

## AIR CONDITIONER

### DESCRIPTION

#### 1. General

The air conditioner system in the new Land Cruiser/Land Cruiser Prado has the following features:

- A right/left independent temperature control has been adopted in the automatic control front air conditioner.
- A semi-center location front air conditioner unit, in which the evaporator and heater core are placed in the vehicle's longitudinal direction, has been adopted.
- A compact, lightweight, and highly efficient straight flow (full-path flow) aluminum heater core has been adopted.
- A revolutionary-slim structure evaporator has been adopted in the front air conditioner unit.
- A multi-tank, super-slim structure evaporator has been adopted in the rear cooler unit.
- A compact, lightweight, and low-noise swash plate type compressor has been adopted.
- The heater exchange efficiency has been improved through the adoption of the sub-cool condenser.
- A rear foot duct has been adopted to guide the airflow from the air conditioner unit to the rear seat area.
- The rear heater has been discontinued.
- On the cold area specifications model with 1KD-FTV engine for Europe, a viscous type power heater and PTC (Positive Temperature Coefficient) heater are provided.
- A clean air filter that excels in removing dust has been adopted.
- A cool box has been adopted in the center console.
- The air conditioner ECU of the automatic air conditioner system is equipped with a self-diagnosis function. If there is a malfunction in the system, it stores the DTCs (Diagnostic Trouble Codes) in its memory and blinks the air conditioning switch indicator.
- The provision of the air conditioner system varies by the destination country, engine type, and body type. For details, refer to the following equipment list.

#### ► Equipment List ◀

●: Optional Equipment ○: Standard Equipment —: Not Available

Destination		Europe		Australia	G.C.C. Countries		General Countries				
Engine Type		1KD-FTV		3RZ-FE 1KZ-TE	3RZ-FE		3RZ-FE		5L-E		1KZ-TE
Body Type		3-Door	5-Door	5-Door	3-Door	5-Door	3-Door	5-Door	3-Door	5-Door	5-Door
Single A/C	Manual	●	●	—	●	●	●	●	○	○	—
	Automatic	●	●	●	●	●	●	●	—	—	○
Dual A/C	Manual	—	—	—	—	●	—	●	—	●	—
	Automatic	—	●	●	—	●	—	●	—	—	●
Front Heater	Normal	○	○	○	○	○	○	○	○	○	○
	Viscous	●*1	●*1	—	—	—	—	—	—	—	—
	Viscous + PTC Heater	●*2	●*2	—	—	—	—	—	—	—	—
Cool Box		—	—	●	●	●*3	●	●	—	—	●
Clean Air Filter		○	○	●	●	●	●	●	—	—	●

\*1: Only for Cold Area Specification Models

\*2: Only for Cold Area Specification Models with Manual Transmission

\*3: Only for Models with Manual Transmission

## 2. Performance and Specifications

### Single Air Conditioner Model

#### ► Performance ◀

Model		New	Previous
Heater	Heat Output W (Kcal/h)	6350 (5460)	4500 (3870)
	Air Flow Volume m <sup>3</sup> /h	380	280
	Power Consumption W	260	180
Air Conditioner	Cooling Capacity W (Kcal/h)	5800 (4990)	5190 (4460)
	Air Flow Volume m <sup>3</sup> /h	550	440
	Power Consumption W	300	179

#### ► Specifications ◀

Model			New	Previous
Ventilation and Heater Core	Heater Core	Type	Straight Flow (Full-path Flow)	Flat Tube
		Size W × H × L mm (in.)	284.8 × 120 × 27 (11.2 × 4.7 × 1.1)	155.7 × 220 × 27 (6.1 × 8.7 × 1.1)
		Fin Pitch mm (in.)	1.5 (0.06)	1.6 (0.06)
	Blower	Motor Type	S80F-11T	S70F14T
		Fan Type	Semi Shroud Fan	Shroud Fan
		Fan Size Dia. × H mm (in.)	165 × 70 (6.5 × 2.8)	150 × 75 (5.9 × 3.0)
Air Conditioner	Condenser	Type	Multi-flow (Sub-cool)	Multi-flow
		Size W × H × L mm (in.)	600 × 485.4 × 16 (23.6 × 19.1 × 0.6)	570 × 463 × 16 (22.4 × 18.2 × 0.6)
		Fin Pitch mm (in.)	3.0 (0.12)	3.2 (0.13)
	Evaporator	Type	Revolutionary-slim Structure	Drawn Cup
		Size W × H × L mm (in.)	279.7 × 215 × 38 (11 × 8.5 × 1.5)	264 × 210 × 90 (10.4 × 8.3 × 3.5)
		Fin Pitch mm (in.)	3.0 (0.12)	3.5 (0.14)
	Compressor	Type	10S17	10PA17
	Refrigerant	Type	HFC134a (R134a)	←
		Volume g	650/750*	750

\*: Models with Cool Box

## Dual Air Conditioner Model

## ► Performance ◀

Model		New		Previous	
		Front	Rear	Front	Rear
Heater	Heat Output W (Kcal/h)	6350 (5460)	—	4660 (4010)	1580 (1360)
	Air Flow Volume m <sup>3</sup> /h	380	—	280	80
	Power Consumption W	260	—	141	30
Air Conditioner	Cooling Capacity W (Kcal/h)	7110 (6110)		6200 (5330)	
	Air Flow Volume m <sup>3</sup> /h	550	300	440	250
	Power Consumption W	300	220	179	94

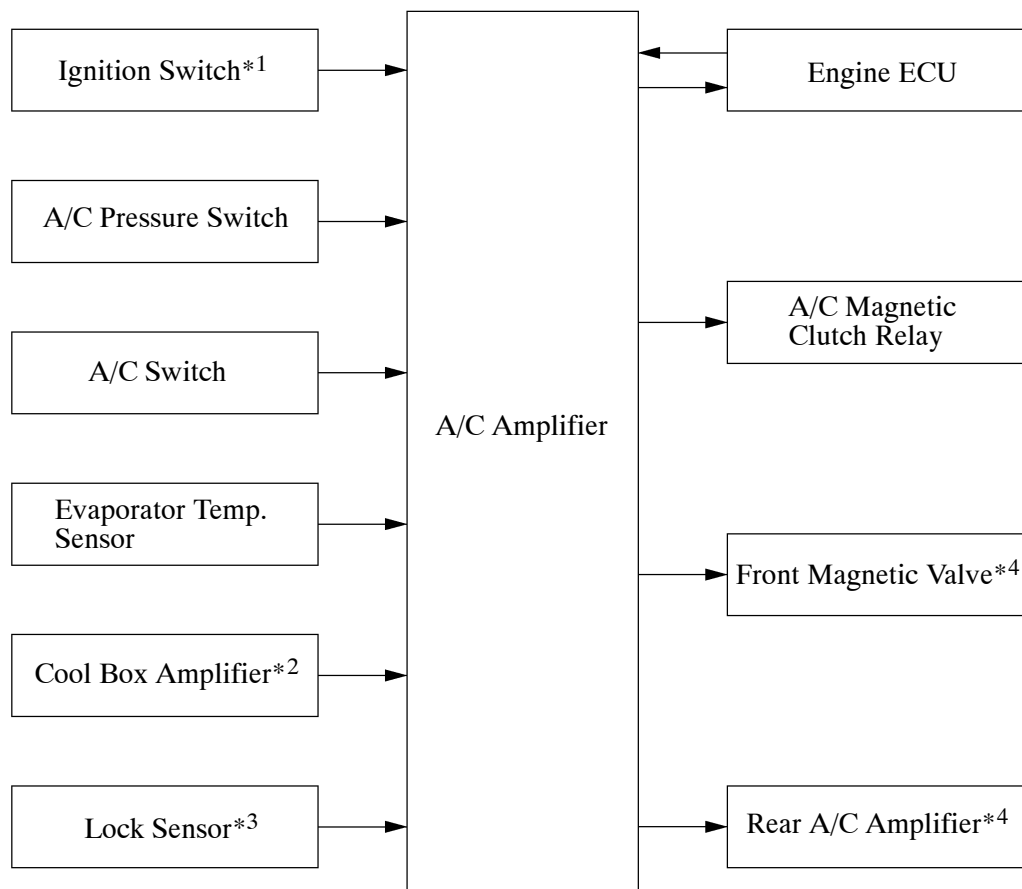
## ► Specifications ◀

Model			New		Previous	
			Front	Rear	Front	Rear
Ventilation and Heater Core	Heater Core	Type	Straight Flow (Full-path Flow)	—	Flat Tube	←
		Size W × H × L mm (in.)	284.8 × 120 × 27 (11.2 × 4.7 × 1.1)	—	155.7 × 220 × 27 (6.1 × 8.7 × 1.1)	105 × 140 × 27 (4.1 × 5.5 × 1.1)
		Fin Pitch mm (in.)	1.5 (0.06)	—	1.6 (0.06)	1.8 (0.07)
	Blower	Motor Type	S80F-11T	S70F14T	←	60F22T
		Fan Type	Semi Shroud Fan	Shroud Fan	←	←
		Fan Size Dia. × H mm (in.)	165 × 70 (6.5 × 2.8)	150 × 75 (5.9 × 3.0)	←	130 × 65 (5.1 × 2.6)
Air Conditioner	Condenser	Type	Multi-flow (Sub-cool)		Multi-flow	
		Size W × H × L mm (in.)	600 × 504.6 × 16 (23.6 × 19.9 × 0.6)		570 × 463 × 16 (22.4 × 18.2 × 0.6)	
		Fin Pitch mm (in.)	3.0 (0.12)		3.2 (0.13)	
	Evaporator	Type	Revolutionary-slim Structure	Multi-tank, Super-slim Structure	Drawn Cup	←
		Size W × H × L mm (in.)	279.7 × 215 × 38 (11 × 8.5 × 1.5)	121.9 × 255 × 58 (4.8 × 10 × 2.3)	264 × 210 × 90 (10.4 × 8.3 × 3.5)	159 × 170 × 90 (6.3 × 6.7 × 3.5)
		Fin Pitch mm (in.)	3.0 (0.12)	3.5 (0.14)	3.5 (0.14)	4.0 (0.16)
	Compressor	Type	10S17		10PA17	
	Refrigerant	Type	HFC134a (R134a)		←	
		Volume g	800/900*		950	

\*: Models with Cool Box

### 3. System Diagram

#### ► Manual Control Air Conditioner System ◀



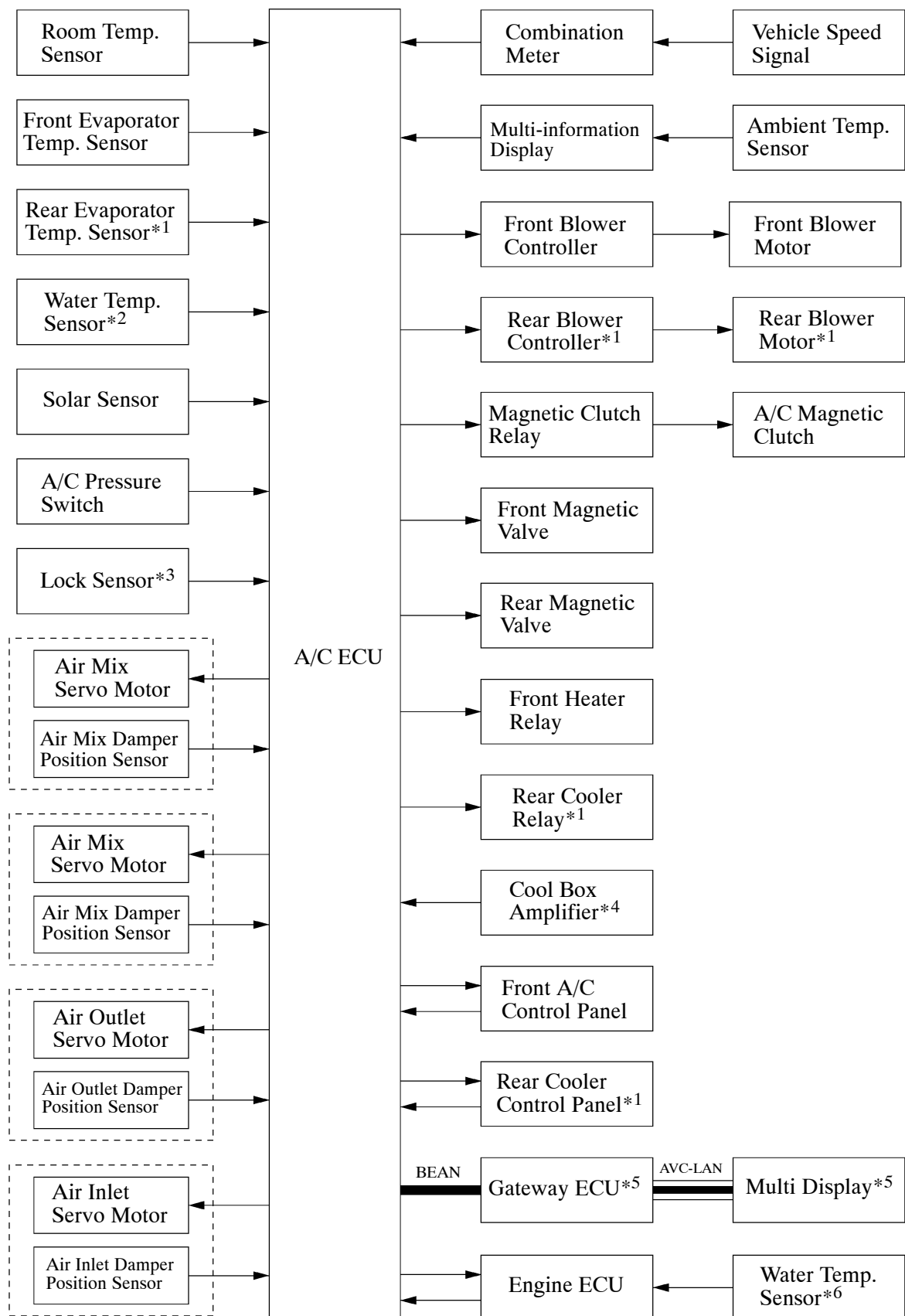
\*1: except 1KD-FTV Engine Model

\*2: Models with Cool Box

\*3: Only for 1KD-FTV Engine Model

\*4: Dual Air Conditioner Model

## ► Automatic Control Air Conditioner System ◀



\*1: Dual Air Conditioner Model

\*2: for 1KZ-TE Engine Model

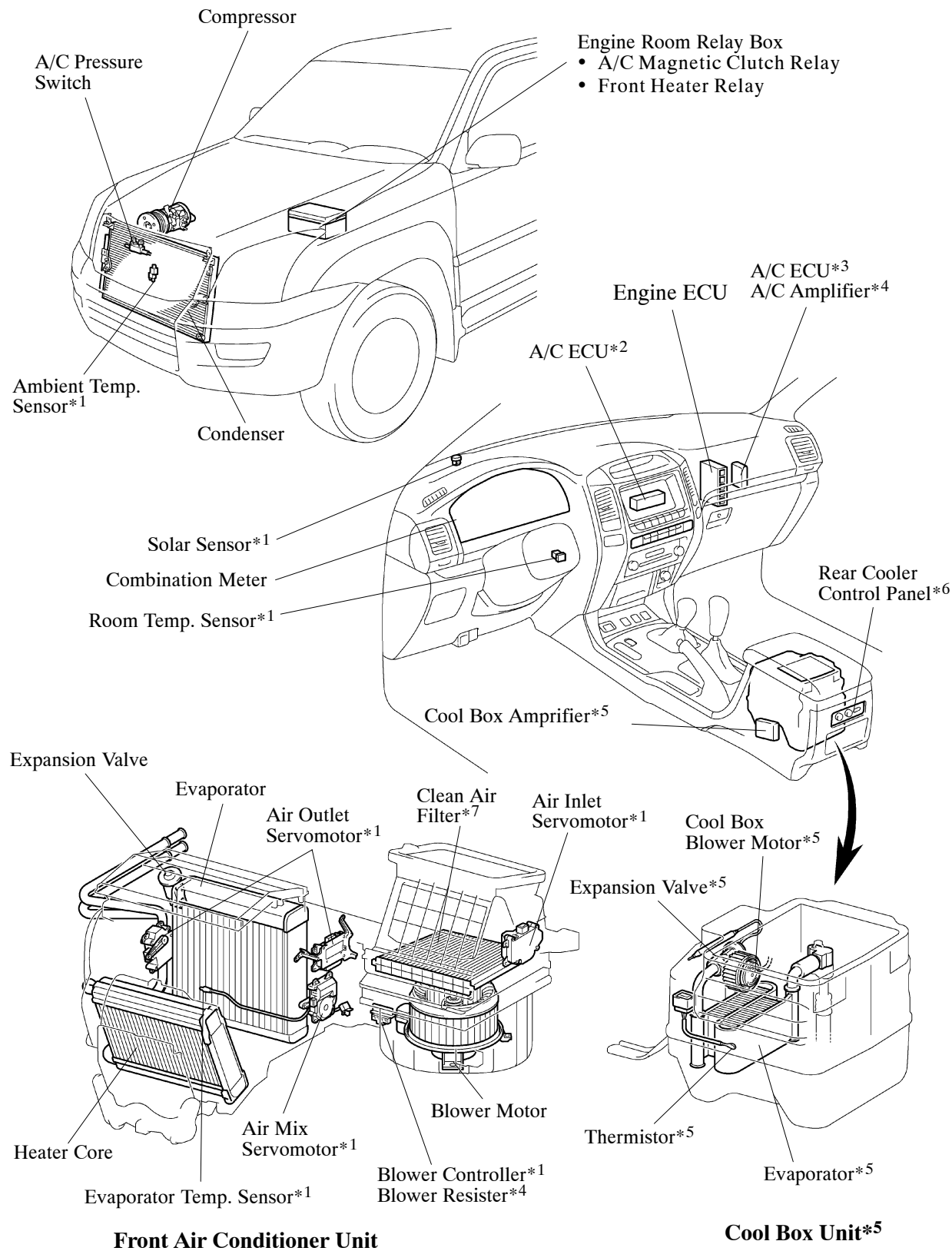
\*3: for 1KD-FTV Engine Model

\*4: Models with Cool Box

\*5: Models with Multi Display

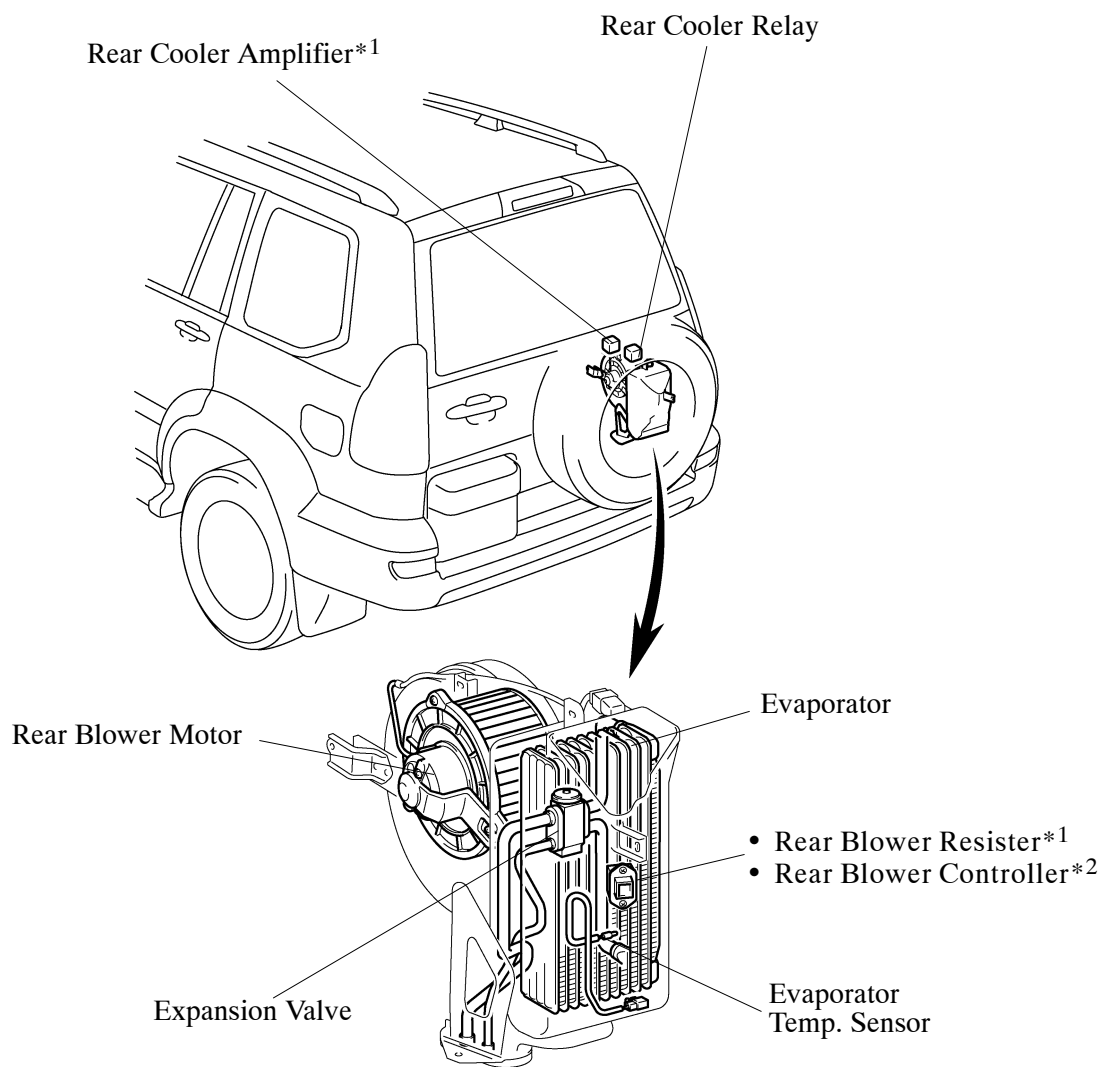
\*6: for 1KD-FTV and 3RZ-FE Engine Model

#### 4. Layout of Main Component



\*1: Automatic Control A/C System  
 \*3: Automatic Control A/C System without Multi Display  
 \*5: Models with Cool Box  
 \*7: Optional Equipment

\*2: Automatic Control A/C System with Multi Display  
 \*4: Manual Control A/C System  
 \*6: Models with Dual A/C System



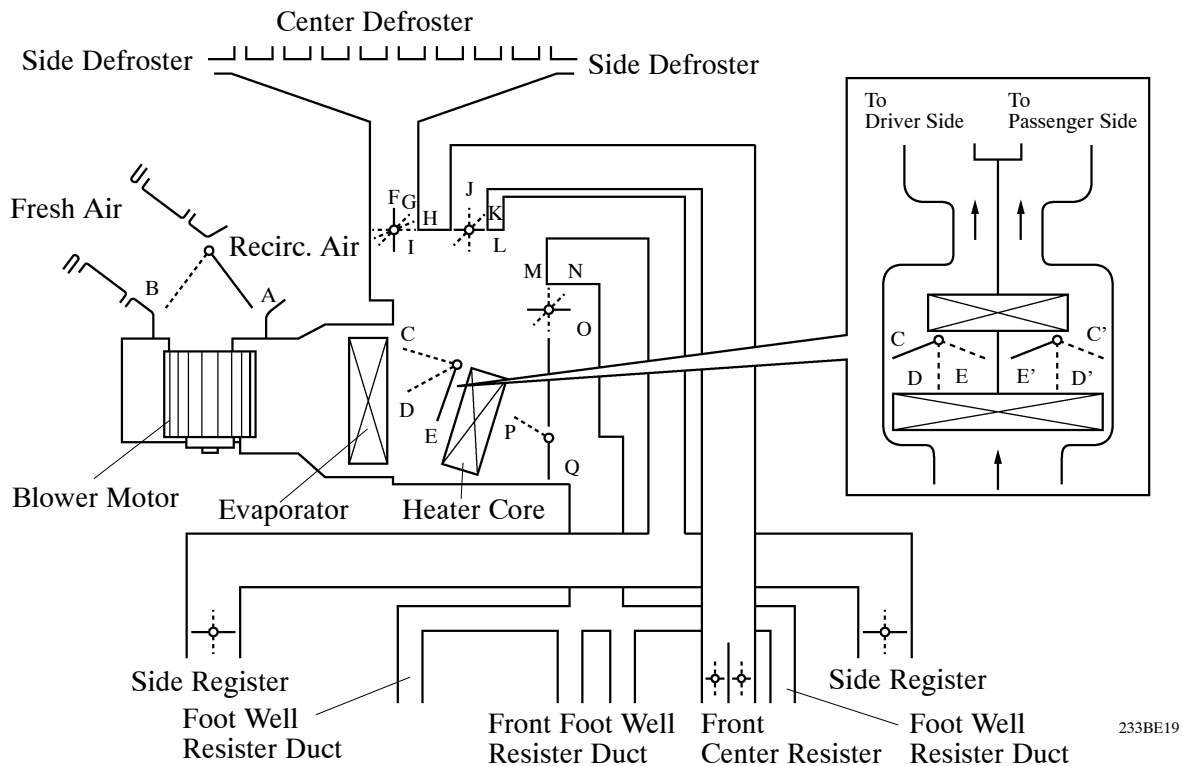
BE

**Dual Air Conditioner Model**

233BE18

- \*1: for Manual Control Type  
 \*2: for Automatic Control Type

## 5. Mode Position and Damper Operation



233BE19

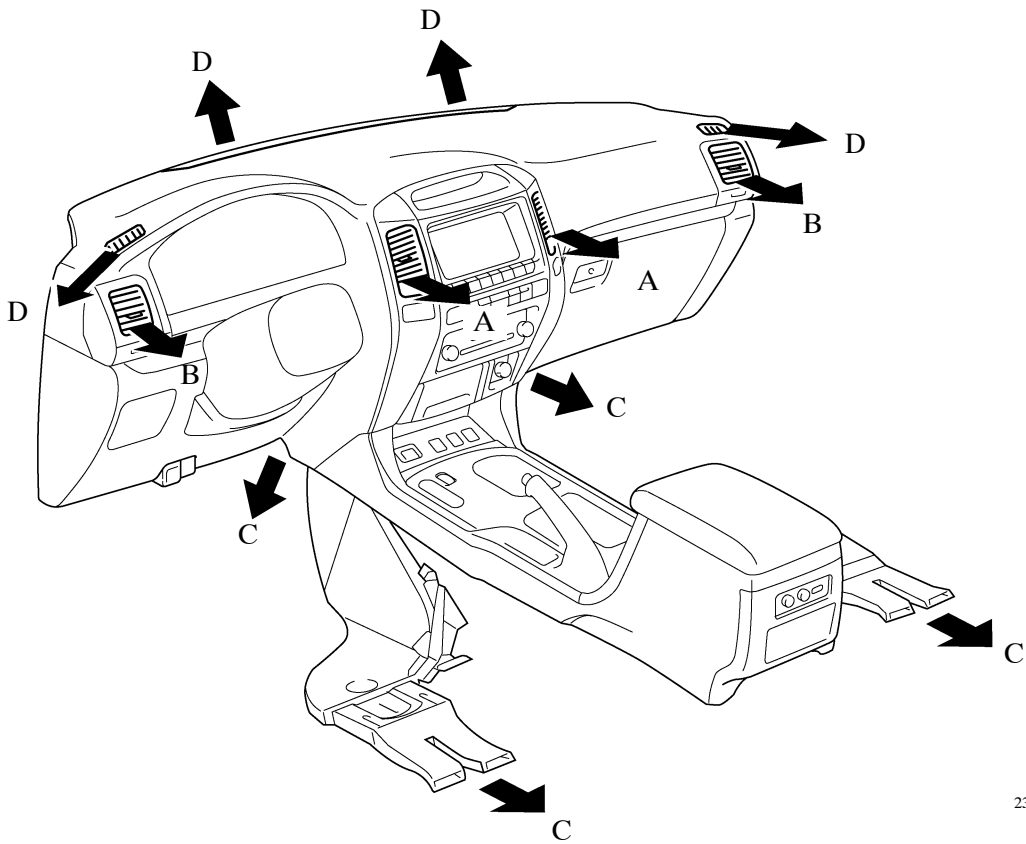
### ► Function of Main Damper ◀

Control Damper	Control Position	Damper Position	Operation
Air Inlet Control Damper	FRESH 187BE23	A	Brings in fresh air.
	RECIRC 187BE41	B	Recirculates internal air.
Air Mix Control Damper	MAX COLD – MAX HOT TEMP. SETTING {18°C (65°F) - 32°C (85°F)}	E ~ D ~ C (E' ~ D' ~ C')*	Varies the mixture ratio of the fresh air and the recirculation air in order to regulate the temperature continuously from HOT to COLD.
Max Hot Damper*	MAX HOT	P, Q	Fully open in the MAX HOT position.
Mode Control Damper	DEF 187BE28	F, L, M	Defrosts the windshield through the center defroster, side defroster, and side register.
	FOOT/DEF 187BE27	G, L, N	Defrosts the windshield through the center defroster, side defroster, and side register, while air is also blown out from the front and rear foot well register ducts.
	FOOT 187BE26	H, L, O	Air blows out of the front and rear foot well register ducts, and side register. In addition, air blows out slightly from the center defroster and side defroster.
	BI-LEVEL 187BE25	I, K, N	Air blows out of the front center registers, side registers, and front and rear foot well register ducts.
	FACE 187BE24	I, J, M	Air blows out of the front center registers, and side register.

\*: Models with Automatic Control Air Conditioner



6. Air Outlets and Air Volume Ratios



233BE20

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Air Outlet Mode			A	B	C	D
			Center Face	Side Face	Foot	Defroster*1
FACE		187BE24	○	○	—	—
BI-LEVEL		187BE25	○	○	○	—
FOOT		187BE26	—	○	○	○
FOOT/DEF		187BE27	—	○	○	○
DEF*1		187BE28	—	○	—	○

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