AIR CONDITIONER SYSTEM

Outline

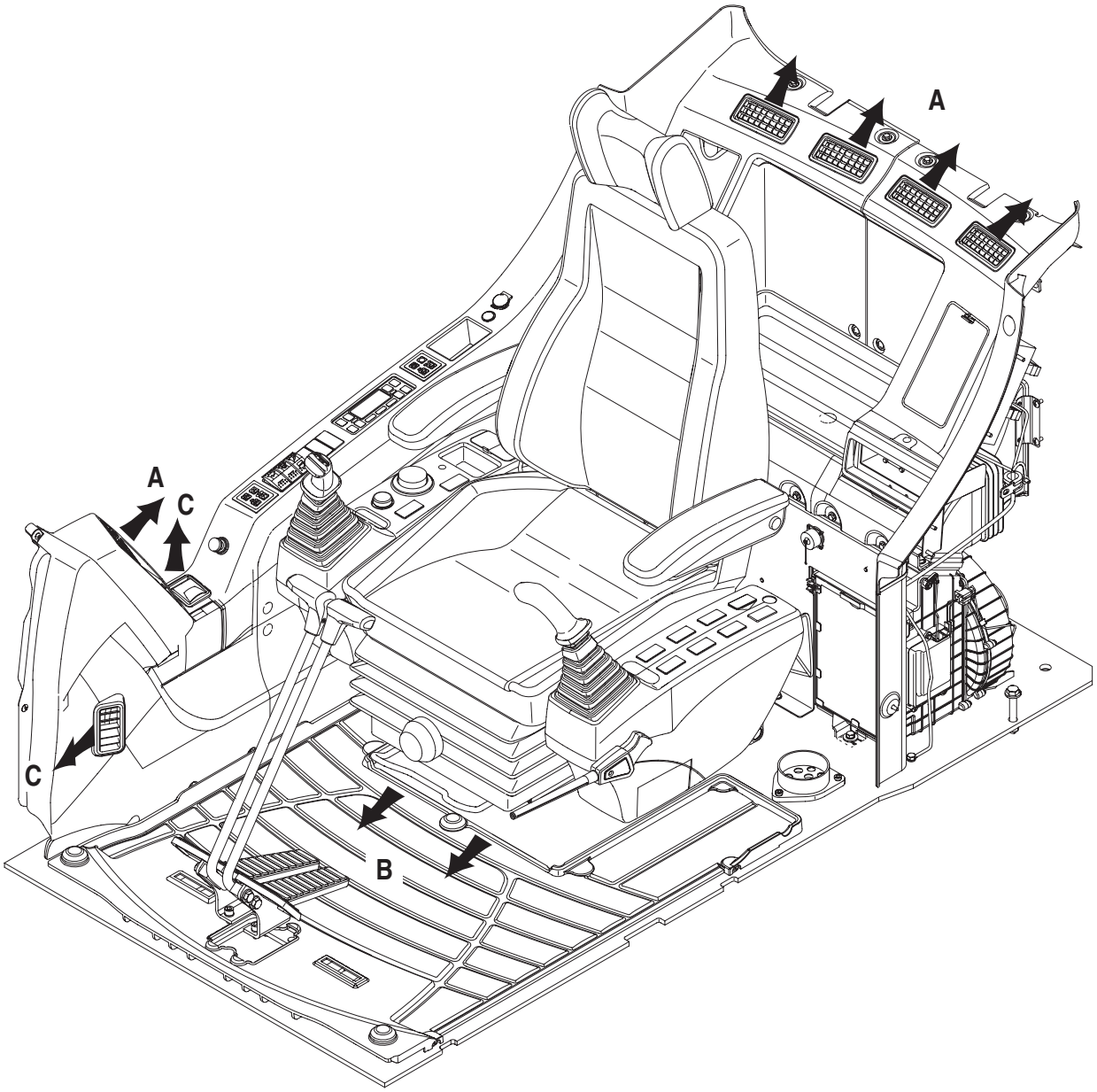

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Figure 1

Solid type heater and air conditioner are installed in the cover behind the driver's seat.

Temperature of the driver's room is adjusted automatically to the temperature set by operator.

(Please refer to the Operation Manual for detailed whole automatic control.

Vent mode selects the direction of discharged air.

Outlets by vent modes

Modes					
Outlets	A	A+B	B	B+C	C

Internal and external filters

Internal and external air purification filters are installed for the driver's room.

Filters must be cleaned every 500 hours.

If machine operates in an excessively contaminated environment, filters must be cleaned more frequently and if necessary, replaced with new ones.

How to check Indoor air filter

1. Press both levers on the left and right side at the top of the filter installed behind the driver's seat.

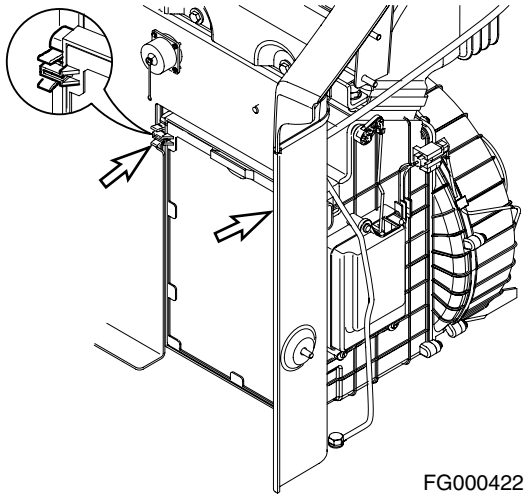

Figure 2

How to check outdoor air filter

1. Open the front door at the left side of machine and loosen four marked bolts to remove cover (1, Figure 3).

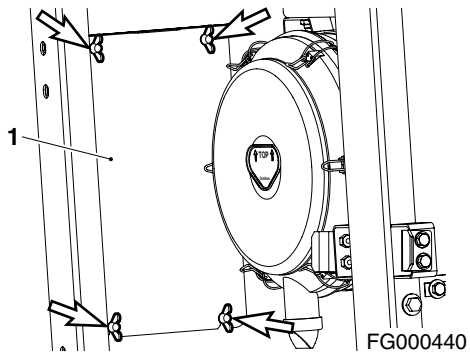

Figure 3

2. Turn marked knobs (1, Figure 4) at the rear side of the cabin to open the cover.

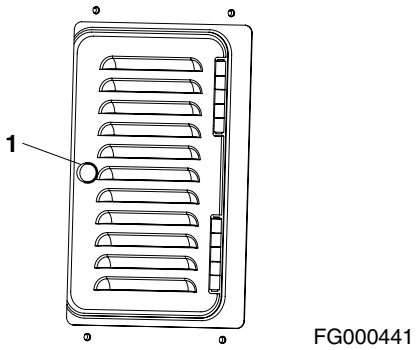

Figure 4

3. Remove filter attached to the cover and clean the contaminated filter using compressed air.
4. Close the cover, replace the knobs, and secure the cover to the support with butterfly bolts.

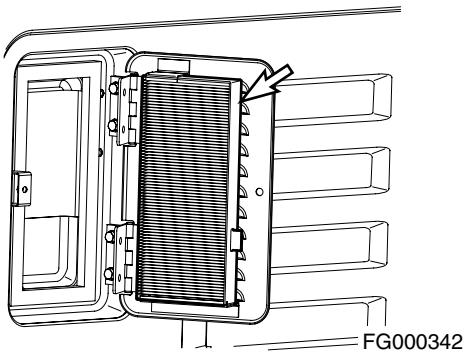

Figure 5

Air-Conditioning System Layout

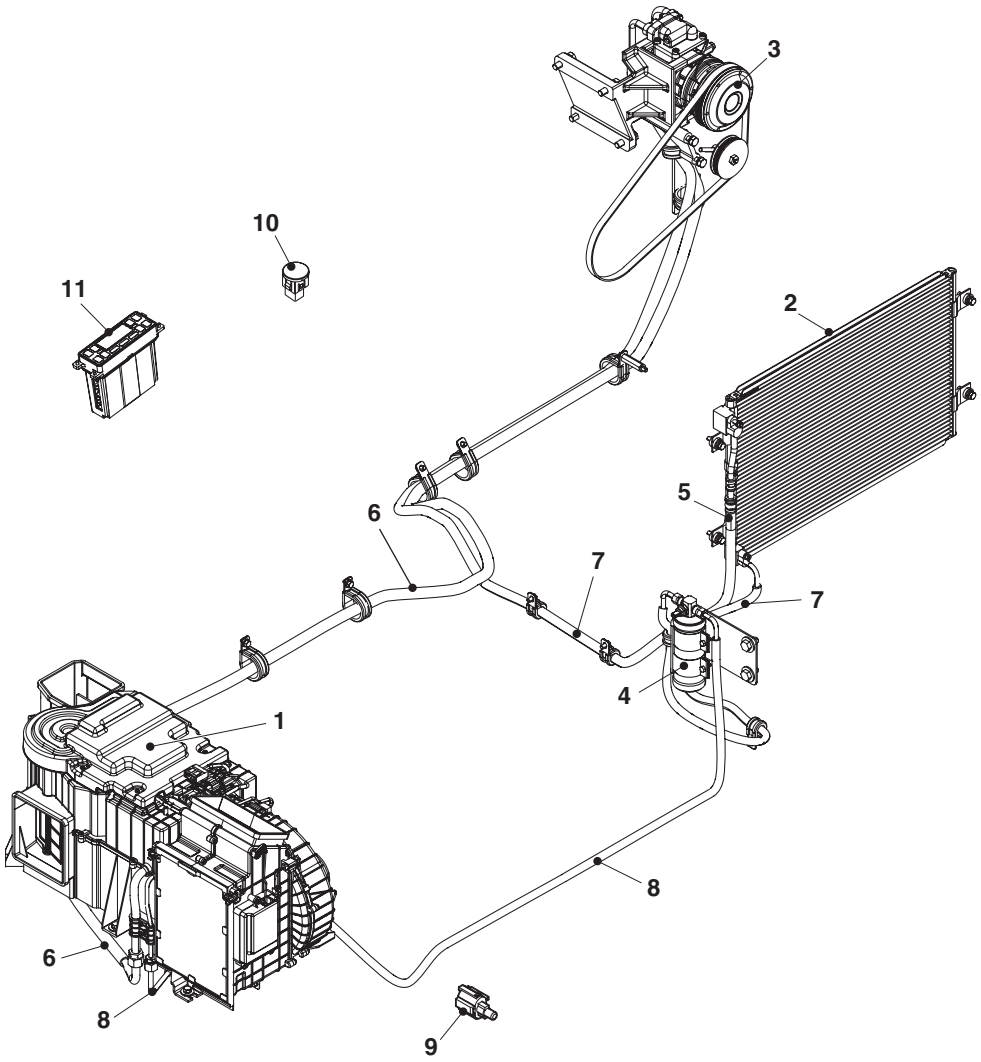

Figure 6

Reference Number	Description
1	Air Conditioner/heater Unit
2	Condenser
3	Compressor
4	Receiver Dryer
5	High-pressure Hose
6	Low-pressure Hose

Reference Number	Description
7	Liquid Hose (1)
8	Liquid Hose (2)
9	Ambient Temperature Sensor
10	Sun Sensor
11	Control Panel

Air Conditioner/heater Circuit Diagram

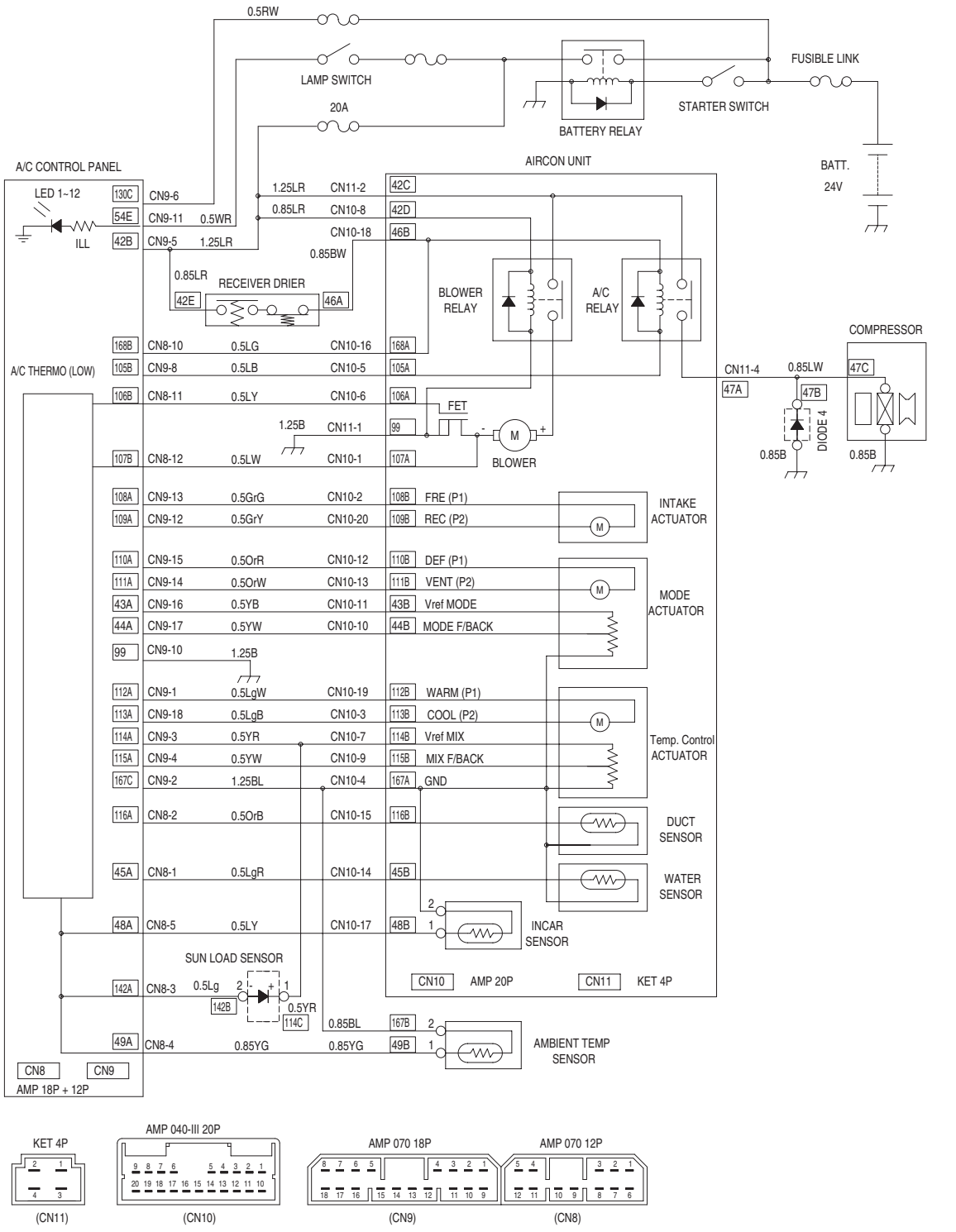

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Figure 7

Air Conditioner/heater Unit

Airflow Diagram

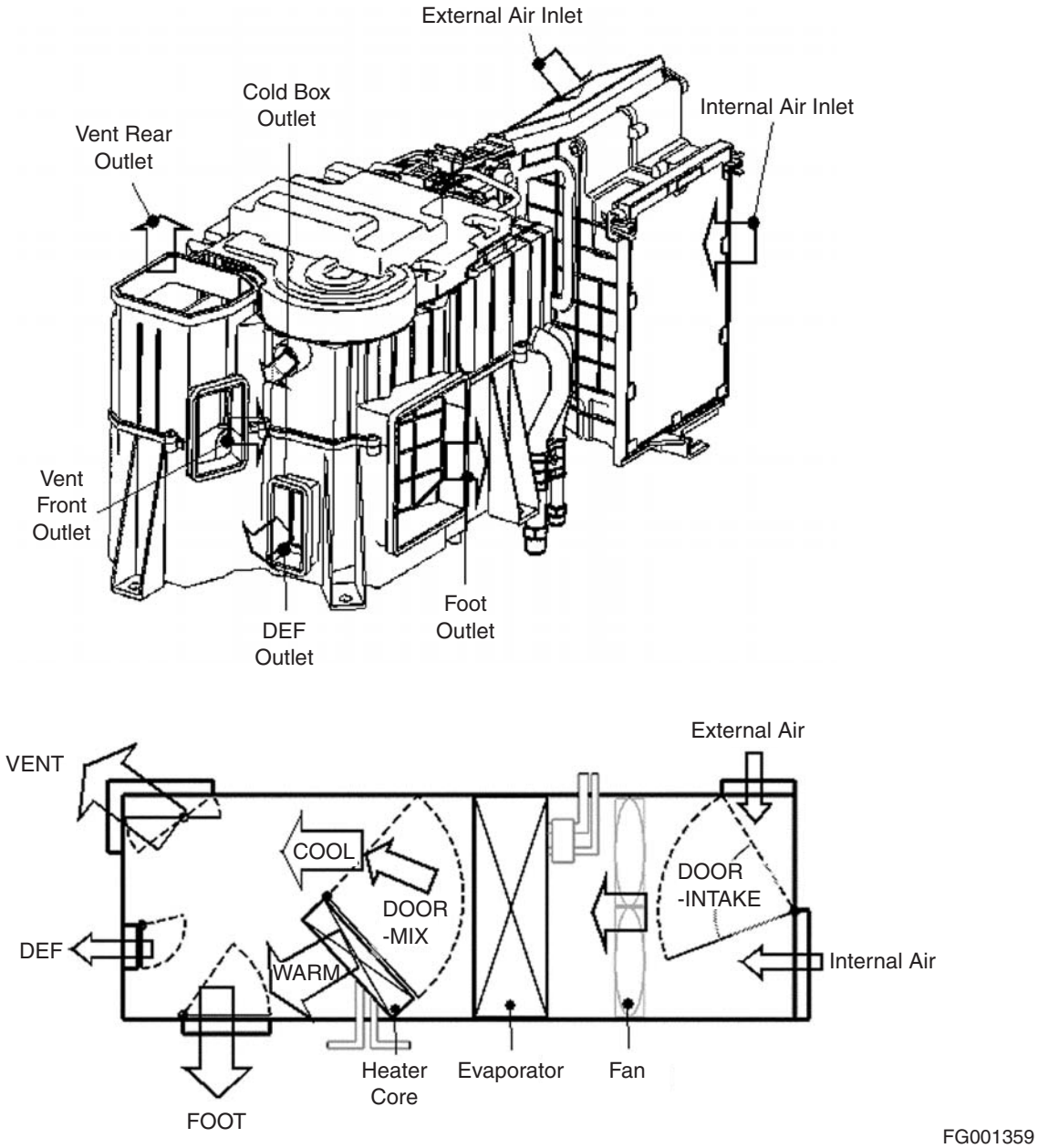

Figure 8

Door Open by Vent Modes

Door	Mode				
	Vent	Bi-level	Foot	Def/foot	Def
Vent	100	60	0	0	0
Foot	0	40	100	80	60
Def	0	0	0	20	40

Main Components

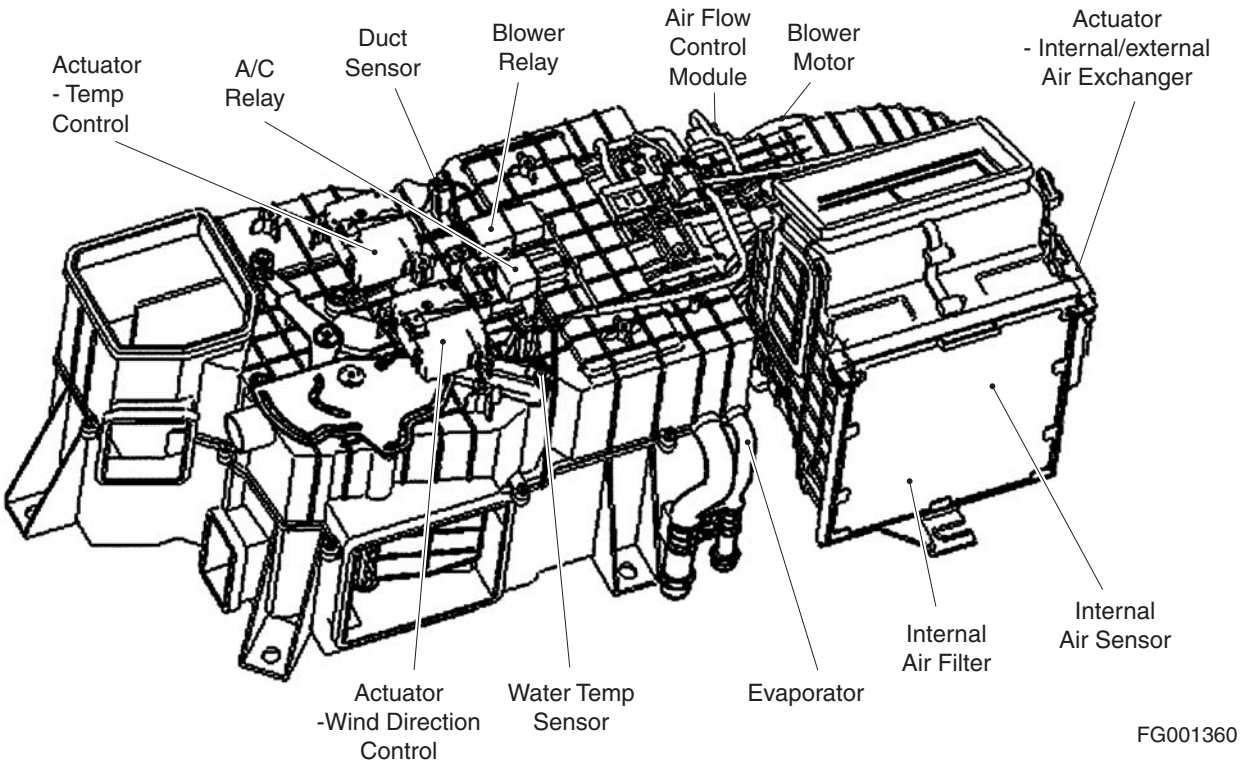

Figure 9

Actuator - Wind direction control: change of discharged airflow according to selected wind direction mode - Change of wind direction: Direction changes in the order of VENT→ BI-LEVEL → FOOT → FOOT/DEF → VENT.

Actuator - Temp control: Change of discharged air temperature by controlling the position of temp control door.

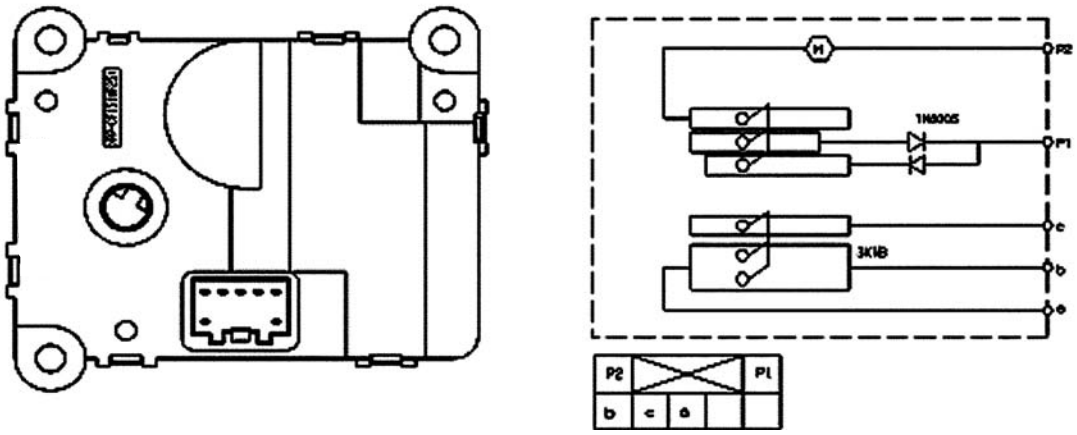

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Figure 10

Actuator - Wind direction control

Wind Direction Mode	Output Terminal	Voltage
Vent	c (+): CN10-10 b (-): CN10-4	0.5 ±0.2V
Bi-level		1.3 ±0.2V
Foot		2.45 ±0.2V
Foot/def		3.5 ±0.2V
Def		4.5 ±0.2V

Actuator - Temp control

Set Temp	Output Terminal	Voltage
Maximum cooling	c (+): CN10-9 b (-): CN10-4	Below 0.4V
Maximum heating		Above 4.5V

Actuator - Internal/external air exchange

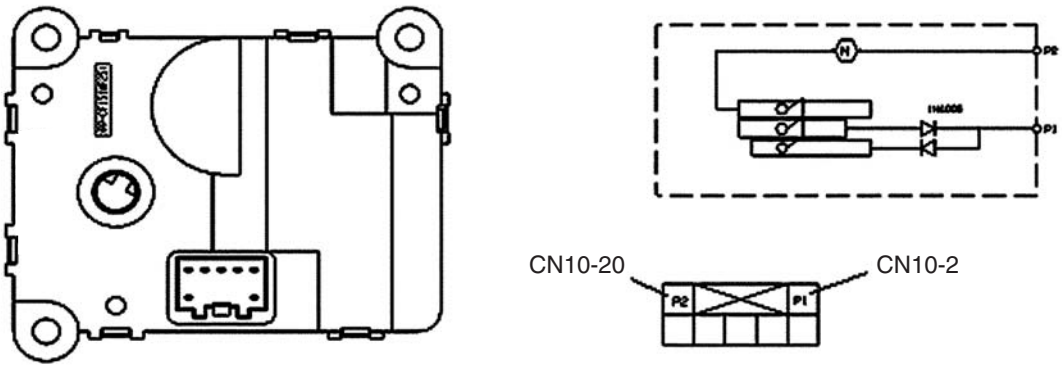

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Figure 11

Sel mode	Output Terminal	Output
Internal Air	P1 (+), P2 (-)	Moving of exchange door by selecting external air
External Air	P1 (-), P2 (+)	Moving of exchange door by selecting internal air

Airflow Control Module

Airflow is controlled through the control of voltage between GATE and SOURCE.

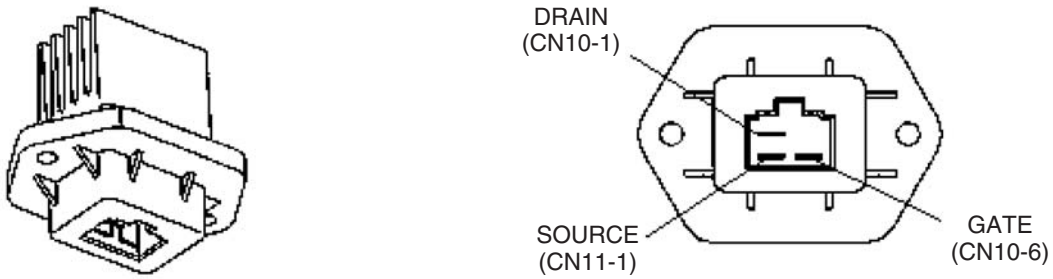

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Figure 12

Airflow	Output Terminal		Output
1st	CN11-2	CN10-1	10 ±0.5V
2nd			12.5 ±0.5V
3rd			15 ±0.5V
4th			17.5 ±0.5V
5th			20.0 ±0.5V
6th			22.0 ±0.5V
7th			More than 25V

Applied voltage: Standard voltage is 27.5V.

Basically, airflow is set manually.

Relay - Blower: Power is supplied to the blower motor when the system is turned on.

Specifications	
Rated voltage	24V
Rated current	20A

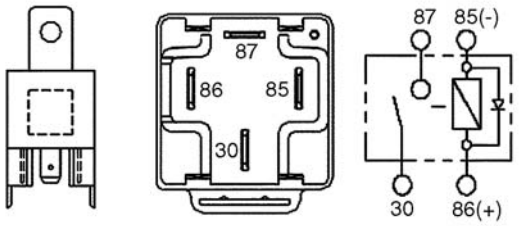

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Figure 13

Relay - A/C: Power is supplied to the magnetic clutch of the compressor.

Specifications	
Rated voltage	24V
Rated current	10A

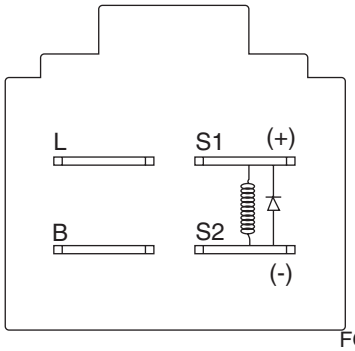

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Figure 14

Duct sensor: It is inserted in the core of the evaporator to prevent freezing of the evaporator.

The sensor consist of negative characteristic thermistor that resistant value increases and decreases when the temperature rises and falls, respectively.

Temp (°C)	Resistance (KßŸ)
0	11.36 ±0.1
2	10.39 ±0.2
2.5	10.17 ±0.2
3	9.95 ±0.2
3.5	9.73 ±0.2
4	9.52 ±0.2
5	9.12 ±0.2
10	7.36 ±0.15
25	4.02 ±0.08
30	3.33 ±0.07

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Figure 15

Water temp sensor: It senses the temperature of coolant water in the heater core.

Temp (°C)	Resistance (KßŸ)
-10	55.8 ±1.7
0	32.9 ±0.9
15	15.76 ±0.5
25	10.0 ±0.3
35	6.5 ±0.2

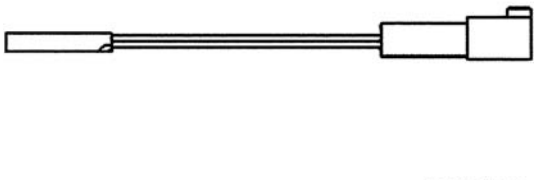

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Figure 16

Internal air temp sensor: Built in the internal air filter, it senses the internal temperature.

Temp (°C)	Resistance (KßŸ)
-15	218.2 ±7.5
0	97.83 ±0.9
15	47.12 ±0.7
25	30.0 ±0.36
35	19.60 ±0.3

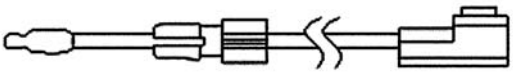

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Figure 17

Ambient Temperature Sensor

Built at the bottom of the cockpit, it senses the temperature of external air.

Temp (°C)	Resistance (KßŸ)
-10	163 ±4.9
0	96.9 ±2.9
10	59.4 ±1.8
20	37.4 ±1.1
25	30 ±0.9
30	24.2 ±0.7

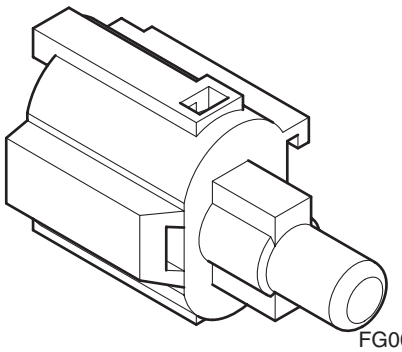

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Figure 18