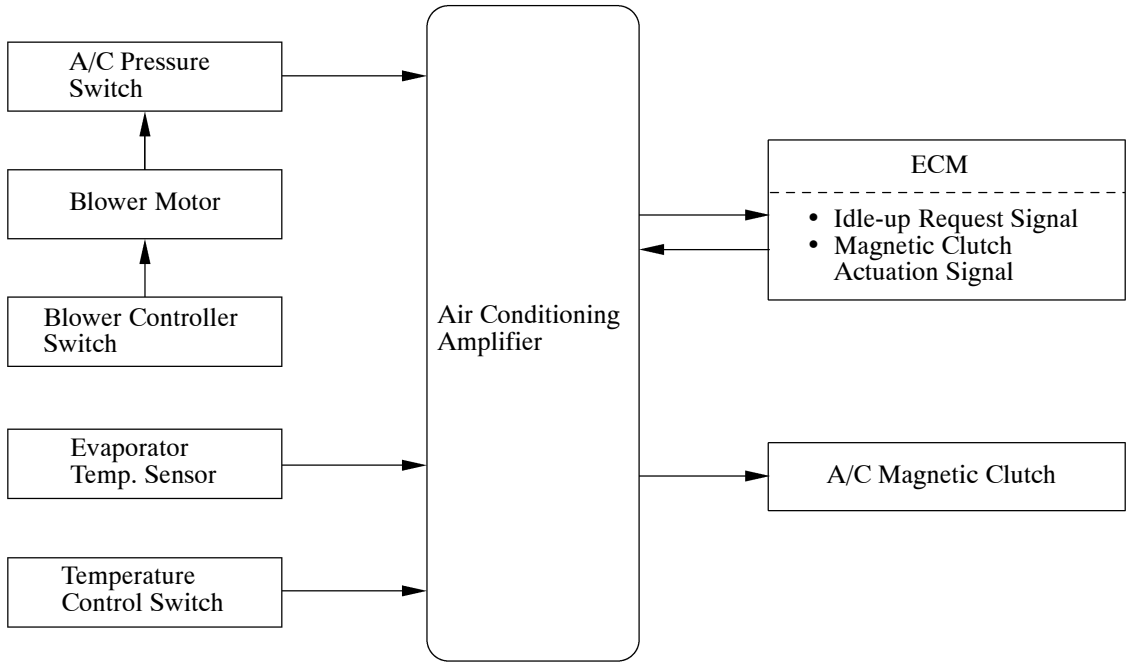
Destination					Central and South America, and ANCOM	Vietnam
Ventilation and Heater Core	Heater Core	Type			Straight Flow (Full-path Flow)	←
		Size W × H × L		mm (in.)	150 × 201.5 × 21 (5.9 × 7.9 × 0.8)	←
		Fin Pitch		mm (in.)	1.8 (0.07)	←
	Blower	Front	Motor Type		K70-10.5T	K62F-12.5T
			Fan Type		Semi Shroud Fan	←
			Fan Size Dia. × H	mm (in.)	155 × 65 (6.1 × 2.6)	←
		Rear	Motor Type		K62F-13.5W	←
			Fan Type		Semi Shroud Fan	←
			Fan Size Dia. × H	mm (in.)	150 × 70 (5.9 × 2.8)	←
Air Conditioning	Condenser	Type			Multi-flow (Sub-cool)	←
		Size W × H × L		mm (in.)	570 × 520.8 × 16 (24.4 × 20.5 × 0.6)	620 × 530.2 × 16 (24.4 × 20.9 × 0.6)
		Fin Pitch		mm (in.)	3.6 (0.14)	3.55 (0.14)
	Evaporator	Front	Type		RS (Revolutionary super-slim Structure)	←
			Size W × H × L	mm (in.)	226.1 × 241 × 38 (8.9 × 9.5 × 1.5)	←
			Fin Pitch	mm (in.)	2.6 (0.1)*3/3.0 (0.12)	3.0 (0.12)
		Rear	Type		RS (Revolutionary super-slim Structure)	←
			Size W × H × L	mm (in.)	118.9 × 251 × 38 (4.7 × 9.9 × 1.5)	←
			Fin Pitch	mm (in.)	3.0 (0.12)	←
	Compressor	Type			10S15C	←
	Refrigerant	Type			HFC134a (R134a)	←
		Volume		g	750	←

*1: Models for Central and South America
*2: Models for ANCOM
*3: Models for Central and South America with manual air conditioning

Destination					South Africa and General Countries	G.C.C. Countries
Ventilation and Heater Core	Heater Core	Type			Straight Flow (Full-path Flow)	←
		Size W × H × L		mm (in.)	150 × 201.5 × 21 (5.9 × 7.9 × 0.8)	←
		Fin Pitch		mm (in.)	1.8 (0.07)	←
	Blower	Front	Motor Type		K70-10.5T	←
			Fan Type		Semi Shroud Fan	←
			Fan Size Dia. × H	mm (in.)	155 × 65 (6.1 × 2.6)	←
		Rear	Motor Type		K62F-13.5W	←
			Fan Type		Semi Shroud Fan	←
			Fan Size Dia. × H	mm (in.)	150 × 70 (5.9 × 2.8)	←
Air Conditioning	Condenser	Type			Multi-flow (Sub-cool)	←
		Size W × H × L		mm (in.)	620 × 530.2 × 16 (24.4 × 20.5 × 0.6)	←
		Fin Pitch		mm (in.)	3.55 (0.14)	3.15 (0.12)
	Evaporator	Front	Type		RS (Revolutionary super-slim Structure)	←
			Size W × H × L	mm (in.)	226.1 × 241 × 38 (8.9 × 9.5 × 1.5)	←
			Fin Pitch	mm (in.)	3.0 (0.12)	2.6 (0.10)
		Rear	Type		RS (Revolutionary super-slim Structure)	←
			Size W × H × L	mm (in.)	118.9 × 251 × 38 (4.7 × 9.9 × 1.5)	←
			Fin Pitch	mm (in.)	3.0 (0.12)	←
	Compressor	Type			10S15C	←
	Refrigerant	Type			HFC134a (R134a)	←
		Volume	Dual	g	750	720

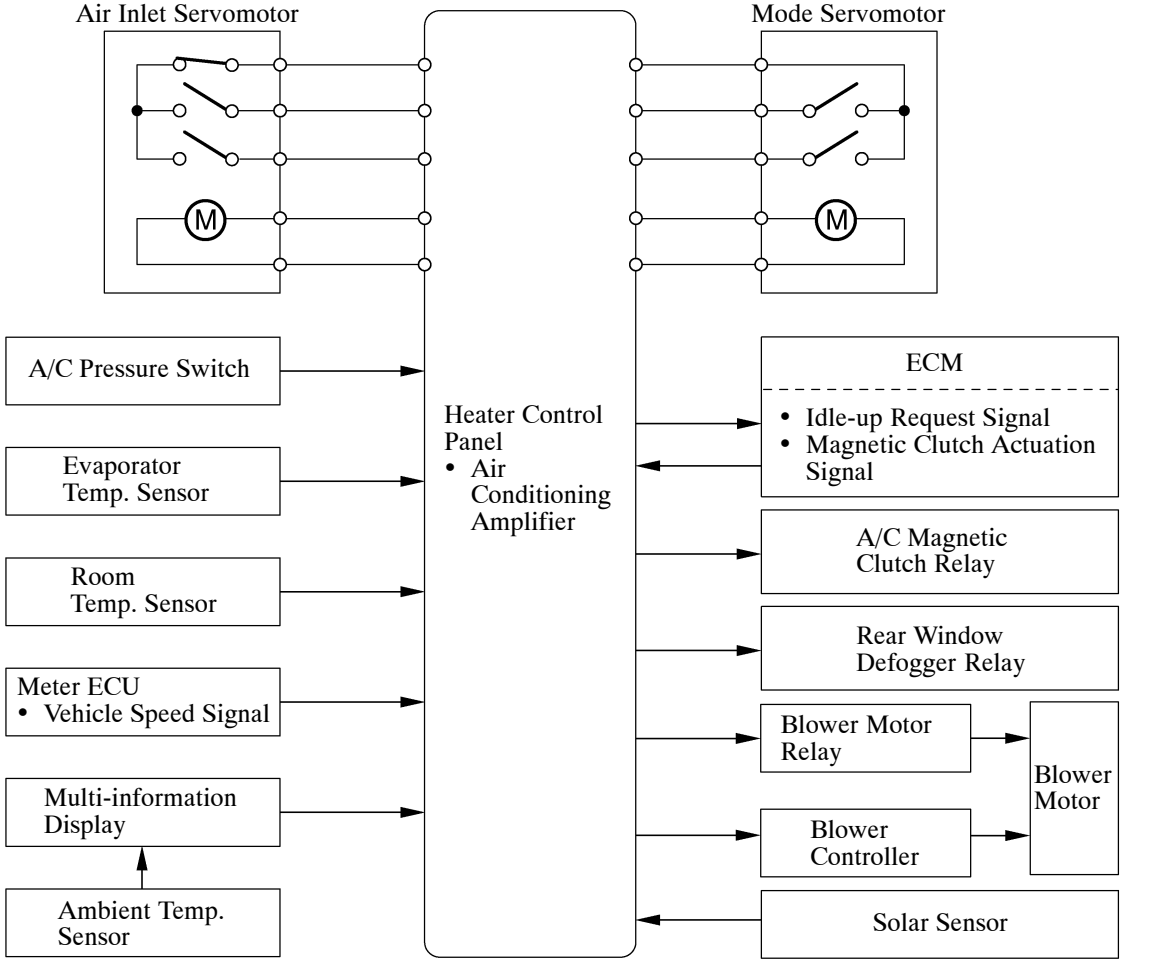
3. System Diagram

▶ Manual Cooler ◀



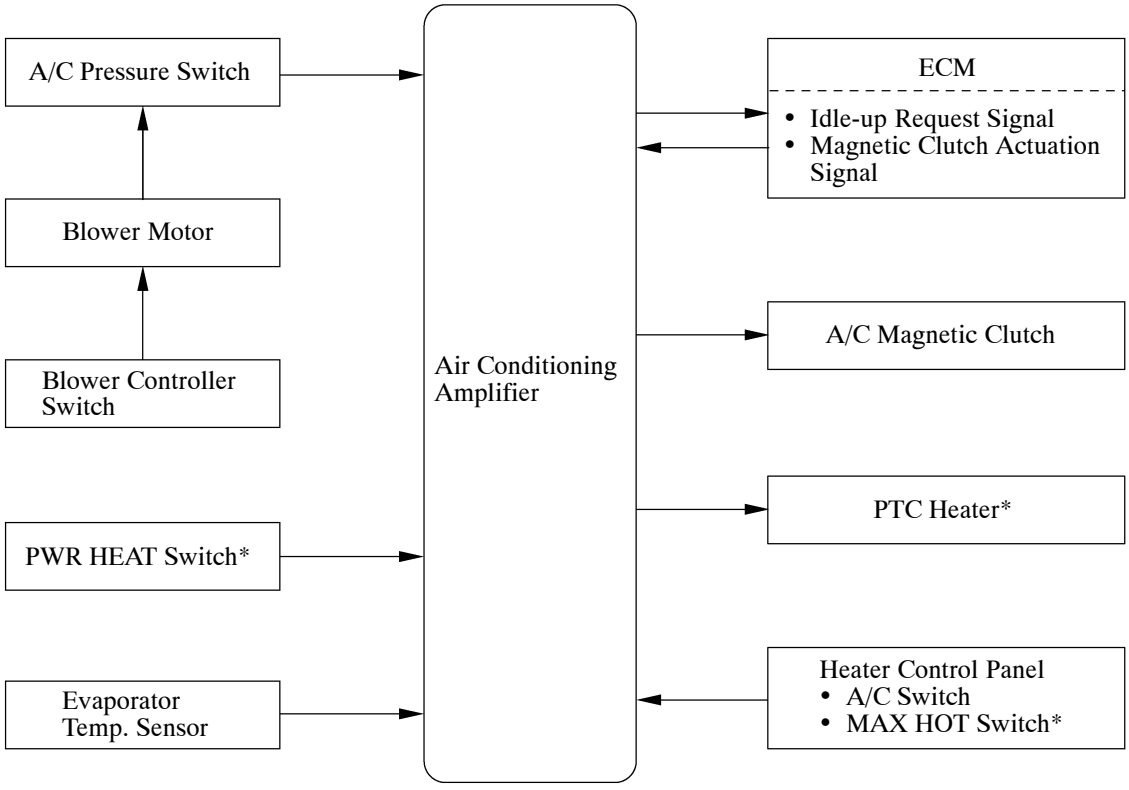
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▶ Automatic Cooler ◀



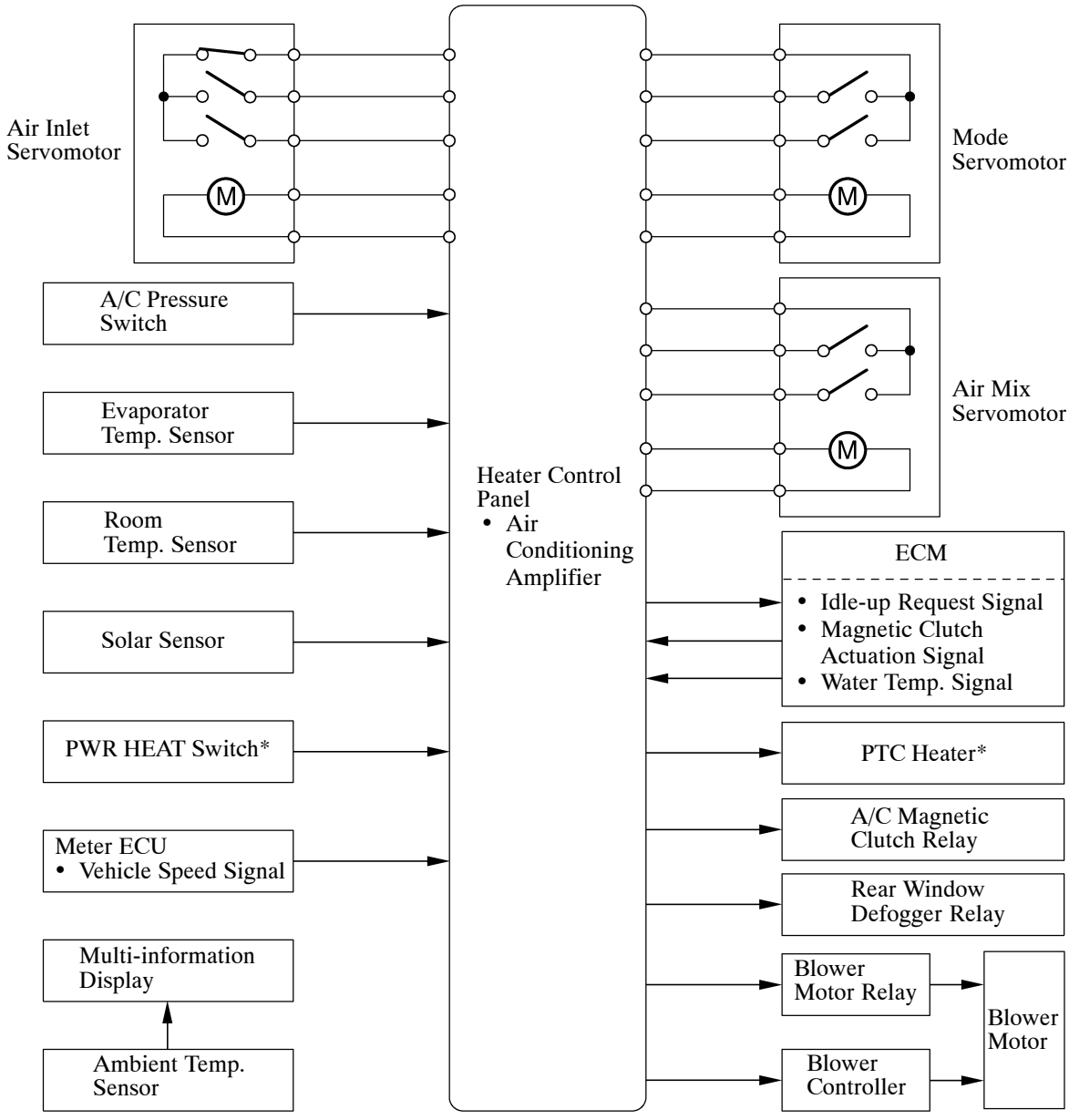
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▶ Manual Air Conditioning ◀



*: Models with PTC heater

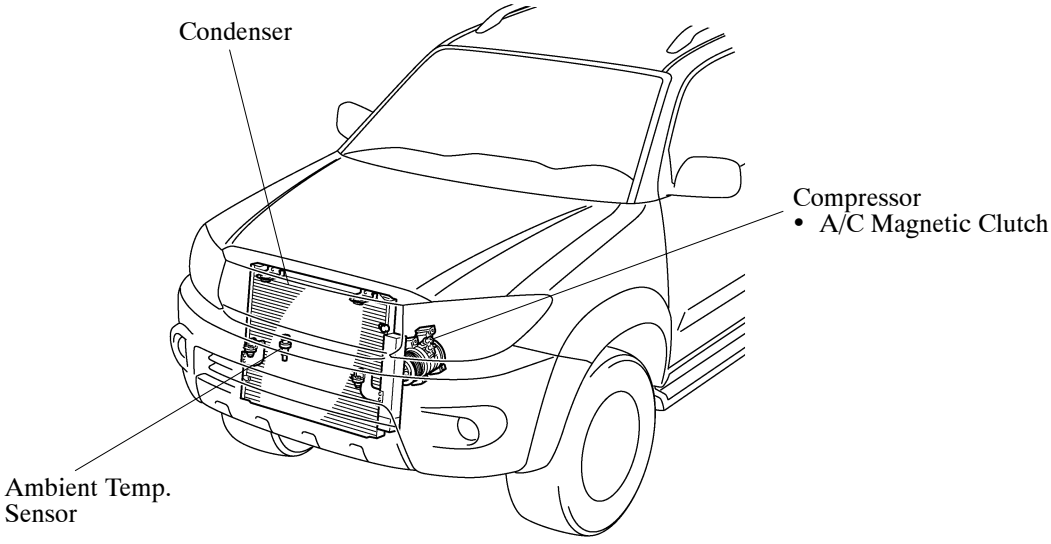
▶ Automatic Air Conditioning ◀



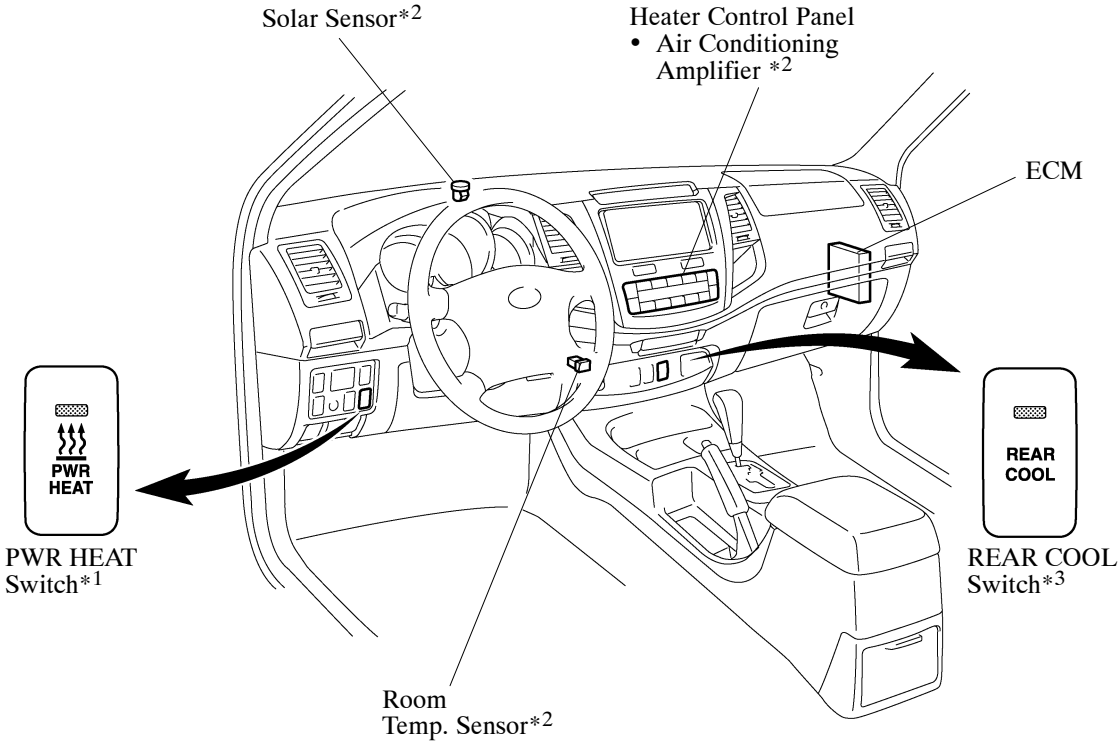
*: Models with PTC heater

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4. Layout of Main Components



2TR-FE Engine Model

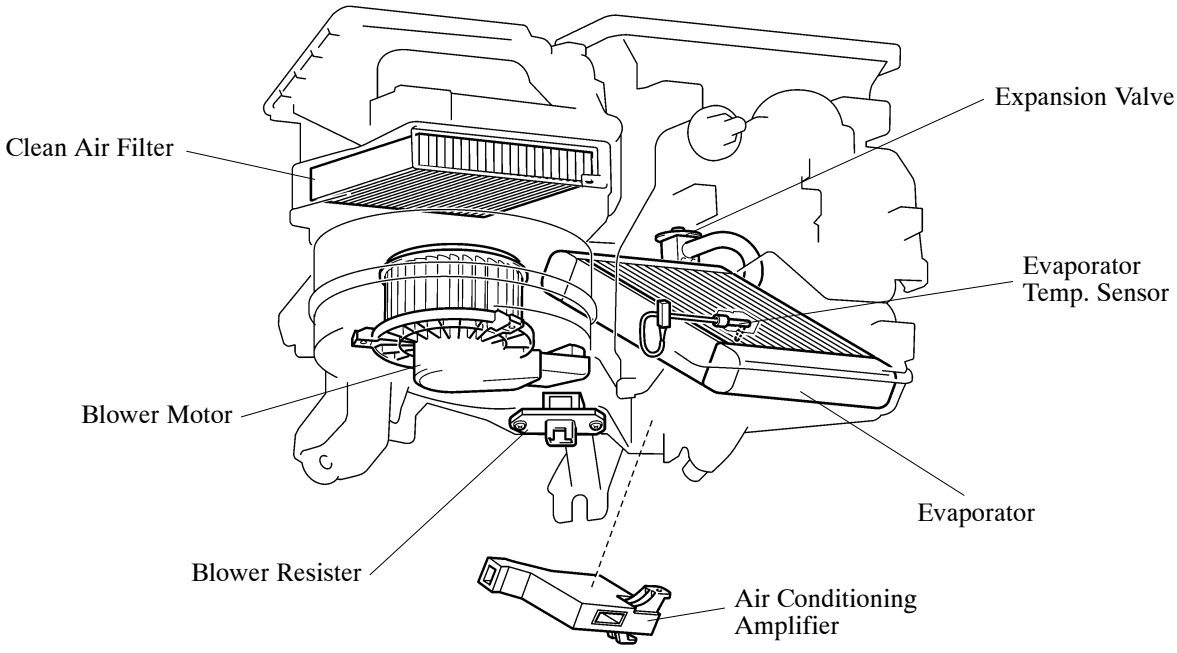


LHD Model

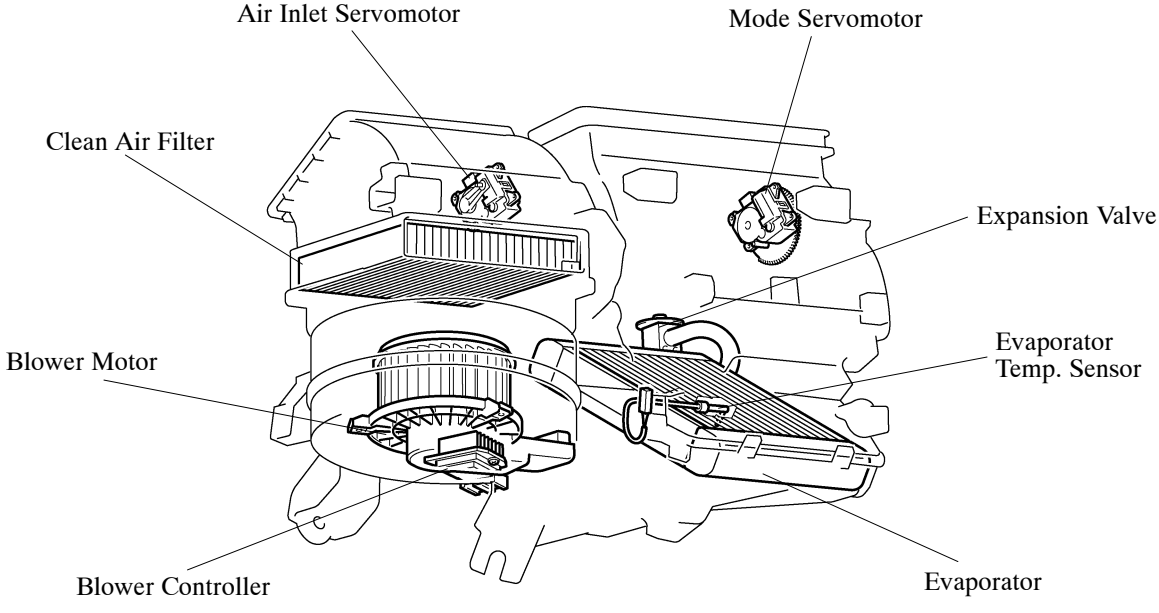
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*1: Models with PTC heater system
*2: Models with automatic cooler or air conditioning
*3: Models with dual air conditioning and dual cooler

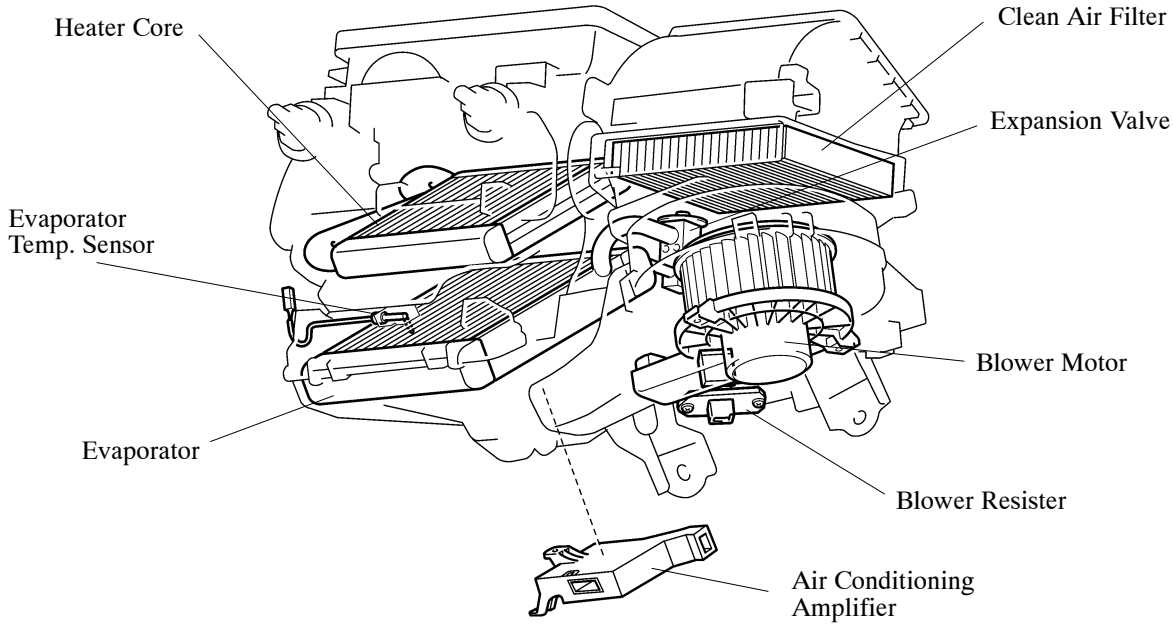
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Manual Cooler

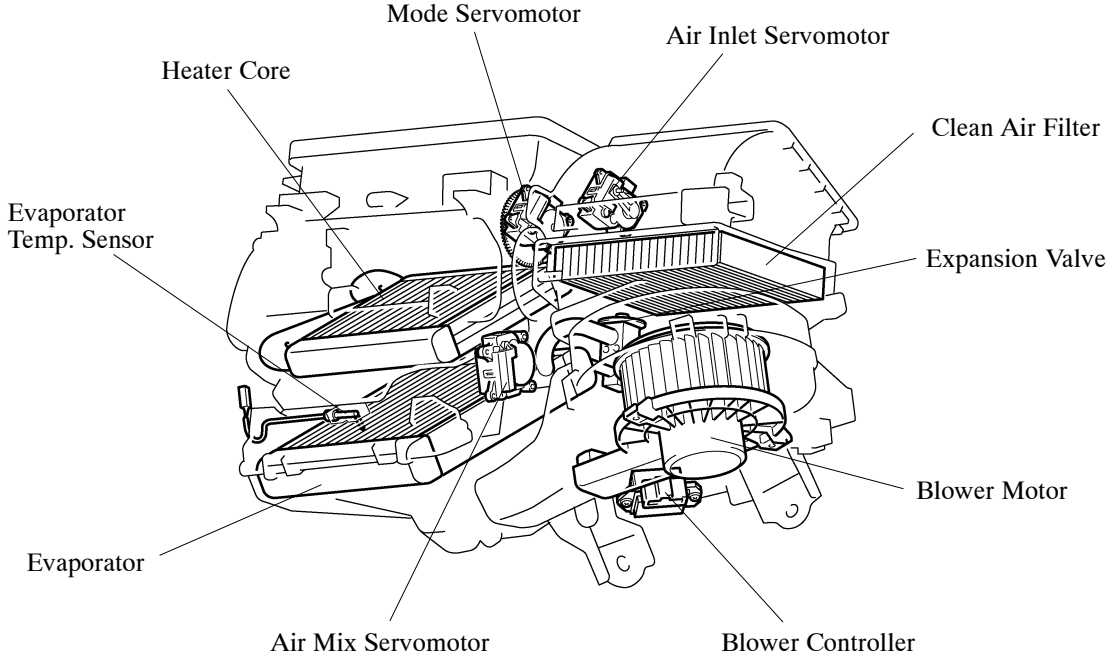


Automatic Cooler



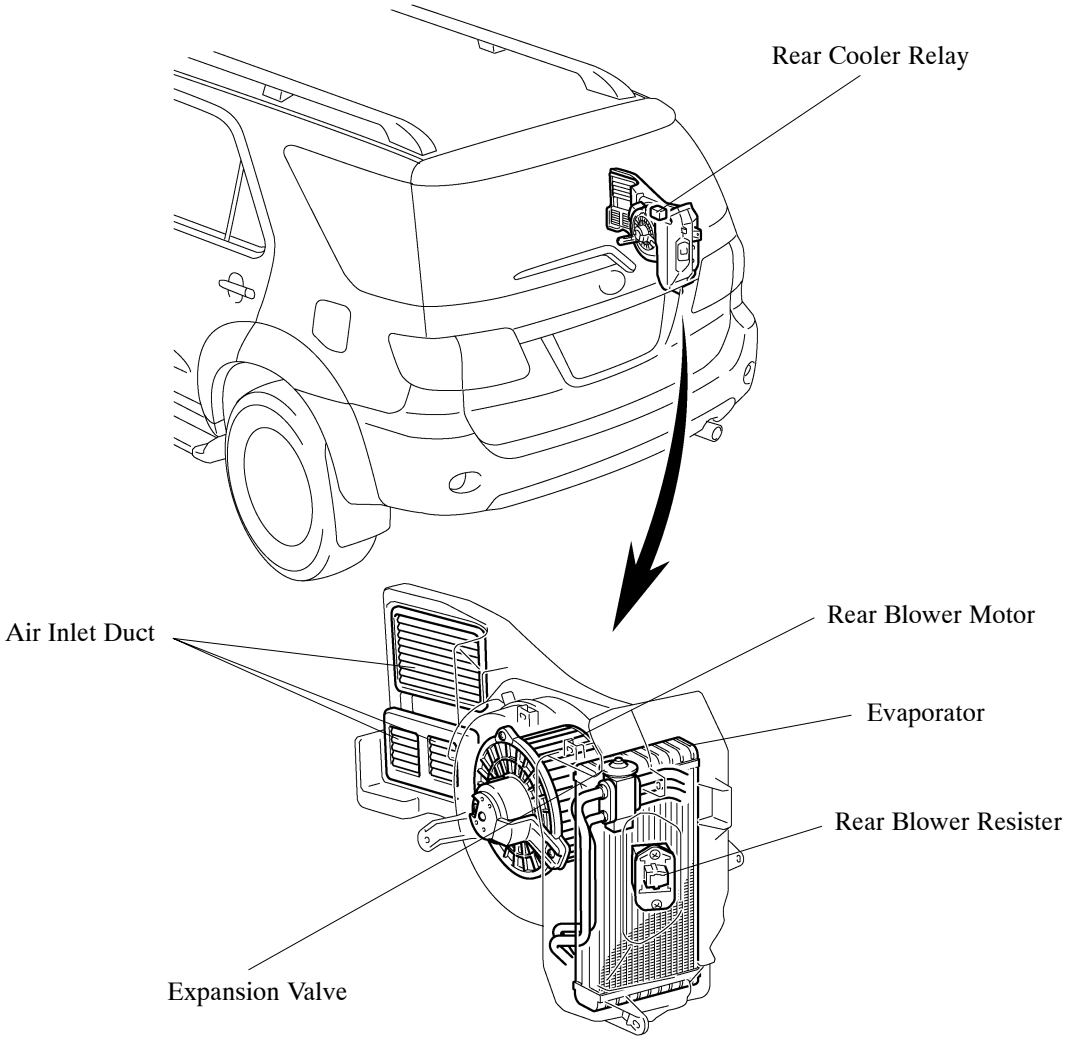
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Manual Air Conditioning



Automatic Air Conditioning

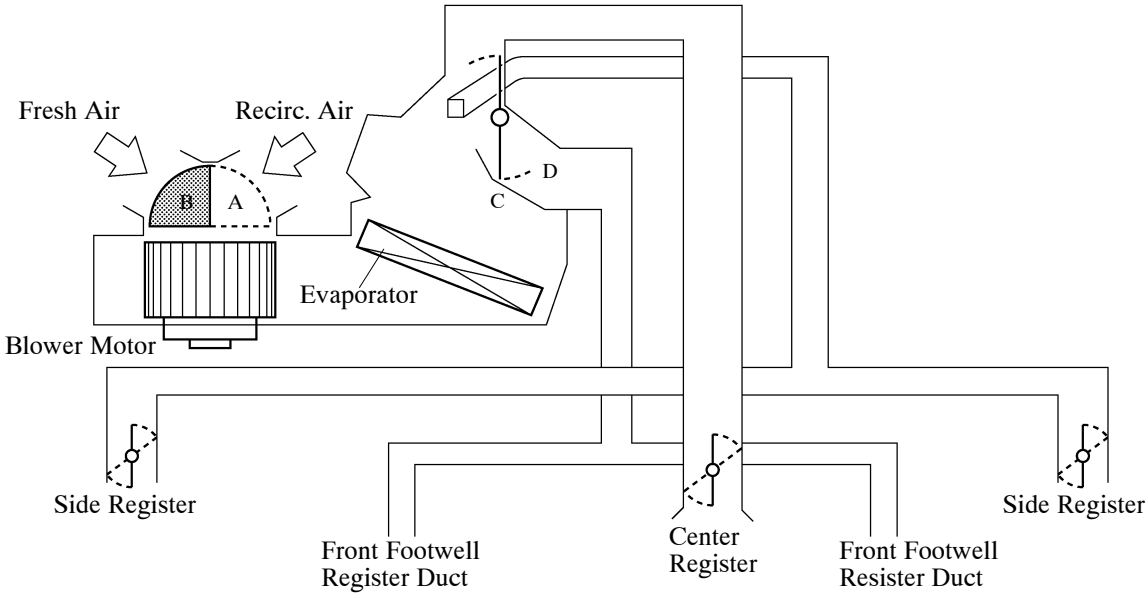
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Dual Air Conditioning and Dual Cooler

5. Model Position and Damper Operation

▶ Models with Manual Cooler ◀



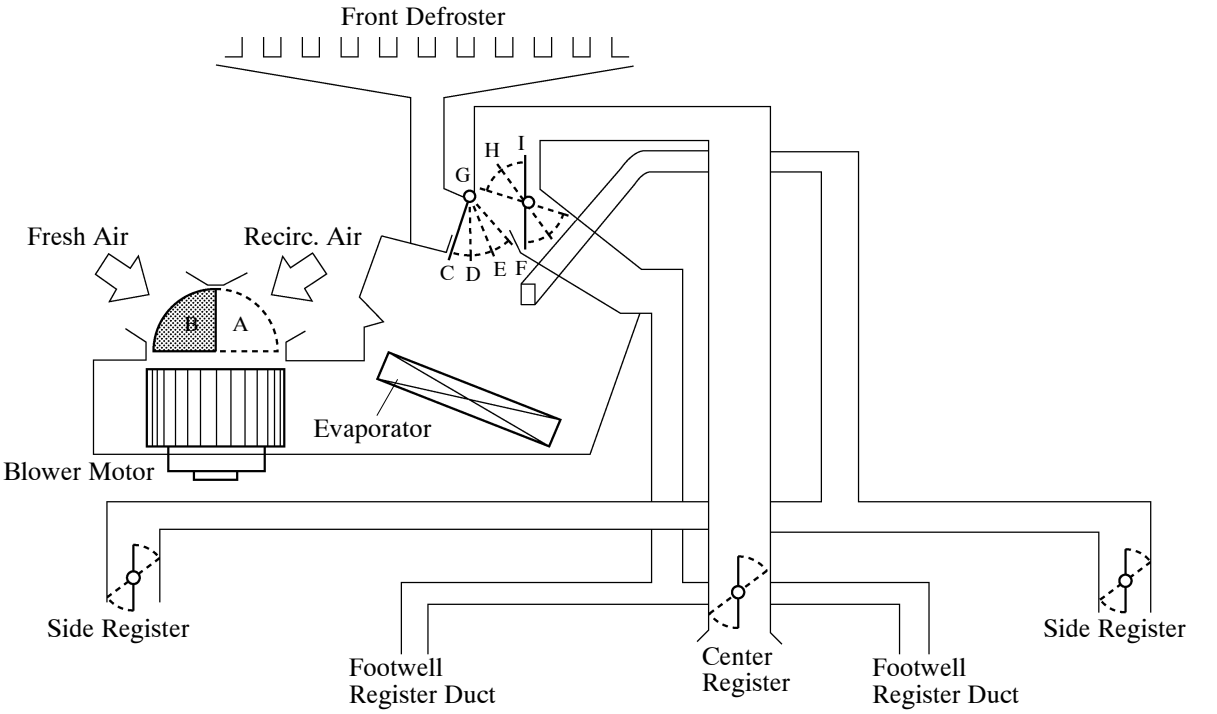
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▶ Function of Main Damper ◀

Control Damper	Control Position	Damper Position	Operation
Air Inlet Control Damper	FRESH	A	Brings in fresh air.
	RECIRC	B	Recirculates internal air.
Mode Control Damper	 FACE 187BE24	C	Air blows out of the center registers and side register.
	 BI-LEVEL 187BE25	D	Air blows out of the center registers, side registers, and footwell register ducts.

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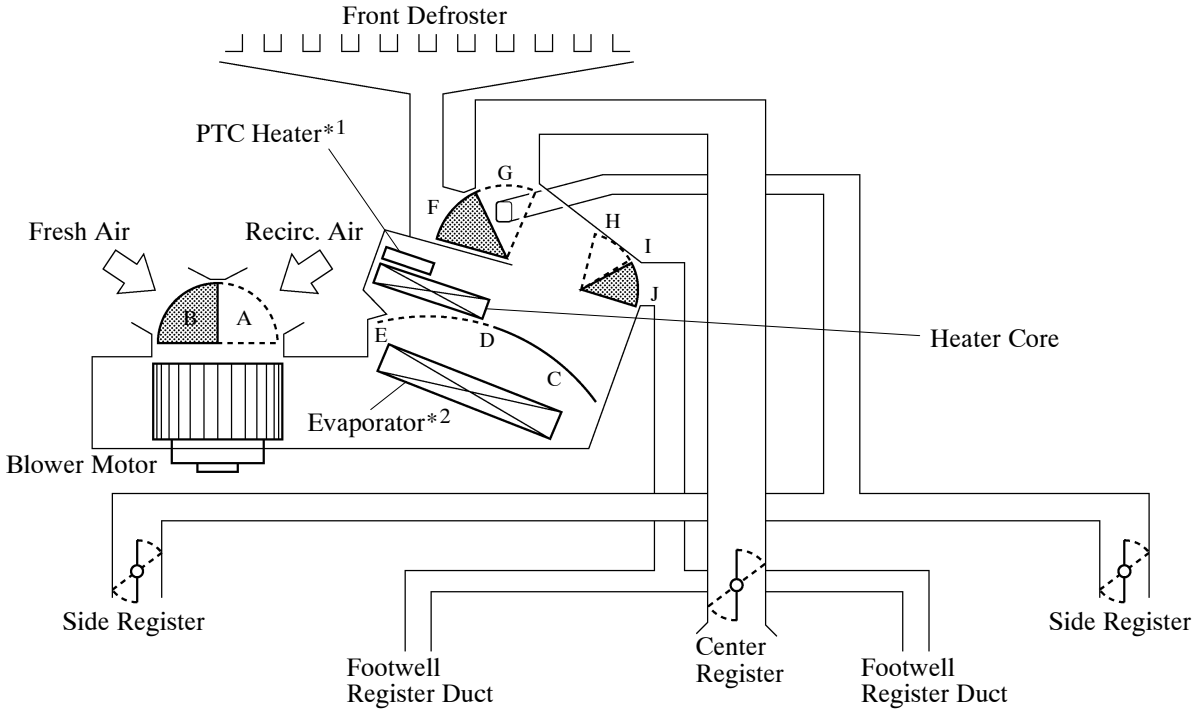
▶ Models with Automatic Cooler ◀



▶ Function of Main Damper ◀

Control Damper	Control Position	Damper Position	Operation
Air Inlet Control Damper	FRESH	A	Brings in fresh air.
	RECIRC	B	Recirculates internal air.
Mode Control Damper	 FACE 187BE24	C, I	Air blows out of the center registers and side register.
	 BI-LEVEL 187BE25	C, H	Air blows out of the center registers, side registers, and footwell register ducts.
	 FOOT 187BE26	D, G	Air blows out of the footwell register ducts and side register. In addition, air blows out slightly from the front defroster.
	 FOOT/DEF 187BE27	E, G	Defrosts the windshield through the front defroster and side register, while air is also blown out from the footwell register ducts.
	 DEF 187BE28	F, G	Defrosts the windshield through the front defroster and side register.

▶ Models with Manual Heater, Manual Air Conditioning, and Automatic Air Conditioning ◀



*1: Models with PTC heater
*2: Models with air conditioning

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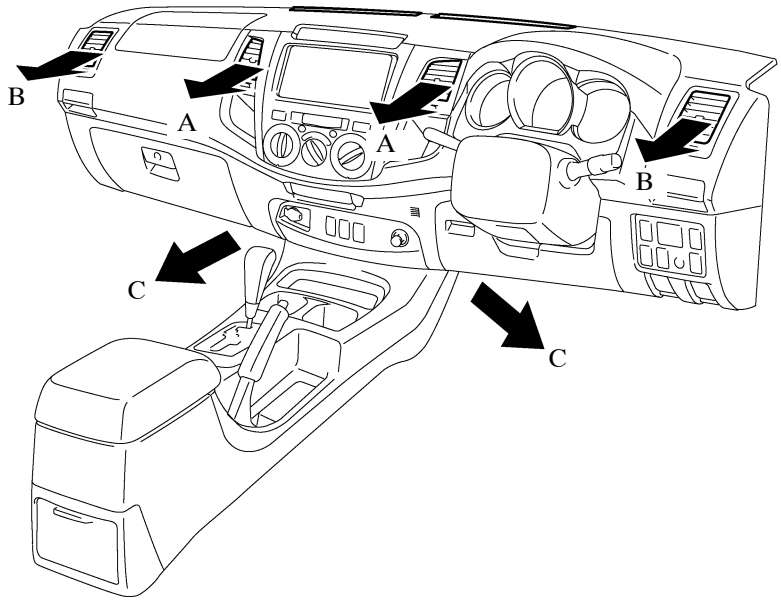
▶ Function of Main Damper ◀

Control Damper	Control Position	Damper Position	Operation
Air Inlet Control Damper	FRESH	A	Brings in fresh air.
	RECIRC	B	Recirculates internal air.
Air Mix Control Damper	MAX COLD – MAX HOT	C – D – E	Varies the mixture ratio of the cool air and the warm air in order to regulate the temperature continuously from HOT to COLD.
Mode Control Damper	 FACE 187BE24	F, J	Air blows out of the center registers and side register.
	 BI-LEVEL 187BE25	F, H	Air blows out of the center registers, side registers, and footwell register ducts.
	 FOOT 187BE26	G, H	Air blows out of the footwell register ducts and side register. In addition, air blows out slightly from the front defroster.
	 FOOT/DEF 187BE27	G, I	Defrosts the windshield through the front defroster and side register, while air is also blown out from the footwell register ducts.
	 DEF 187BE28	G, J	Defrosts the windshield through the front defroster and side register.

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6. Air Outlets and Air Volume Rations

▶ Models with Manual Cooler ◀

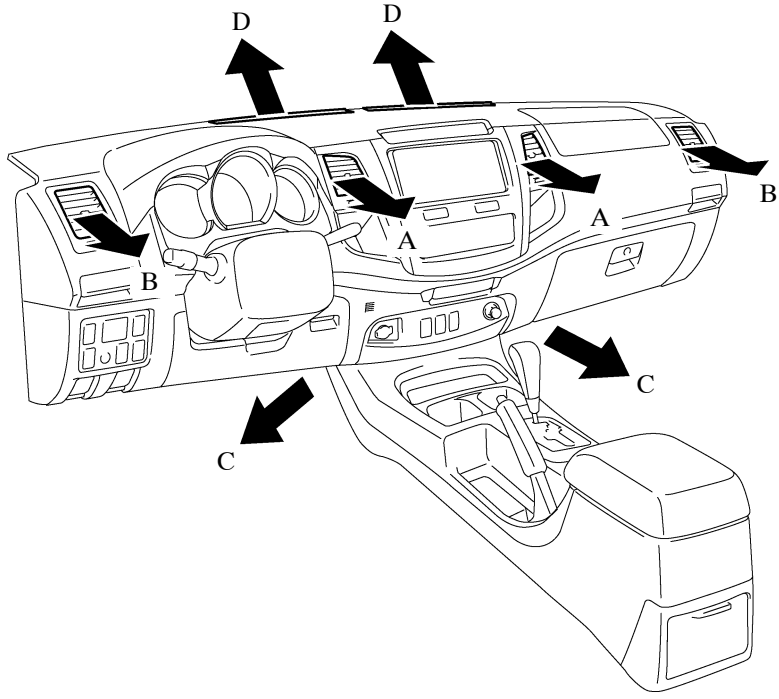


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Air Outlet Mode	A	B	C
	Center	Side	Footwell
FACE  187BE24	○	○	—
BI-LEVEL  187BE25	○	○	○

The size of the circle ○ indicates the proportion of airflow volume.

▶ Models with Manual Heater, Manual Air Conditioning, Automatic Cooler and Automatic Air Conditioning ◀



LHD Model for Automatic Air Conditioning

00MBE26Y

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Air Outlet Mode	A	B	C	D
	Center	Side	Footwell	Defroster
FACE 187BE24	○	○	—	—
BI-LEVEL 187BE25	○	○	○	—
FOOT 187BE26	—	○	○	○
FOOT/DEF 187BE27	—	○	○	○
DEF 187BE28	—	○	—	○

The size of the circle ○ indicates the proportion of airflow volume.