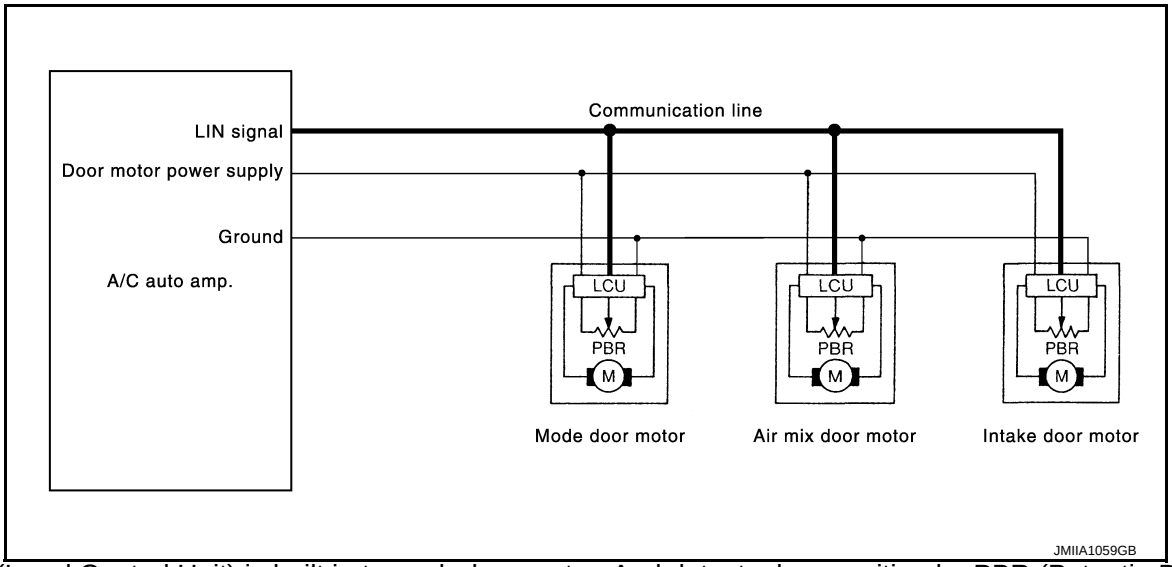
AUTOMATIC AIR CONDITIONING SYSTEM : Door Control

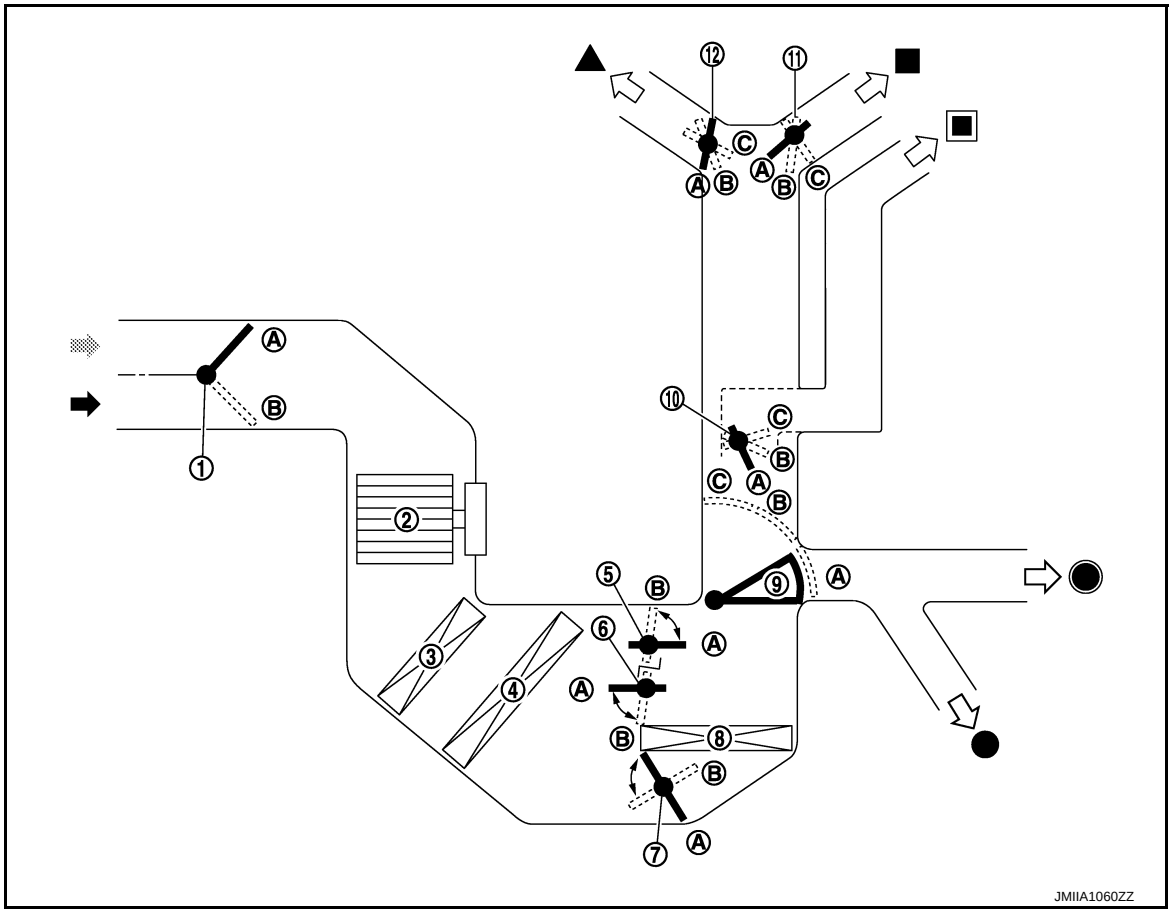
INFOID:0000000006546676

DOOR MOTOR CONTROL



- LCU (Local Control Unit) is built in to each door motor. And detects door position by PBR (Potentio Balance Resistor).
- A/C auto amp. communicates with each LCU via communication line. And receives each door position feedback signal from each LCU.
- Each LCU controls each door to the appropriate position depending on the control signal from A/C auto amp. when the door movement is complete, transmits the signal of door movement completion to A/C auto amp.

SWITCH AND THEIR CONTROL FUNCTION



1. Intake door
2. Blower motor
3. Air conditioner filter
4. Evaporator
5. Max. cool door
6. Upper air mix door
7. Lower air mix door
8. Heater core
9. Foot door
10. Side ventilator door
11. Center ventilator door
12. Defroster door

Fresh air intake | Recirculation air | Defroster

Center ventilator | Side ventilator | Foot

Rear foot*

*: With rear foot duct

Switch/dial position				Door position							
				Center ventilator door	Side ventilator door	Foot door	Defroster door	Intake door	Max. cool door	Upper air mix door	Lower air mix door
AUTO switch		AUTO		AUTO							
MODE switch	VENT		☀	A	A	A	A	—	—	—	—
	B/L		☀	B	B	B	A				
	FOOT		☀	C	C	C	B				
	D/F		☀								
DEF switch			☀			A	C				
Intake switch			☀	—	—	—	—	A			
			☀					B			
Temperature control dial		Full cold (16°C)						—	A	A	A
		16.5°C – 29.5°C							AUTO	AUTO	AUTO
		Full hot (30°C)							B	B	B
OFF switch				C	C	C	B	B	—	—	—

AIR DISTRIBUTION

Without rear foot duct

MODE/DEF setting position	Discharge air flow			
	Air outlet/distribution			
	Ventilator		Foot	Defroster
	Center	Side		
	52.6%	47.3%	—	—
	34.0%	27.7%	38.4%	—
	—	19.1%	57.9%	23.0%
	—	13.5%	42.4%	44.1%
	—	16.3%	—	83.8%

With rear foot duct

MODE/DEF setting position	Discharge air flow				
	Air outlet/distribution				
	Ventilator		Foot		Defroster
	Center	Side	Front	Rear	
	52.6%	47.3%	—	—	—
	28.2%	25.9%	29.6%	16.3%	—
	—	16.3%	43.0%	21.0%	19.7%
	—	12.2%	33.1%	16.3%	38.4%
	—	16.3%	—	—	83.8%

AUTOMATIC AIR CONDITIONING SYSTEM : ECO Mode Control

INFOID:0000000006659840

DESCRIPTION

- A/C auto amp. receives operation status of each switch (A/C operation signal), D-MODE setting status (ECO mode signal), and “CLIMATE ECO” setting status (A/C ECO setting signal) from multi display unit via CAN communication.
- A/C auto amp. operates air conditioning system in ECO mode, when D-MODE on multi display unit is set to ECO mode while air conditioning system is in automatic control.

NOTE:

- For setting procedure of D-MODE, refer to AV-99, "NISSAN DYNAMIC CONTROL SYSTEM : System Description".
- Activation or deactivation of ECO mode can be changed using multi display unit setting function (“CLIMATE ECO”). For setting procedure, refer to AV-99, "NISSAN DYNAMIC CONTROL SYSTEM : System Description".

CONTROL OUTLINE

During ECO mode operation, A/C auto amp. changes air flow and control characteristics of air inlet, within a range that may not spoil the comfort level, lowers operation ratio of compressor, and reduces the electrical load. This reduces engine load and improved fuel economy. Refer to the following items for details of each control.

Air Flow Control

- A/C auto amp. increases voltage to power transistor gate compared to ordinary operation and reduces voltage to blower motor. This reduces air flow.
- Since air flow is reduced, the amount of air that passes evaporator is reduced. Increase of evaporator temperature can be moderated. Evaporator temperature is easily shifted to temperature control range for low temperature protection control. Operation ratio of evaporator is reduced.
- Since air flow is reduced, the electrical load is reduced. Alternator power output can be moderated.

Air Inlet Control

- In the following conditions, A/C auto amp. controls air inlet and increases recirculation air mixing ratio compared to ordinary operation.

- Ambient temperature: 25°C (77°F) or more
- Temperature setting: Any temperature other than full cold (16°C) or full hot (30°C)
- Air outlet: In automatic control
- Air flow: In automatic control
- Air inlet: In automatic control or in fresh air intake mode by manual control
- A/C switch: ON

- By increasing recirculation air mixing ratio, cooled air in passenger room is circulated in larger amount than during ordinary operation. Air temperature blowing to evaporator is maintained at a low level. Evaporator temperature increase can be moderated. Evaporator temperature is easily shifted to temperature control range for low temperature protection control. Operation ratio of evaporator is reduced.

AUTOMATIC AIR CONDITIONING SYSTEM : Fail-safe

INFOID:0000000006696751

FAIL-SAFE FUNCTION

If a communication error exists between the A/C auto amp. and multi display unit for 2 seconds or longer, air conditioning is controlled under the following conditions: