SECTION HAC

HEATER & AIR CONDITIONING CONTROL SYSTEM

CONTENTS

SYSTEM DESCRIPTION

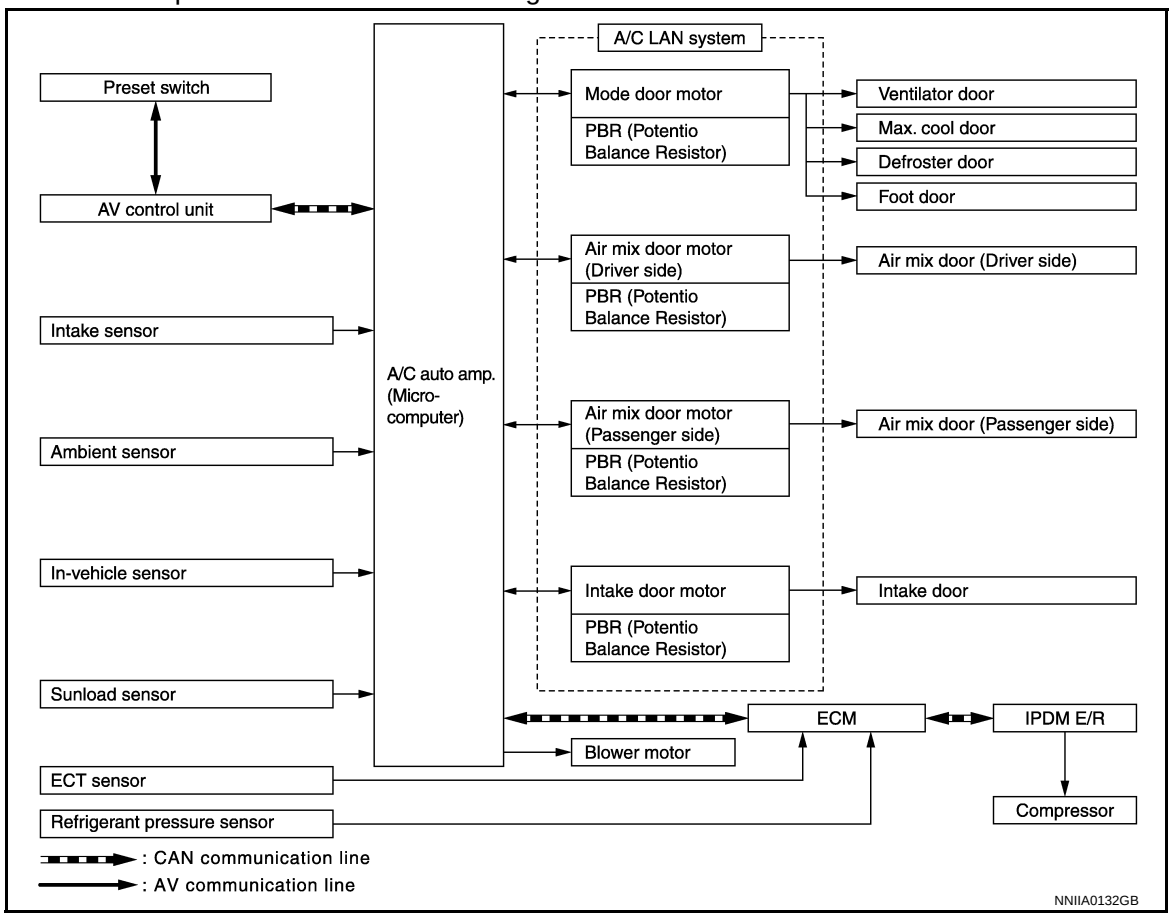
AUTOMATIC AIR CONDITIONER SYSTEM

System Diagram

INFOID:0000000009163969

CONTROL SYSTEM

The control system consists of input sensors, switches, A/C auto amp. (microcomputer) and outputs. The relationship of these components is as shown in the figure below:

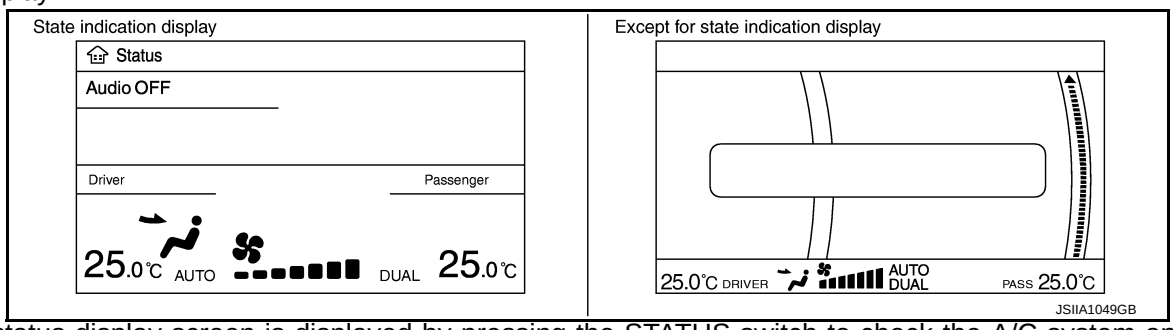


System Description

INFOID:0000000009163970

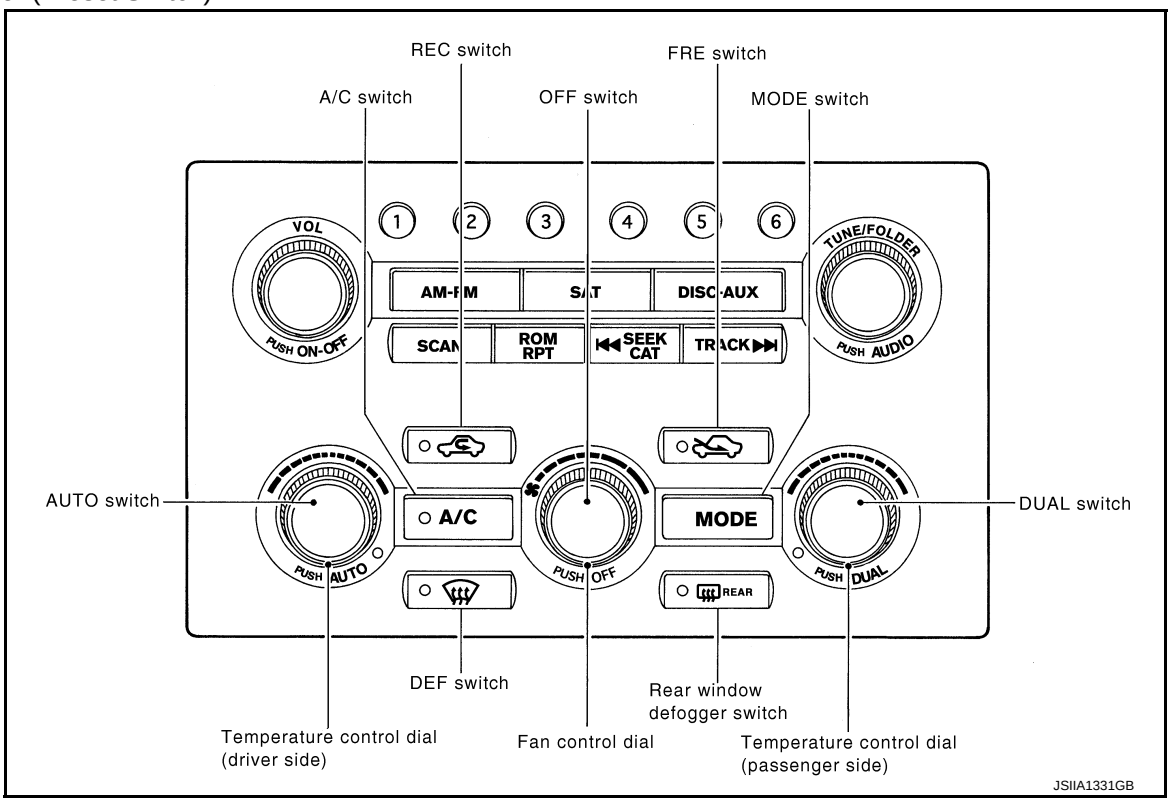
CONTROL OPERATION

A/C Display



- The status display screen is displayed by pressing the STATUS switch to check the A/C system operating condition.
- If the A/C operation is performed when any screen other than the status display screen (such as the navigation system and the audio system) is displayed, the switch operating condition of the used switch is displayed on the bottom of the screen. It turns OFF automatically after several seconds.

Controller (Preset Switch)



MODE Switch

- The “AUTO” on the A/C display turns OFF by pressing the MODE switch from the condition that the AUTO switch is ON (automatic control).
- The set temperature (driver side and passenger side) and air outlets are displayed on the A/C display by pressing the MODE switch from the condition that the A/C system is OFF.
- The air outlets may be switched by pressing the MODE switch. Any of VENT, B/L, FOOT, or D/F can be selected.
  VENT→B/L→FOOT→D/F→VENT

Temperature Control Dial (Potentio Temperature Control)

- It can select the set temperature of the A/C display at the range of 18.0°C (60°F) to 32.0°C (90°F) in increments of 0.5°C (1.0°F) freely.
- It increases in increments of 0.5°C (1.0°F) by turning the temperature control dial clockwise.
- It decreases in increments of 0.5°C (1.0°F) by turning the temperature control dial counterclockwise.
- The system is set to the LH/RH independent condition (the DUAL switch indicator turns ON) by operating the temperature control dial (passenger side). It can change the air flow temperature of passenger side without changing the air flow temperature of driver side.
- When the air outlet is set to DEF, the temperature control dial (passenger side) is inoperative.
- The set temperature is changed by operating the temperature control dial even if the A/C system is OFF condition. However, the set temperature is not displayed when the display is turned OFF.

Fan Control Dial

- The fan speed can be selected from the range of 1-7 freely by operating the fan control dial.
- The set temperature, air outlets, and fan speed are displayed on the A/C display by turning the fan control dial clockwise from the condition that the A/C system is OFF.
- The “AUTO” on the A/C display turns OFF by operating the fan control dial from the condition that the AUTO switch is ON (automatic control).

A/C Switch

- “A/C OFF” is displayed on the A/C display for several seconds, the A/C switch indicator turns OFF, and the compressor is turned OFF by pressing the A/C switch from the condition that the compressor is ON (automatic control).
- When pressing the A/C switch again, “A/C ON” is displayed on the A/C display for several seconds, the A/C switch indicator turns ON, and the compressor is turned to ON.

DEF Switch

- The “AUTO” on the A/C display turns OFF and the DEF switch indicator turns ON by pressing the DEF switch from the condition that the AUTO switch is ON (automatic control).
- The set temperature, air outlets (DEF), and fan speed are displayed on the A/C display by pressing the DEF switch from the condition that the A/C system is OFF. The DEF switch indicator and the A/C switch indicator illuminate.
- Basically, pressing the DEF switch fixes the air outlet to DEF and the air inlets to fresh air intake. The FRE switch indicator illuminates, the compressor is turned to ON, and the air flow is set to automatic control. (If the condition before pressing the DEF switch is the air flow manual control, it is not set to the automatic control.)
- When pressing the DEF switch again, it returns to the condition that existed before pressing the switch. However, the air flow manual control is given priority to when the DEF switch is pressed again since the fan control dial is operated after the DEF switch is pressed once. In addition, the air flow manual selection is given priority when the DEF switch is pressed again since the fan switch is operated after starting with the DEF switch from the OFF condition. The air outlets and the air inlets are controlled automatically and the compressor is still ON.

AUTO Switch

- The AUTO switch indicator turns ON. “AUTO”, set temperature (driver side and passenger side), fan speed, and air outlets are displayed on the A/C display.
- The air outlets, air inlets, fan speed, and air flow temperature are controlled automatically. (They are set to the automatic control only when the air inlets are not fixed to recirculation and fresh air intake.)

DUAL Switch

- When the DUAL switch indicator is ON, the driver side and passenger side, temperature can each be set independently.
- When the DUAL switch indicator is OFF, the driver side setting temperature is applied to both sides.
- The left and right ventilation temperature separately control is cancelled by turning the DEF switch to ON.

REC Switch

- When pressing the REC switch, the REC switch indicator illuminates and the air inlet is fixed to recirculation.
- The REC switch indicator blink twice and the system is switched to the automatic control when pressing the FRE switch or the REC switch for approximately 2 seconds or more. In addition, the condition of the air inlet is displayed at the automatic control.
- When FRE switch indicator turned ON, shifting mode position to D/F or DEF, or when compressor is turned from ON to OFF, REC switch is automatically turned OFF (fixed to fresh air intake). Recirculation mode can be re-entered by pressing REC switch again, and then compressor is turned ON (Except D/F or DEF position).

FRE Switch

- When pressing the FRE switch, the FRE switch indicator illuminates and the air inlet is fixed to fresh air intake.
- The REC switch indicator blink twice and the system is switched to the automatic control when pressing the FRE switch or the REC switch for approximately 2 seconds or more. In addition, the condition of the air inlet is displayed at the automatic control.

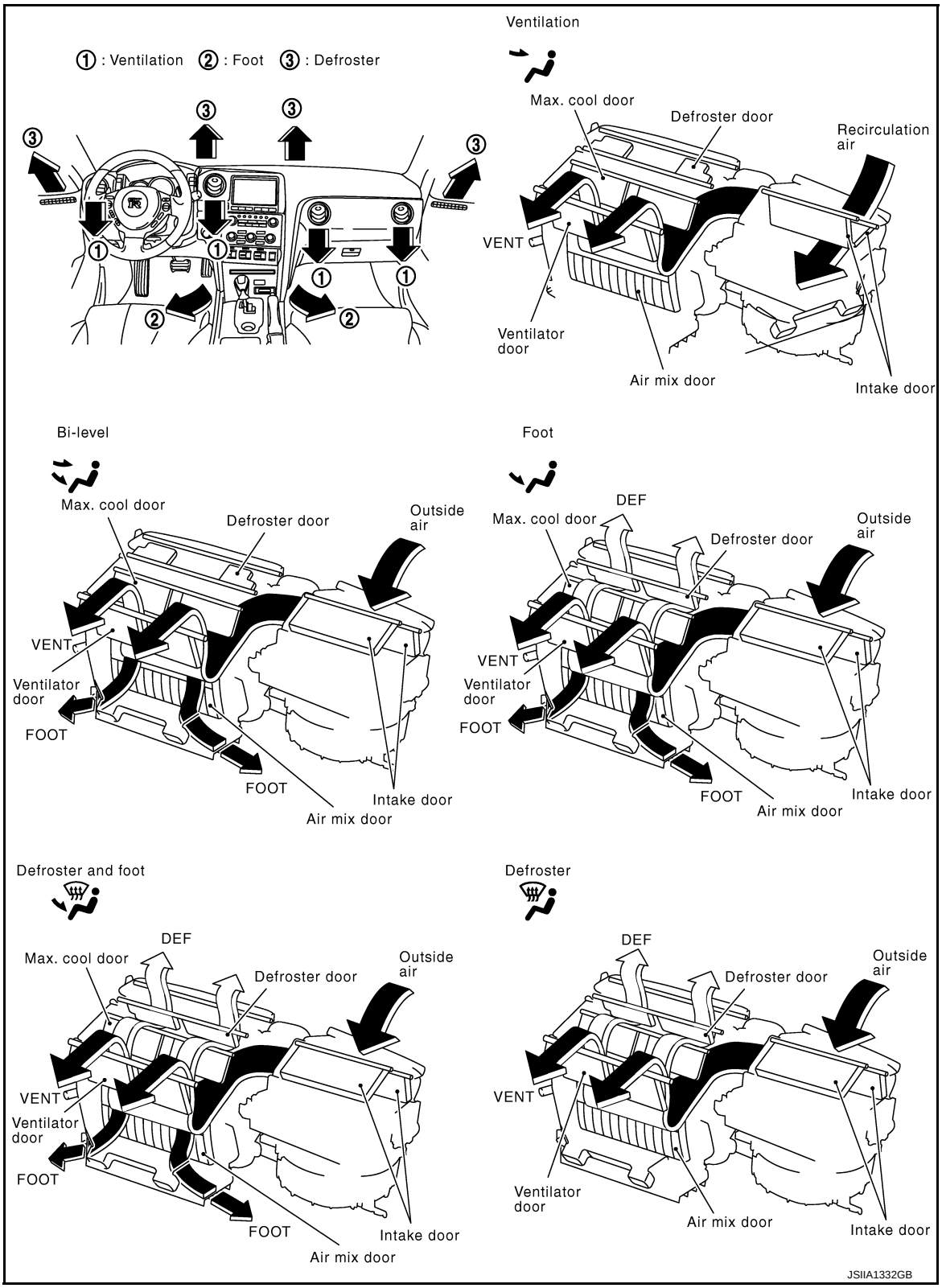
Rear Window Defogger Switch

- The “Rear defrost ON” is displayed on the A/C display when pressing the rear window defogger switch. The indicator of rear window defogger switch illuminates, and then the rear window defogger is turned ON.
- The “Rear defrost OFF” is displayed on the A/C display when pressing the rear window defogger switch again. The indicator of rear window defogger switch turns OFF, and then the rear window defogger is turned OFF.
- Refer to DEF-3, "System Description" for details.

OFF Switch

- The blower motor and compressor are turned OFF when pressing the OFF switch. At this time, the switch condition just before OFF is recorded on the set temperature and the left and right ventilation temperature separately control mode.
- Fix the air inlet to fresh air intake. However, when the REC switch was ON, fix it to recirculation. Inlet status is displayed by indicator when air conditioner system is OFF.
- Set the air outlet to foot position. (The air outlet can be switched with the MODE switch.)

DISCHARGE AIR FLOW



AIR DISTRIBUTION

Discharge air flow				
Mode position indication	Condition	Air outlet/distribution		
		VENT	FOOT	DEF
	DUAL switch: OFF	100%	—	—
		63%	37%	—
		15%	57%	28%
		10%	43%	47%
		13%	—	87%

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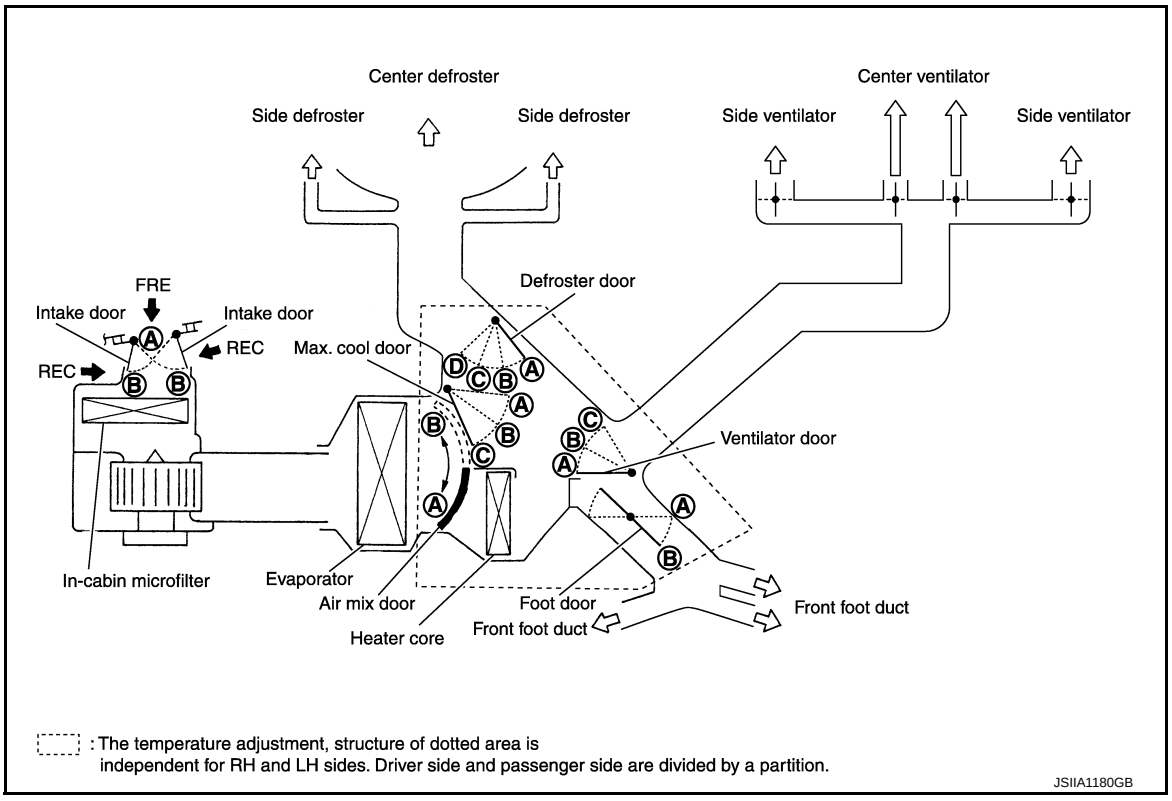
SWITCHES AND THEIR CONTROL FUNCTION



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Position or switch / Door	DUAL switch	MODE switch				DEF switch		AUTO switch	FRE switch	REC switch	Temperature control dial (Driver side)	Temperature control dial (Passenger side)	OFF switch
		VENT	B/L	FOOT	D/F	ON	OFF						
		MODE											
	-●-					-●-	○	-●-	-●-	-●-	18°C (60°F) ⇔ 32°C (90°F)	18°C (60°F) ⇔ 32°C (90°F)	
Ventilator door	—	Ⓐ	Ⓑ	Ⓒ	Ⓒ	Ⓒ	—	AUTO	—		—	—	Ⓒ
Max.cool door	—	Ⓐ	Ⓑ	Ⓒ	Ⓒ	Ⓒ			—				Ⓒ
Defroster door	—	Ⓓ	Ⓓ	Ⓒ	Ⓑ	Ⓐ			—				Ⓒ
Foot door	—	Ⓑ	Ⓑ	Ⓑ	Ⓑ	Ⓐ			—		—	—	Ⓑ
Intake door	—	—			Ⓑ	Ⓑ			Ⓑ* AUTO	Ⓐ* AUTO	—	—	Ⓑ
Air mix door (Driver side)	—	—				—			—		Ⓐ AUTO Ⓑ	—	—
Air mix door (Passenger side)	ON	—				—			—		—	Ⓐ AUTO Ⓑ	—
	OFF	—				—			—		Ⓐ AUTO Ⓑ	—	

*:Inlet status is displayed by LED when activating automatic control.

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Component Parts Location

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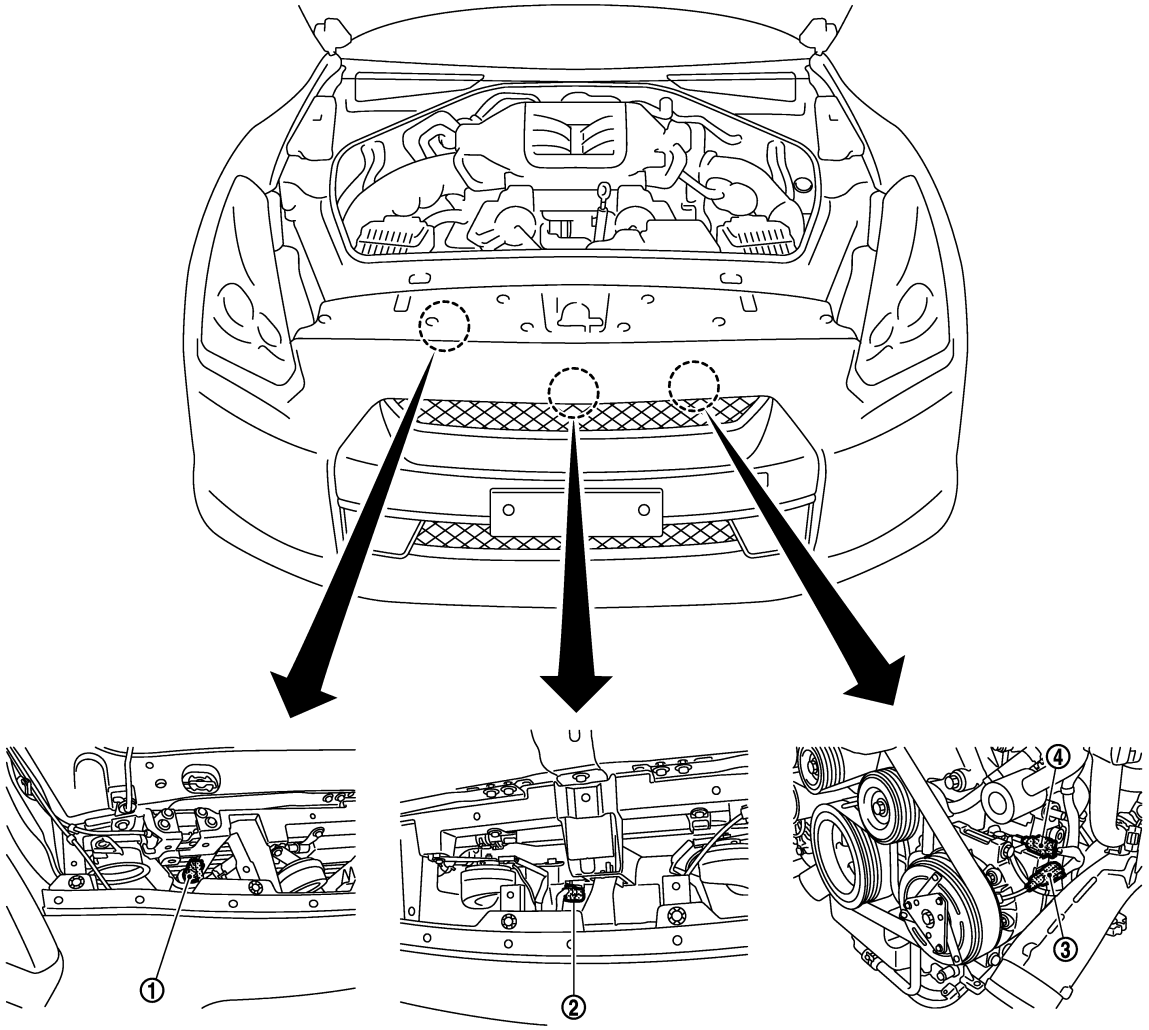
ENGINE COMPARTMENT



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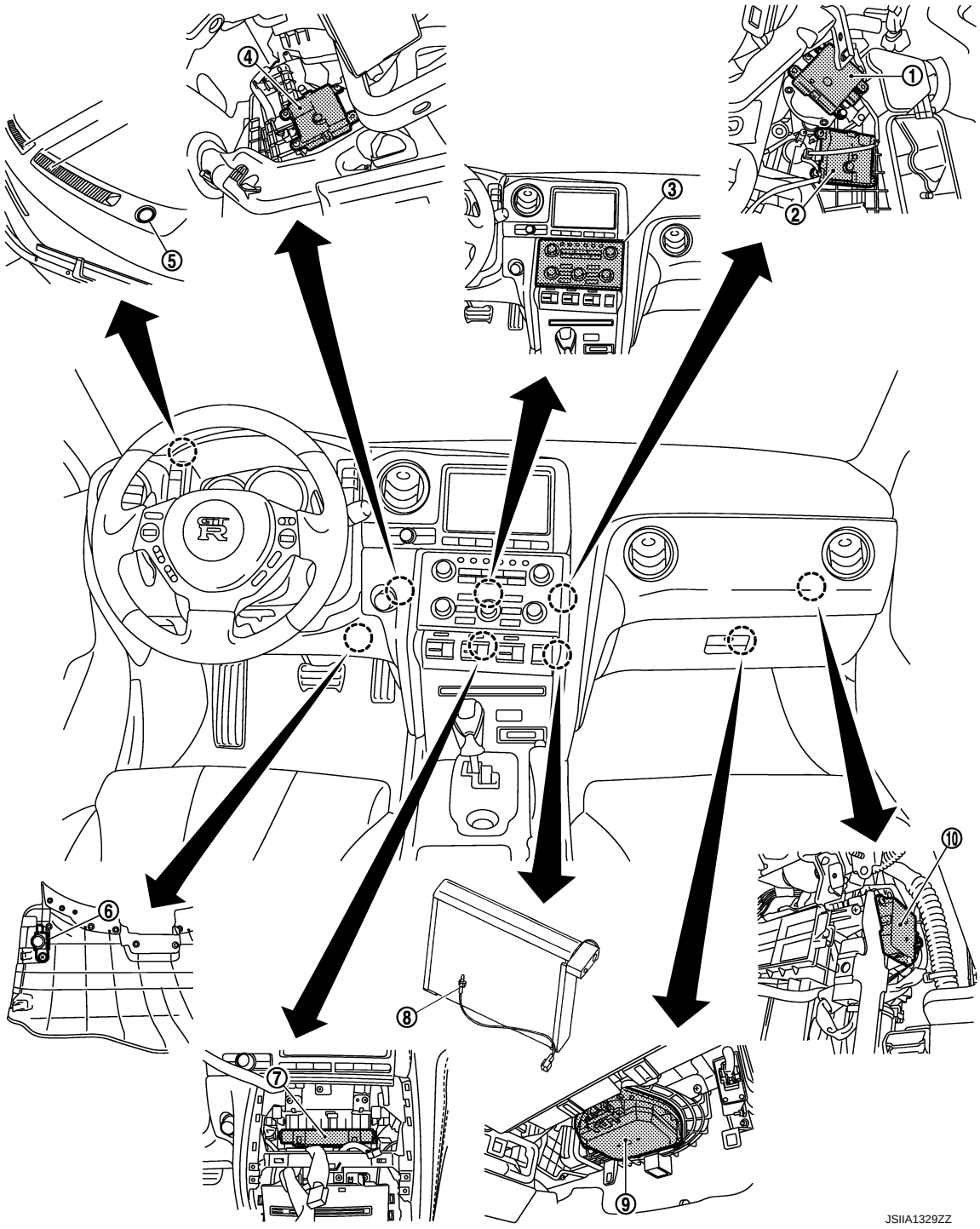
1. Refrigerant pressure sensor
2. Ambient sensor
3. Magnetic clutch connector
4. ECV connector

PASSENGER COMPARTMENT



1. Mode door motor
2. Air mix door motor (passenger side)
3. Preset switch
4. Air mix door motor (driver side)
5. Sunload sensor
6. In-vehicle sensor
7. A/C auto amp.
8. Intake sensor
9. Blower motor
10. Intake door motor

Component Description

INFOID:0000000009163972

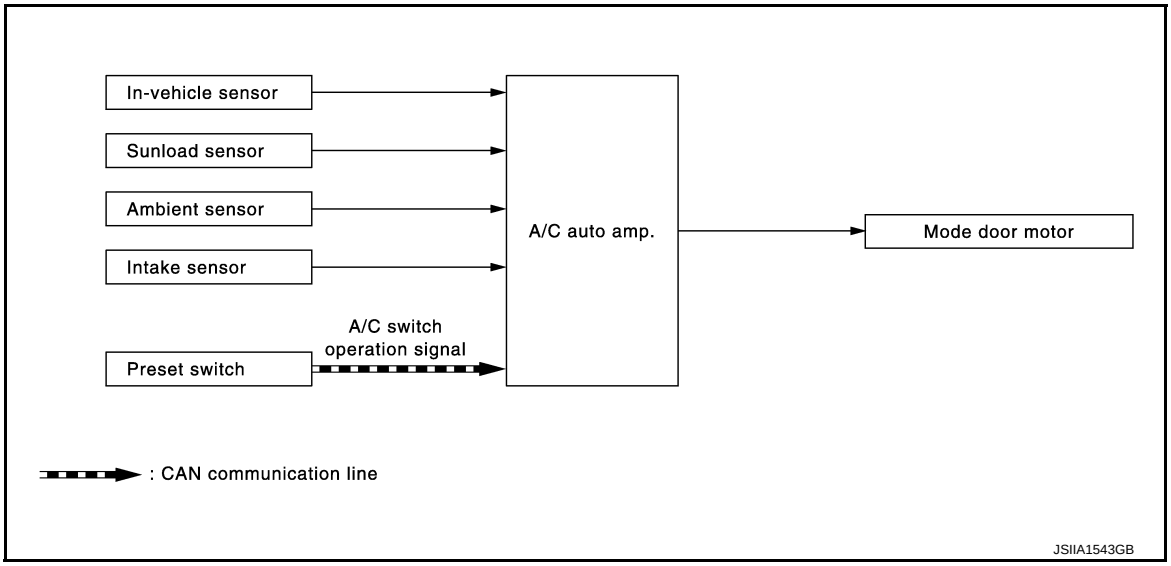
Component	Reference
Air mix door motor (driver side)	—
Air mix door motor (passenger side)	—

Component	Reference
Ambient sensor	—
A/C auto amp.	—
Blower motor	—
Magnet clutch	—
ECV	—
Intake door motor	—
Intake sensor	—
In-vehicle sensor	—
Mode door motor	—
Preset switch	The preset switch integrated with the controller for A/C operation and AV switch is installed to the center of the instrument panel. The operation and the display data of the preset switch are communicated with the A/C auto amp. through AV control unit via CAN communication.
Refrigerant pressure sensor	—
Sunload sensor	—

MODE DOOR CONTROL SYSTEM

System Diagram

INFOID:0000000009163973



System Description

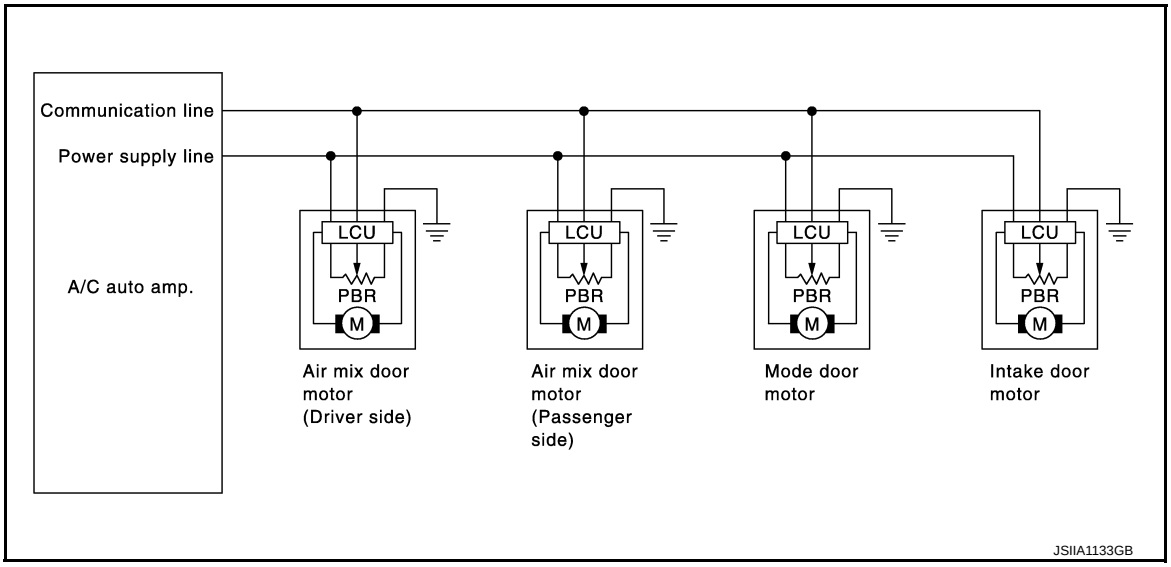
INFOID:0000000009163974

The mode door is automatically controlled by the temperature setting, ambient temperature, in-vehicle temperature, intake temperature and amount of sunload.

SYSTEM OPERATION

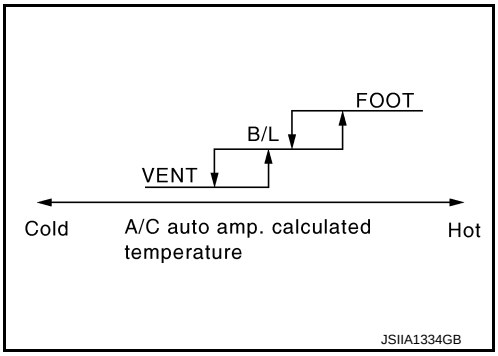
- The A/C auto amp. receives data from each of the sensors.
- The A/C auto amp. sends air mix door, mode door and intake door opening angle data to the air mix door motor LCUs, mode door motor LCU and intake door motor LCU.
- The air mix door motors, mode door motor and intake door motor read their respective signals according to the address signal. Opening angle indication signals received from the A/C auto amp. and each of the motor position sensors are compared by the LCUs in each door motor with the existing decision and opening angles.
- Subsequently, HOT/COLD, DEF/VENT and FRE/REC operation is selected. The new selection data are returned to the A/C auto amp.

Door Motor Circuit



MODE DOOR CONTROL SPECIFICATION

- The air outlet can be selected manually by pressing the MODE switch or the DEF switch of preset switch. The air outlet can be fixed.
- The automatic control by A/C auto amp. is available by pressing the AUTO switch.
- Select the mode door position (VENT, B/L, FOOT, D/F) according to the air flow temperature calculated by the A/C auto amp. based on the target air mix door position and sunload amount at the air outlet automatic control.



AIR MIX DOOR CONTROL SYSTEM

System Diagram

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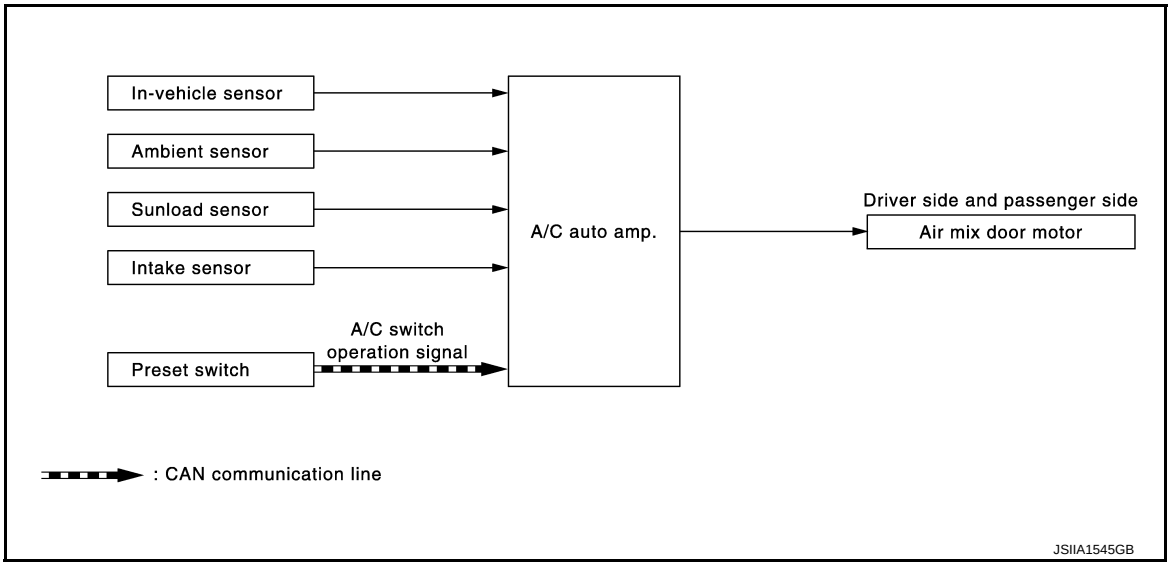


System Description

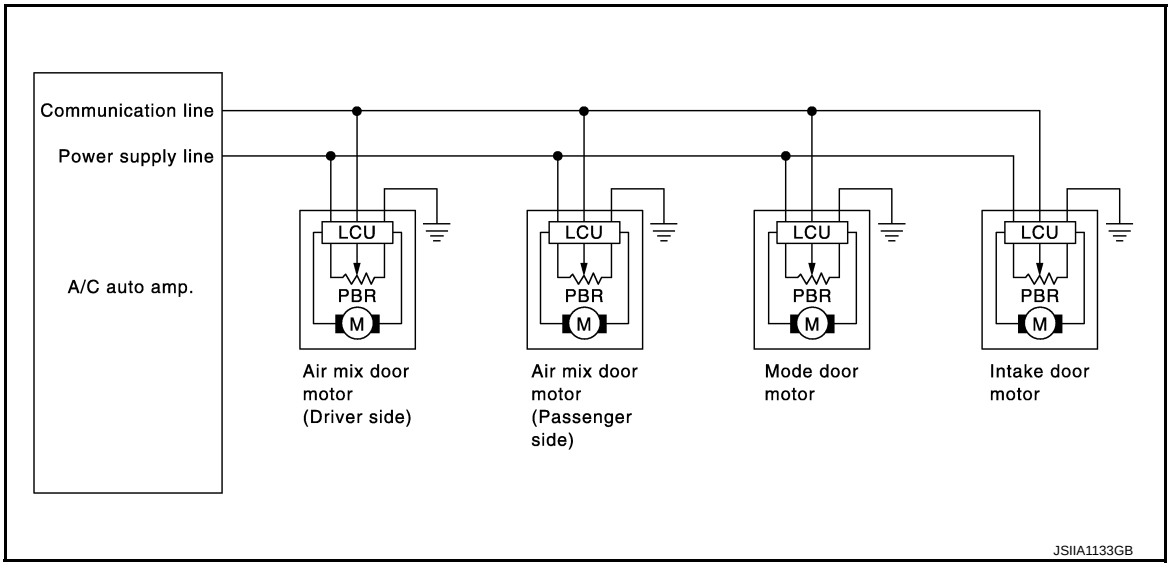
INFOID:0000000009163976

The air mix door is automatically controlled so that in-vehicle temperature is maintained at a predetermined value by the temperature setting, ambient temperature, in-vehicle temperature and amount of sunload.

SYSTEM OPERATION

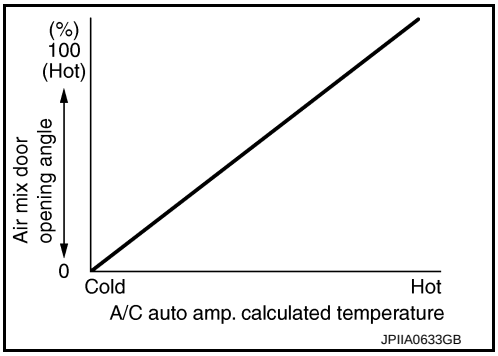
- The A/C auto amp. receives data from each of the sensors.
- The A/C auto amp. sends air mix doors, mode door and intake door opening angle data to the air mix door motor LCUs, mode door motor LCU and intake door motor LCU.
- The air mix door motors, mode door motor and intake door motor read their respective signals according to the address signal. Opening angle indication signals received from the A/C auto amp. and each of the motor position sensors are compared by the LCUs in each door motor with the existing decision and opening angles.
- Subsequently, HOT/COLD, DEF/VENT and FRE/REC operation is selected. The new selection data are returned to the A/C auto amp.

Door Motor Circuit



AIR MIX DOOR CONTROL SPECIFICATION

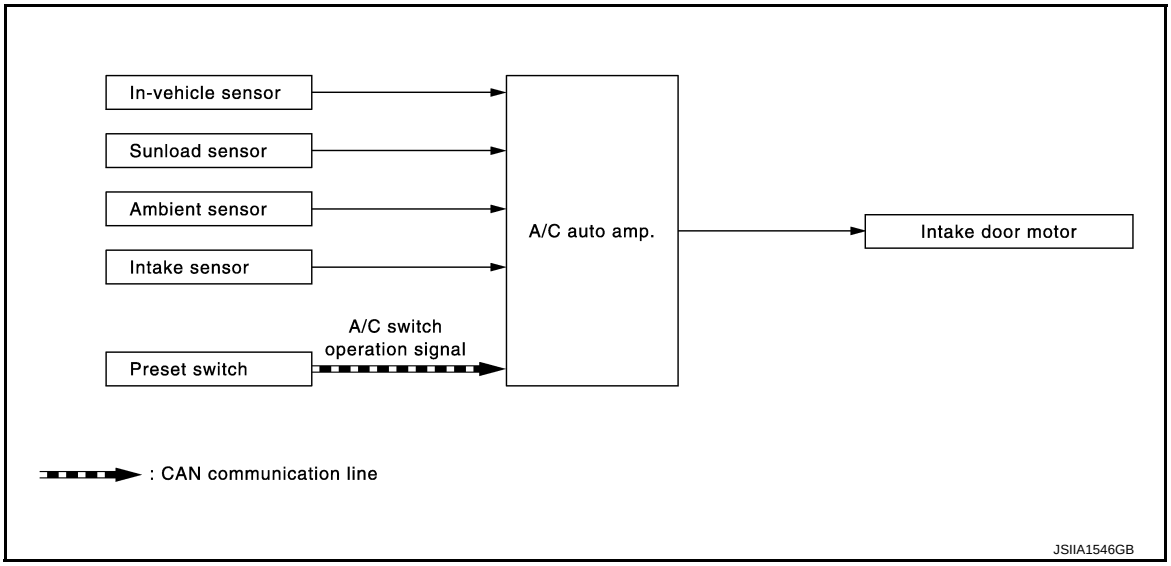
- The A/C auto amp. always automatically controls the temperature regardless of the operating condition of air conditioner when the ignition switch is ON.
- The A/C auto amp. performs the set temperature correction when the target temperature is set with the temperature control dial of the preset switch and decides the air mix door position.
- Based on the target air mix door position and the current air mix door position, it controls the air mixture door to always become the most suitable air mix door position.
- The air mix door is fixed to the full-cold position when the set temperature is set to 18.0°C (60°F) and it is fixed to the full-hot position when the set temperature is set to 32.0°C (90°F).



INTAKE DOOR CONTROL SYSTEM

System Diagram

INFOID:0000000009163977



System Description

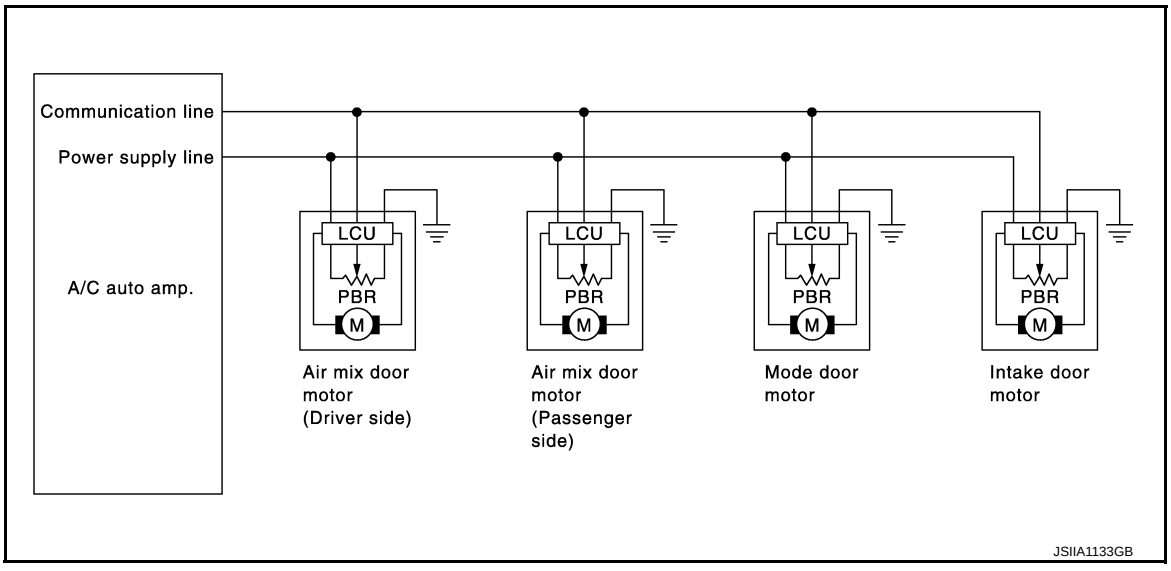
INFOID:0000000009163978

The intake doors are automatically controlled by the temperature setting, ambient temperature, in-vehicle temperature, intake temperature, amount of sunload and ON/OFF operation of the compressor.

SYSTEM OPERATION

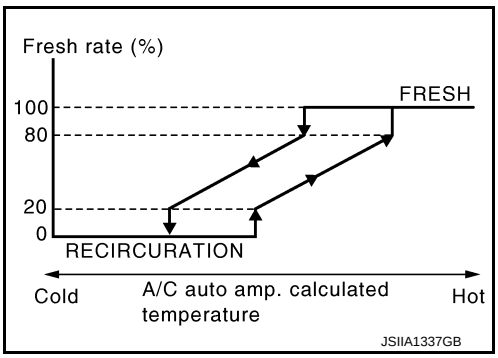
- The A/C auto amp. receives data from each of the sensors.
- The A/C auto amp. sends air mix door, mode door and intake door opening angle data to the air mix door motor LCUs, mode door motor LCU and intake door motor LCU.
- The air mix door motors, mode door motor and intake door motor read their respective signals according to the address signal. Opening angle indication signals received from the A/C auto amp. and each of the motor position sensors are compared by the LCUs in each door motor with the existing decision and opening angles.
- Subsequently, HOT/COLD, DEF/VENT and FRE/REC operation is selected. The new selection data are returned to the A/C auto amp.
- The intake door control judges intake door position based on the ambient temperature, the intake air temperature and the in-vehicle temperature. When shifting mode position D/F, when the DEF or OFF switches are pressed, or when A/C switch is OFF, the A/C auto amp. sets the intake door at the FRE position.

Door Motor Circuit



INTAKE DOOR CONTROL SPECIFICATION

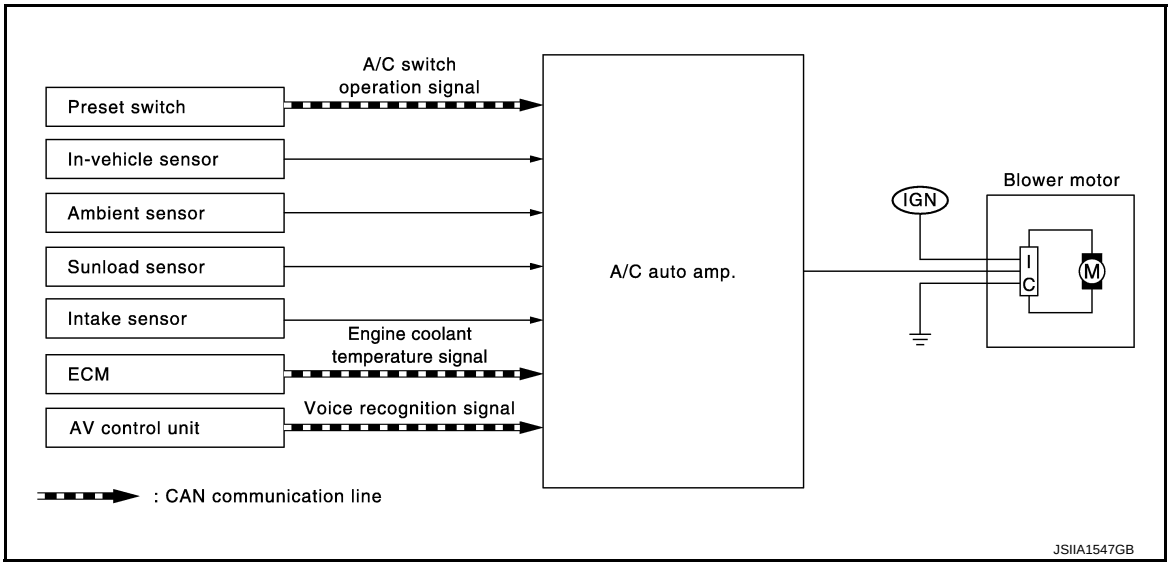
- Intake door position is basically fixed at FRE when FRE indicator of FRE switch is ON or DEF switch is ON.
- Intake door position is basically fixed at REC when REC indicator of REC switch is ON.
- Intake door automatic control selects FRE, 20 – 80% FRE, or REC depending on a target air mix door opening angle, based on in-vehicle temperature, ambient temperature, and sunload amount.



BLOWER MOTOR CONTROL SYSTEM

System Diagram

INFOID:0000000009163979



System Description

INFOID:0000000009163980

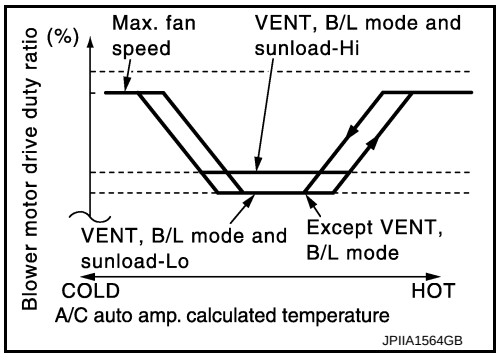
SYSTEM OPERATION

- For air flow, the manual selection (1-7 speed) with the fan control dial has priority.
- If the AUTO switch is pressed or if the DEF switch is pressed while in the OFF condition, it changes to the automatic control by A/C auto amp.
- When increasing the air flow, it changes the duty ratio of blower fan motor drive signal to prevent the air flow from suddenly increasing.
- There are the following types of air flow control: starting air flow control, starting air flow control at low coolant temperature, starting air flow control at high interior air temperature, air flow control at door motor operation, and air flow control at voice recognition in addition to manual control, normal automatic air flow control.

AIR FLOW CONTROL

Automatic Air Flow Control

- When the target temperature is set by the temperature control dial of preset switch, the A/C auto amp. performs the calculation and decides the target air flow according to the signal from each sensor.
- The A/C auto amp. changes the duty ratio of the blower motor control signal and controls the air flow continuously so that the air flow becomes the target air flow.
- The minimum air flow will change according to the sunload when the air discharge outlet is VENT or B/L.



Starting Air Flow Control

- When starting the automatic control of air flow, the system gradually increases the duty ratio of the blower motor control signal to prevent too much air from blowing.
- The time period from when the air flow changes from LOW to HI is approximately 8 seconds.
- It becomes the starting air flow control at low coolant temperature according to the calculation result of auto amp and engine coolant temperature [approximately 56°C (133°F) or less] during the automatic air flow control.

- Do not perform the starting air flow control when the air discharge outlet is set to DEF.

Low Coolant Temperature Starting Control

- It stops the blower motor for approximately 150 seconds at the maximum according to the target air mix door position based on the calculation result of A/C auto amp. and engine coolant temperature [approximately 56°C (133°F) or less] when starting the automatic air flow control. Then, it increases the duty ratios gently so as not to blow cold air underfoot.
- Change the increase rate of the duty ratio to the normal automatic air flow control when the engine coolant temperature is approximately 56°C (133°F) or more in the starting air flow control at low coolant temperature.

High In-vehicle Temperature Starting Control

Turn the blower motor to OFF while the evaporator is cooled by the refrigerant (approximately 3 seconds) to prevent the hot air from blowing out when the evaporator temperature is high [approximately 35°C (95°F) or more of intake sensor detection temperature] at starting the blower motor.

Fan Speed Control at Door Motor Operation

When the mode door motor operated at the air flow automatic control, it decreases the air flow of the blower motor once and controls it so that the mode door motor moves smoothly.

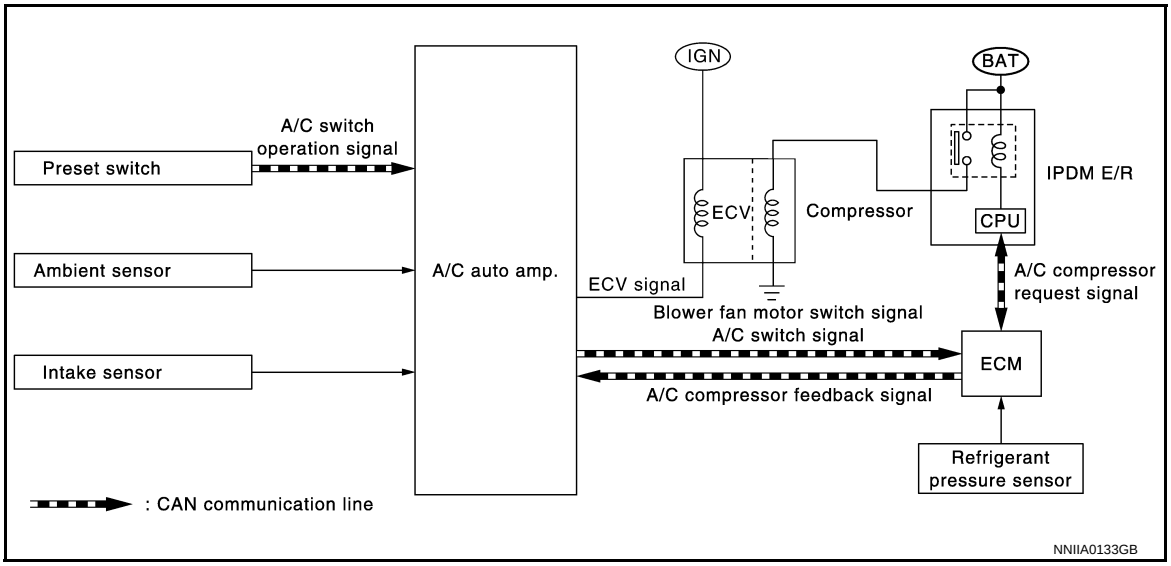
Fan Speed Control at Voice Recognition

When the voice command switch is operated at the air flow automatic control, it decreases the air flow of the blower motor once and controls it so as not to disturb the voice recognition function. In addition, this control continues while the voice recognition function is operating.

MAGNET CLUTCH CONTROL SYSTEM

System Diagram

INFOID:0000000009163981



System Description

INFOID:0000000009163982

SYSTEM OPERATION

- When A/C switch, AUTO switch, DEF switch is pressed or when shifting mode position D/F, A/C auto amp. transmits A/C switch signal and blower fan motor switch signal to ECM, via CAN communication.
- ECM judges whether compressor can be turned ON, based on each sensor status (refrigerant-pressure sensor signal, throttle angle, etc.). If it judges compressor can be turned ON, it sends A/C compressor request signal to IPDM E/R, via CAN communication.
- Upon receipt of A/C compressor request signal from ECM, IPDM E/R turns A/C relay ON to operate compressor.
- When sending A/C compressor request signal to IPDM E/R via CAN communication line, ECM simultaneously sends A/C compressor feedback signal to A/C auto amp. via CAN communication line.
- ECM sends A/C compressor feedback signal to A/C auto amp., then, uses input A/C compressor feedback signal to control air inlet.

COMPRESSOR PROTECTION CONTROL

Compressor Protection Control at Pressure Malfunction

The high-pressure side pressure detected by the refrigerant pressure sensor is approximately 3,120 kPa (31.8 kg/cm^2, 452 psi) or more when the engine speed is less than 1,500 rpm. It is approximately 2,740 kPa (27.9 kg/cm^2, 397 psi) when the engine speed is 1,500 rpm or more. When it is approximately 120 kPa (1.2 kg/cm^2, 17 psi) or less, ECM turns the A/C relay to OFF and stops the compressor.

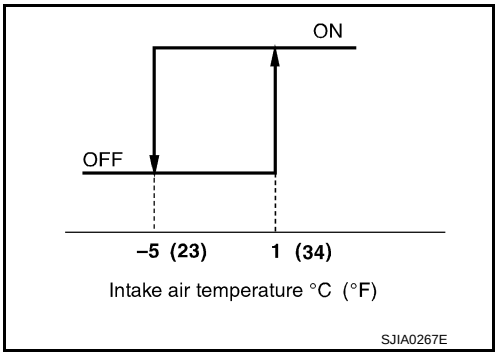
Compressor Oil Circulation Control

When the engine coolant temperature is approximately 56°C (133°F) or less, it turns the compressor to ON at the engine start for approximately 6 seconds and circulates the compressor oil.

Low Temperature Protection Control

It turns the A/C relay OFF and stops the compressor by the signal from A/C auto amp. according to the evaporator passing air temperature detected by the intake sensor.

It turns the compressor to OFF when the evaporator passing air temperature becomes –5°C (23°F) or less. In addition, it turns the compressor to ON when the evaporator passing air temperature becomes 1°C (34°F) or more.



Operating Rate Control
It controls the operating rate of the compressor by the ambient temperature when the set temperature is set to any condition other than the full cold or when the air outlet is “VENT”, “B/L”, or “FOOT”.

Air Conditioner Cut Control
ECM turns the A/C relay to OFF and stops the compressor at engine high load.

Fail-safe Control
When a communication malfunction between A/C auto amp. and AV control unit and preset switch is continuing for approximately 30 seconds or more, the A/C auto amp. automatically controls air outlet and fan speed, fixes the air inlet to fresh air intake, maintains the set temperature data before the communication malfunction occurred, and turns the compressor to ON. Turn the compressor to ON with the following conditions if the condition before the communication error occurs was A/C switch OFF.

CAN COMMUNICATION SYSTEM

Description

INFOID:0000000009163983

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on board multiplex communication line with high data communication speed and excellent error detection ability. A modern vehicle is equipped with many ECMs, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, 2 control units are connected with 2 communication lines (CAN H-line, CAN L-line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. Refer to LAN-11, "CAN System Specification Chart".

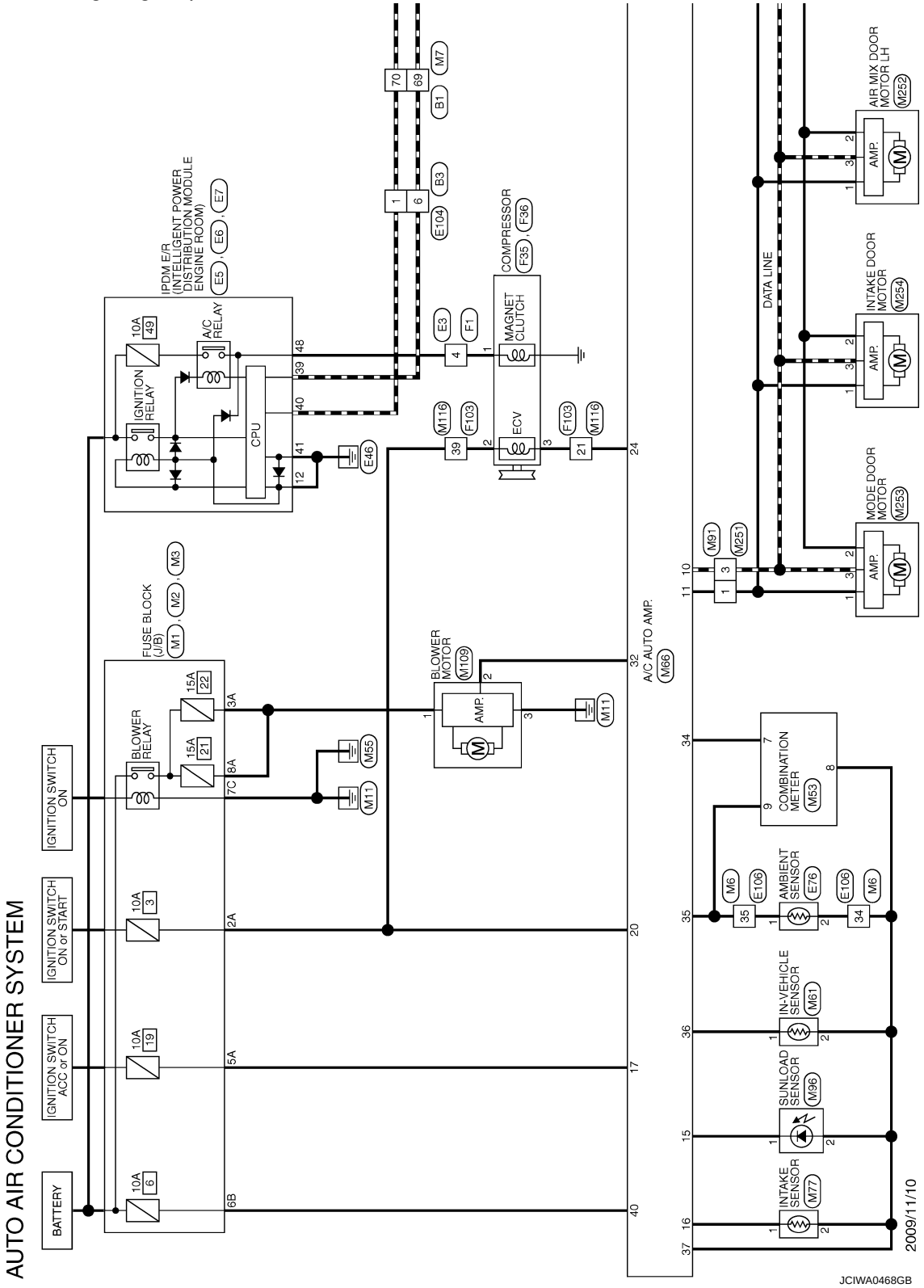
ECU DIAGNOSIS INFORMATION

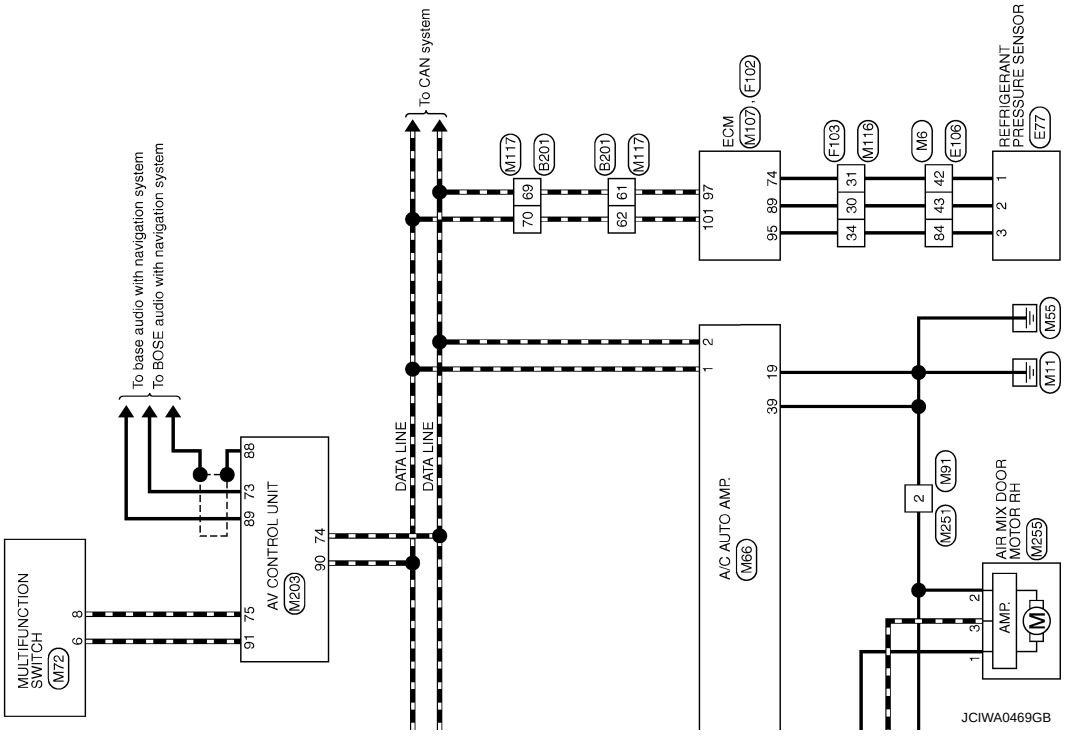
A/C AUTO AMP.

Wiring Diagram - AIR CONDITIONER CONTROL SYSTEM -

INFOID:0000000009164035

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".





Fail-safe

INFOID:0000000009164036

FAIL-SAFE FUNCTION

When a communication malfunction between A/C auto amp., and AV control unit and preset switch continued for approximately 30 seconds or more, control the air conditioner under the following conditions.

Compressor	**: ON**
Air outlet	**: AUTO**
Air inlet	**: FRE (Fresh air intake)**
Fan speed	**: AUTO**
Preset temperature	**: Setting before communication error occurs**

PRECAUTION

PRECAUTIONS

Precaution for Working Range at a Regular Dealership

INFOID:0000000009196925

CAUTION:
The service items unmentioned on this manual are recommended to be performed by a GT-R certified NISSAN dealer. Because those service items require special equipment and a GT-R certified technical staff who completed special training.

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000009164048

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:
Always observe the following items for preventing accidental activation.
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:
Always observe the following items for preventing accidental activation.
- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution for Battery Service

INFOID:0000000009164049

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

General Precautions

INFOID:0000000009164050

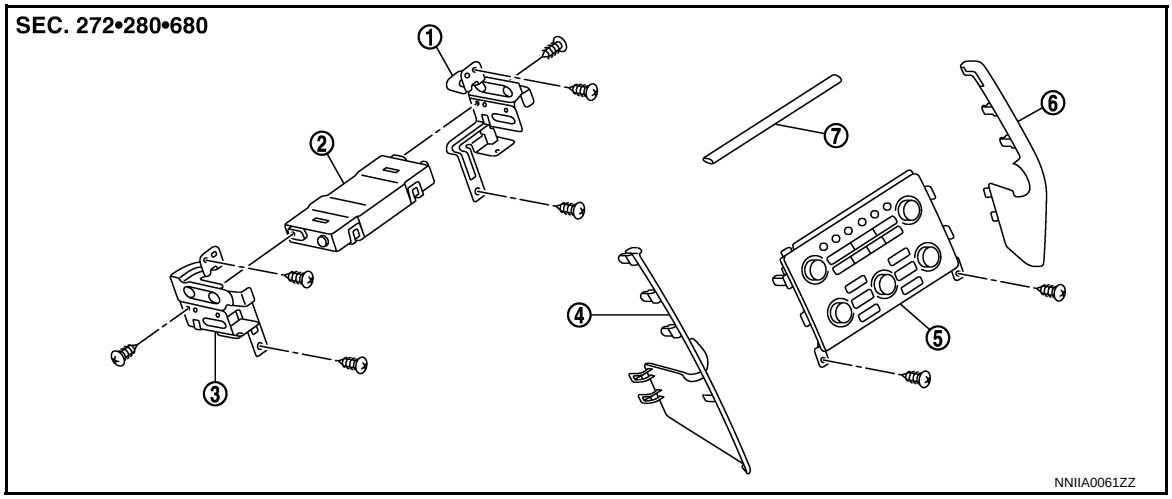
CAUTION:
After finishing servicing, check that all the tools and waste are stored in a customary place.

REMOVAL AND INSTALLATION

PRESET SWITCH

Exploded View

INFOID:0000000009164051



1. A/C auto amp. bracket RH
2. A/C auto amp.
3. A/C auto amp. bracket LH
4. Instrument panel garnish LH
5. Preset switch
6. Instrument panel garnish RH
7. Instrument panel garnish

Removal and Installation

INFOID:0000000009164052

REMOVAL

Refer to AV-87, "Exploded View" (BASE AUDIO WITH NAVIGATION) or AV-180, "Exploded View" (BOSE AUDIO WITH NAVIGATION).

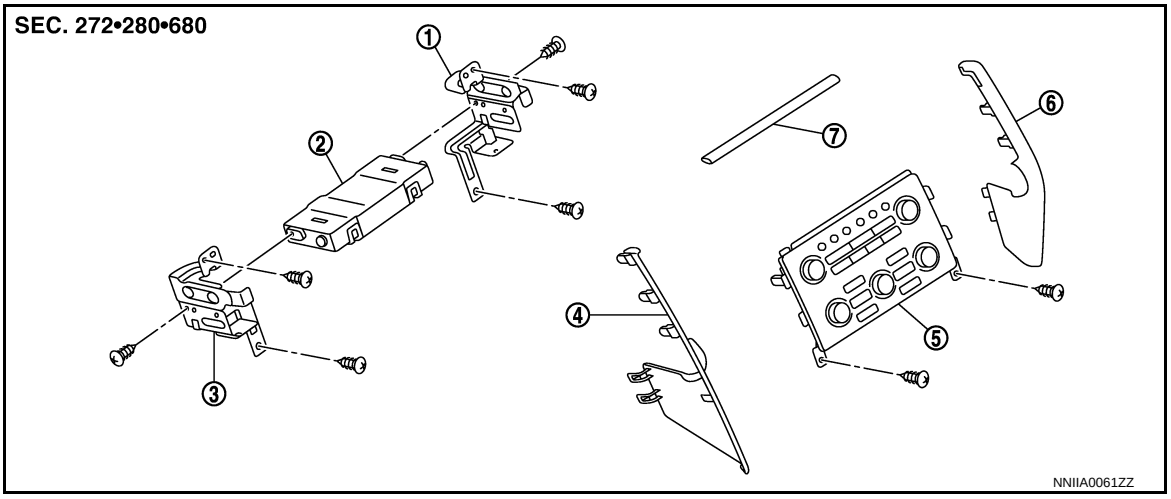
INSTALLATION

Installation is basically the reverse order of removal.

A/C AUTO AMP.

Exploded View

INFOID:0000000009164053



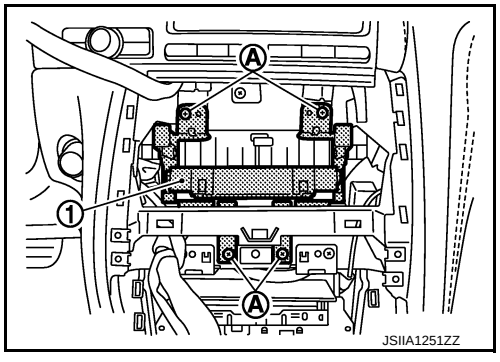
1. A/C auto amp. bracket RH
2. A/C auto amp.
3. A/C auto amp. bracket LH
4. Instrument panel garnish LH
5. Preset switch
6. Instrument panel garnish RH
7. Instrument panel garnish

Removal and Installation

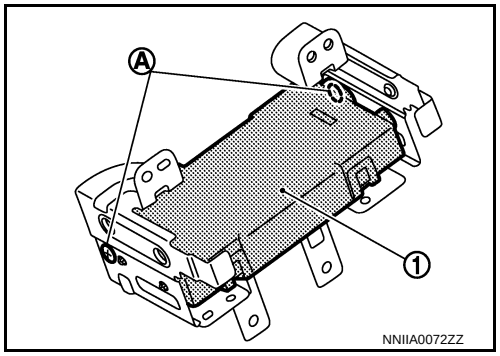
INFOID:0000000009164054

REMOVAL

1. Remove preset switch. Refer to AV-87, "Exploded View" (BASE AUDIO WITH NAVIGATION) or AV-180, "Exploded View" (BOSE AUDIO WITH NAVIGATION).
2. Remove set-up switch assembly. Refer to IP-12, "Exploded View".
3. Remove cluster lid C (lower). Refer to IP-12, "Exploded View".
4. Remove mounting screws (A).
5. Disconnect A/C auto amp. harness connector, and then remove A/C auto amp. (1) together with A/C auto amp. bracket.



6. Remove mounting screws (A), and then remove A/C auto amp. bracket from A/C auto amp. (1).



INSTALLATION

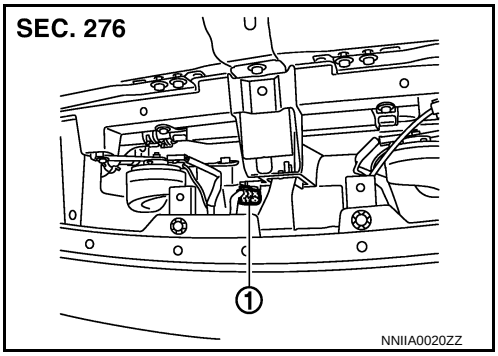
Installation is basically the reverse order of removal.

AMBIENT SENSOR

Exploded View

INFOID:0000000009164055

1. Ambient sensor



Removal and Installation

INFOID:0000000009164056

REMOVAL

1. Remove radiator cover. (This work should be performed by GT-R certified NISSAN dealer.)
2. Disconnect ambient sensor connector, and then remove ambient sensor.

INSTALLATION

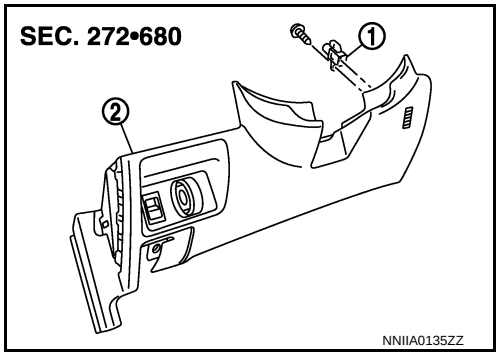
Installation is basically the reverse order of removal.

IN-VEHICLE SENSOR

Exploded View

INFOID:0000000009164057

1. In-vehicle sensor
2. Instrument lower panel (driver)



Removal and Installation

INFOID:0000000009164058

REMOVAL

1. Remove instrument lower panel (driver). Refer to IP-12, "Exploded View".
2. Remove mounting screw of in-vehicle sensor, and then remove in-vehicle sensor from instrument lower panel (driver).

INSTALLATION

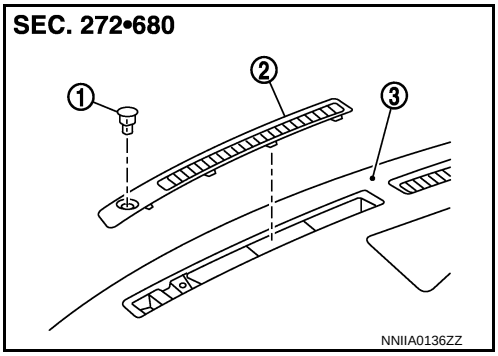
Installation is basically the reverse order of removal.

SUNLOAD SENSOR

Exploded View

INFOID:0000000009164059

1. Sunload sensor
2. Front defroster grille (left)
3. Instrument panel assembly

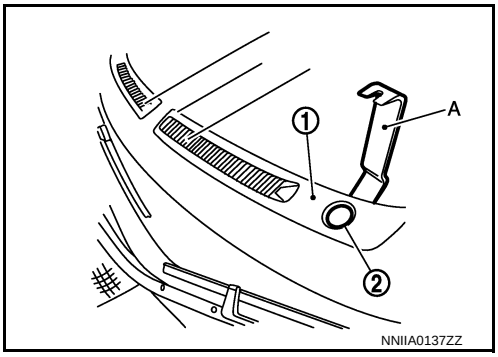


Removal and Installation

INFOID:0000000009164060

REMOVAL

1. Remove front defroster grille (left) (1), using remover tools (A). Refer to VTL-8, "Exploded View".
2. Disconnect sunload sensor connector, and then remove sunload sensor (2).



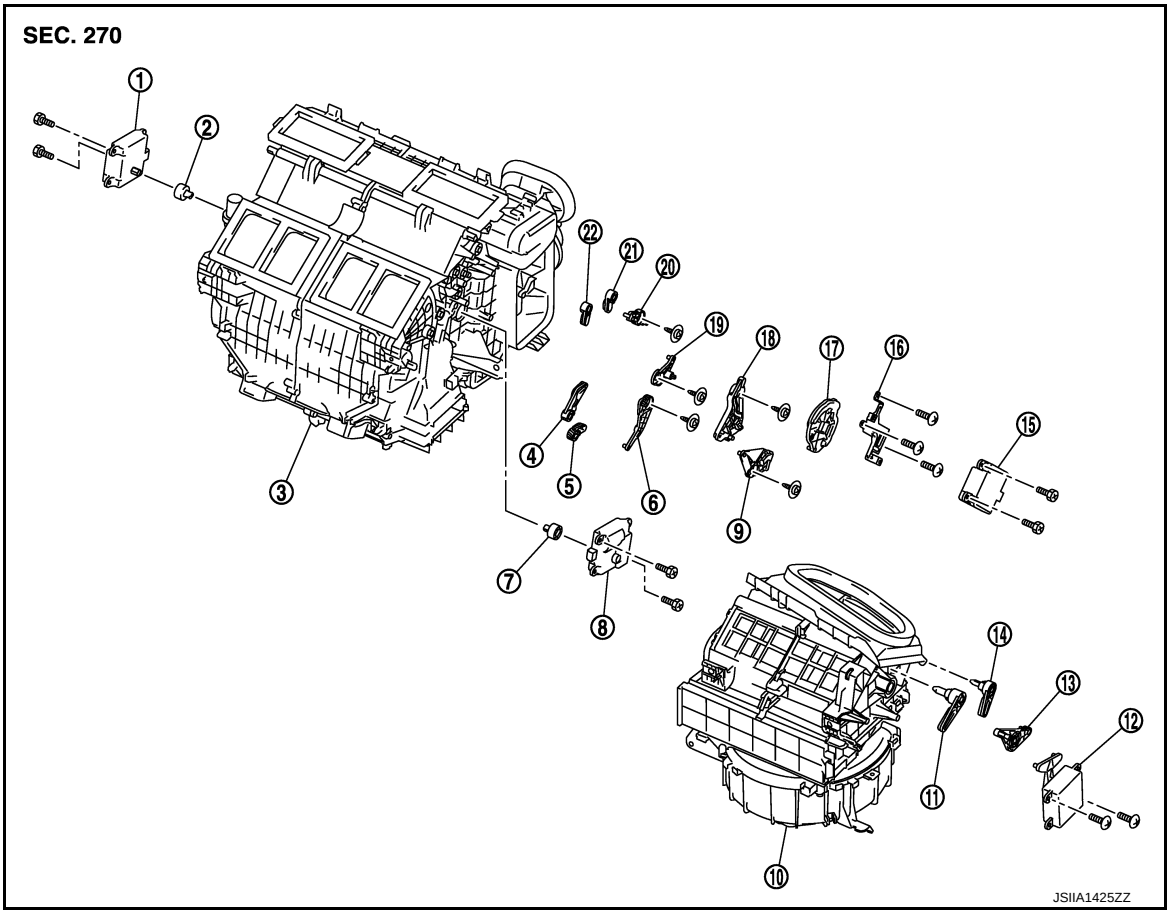
INSTALLATION

Installation is basically the reverse order of removal.

DOOR MOTOR

Exploded View

INFOID:0000000009164065



1. Air mix door motor (driver side)
2. Air mix door motor adapter
3. Heater & cooling unit assembly
4. Ventilator door lever
5. Foot door lever
6. Foot door link
7. Air mix door motor adapter
8. Air mix door motor (passenger side)
9. Ventilator door link
10. Blower unit
11. Intake door lever 2
12. Intake door motor
13. Intake door link
14. Intake door lever 1
15. Mode door motor
16. Mode door motor bracket
17. Main link
18. Main link sub
19. Max.cool door link
20. Defroster door link
21. Max.cool door lever
22. Defroster door lever

INTAKE DOOR MOTOR

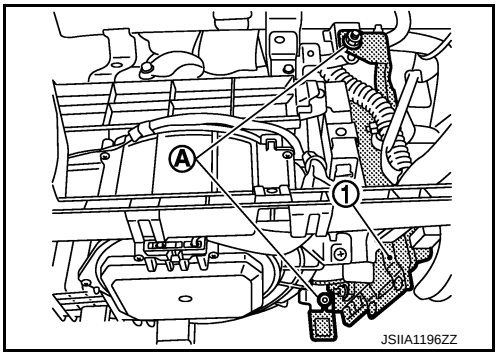
INTAKE DOOR MOTOR : Removal and Installation

INFOID:0000000009164066

REMOVAL

1. Remove instrument panel (assist). Refer to IP-12, "Exploded View".

2. Remove mounting nuts (A).
3. Disconnect ECM connectors, and then remove ECM (1) with bracket attached.



4. Remove power steering control unit. (This work should be performed by GT-R certified NISSAN dealer.).
5. Remove mounting screws of intake door motor, and then remove intake door motor from blower unit.
6. Disconnect intake door motor connector.

INSTALLATION
Installation is basically the reverse order of removal.

MODE DOOR MOTOR

MODE DOOR MOTOR : Removal and Installation

INFOID:0000000009164067

REMOVAL

1. Remove blower unit. Refer to VTL-15, "Exploded View".
2. Remove mounting screws of mode door motor, and then remove mode door motor from heater & cooling unit assembly.
3. Disconnect mode door motor connector.

INSTALLATION
installation is basically the reverse order of removal.

AIR MIX DOOR MOTOR

AIR MIX DOOR MOTOR : Removal and Installation

INFOID:0000000009164068

REMOVAL

Driver Side

1. Set the temperature (driver side) at 18.0°C (60°F).
2. Disconnect the battery cable from the negative terminal.
   CAUTION:
   The angle may be out, when installing the air mix door motor to the air mix door, unless the above 2 procedures are performed.
3. Remove instrument lower panel (driver). Refer to IP-12, "Exploded View".
4. Remove mounting screws of air mix door motor, and then remove air mix door motor.
5. Disconnect air mix door motor connector.

Passenger Side

1. Set the temperature (passenger side) at 18.0°C (60°F).
2. Disconnect the battery cable from the negative terminal.
   CAUTION:
   The angle may be out, when installing the air mix door motor to the air mix door, unless the above 2 procedures are performed.
3. Remove instrument lower panel (assist). Refer to IP-12, "Exploded View".
4. Remove mounting screws of air mix door motor, and then remove air mix door motor.
5. Disconnect air mix door motor connector.

INSTALLATION

Installation is basically the reverse order of removal.