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SECTION HAC

HEATER & AIR CONDITIONING CONTROL SYSTEM C

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[AUTOMATIC AIR CONDITIONER]

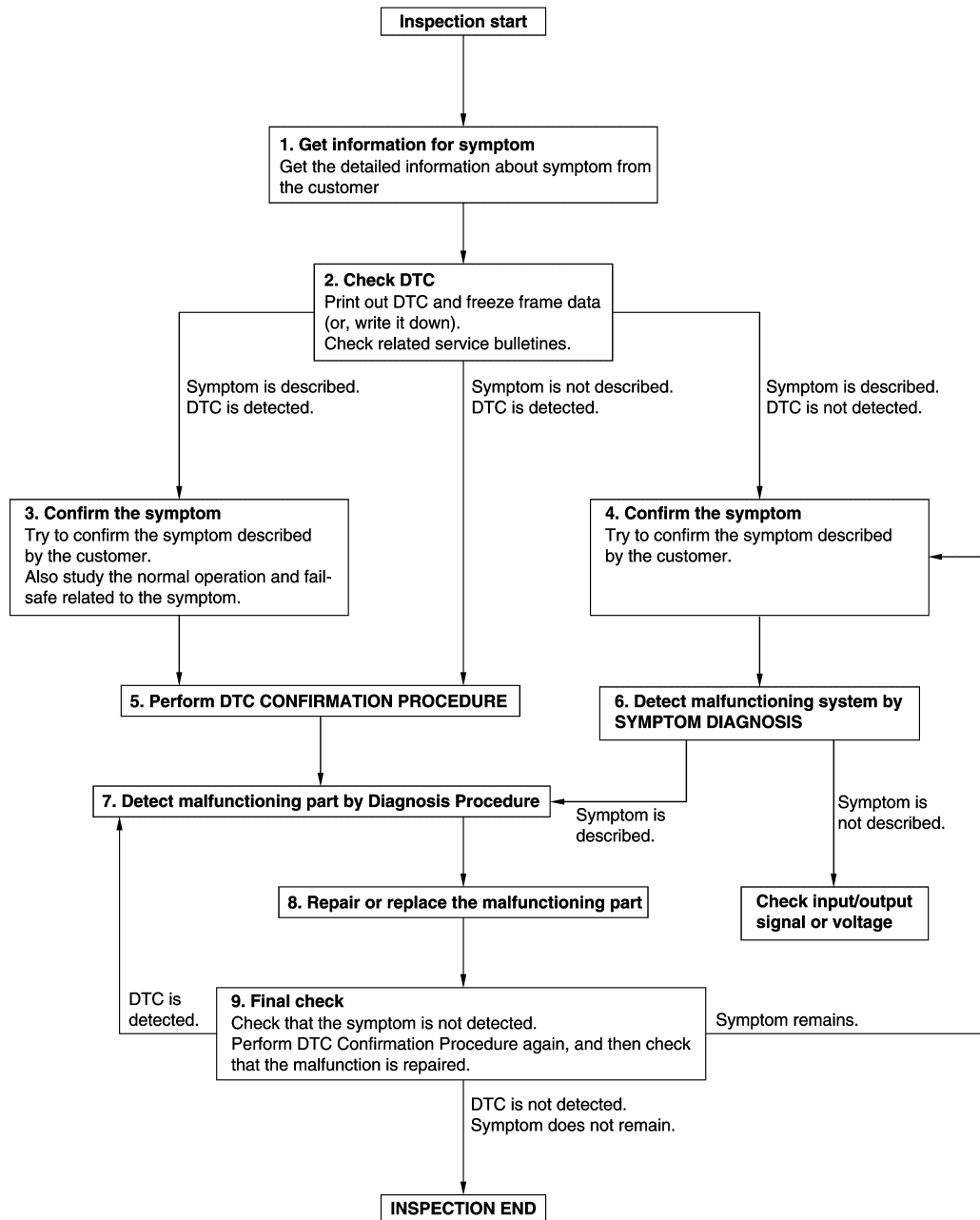
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000011488834

OVERALL SEQUENCE



JMKIA8652GB

DETAILED FLOW

Revision: 2015 June

HAC-4

GT-R

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[AUTOMATIC AIR CONDITIONER]

1.GET INFORMATION FOR SYMPTOM

1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

2.CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.
 - Record DTC and freeze frame data (Print them out using CONSULT.)
 - Erase DTC.
 - Study the relationship between the cause detected by DTC and the symptom described by the customer.
3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.

Symptom is described, DTC is not detected>>GO TO 4.

Symptom is not described, DTC is detected>>GO TO 5.

3.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

Also study the normal operation and fail-safe related to the symptom.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time. If two or more DTCs are detected, refer to DTC INSPECTION PRIORITY CHART, and determine trouble diagnosis order.

NOTE:

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.

If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.

NO >> Check according to [GI-39. "Intermittent Incident"](#).

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

Is the symptom described?

YES >> GO TO 7.

NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

7.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

DIAGNOSIS AND REPAIR WORK FLOW

[AUTOMATIC AIR CONDITIONER]

< BASIC INSPECTION >

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.

NO >> Check according to [GI-39. "Intermittent Incident"](#).

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnosis Procedure again after repair and replacement.
3. Check DTC. If DTC is detected, erase it.

>> GO TO 9.

9. FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.

When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 7.

YES-2 >> Symptom remains: GO TO 4.

NO >> Before returning the vehicle to the customer, always erase DTC.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[AUTOMATIC AIR CONDITIONER]

INSPECTION AND ADJUSTMENT

Description & Inspection

INFOID:000000011488835

DESCRIPTION

The purpose of the operational check is to check that the individual system operates normally.

Check condition : Engine running at normal operating temperature.

1.CHECK MEMORY FUNCTION

1. Turn the ignition switch ON.
2. Set temperature control dial (driver side) to 32.0°C (90°F).
3. Press the OFF switch.
4. Turn the ignition switch OFF.
5. Turn the ignition switch ON.
6. Press the AUTO switch.
7. Check that the set temperature is maintained.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Memory function malfunction. Refer to [HAC-92. "Diagnosis Procedure"](#).

2.CHECK THE BLOWER MOTOR

1. Start the engine.
2. Operate the fan control dial. Check that the fan speed changes. Check the operation for all blower speeds.
3. Leave blower on maximum speed.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Blower motor system malfunction. Refer to [HAC-63. "Diagnosis Procedure"](#).

3.CHECK DISCHARGE AIR

1. Operate MODE switch and DEF switch.
2. Check that the air outlets change according to each indicated air outlet by placing a hand in front of the outlets. Refer to [VTL-3. "System Description"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Mode door system malfunction. Refer to [HAC-56. "Diagnosis Procedure"](#).

4.CHECK INTAKE AIR

1. Press REC switch to set the air outlet to recirculation.
2. The REC switch indicator turns ON.
3. Listen to intake sound and confirm air inlets change.
4. Press FRE switch to set the air outlet to fresh air intake.
5. The FRE switch indicator turns ON.
6. Listen to intake sound and confirm air inlets change.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Intake door system malfunction. Refer to [HAC-57. "Diagnosis Procedure"](#).

5.CHECK A/C SWITCH

1. Press the A/C switch.
2. Check that the indicator of the A/C switch turns ON. Check visually and by sound that the compressor operates.
3. Press the A/C switch again.
4. Check that the indicator of the A/C switch turns OFF. Check that the compressor stops.

Is the inspection result normal?

YES >> GO TO 6.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[AUTOMATIC AIR CONDITIONER]

NO >> Magnet clutch system malfunction. Refer to [HAC-67. "Diagnosis Procedure"](#).

6. CHECK DISCHARGE AIR TEMPERATURE

1. Operate the temperature control dial (driver side). Check that the discharge air temperature (driver side) changes.
2. Operate the temperature control dial (passenger side). Check that the discharge air temperature (passenger side) changes.

Is the inspection result normal?

- YES >> GO TO 7.
NO-1 >> Air mix door (driver side) malfunction. Refer to [HAC-52. "Diagnosis Procedure"](#).
NO-2 >> Air mix door (passenger side) malfunction. Refer to [HAC-54. "Diagnosis Procedure"](#).

7. CHECK TEMPERATURE DECREASE

1. Operate the compressor.
2. Operate the temperature control dial (driver side) and lower the set temperature to 18.0°C (60°F).
3. Check that the cool air blows from the outlets.

Is the inspection result normal?

- YES >> GO TO 8.
NO >> Insufficient cooling. Refer to [HAC-85. "Diagnosis Procedure"](#).

8. CHECK TEMPERATURE INCREASE

1. Turn temperature control dial (driver side) and raise temperature setting to 32.0°C (90°F) after warming up the engine.
2. Check that warm air blows from outlets.

Is the inspection result normal?

- YES >> GO TO 9.
NO >> Insufficient heating. Refer to [HAC-87. "Diagnosis Procedure"](#).

9. CHECK LEFT AND RIGHT VENTILATION TEMPERATURE SEPARATELY CONTROL SYSTEM FUNCTION

1. Press the DUAL switch, and then check that "DUAL" is shown on the display.
2. Operate the temperature control dial (passenger side). Check that the temperature indication and discharge air temperature on the passenger side changes.
3. Press the DUAL switch, and then check that the temperature setting (LH/RH) is unified to the driver side temperature setting.

Is the inspection result normal?

- YES >> GO TO 10.
NO >> Refer to [HAC-84. "Diagnosis Chart By Symptom"](#) and perform the appropriate diagnosis.

10. CHECK AUTO MODE

1. Press the AUTO switch, and then check that "AUTO" is shown on the display.
2. Operate the temperature control dial (driver side). Check that the fan speed or air outlet changes (the air flow temperature or fan speed varies depending on the ambient temperature, in-vehicle temperature, and set temperature).

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Refer to [HAC-84. "Diagnosis Chart By Symptom"](#) and perform the appropriate diagnosis.

Temperature Setting Trimmer

INFOID:000000011488836

DESCRIPTION

If the temperature felt by the customer is different than the air flow temperature controlled by the temperature setting, the A/C auto amp. control temperature can be adjusted to compensate for the temperature setting.

HOW TO SET

Ⓜ With CONSULT
Perform "TEMP SET CORRECT" of HVAC work support item.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[AUTOMATIC AIR CONDITIONER]

Work support items	Display (°F)	Display (°C)
TEMP SET CORRECT	6	3.0
	5	2.5
	4	2.0
	3	1.5
	2	1.0
	1	0.5
	0 (initial status)	0 (initial status)
	-1	-0.5
	-2	-1.0
	-3	-1.5
	-4	-2.0
	-5	-2.5
	-6	-3.0

NOTE:

- When -3.0°C (-6°F) is corrected on the temperature setting set as 25.0°C (77°F), the temperature controlled by A/C auto amp. is 25.0°C (77°F) $- 3.0^{\circ}\text{C}$ (-6°F) = 22.0°C (72°F) and the temperature becomes lower than the temperature setting.
- When the battery cable is disconnected from the negative terminal or when the battery voltage becomes 10 V or less, the setting of the difference between the set temperature and control temperature may be cancelled.

Foot Position Setting Trimmer

INFOID:000000011488837

HAC

DESCRIPTION

In FOOT mode, the air blowing to DEF can change ON/OFF.

HOW TO SET

With CONSULT

Perform the "BLOW SET" of HVAC work support item.

Work support items	Display	Defroster door position	
		Auto control	Manual control
BLOW SET	MODE 1	OPEN	CLOSE
	MODE 2 (initial status)	OPEN	OPEN
	MODE 3	CLOSE	OPEN
	MODE 4	CLOSE	CLOSE

NOTE:

When the battery cable is disconnected from the negative terminal or when the battery voltage becomes 10 V or less, the setting of the discharge air mix ratio in FOOT mode may be cancelled.

Inlet Port Memory Function (FRE)

INFOID:000000011488838

DESCRIPTION

- If the ignition switch is turned to the OFF position while the FRE switch is set to ON (manual FRE), "Perform the memory" or "Do not perform the memory" of FRE switch ON (manual FRE) condition can be selected.
- If "Perform the memory" was set, the FRE switch will be ON (manual FRE) when turning the ignition switch to the ON position again.
- If "Do not perform the memory" was set, the air inlets will be controlled automatically when turning the ignition switch to the ON position again.

HOW TO SET

With CONSULT

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[AUTOMATIC AIR CONDITIONER]

Perform the "FRE MEMORY SET" of HVAC work support item.

Work support items	Display	Setting
FRE MEMORY SET	WITHOUT	Perform the memory of manual FRE
	WITH (initial status)	Do not perform the memory of manual FRE (auto control)

NOTE:

When the battery cable is disconnected from the negative terminal or when the battery voltage becomes 10 V or less, the setting of the FRE switch memory function may be cancelled.

Inlet Port Memory Function (REC)

INFOID:00000001148839

DESCRIPTION

- If the ignition switch is turned to the OFF position while the REC switch is set to ON (manual REC), "Perform the memory" or "Do not perform the memory" of REC switch ON (manual REC) condition can be selected.
- If "Perform the memory" was set, the REC switch will be ON (manual REC) when turning the ignition switch to the ON position again.
- If "Do not perform the memory" was set, the air inlets will be controlled automatically when turning the ignition switch to the ON position again.

HOW TO SET

 With CONSULT

Perform the "REC MEMORY SET" of HVAC work support item.

Work support items	Display	Setting
REC MEMORY SET	WITHOUT (initial status)	Perform the memory of manual REC
	WITH	Do not perform the memory of manual REC (auto control)

NOTE:

When the battery cable is disconnected from the negative terminal or when the battery voltage becomes 10 V or less, the setting of the REC switch memory function may be cancelled.

COMPRESSOR CONTROL FUNCTION

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

SYSTEM DESCRIPTION

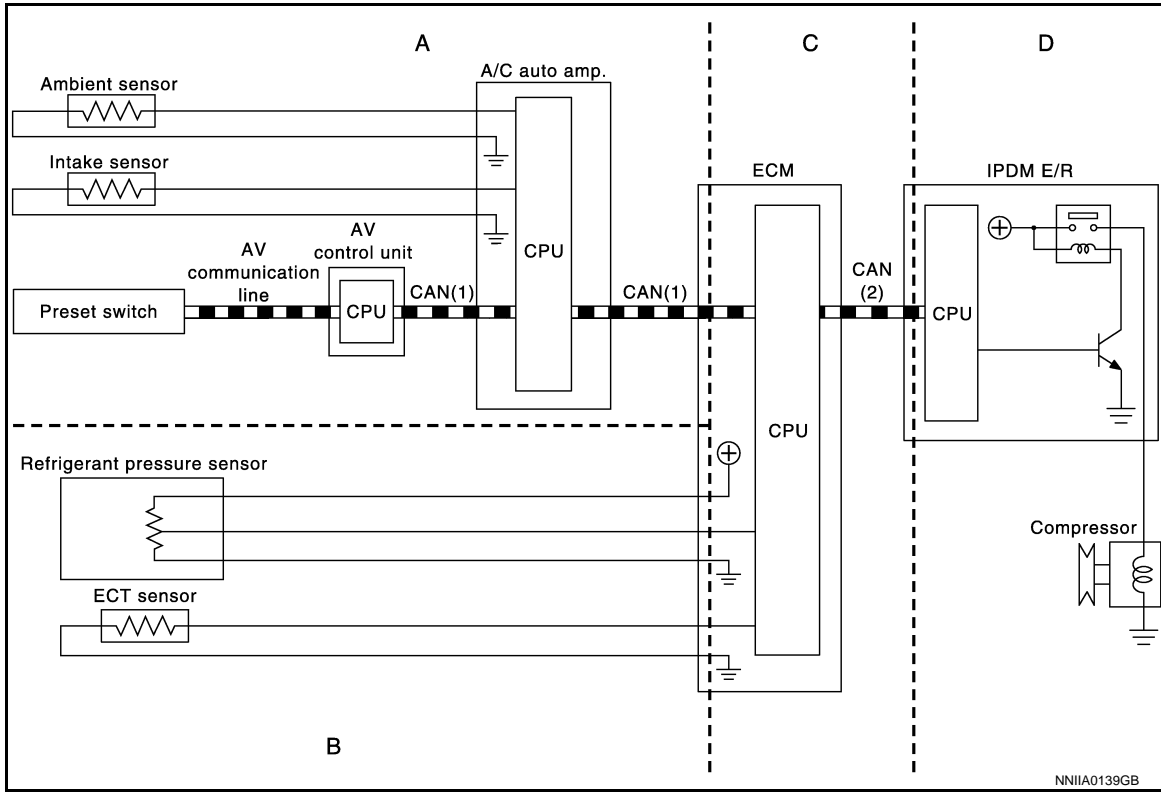
COMPRESSOR CONTROL FUNCTION

Description

INFOID:000000011488840

OPERATION PRINCIPLE

Functional Circuit Diagram



AV commu- : A/C switch signal
 nication line/ : Blower fan motor switch signal
 CAN (1)

CAN (2) : A/C compressor request signal

Functional Initial Inspection Chart

Control unit	Diagnosis item	Location			
		A	B	C	D
A/C auto amp.	Self-diagnosis	×	-	-	-
	④“HVAC” Data monitor	×	-	-	-
	Active test	×	-	-	×
ECM	Self-diagnosis function (CAN system diagnosis)	-	-	×	-
	④“ENGINE” Data monitor	-	×	×	-
IPDM E/R	Self-diagnosis function (CAN system diagnosis)	-	-	-	×
	④“IPDM E/R” Data monitor	-	-	×	-
	Auto active test	-	-	-	×

COMPRESSOR CONTROL FUNCTION

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

Fail-safe

INFOID:000000011488841

FAIL-SAFE FUNCTION

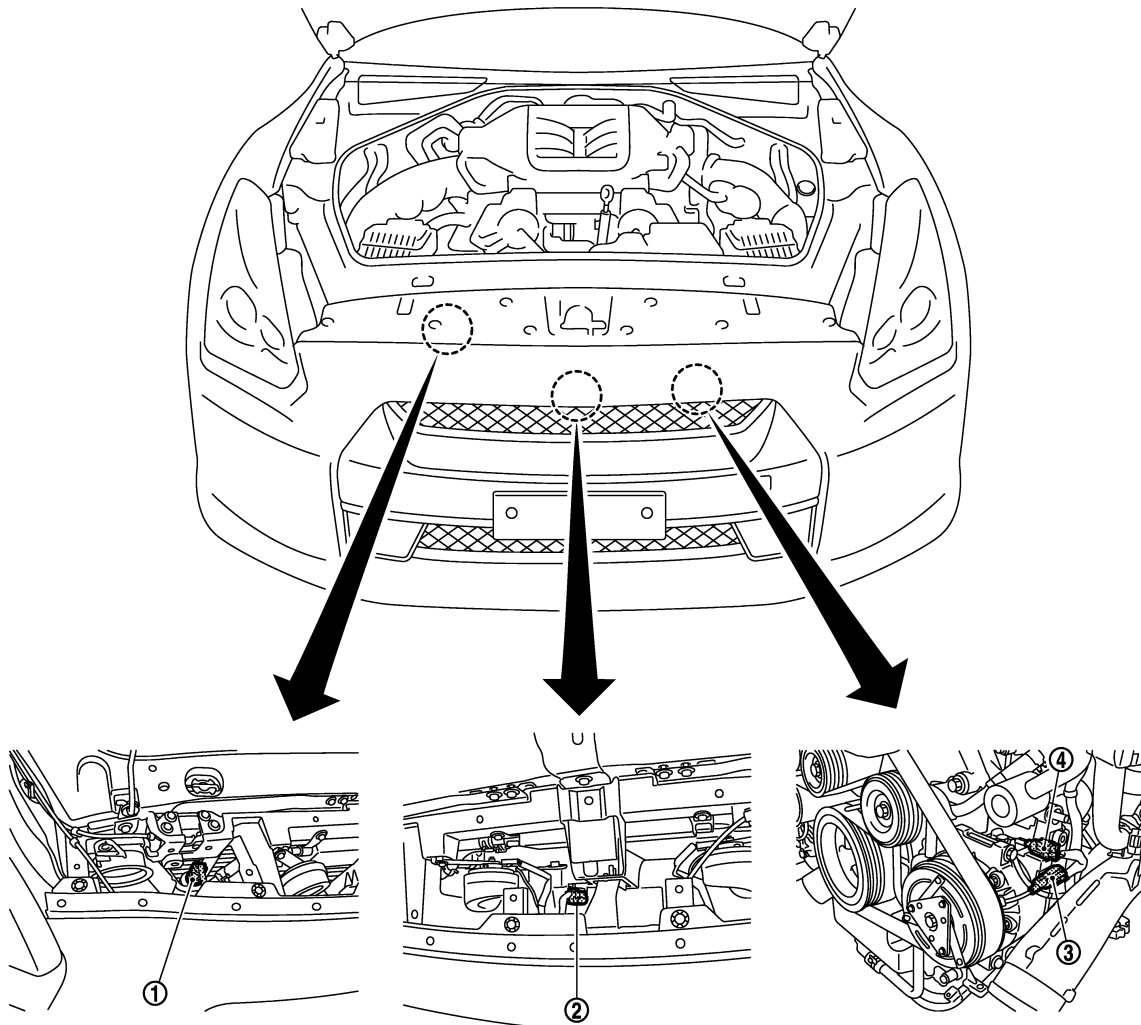
When a communication malfunction between A/C auto amp., and AV control unit and preset switch continued for approximately 30 seconds or more, control the air conditioner under the following conditions.

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

Component Parts Location

INFOID:000000011488842

ENGINE COMPARTMENT



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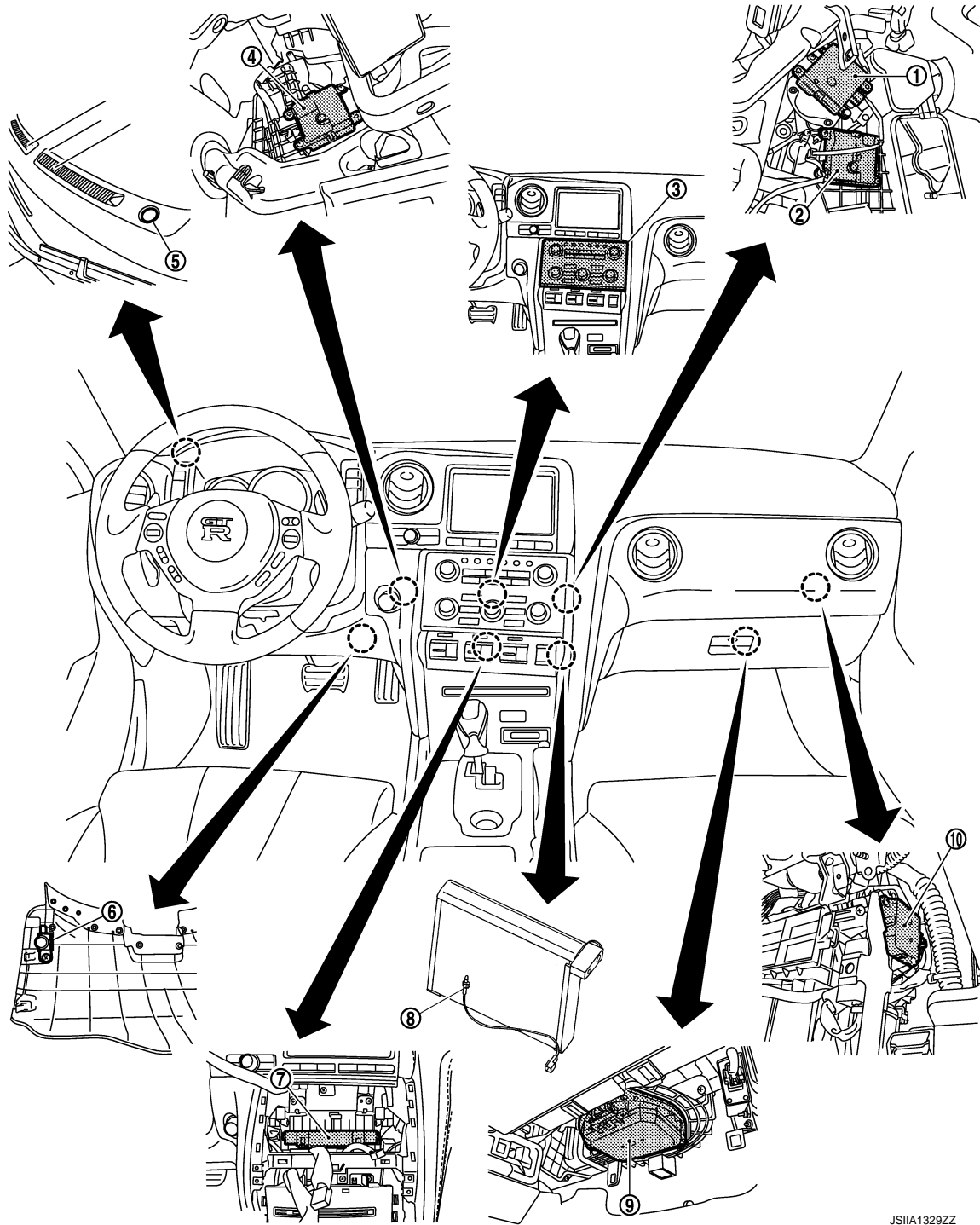
- 1. Refrigerant pressure sensor
- 2. Ambient sensor
- 3. Magnetic clutch connector
- 4. ECV connector

PASSENGER COMPARTMENT

COMPRESSOR CONTROL FUNCTION

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]



- | | | |
|-------------------------------------|--|----------------------|
| 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 | | |

JSIA1329ZZ

Component Description

INFOID:000000011488843

Component	Reference
Air mix door motor (driver side)	HAC-51. "Description"
Air mix door motor (passenger side)	HAC-53. "Description"

COMPRESSOR CONTROL FUNCTION

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

Component	Reference
Ambient sensor	HAC-42. "Description"
A/C auto amp.	HAC-62. "Description"
Blower motor	HAC-63. "Description"
Magnet clutch	HAC-67. "Description"
ECV	HAC-69. "Description"
Intake door motor	HAC-57. "Description"
Intake sensor	HAC-45. "Description"
In-vehicle sensor	HAC-39. "Description"
Mode door motor	HAC-55. "Description"
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	EC-560. "Description (GT-R certified NISSAN dealer)"
Sunload sensor	HAC-48. "Description"

AUTOMATIC AIR CONDITIONER SYSTEM

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

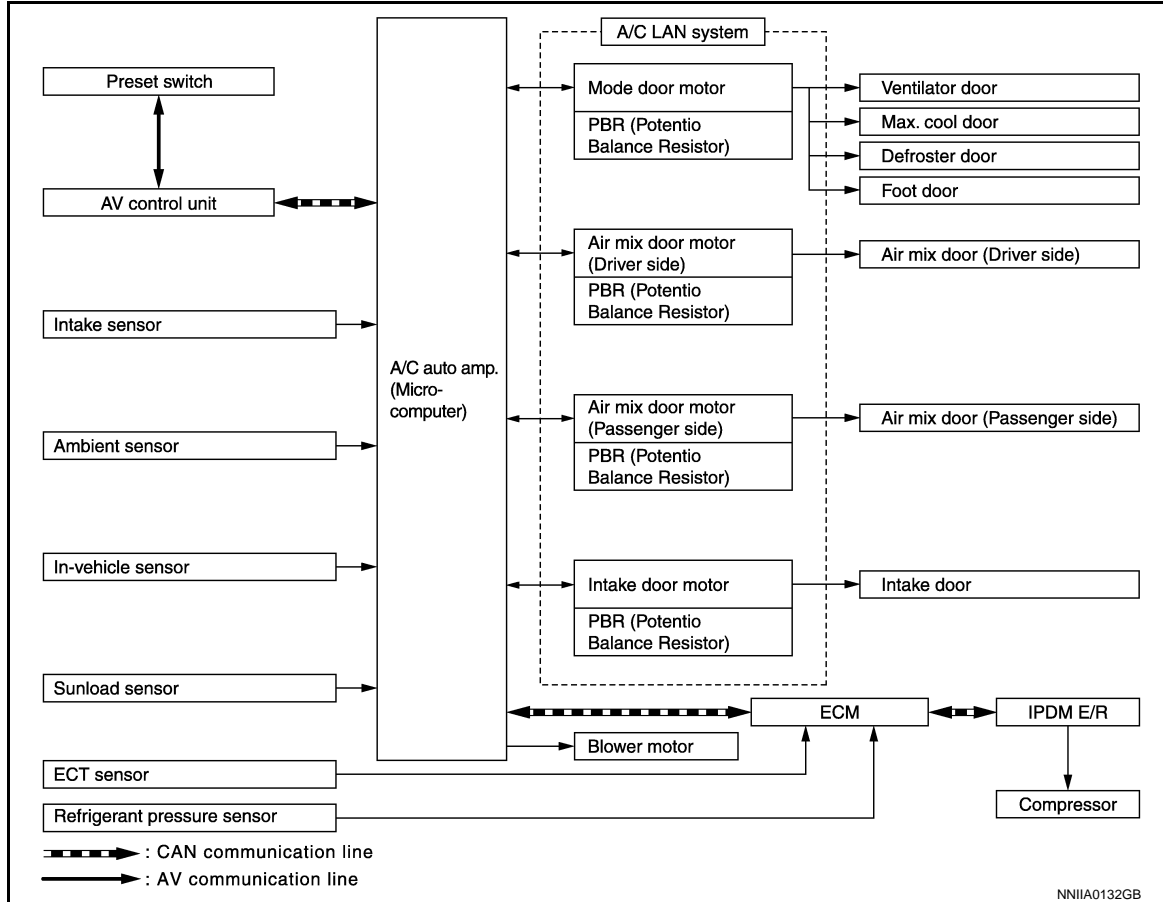
AUTOMATIC AIR CONDITIONER SYSTEM

System Diagram

INFOID:000000011488844

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:

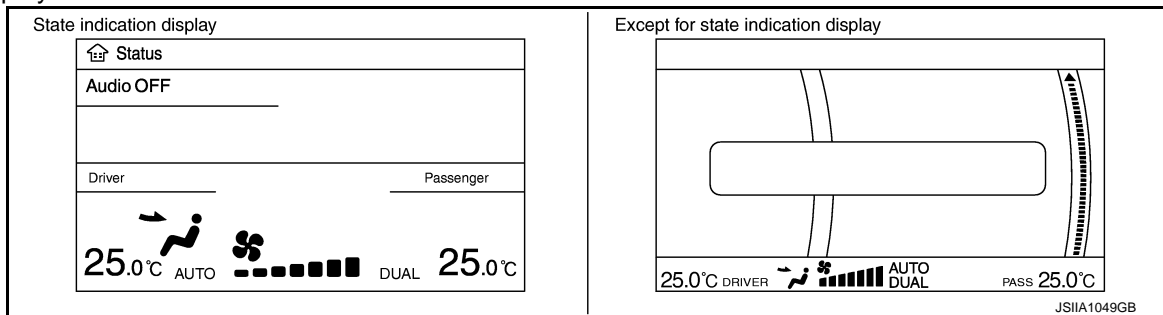


System Description

INFOID:000000011488845

CONTROL OPERATION

A/C Display



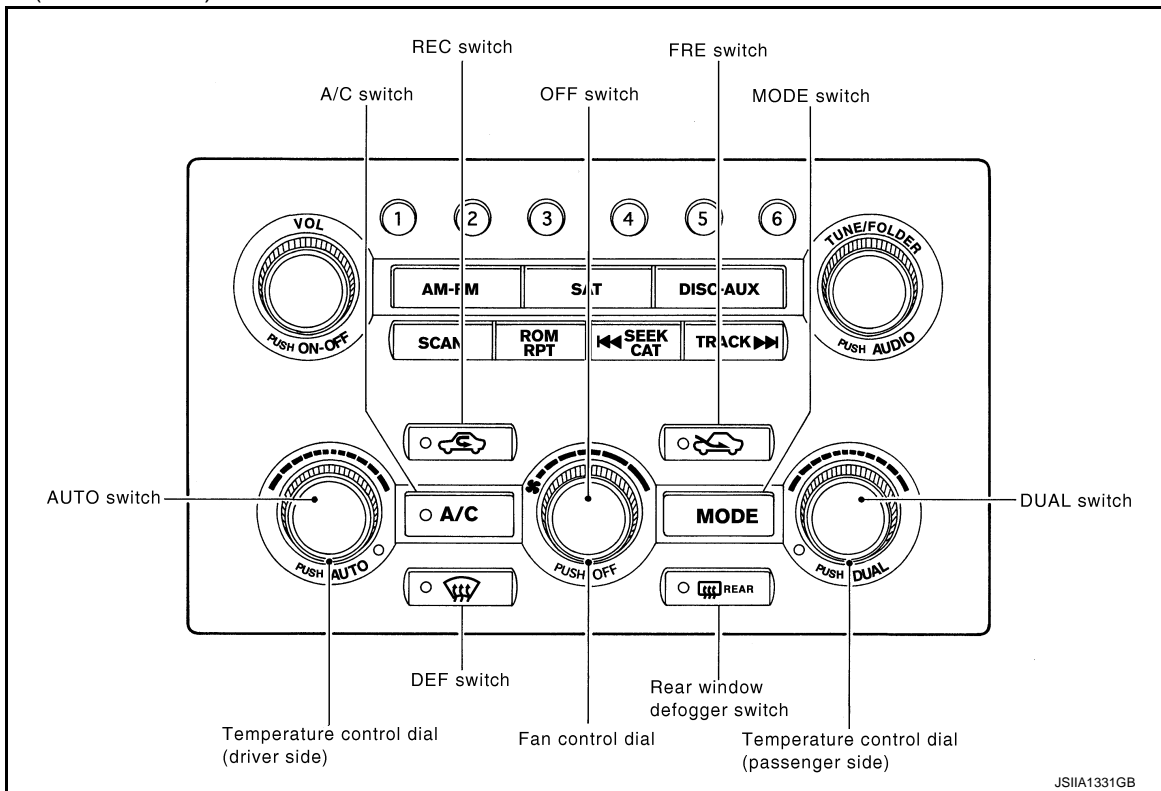
- The status display screen is displayed by pressing the STATUS switch to check the A/C system operating condition.
- If the A/C operation is performed when any screen other than the status display screen (such as the navigation system and the audio system) is displayed, the switch operating condition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

AUTOMATIC AIR CONDITIONER SYSTEM

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

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

AUTOMATIC AIR CONDITIONER SYSTEM

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

- 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). A
- 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. B
- 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.) C
- 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. D

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. E
- 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.) F

DUAL Switch

- When the DUAL switch indicator is ON, the driver side and passenger side, temperature can each be set independently. G
- When the DUAL switch indicator is OFF, the driver side setting temperature is applied to both sides. H
- 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. HAC
- 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). J

FRE Switch

- When pressing the FRE switch, the FRE switch indicator illuminates and the air inlet is fixed to fresh air intake. K
- 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. L

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. M
- 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. N
- Refer to [DEF-4, "System Description"](#) for details. O

OFF Switch

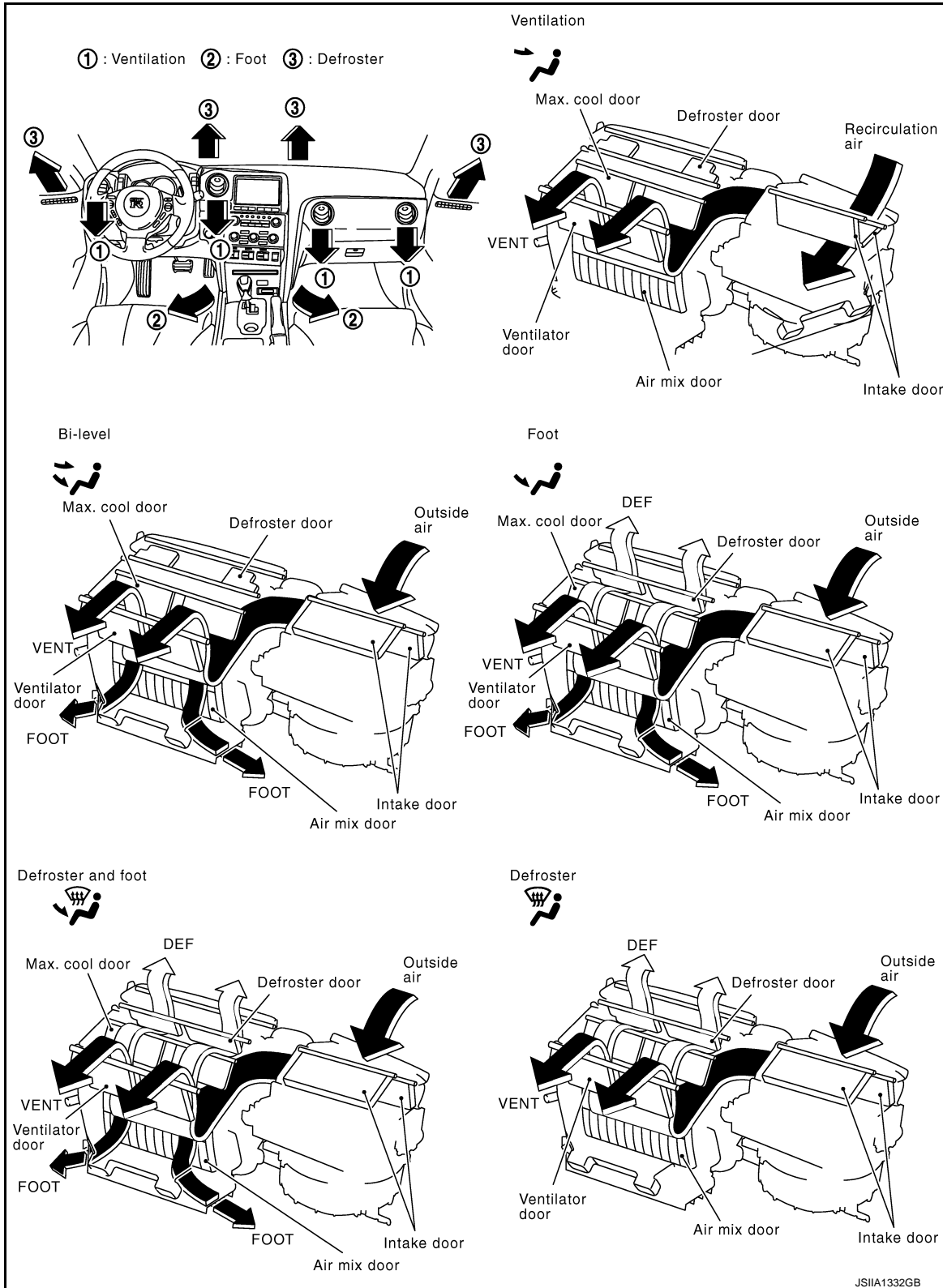
- The blower motor and compressor are turned OFF when pressing the OFF switch. At this time, the switch condition just before OFF is recorded on the set temperature and the left and right ventilation temperature separately control mode. P
- Fix the air inlet to fresh air intake. However, when the REC 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.)

AUTOMATIC AIR CONDITIONER SYSTEM

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

DISCHARGE AIR FLOW



AUTOMATIC AIR CONDITIONER SYSTEM

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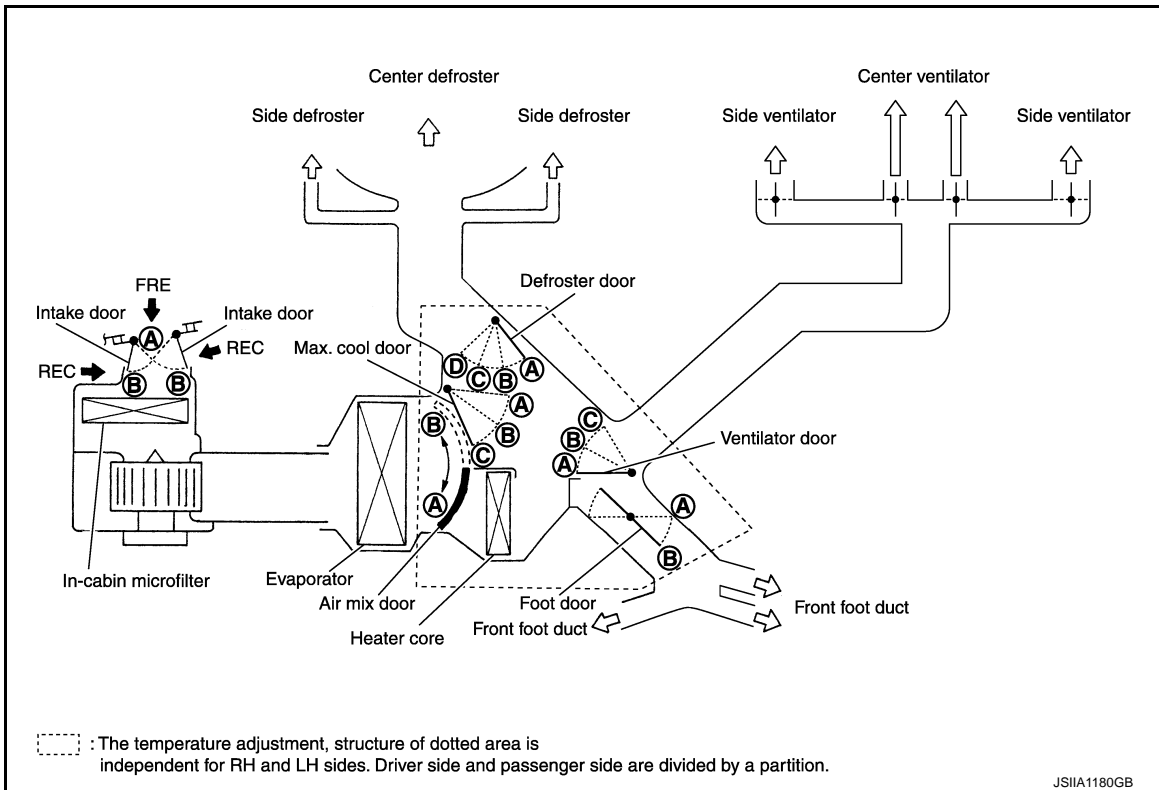
[AUTOMATIC AIR CONDITIONER]

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%

JSIIA1182GB

SWITCHES AND THEIR CONTROL FUNCTION



JSIIA1180GB


























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AUTOMATIC AIR CONDITIONER SYSTEM

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

Position or switch	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								
Door		MODE													
											18°C (60°F) ↔ 32°C (90°F)	18°C (60°F) ↔ 32°C (90°F)			
Ventilator door	—	(A)	(B)	(C)	(C)	(C)	—	AUTO	—	—	—	—	(C)		
Max.cool door	—	(A)	(B)	(C)	(C)	(C)	—		—	—	—	—	—	(C)	
Defroster door	—	(D)	(D)	(C)	(B)	(A)	—		—	—	—	—	—	(C)	
Foot door	—	(B)	(B)	(B)	(B)	(A)	—		—	—	—	—	—	(B)	
Intake door	—	—			(B)	(B)	—		(B)* AUTO	(A)* AUTO	—	—	—	(B)	
Air mix door (Driver side)	—	—				—	—		—	(A)	AUTO	(B)	—	—	
Air mix door (Passenger side)	ON	—				—	—		—	—	—	(A)	AUTO	(B)	—
	OFF	—				—	—	—	—	(A)	AUTO	(B)	—	—	

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

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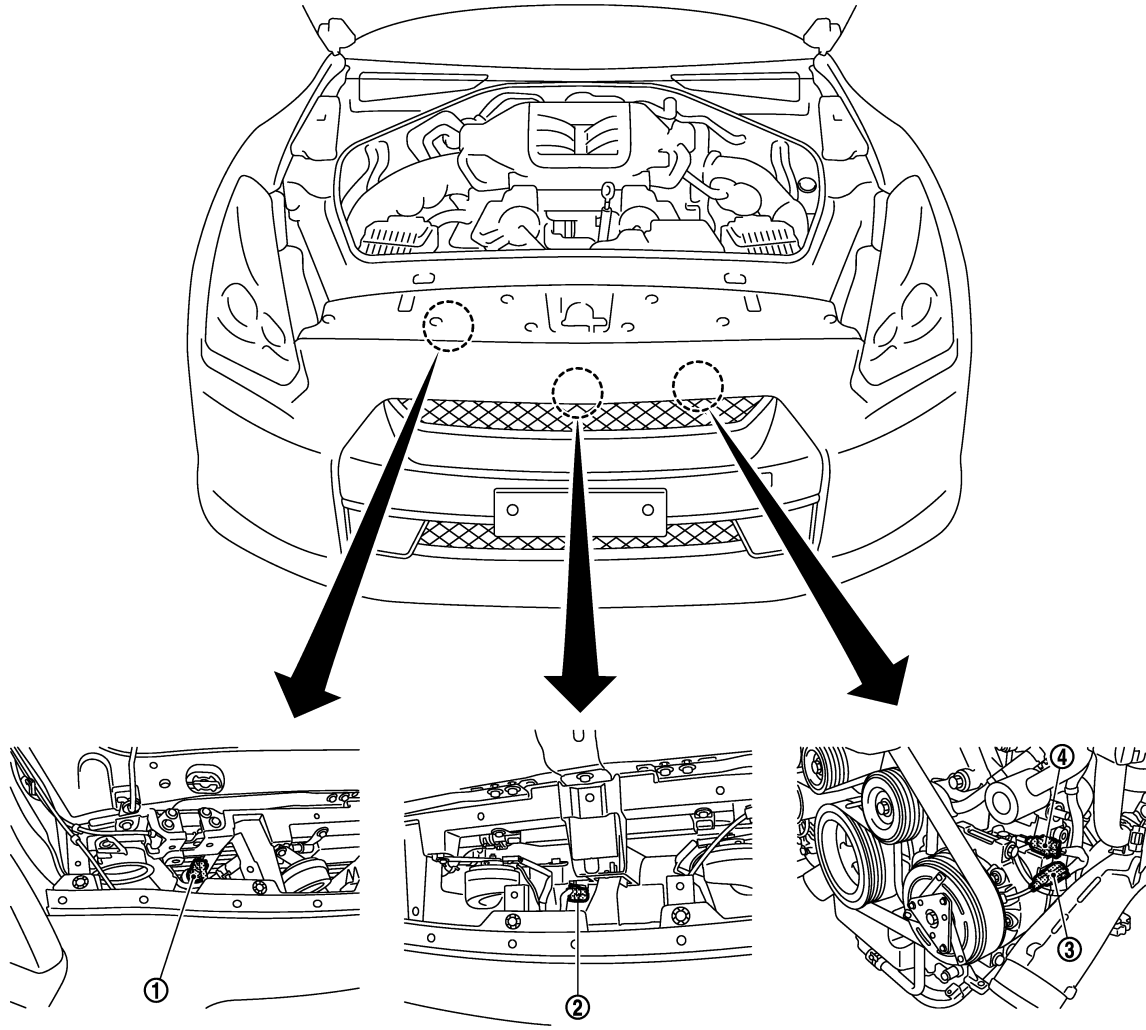
Component Parts Location

ENGINE COMPARTMENT

AUTOMATIC AIR CONDITIONER SYSTEM

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]



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

PASSENGER COMPARTMENT

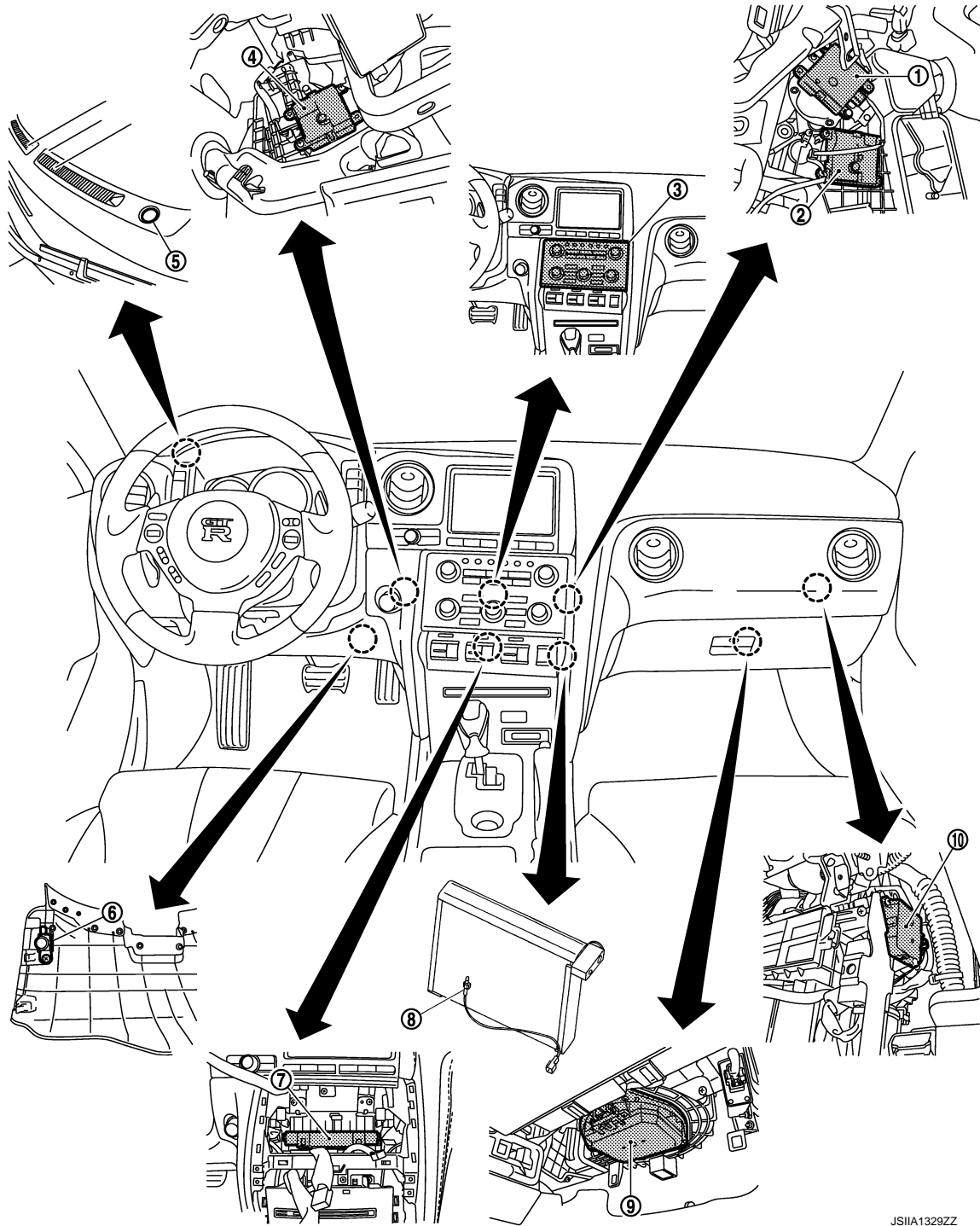
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AUTOMATIC AIR CONDITIONER SYSTEM

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]



JSIA1329ZZ

- | | | |
|-------------------------------------|--|----------------------|
| 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:000000011488847

Component	Reference
Air mix door motor (driver side)	HAC-51. "Description"
Air mix door motor (passenger side)	HAC-53. "Description"

AUTOMATIC AIR CONDITIONER SYSTEM

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

Component	Reference
Ambient sensor	HAC-42. "Description"
A/C auto amp.	HAC-62. "Description"
Blower motor	HAC-63. "Description"
Magnet clutch	HAC-67. "Description"
ECV	HAC-69. "Description"
Intake door motor	HAC-57. "Description"
Intake sensor	HAC-45. "Description"
In-vehicle sensor	HAC-39. "Description"
Mode door motor	HAC-55. "Description"
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	EC-560. "Description (GT-R certified NISSAN dealer)"
Sunload sensor	HAC-48. "Description"

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MODE DOOR CONTROL SYSTEM

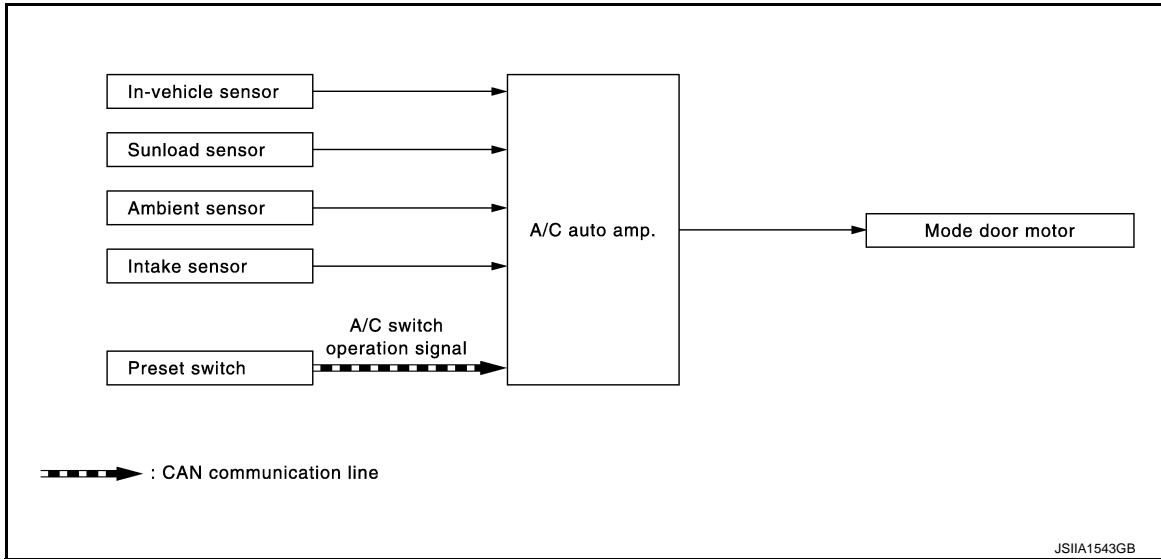
< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

MODE DOOR CONTROL SYSTEM

System Diagram

INFOID:000000011488848



System Description

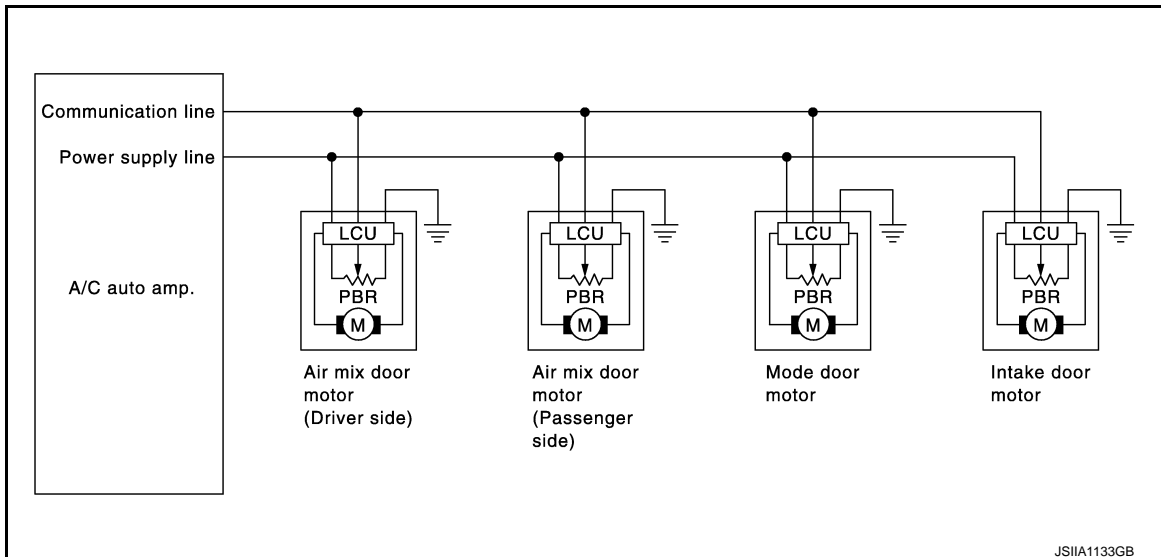
INFOID:000000011488849

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



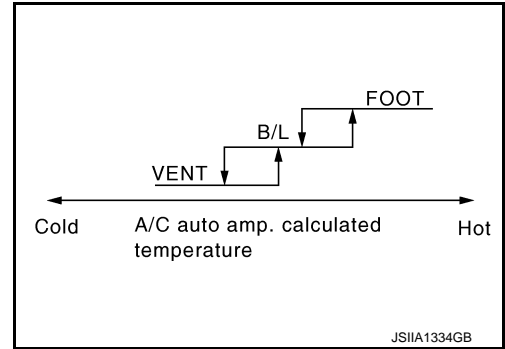
MODE DOOR CONTROL SPECIFICATION

MODE DOOR CONTROL SYSTEM

[AUTOMATIC AIR CONDITIONER]

< SYSTEM DESCRIPTION >

- 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.



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AIR MIX DOOR CONTROL SYSTEM

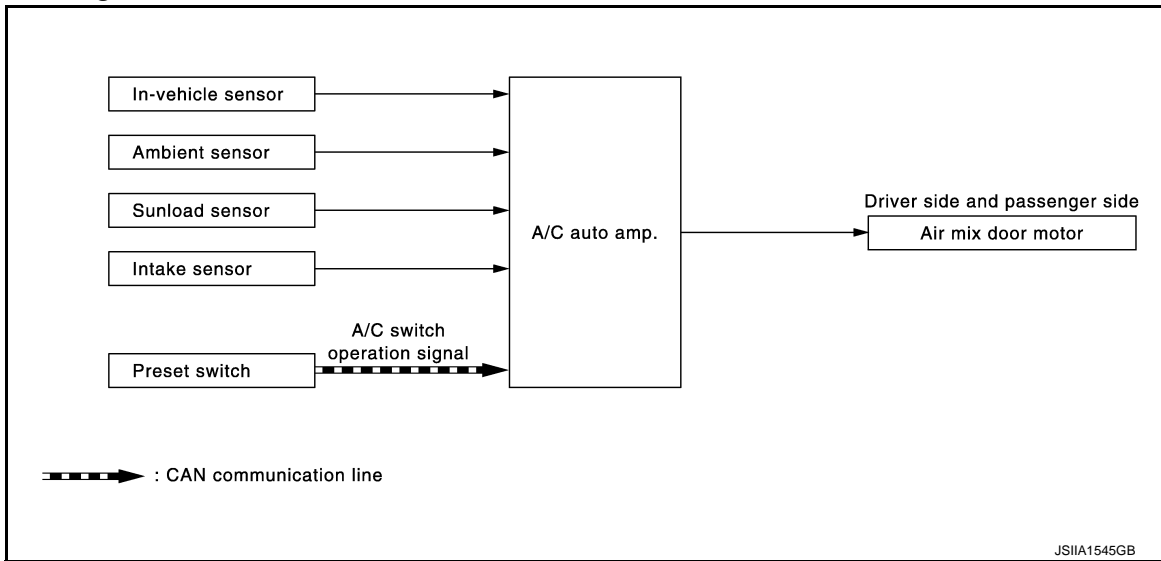
< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

AIR MIX DOOR CONTROL SYSTEM

System Diagram

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System Description

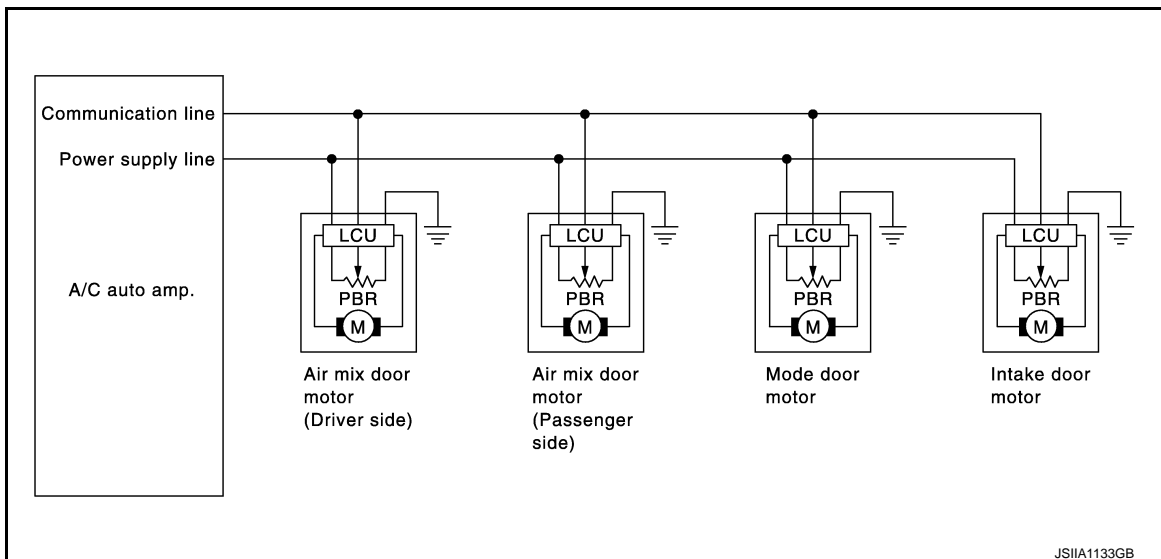
INFOID:000000011488851

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



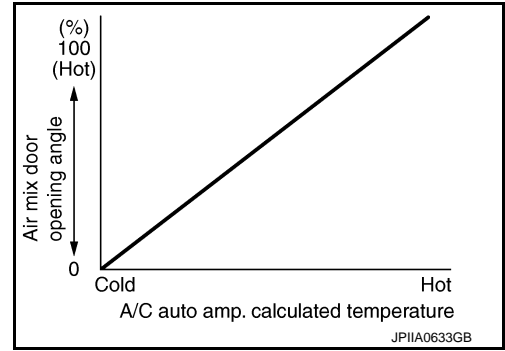
AIR MIX DOOR CONTROL SPECIFICATION

AIR MIX DOOR CONTROL SYSTEM

[AUTOMATIC AIR CONDITIONER]

< SYSTEM DESCRIPTION >

- 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).



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INTAKE DOOR CONTROL SYSTEM

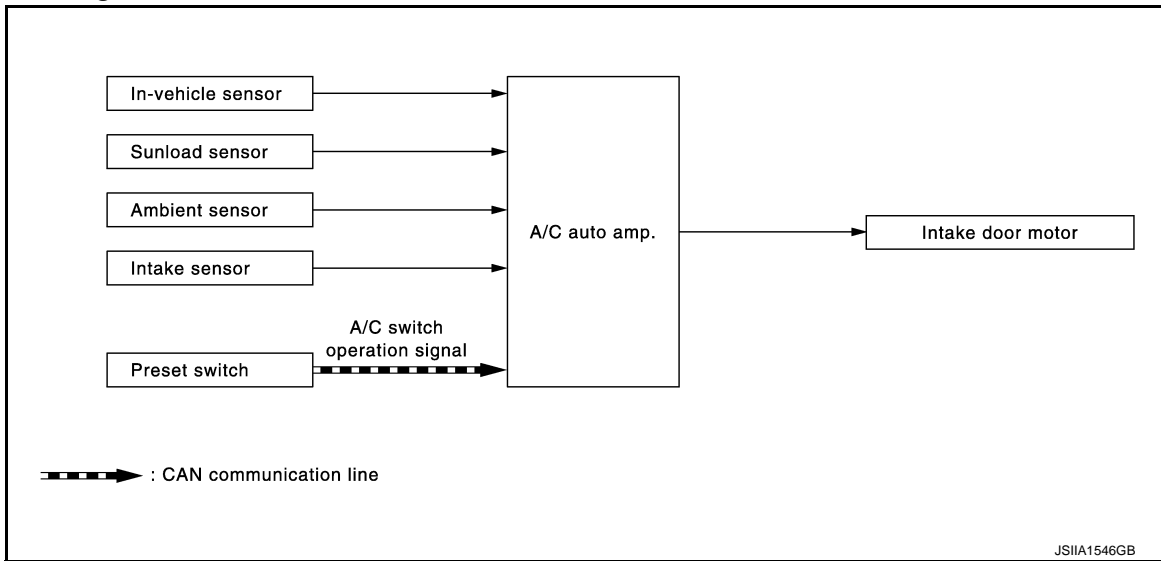
< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

INTAKE DOOR CONTROL SYSTEM

System Diagram

INFOID:000000011488852



System Description

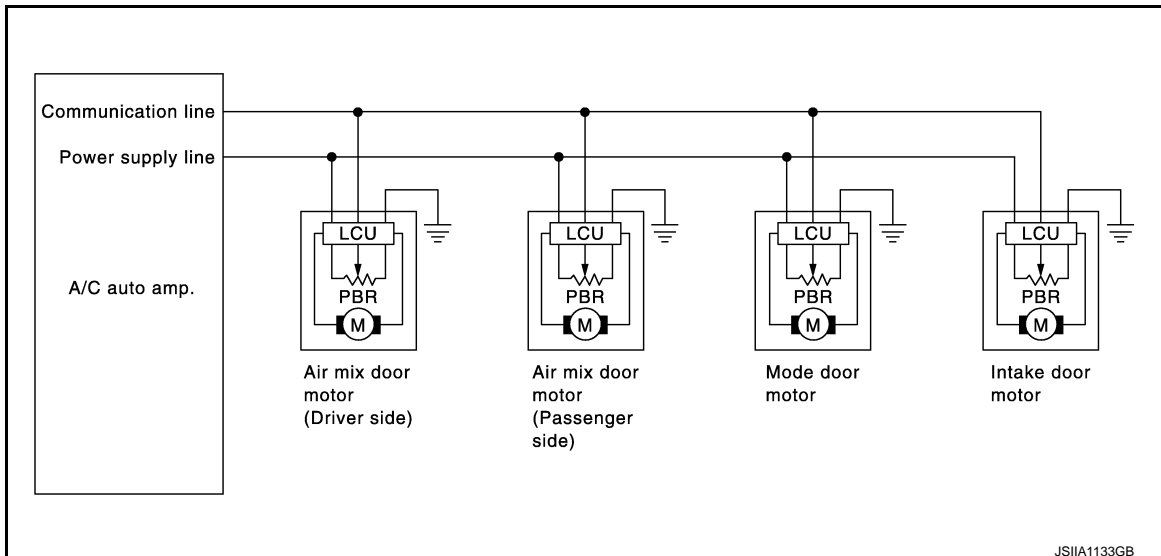
INFOID:000000011488853

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



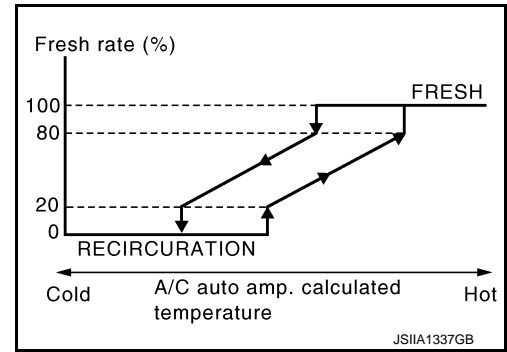
INTAKE DOOR CONTROL SYSTEM

[AUTOMATIC AIR CONDITIONER]

< SYSTEM DESCRIPTION >

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.



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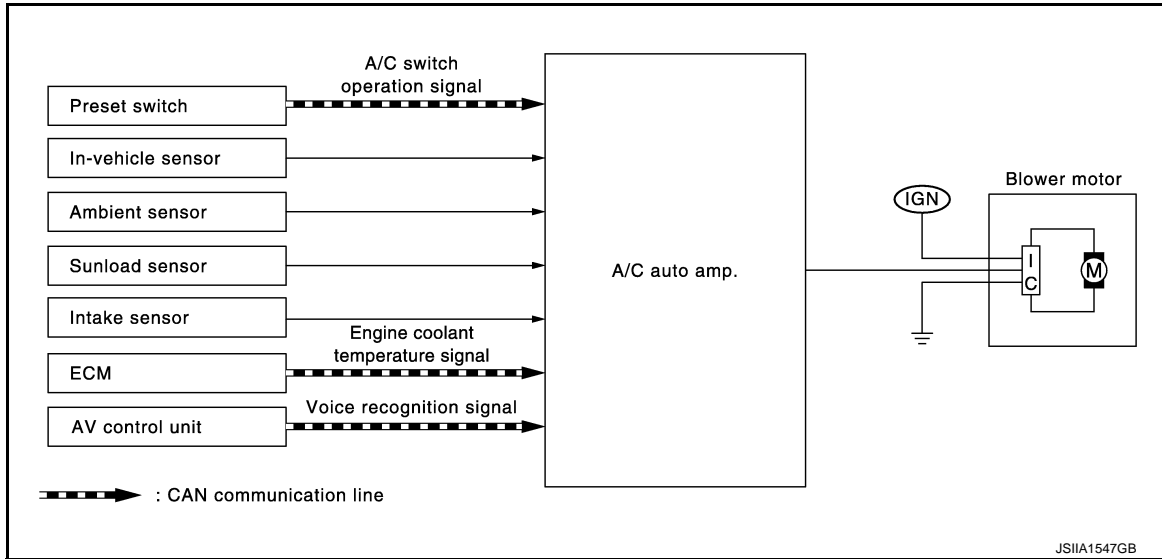
BLOWER MOTOR CONTROL SYSTEM

[AUTOMATIC AIR CONDITIONER]

< SYSTEM DESCRIPTION >

BLOWER MOTOR CONTROL SYSTEM

System Diagram



System Description

INFOID:00000001148855

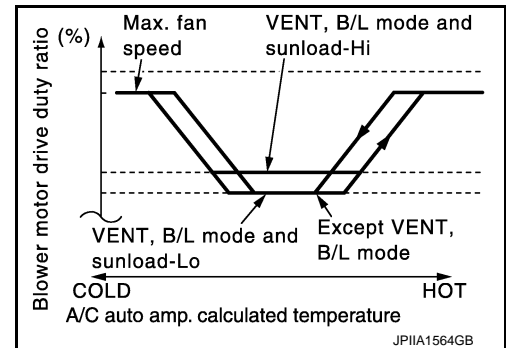
SYSTEM OPERATION

- 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.

BLOWER MOTOR CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

- 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.

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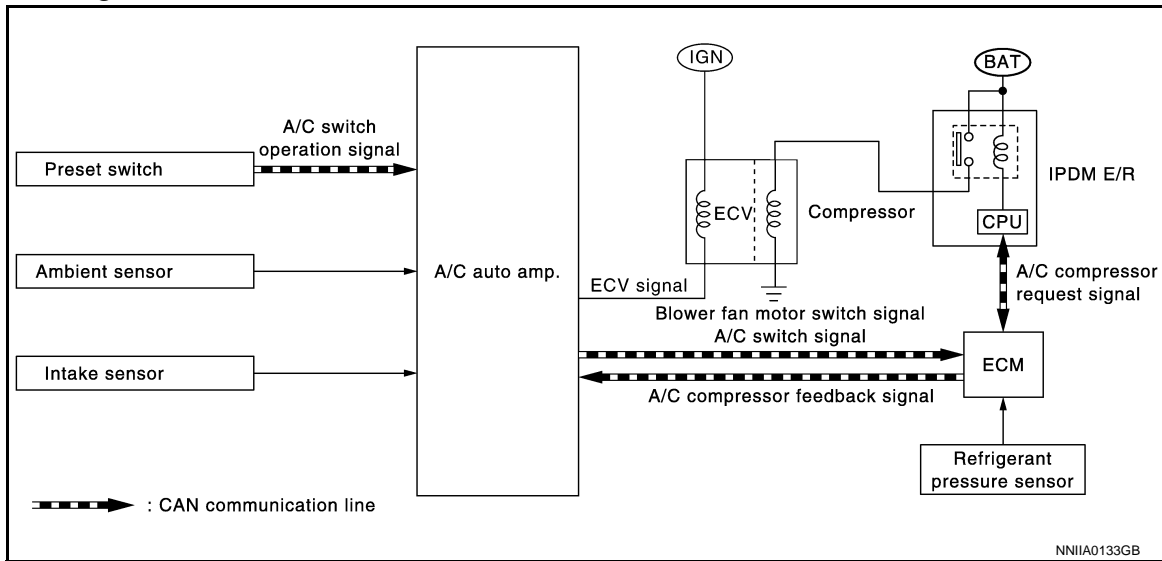
MAGNET CLUTCH CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

MAGNET CLUTCH CONTROL SYSTEM

System Diagram



System Description

INFOID:000000011488857

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/cm², 452 psi) or more when the engine speed is less than 1,500 rpm. It is approximately 2,740 kPa (27.9 kg/cm², 397 psi) when the engine speed is 1,500 rpm or more. When it is approximately 120 kPa (1.2 kg/cm², 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

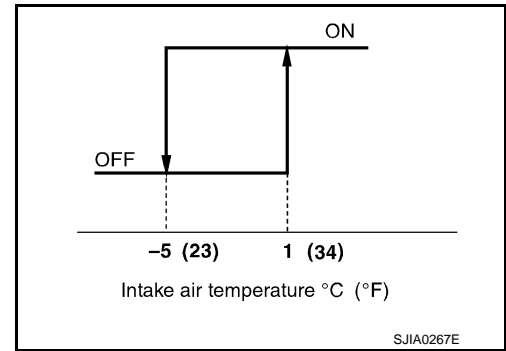
It turns the A/C relay OFF and stops the compressor by the signal from A/C auto amp. according to the evaporator passing air temperature detected by the intake sensor.

MAGNET CLUTCH CONTROL SYSTEM

[AUTOMATIC AIR CONDITIONER]

< SYSTEM DESCRIPTION >

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. Refer to [EC-73. "System Description \(GT-R certified NISSAN dealer\)"](#).

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.

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CAN COMMUNICATION SYSTEM

Description

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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-24, "CAN System Specification Chart"](#).

DIAGNOSIS SYSTEM (A/C AUTO AMP.)

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

DIAGNOSIS SYSTEM (A/C AUTO AMP.)

CONSULT Function

INFOID:000000011488859

CONSULT performs the following functions via CAN communication with A/C auto amp.

Diagnostic mode	Description
Self diagnostic result	Displays the diagnosis results judged by A/C auto amp.
Data monitor	Displays the input/output signal of A/C auto amp.
Active test	The signals used to activate each device are forcibly supplied from A/C auto amp.
Work support	Changes the setting for each setting function. <ul style="list-style-type: none"> • Temperature setting trimmer • Inlet port memory function (FRE) • Inlet port memory function (REC) • Foot position setting trimmer
ECU identification	Displays the part number of A/C auto amp.

NOTE:

Diagnosis should be performed with engine running. Door motor operation speeds become slower and NO results may be returned even for normal operation if battery voltage drops below 12 V during self-diagnosis.

SELF-DIAGNOSIS RESULTS

Refer to [HAC-82, "DTC Index"](#).

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Display item list

Monitor item [Unit]	Description
COMP REQ SIG [On/Off]	Displays A/C switch ON/OFF status transmitted to other units via CAN communication
FAN REQ SIG [On/Off]	Displays fan switch ON/OFF status transmitted to other units via CAN communication
AMB TEMP SEN [°C]	Ambient sensor value converted from ambient sensor signal received from ambient sensor
IN-VEH TEMP [°C]	In-vehicle sensor value converted from in-vehicle sensor signal received from in-vehicle sensor
INT TEMP SEN [°C]	Intake sensor value converted from intake sensor signal received from intake sensor
SUNLOAD SEN [w/m ²]	Sunload sensor value converted from sunload sensor signal received from sunload sensor
AMB SEN CAL [°C]	Ambient sensor value calculated by A/C auto amp.
IN-VEH CAL [°C]	In-vehicle sensor value calculated by A/C auto amp.
INT TEMP CAL [°C]	Intake sensor value calculated by A/C auto amp.
SUNL SEN CAL [w/m ²]	Sunload sensor value calculated by A/C auto amp.
FAN DUTY	Duty ratio of the blower motor judged by A/C auto amp.
XM	Target discharge air temperature judged by A/C auto amp. according to the temperature setting and the value from each sensor
ENG COOL TEMP [°C]	Water temperature signal value received from ECM via CAN communication
VEHICLE SPEED [Mph (km/h)]	Vehicle speed signal value received from meter via CAN communication

ACTIVE TEST

Test item	Description
Check each output device	The operation check of air conditioner system can be performed by selecting the mode. Refer to the following table for the conditions of each mode.

DIAGNOSIS SYSTEM (A/C AUTO AMP.)

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONER]

Check each output device

	Test item						
	MODE 1	MODE 2	MODE 3	MODE 4	MODE 5	MODE 6	MODE 7
Mode door position	VENT	B/L 1	B/L 2	FOOT	D/F	DEF	—
Intake door position	REC	REC	20% FRE	FRE	FRE	FRE	—
Air mix door position (driver & passenger side)	FULL COLD	FULL COLD	FULL HOT	FULL HOT	FULL HOT	FULL HOT	—
Blower motor control signal duty ratio	37%	91%	65%	65%	65%	91%	—
Magnet clutch	ON	ON	OFF	OFF	ON	ON	—
ECV	100%	100%	0%	0%	50%	100%	—

NOTE:

- Perform the inspection of each output device after starting the engine because the compressor is operated.
- If the Mode 7 is selected, the malfunction is displayed but it is normal.

WORK SUPPORT

Work item	Description	Refer to
TEMP SET CORRECT (Temperature setting trimmer)	If the temperature felt by the customer is different than the air flow temperature controlled by the temperature setting, the A/C auto amp. control temperature can be adjusted to compensate for the temperature setting.	HAC-8. "Temperature Setting Trimmer"
FRE MEMORY SET [Inlet port memory function (FRE)]	<ul style="list-style-type: none"> • If the ignition switch is turned to the OFF position while the FRE switch is set to ON (fresh air intake), "Perform the memory" or "Do not perform the memory" of FRE switch ON (fresh air intake) condition can be selected. • If "Perform the memory" was set, the FRE switch will be ON (fresh air intake) when turning the ignition switch to the ON position again. • If "Do not perform the memory" was set, the air inlets will be controlled automatically when turning the ignition switch to the ON position again. 	HAC-9. "Inlet Port Memory Function (FRE)"
REC MEMORY SET [Inlet port memory function (REC)]	<ul style="list-style-type: none"> • If the ignition switch is turned to the OFF position while the REC switch is set to ON (recirculation), "Perform the memory" or "Do not perform the memory" of REC switch ON (recirculation) condition can be selected. • If "Perform the memory" was set, the REC switch will be ON (recirculation) when turning the ignition switch to the ON position again. • If "Do not perform the memory" was set, the air inlets will be controlled automatically when turning the ignition switch to the ON position again. 	HAC-10. "Inlet Port Memory Function (REC)"
BLOWER SET (Foot position setting trimmer)	In FOOT mode, the air blowing to DEF can change ON/OFF.	HAC-9. "Foot Position Setting Trimmer"

NOTE:

When the battery cable is disconnected from the negative terminal or when the battery voltage becomes 10 V or less, the setting of WORK SUPPORT may be cancelled.

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000011488860

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-L-line and CAN-H-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-24, "CAN Communication Signal Chart"](#) for details of the communication signal.

DTC Logic

INFOID:0000000011488861

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	Diagnostic item is detected when...	Possible cause
U1000	CAN COMM CIRCUIT	When A/C auto amp. is not transmitting or receiving CAN communication signal for 2 or more seconds.	CAN communication system

Diagnosis Procedure

INFOID:0000000011488862

1. PERFORM SELF-DIAGNOSIS

Ⓜ With CONSULT

1. Turn the ignition switch ON and wait for 2 seconds or more.
2. Perform the "SELF-DIAGNOSIS".
3. Check if any DTC is detected in the self-diagnostic results.

Is DTC "U1000" displayed?

- YES >> Perform the diagnosis for the CAN communication system. Refer to [LAN-15, "Trouble Diagnosis Flow Chart"](#).
- NO >> Perform the intermittent malfunction diagnosis. Refer to [GI-39, "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

Description

INFOID:000000011488863

Initial diagnosis of A/C auto amp.

DTC Logic

INFOID:000000011488864

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	Diagnostic item is detected when...	Possible cause
U1010	CONTROL UNIT (CAN)	When detecting error during the initial diagnosis of CAN controller of A/C auto amp.	A/C auto amp.

Diagnosis Procedure

INFOID:000000011488865

1. REPLACE A/C AUTO AMP.

When DTC "U1010" is detected, replace A/C auto amp.

>> INSPECTION END

B2578, B2579 IN-VEHICLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

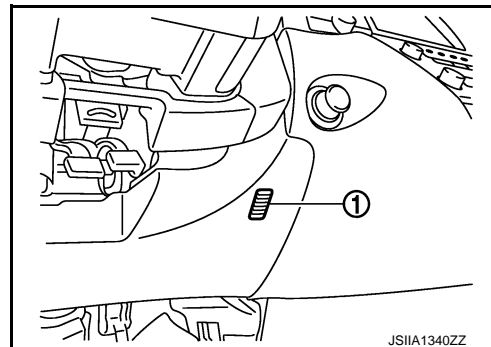
B2578, B2579 IN-VEHICLE SENSOR

Description

INFOID:000000011488866

IN-VEHICLE SENSOR

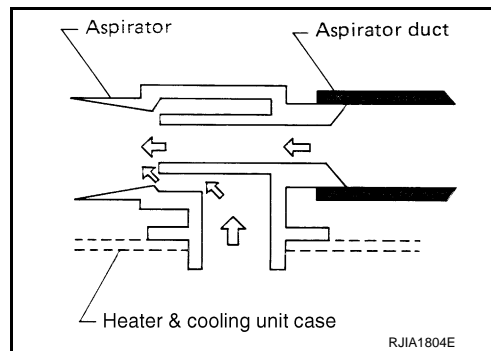
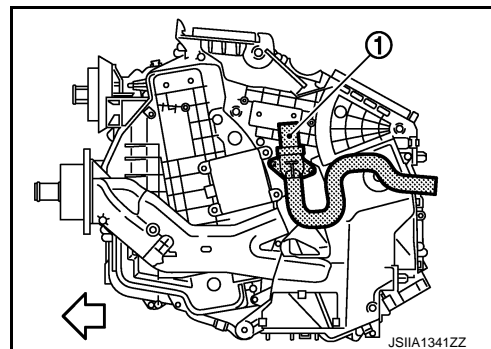
- The in-vehicle sensor (1) is installed to the instrument lower panel (driver).
- The in-vehicle sensor converts the interior air temperature of the passenger room sucked by the aspirator detected with the thermistor into the voltage, and the A/C auto amp. inputs this voltage.



ASPIRATOR

The aspirator (1) generates the vacuum by the air blown from the heater and cooling unit and draws the air of the passenger room to the in-vehicle sensor area via the aspirator duct.

← : Vehicle front



INTERIOR AIR TEMPERATURE CORRECTION

- The A/C auto amp. inputs the temperature detected with the in-vehicle sensor as the interior air temperature.
- Perform the correction of the temperature detected with the in-vehicle sensor for each air conditioner control.

DTC Logic

INFOID:000000011488867

DTC DETECTION LOGIC

A
B
C
D
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G
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HAC
J
K
L
M
N
O
P

B2578, B2579 IN-VEHICLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

DTC	Items (CONSULT screen terms)	Diagnostic item is detected when...	Possible causes
B2578	IN-VEHICLE SENSOR	The in-vehicle sensor recognition temperature is too high.	<ul style="list-style-type: none"> In-vehicle sensor A/C auto amp. Harness and connector (Short in the in-vehicle sensor circuit)
B2579		The in-vehicle sensor recognition temperature is too low.	<ul style="list-style-type: none"> In-vehicle sensor A/C auto amp. Harness and connector (Open in the in-vehicle sensor circuit)

DTC CONFIRMATION PROCEDURE

1.PERFORM SELF-DIAGNOSIS

Ⓜ With CONSULT

1. Perform the "SELF-DIAGNOSIS".
2. Check if any DTC is detected in the self-diagnostic results.

NOTE:

If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to [HAC-37, "DTC Logic"](#) or [HAC-38, "DTC Logic"](#).

Is DTC "B2578" or "B2579" displayed?

- YES >> Perform the diagnosis for the in-vehicle sensor. Refer to [HAC-40, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000011488668

1.CHECK IN-VEHICLE SENSOR POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the in-vehicle sensor connector.
3. Turn the ignition switch ON.
4. Check voltage between in-vehicle sensor harness connector and ground.

(+)		(-)	Voltage (Approx.)
In-vehicle sensor		—	
Connector	Terminal		
M61	1	Ground	5 V

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> GO TO 4.

2.CHECK IN-VEHICLE SENSOR CIRCUIT CONTINUITY-

1. Turn the ignition switch OFF.
2. Disconnect the A/C auto amp. connector.
3. Check for continuity between the in-vehicle sensor harness connector and A/C auto amp. harness connector.

In-vehicle sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M61	2	M66	37	Existed

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Repair the harnesses or connectors.

3.CHECK IN-VEHICLE SENSOR

Check the in-vehicle sensor components. Refer to [HAC-41, "Component Inspection"](#).

B2578, B2579 IN-VEHICLE SENSOR

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> Replace the A/C auto amp.
- NO >> Replace the in-vehicle sensor.

4.CHECK IN-VEHICLE SENSOR CIRCUIT CONTINUITY

1. Turn the ignition switch OFF.
2. Disconnect the A/C auto amp. connector.
3. Check for continuity between the in-vehicle sensor harness connector and A/C auto amp. harness connector.

In-vehicle sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M61	1	M66	36	Existed

4. Check for continuity between in-vehicle sensor harness connector and ground.

In-vehicle sensor		—	Continuity
Connector	Terminal		
M61	1	Ground	Not existed

Is the inspection result normal?

- YES >> Replace the A/C auto amp.
- NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000011488869

1.CHECK IN-VEHICLE SENSOR

1. Turn the ignition switch OFF.
2. Remove the in-vehicle sensor. Refer to [HAC-98. "Exploded View"](#).
3. Check the resistance between the in-vehicle sensor terminals. Refer to the applicable table for the normal value.

Terminal		Condition	Resistance: kΩ
		Temperature: °C (°F)	
1	2	-15 (5)	12.73
		-10 (14)	9.92
		-5 (23)	7.80
		0 (32)	6.19
		5 (41)	4.95
		10 (50)	3.99
		15 (59)	3.24
		20 (68)	2.65
		25 (77)	2.19
		30 (86)	1.81
		35 (95)	1.51
		40 (104)	1.27
45 (113)	1.07		

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the in-vehicle sensor.

B257B, B257C AMBIENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

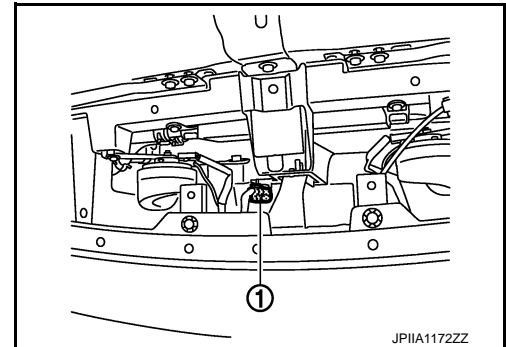
B257B, B257C AMBIENT SENSOR

Description

INFOID:000000011488870

AMBIENT SENSOR

- The ambient sensor (1) is installed to the radiator core support (center).
- The ambient sensor converts the ambient temperature detected with thermistor into the voltage, and the A/C auto amp. inputs this voltage.



AMBIENT TEMPERATURE CORRECTION

- The A/C auto amp. inputs the temperature detected with the ambient sensor as the ambient temperature.
- Perform the correction of the temperature detected with the ambient sensor for air conditioner control and for ambient temperature display.
- Select and use the initial value of ambient temperature data depending on the coolant temperature when turning the ignition switch from OFF to ON. Use the detection temperature of the ambient sensor at low coolant temperature [less than approximately 56°C (133°F)]. Use the memory data (before the ignition switch is OFF) when the engine is warming up [approximately 56°C (133°F) or more].
- Do not perform the correction of the ambient temperature when the detection temperature of the ambient temperature is less than approximately -29°C (-20°F) (for ambient temperature display) or less than approximately -20°C (-4°F) (for air conditioner control).

SET TEMPERATURE CORRECTION

The A/C auto amp. performs the correction to the target temperature set by the temperature control dial so as to match the temperature felt by the passengers depending on the ambient temperature detected with the ambient sensor and controls it so that the interior air temperature is always the most suitable.

DTC Logic

INFOID:000000011488871

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	Diagnostic item is detected when...	Possible causes
B257B	AMBIENT SENSOR	The ambient sensor recognition temperature is too high.	<ul style="list-style-type: none"> • Ambient sensor • A/C auto amp. • Harness and connector (Short in the ambient sensor circuit)
B257C		The ambient sensor recognition temperature is too low.	<ul style="list-style-type: none"> • Ambient sensor • A/C auto amp. • Harness and connector (Open in the ambient sensor circuit)

DTC CONFIRMATION PROCEDURE

1. PERFORM SELF-DIAGNOSIS

④ With CONSULT

1. Perform the "SELF-DIAGNOSIS".
2. Check if any DTC is detected in the self-diagnostic results.

NOTE:

- If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to [HAC-37. "DTC Logic"](#) or [HAC-38. "DTC Logic"](#).
- If there is an open circuit in the ambient sensor, A/C auto amp registers extreme cold [-44°C (-47°F)] and adjusts the temperature control warmer.

B257B, B257C AMBIENT SENSOR

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

Is DTC "B257B" or "B257C" displayed?

- YES >> Perform the diagnosis for the ambient sensor. Refer to [HAC-43, "Diagnosis Procedure"](#).
- NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011488872

1. CHECK AMBIENT SENSOR POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect ambient sensor connector.
3. Turn the ignition switch ON.
4. Check voltage between ambient sensor harness connector and ground.

(+)		(-)	Voltage (Approx.)
Ambient sensor		—	
Connector	Terminal		
E76	1	Ground	5 V

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> GO TO 4.

2. CHECK AMBIENT SENSOR CIRCUIT CONTINUITY

1. Turn the ignition switch OFF.
2. Disconnect the A/C auto amp. connector.
3. Check for continuity between the ambient sensor harness connector and A/C auto amp harness connector.

Ambient sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
E76	2	M66	37	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the harnesses or connectors.

3. CHECK AMBIENT SENSOR

Check the ambient sensor components. Refer to [HAC-44, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Replace the A/C auto amp.
- NO >> Replace the ambient sensor.

4. CHECK AMBIENT SENSOR CIRCUIT CONTINUITY

1. Turn the ignition switch OFF.
2. Disconnect the A/C auto amp. connector.
3. Check for continuity between the ambient sensor harness connector and A/C auto amp. harness connector.

Ambient sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
E76	1	M66	35	Existed

4. Check for continuity between ambient sensor harness connector and ground.

Ambient sensor		(-)	Continuity
Connector	Terminal	—	
E76	1	Ground	Not existed

B257B, B257C AMBIENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

Is the inspection result normal?

- YES >> Replace the A/C auto amp.
- NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000011488873

1. CHECK AMBIENT SENSOR

1. Turn the ignition switch OFF.
2. Remove the ambient sensor. Refer to [HAC-97, "Exploded View"](#).
3. Check the resistance between the ambient sensor terminals. Refer to the applicable table for the normal value.

Terminal		Condition	Resistance: kΩ
		Temperature: °C (°F)	
1	2	-15 (5)	12.73
		-10 (14)	9.92
		-5 (23)	7.80
		0 (32)	6.19
		5 (41)	4.95
		10 (50)	3.99
		15 (59)	3.24
		20 (68)	2.65
		25 (77)	2.19
		30 (86)	1.81
		35 (95)	1.51
		40 (104)	1.27
		45 (113)	1.07

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the ambient sensor.

B2581, B2582 INTAKE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

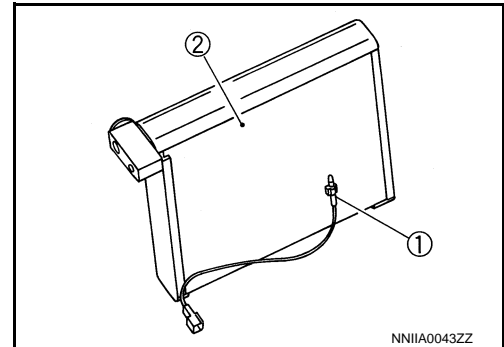
B2581, B2582 INTAKE SENSOR

Description

INFOID:000000011488874

INTAKE SENSOR

- Intake sensor (1) is located on the evaporator (2).
- The intake sensor converts the evaporator passing air temperature detected with thermistor into the voltage, and the A/C auto amp. inputs this voltage.



INTAKE TEMPERATURE CORRECTION

- The A/C auto amp. inputs the temperature detected with the intake sensor as the evaporator passing air temperature.
- Perform the correction of the temperature detected with the intake sensor for air conditioner control.
- The A/C auto amp. performs the correction so that the recognition intake temperature changes according to the difference between the detected intake temperature and the recognition intake temperature. If the difference is large, the changing is early. The changing becomes slow as the difference becomes small.

DTC Logic

INFOID:000000011488875

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	Diagnostic item is detected when...	Possible causes
B2581	INTAKE SENSOR	The intake sensor recognition temperature is too high.	<ul style="list-style-type: none"> • Intake sensor • A/C auto amp. • Harness and connector (Short in the intake sensor circuit)
B2582		The intake sensor recognition temperature is too low.	<ul style="list-style-type: none"> • Intake sensor • A/C auto amp. • Harness and connector (Open in the intake sensor circuit)

DTC CONFIRMATION PROCEDURE

1. PERFORM SELF-DIAGNOSIS

Ⓜ With CONSULT

1. Perform the "SELF-DIAGNOSIS".
2. Check if any DTC is detected in the self-diagnostic results.

NOTE:

If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to [HAC-37, "DTC Logic"](#) or [HAC-38, "DTC Logic"](#).

Is DTC "B2581" or "B2582" displayed?

- YES >> Perform the diagnosis for the intake sensor. Refer to [HAC-45, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000011488876

1. CHECK INTAKE SENSOR POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the intake sensor connector.
3. Turn the ignition switch ON.

B2581, B2582 INTAKE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

4. Check voltage between intake sensor harness connector and ground.

(+)		(-)	Voltage (Approx.)
Intake sensor		—	
Connector	Terminal		
M77	1	Ground	5 V

Is the inspection result normal?

- YES >> GO TO 2.
NO >> GO TO 4.

2.CHECK INTAKE SENSOR CIRCUIT CONTINUITY

1. Turn the ignition switch OFF.
2. Disconnect the A/C auto amp. connector.
3. Check for continuity between the intake sensor harness connector and A/C auto amp. harness connector.

Intake sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M77	2	M66	37	Existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK INTAKE SENSOR

Check the intake sensor components. Refer to [HAC-46, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Replace the A/C auto amp.
NO >> Replace the intake sensor.

4.CHECK INTAKE SENSOR CIRCUIT CONTINUITY

1. Turn the ignition switch OFF.
2. Disconnect the A/C auto amp. connector.
3. Check for continuity between the intake sensor harness connector and A/C auto amp. harness connector.

Intake sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M77	1	M66	16	Existed

4. Check for continuity between intake sensor harness connector and ground.

Intake sensor		(-)	Continuity
Connector	Terminal		
M77	1	Ground	Not existed.

Is the inspection result normal?

- YES >> Replace the A/C auto amp.
NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000011488877

1.CHECK INTAKE SENSOR

1. Turn the ignition switch OFF.
2. Disconnect the intake sensor connector. Refer to [HAC-100, "Exploded View \(GT-R certified NISSAN dealer\)"](#).
3. Check the resistance between the intake sensor terminals. Refer to the applicable table for the normal value.

B2581, B2582 INTAKE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

Terminal		Condition	Resistance: kΩ
		Temperature: °C (°F)	
1	2	-15 (5)	12.84
		-10 (14)	10.02
		-5 (23)	7.89
		0 (32)	6.27
		5 (41)	5.02
		10 (50)	4.06
		15 (59)	3.30
		20 (68)	2.70
		25 (77)	2.23
		30 (86)	1.85
		35 (95)	1.54
		40 (104)	1.30
		45 (113)	1.09

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the intake sensor.

A

B

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D

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HAC

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P

B2630, B2631 SUNLOAD SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

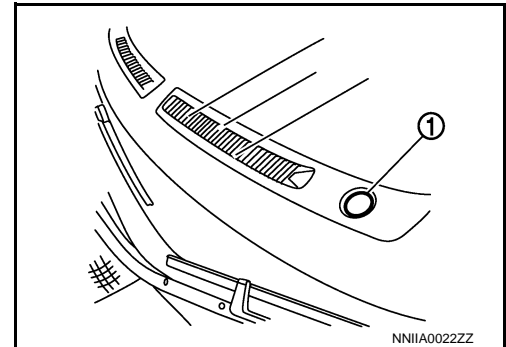
B2630, B2631 SUNLOAD SENSOR

Description

INFOID:000000011488878

SUNLOAD SENSOR

- The sunload sensor (1) is installed to the front defroster grille of the driver side.
- The sunload sensor converts the sunload amount (illuminance) into the current value with the photodiode. The A/C auto amp. calculates this current value to the voltage and inputs it.



SUNLOAD AMOUNT CORRECTION

- The A/C auto amp. inputs the sunload amount detected with the sunload sensor.
- Perform the correction of the sunload amount detected with the sunload sensor for each air conditioner control.
- When the sunload amount suddenly changes, for example when entering a tunnel, perform the correction so that the recognition sunload amount of the A/C auto amp. changes slowly.

DTC Logic

INFOID:000000011488879

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	Diagnostic item is detected when...	Possible causes
B2630	SUNLOAD SENSOR	Detected calorie at sunload sensor 2832 W/m ² (2437 kcal/m ² ·h) or more	<ul style="list-style-type: none"> • Sunload sensor • A/C auto amp. • Harness and connector (Short in the sunload sensor circuit)
B2631		Detected calorie at sunload sensor 64.7 W/m ² (56 kcal/m ² ·h) or less	<ul style="list-style-type: none"> • Sunload sensor • A/C auto amp. • Harness and connector (Open in the sunload sensor circuit)

DTC REPRODUCTION PROCEDURE

1. PERFORM SELF-DIAGNOSIS

Ⓜ With CONSULT

1. Perform the "SELF-DIAGNOSIS".
2. Check if any DTC is detected in the self-diagnostic results.

NOTE:

- If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to [HAC-37. "DTC Logic"](#) or [HAC-38. "DTC Logic"](#).
- Sunload sensor may register a malfunction when indoors, at dusk, or at other times when light is insufficient. When performing the diagnosis indoors, use a lamp (60 W or more) that is pointed at the sunload sensor.

Is DTC "B2630" or "B2631" displayed?

- YES >> Perform the diagnosis for the sunload sensor. Refer to [HAC-48. "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000011488880

1. CHECK SUNLOAD SENSOR POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the sunload sensor connector.

B2630, B2631 SUNLOAD SENSOR

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

- Turn the ignition switch ON.
- Check voltage between sunload sensor harness connector and ground.

(+)		(-)	Voltage (Approx.)
Sunload sensor		—	
Connector	Terminal		
M96	1	Ground	

Is the inspection result normal?

- YES >> GO TO 2.
NO >> GO TO 4.

2.CHECK SUNLOAD SENSOR CIRCUIT CONTINUITY

- Turn the ignition switch OFF.
- Disconnect the A/C auto amp. connector.
- Check for continuity between the sunload sensor harness connector and the A/C auto amp. harness connector.

Sunload sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M96	2	M66	37	Existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK SUNLOAD SENSOR

- Connect the sunload sensor connector.
- Connect the A/C auto amp. connector.
- Check the sunload sensor components. Refer to [HAC-49, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Replace the A/C auto amp.
NO >> Replace the sunload sensor.

4.CHECK SUNLOAD SENSOR CIRCUIT CONTINUITY

- Turn the ignition switch OFF.
- Disconnect the A/C auto amp. connector.
- Check for continuity between the sunload sensor harness connector and A/C auto amp. harness connector.

Sunload sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M96	1	M66	15	Existed

- Check for continuity between sunload sensor harness connector and ground.

Sunload sensor		(-)	Continuity
Connector	Terminal		
M96	1	Ground	Not existed

Is the inspection result normal?

- YES >> Replace A/C auto amp.
NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:00000001148881

1.CHECK SUNLOAD SENSOR

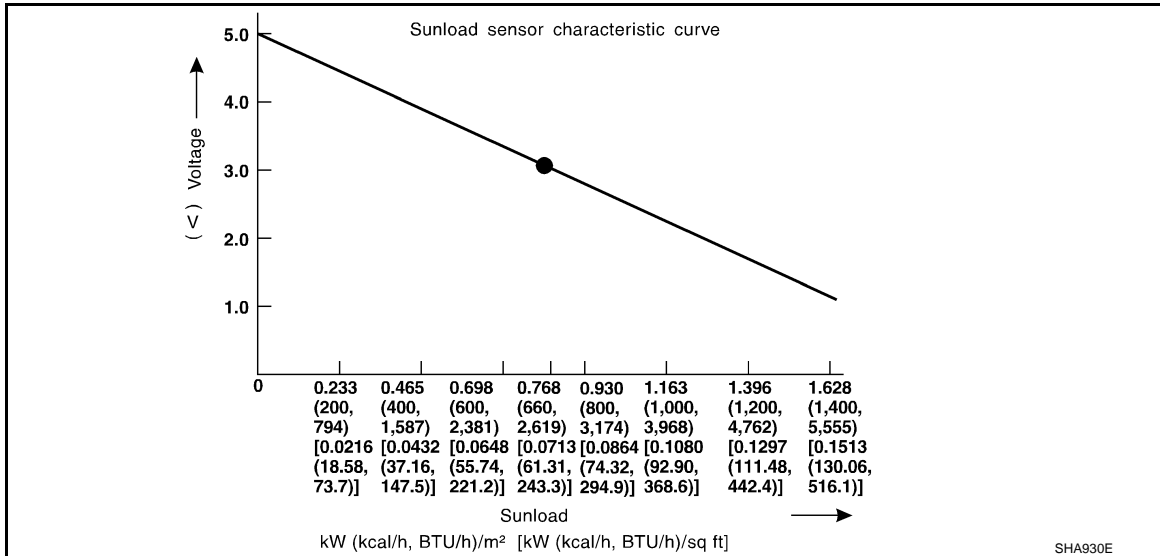
B2630, B2631 SUNLOAD SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

1. Turn the ignition switch ON.
2. Check the input voltage from the sunload sensor between the A/C auto amp. harness connector and ground. Refer to the applicable table for the normal value.

(+)		(-)
A/C auto amp.		—
Connector	Terminal	
M66	15	Ground



NOTE:

- When checking indoors, use a lamp of approximately 60 W. Move the lamp towards and away from the sensor to check.
- The sunload amount produced by direct sunshine in fair weather is equivalent to approximately 0.77 kW/m² (660 kcal/m²·h).

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace the sunload sensor.

B2632, B2633 AIR MIX DOOR MOTOR PBR (DRIVER SIDE)

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

B2632, B2633 AIR MIX DOOR MOTOR PBR (DRIVER SIDE)

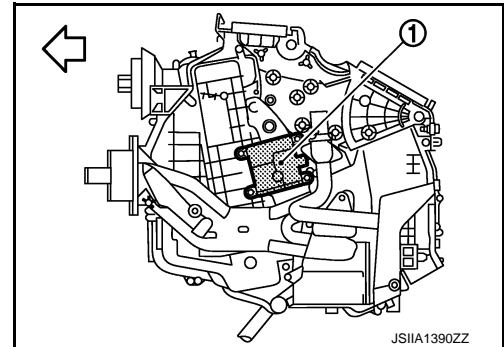
Description

INFOID:000000011488882

AIR MIX DOOR MOTOR (DRIVER SIDE)

- The air mix door motor (driver side) (1) is installed to the heater & cooling unit assembly.

←: **Vehicle front**



- The LCU (Local Control Unit) is installed to each door motor so as to perform the multiplex communication control (LAN) between each door motor of the mode door motor, air mix door motor and intake door motor in one communication line.
- When each LCU receives the control signal (combination of the pulse wave with two types of amplitude) from the A/C auto amp., it moves each door to the appropriate position based on the door position detection signal of each PBR (Potentio Balance Resistor). When the movement was completed, each LCU transmits the signal that reports the movement completion to the A/C auto amp.

DTC Logic

INFOID:000000011488883

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	Diagnostic item is detected when...	Possible causes
B2632	DR AIR MIX DOOR MOT	Air mix door PBR (driver side) position 95% or less	<ul style="list-style-type: none">Air mix door motor (driver side) (PBR internal circuit is shorted)A/C auto amp.Harness and connector (LAN communication line is open or shorted)
B2633		Air mix door PBR (driver side) position 5% or more	<ul style="list-style-type: none">Air mix door motor (driver side) (PBR internal circuit is open)A/C auto amp.Harness and connector (LAN communication line is open or shorted)

HAC

DTC CONFIRMATION PROCEDURE

1. PERFORM SELF-DIAGNOSIS

Ⓜ With CONSULT

- Perform the "SELF-DIAGNOSIS".
- Check if any DTC is detected in the self-diagnostic results.

NOTE:

If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to [HAC-37. "DTC Logic"](#) or [HAC-38. "DTC Logic"](#).

Is DTC "B2632" or "B2633" displayed?

YES >> Perform the diagnosis of air mix door motor system (driver side). Refer to [HAC-52. "Diagnosis Procedure"](#).

NO >> GO TO 2.

2. FUNCTION INSPECTION

- Turn temperature dial (driver side) and raise temperature setting to 32.0°C (90°F) after warming up the engine.
- Check that warm air blows from outlets.
- Operate the compressor.
- Operate the temperature control dial (driver side) and lower the set temperature to 18.0°C (60°F).

B2632, B2633 AIR MIX DOOR MOTOR PBR (DRIVER SIDE)

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

5. Check that the cool air blows from the outlets.

Does it operate normally?

YES >> INSPECTION END

NO >> Check the air mix door motor system (driver side) installation condition. Repair or replace the malfunctioning parts.

Diagnosis Procedure

INFOID:000000011488884

1. CHECK BATTERY VOLTAGE OF AIR MIX DOOR MOTOR (DRIVER SIDE)

1. Turn the ignition switch ON.

2. Check voltage between the air mix door motor (driver side) harness connector and ground.

(+)		(-)	Voltage (Approx.)
Air mix door motor (driver side)		—	
Connector	Terminal		
M252	1	Ground	12 V

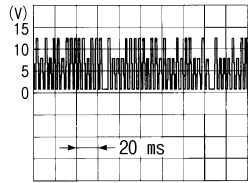
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

2. CHECK SIGNAL OF AIR MIX DOOR MOTOR (DRIVER SIDE)

Check output waveform between the air mix door motor (driver side) harness connector and ground with the oscilloscope.

(+)		(-)	Output waveform
Air mix door motor (driver side)		—	
Connector	Terminal		
M252	3	Ground	

SJIA1453J

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3. CHECK GROUND CIRCUIT OF AIR MIX DOOR MOTOR (DRIVER SIDE)

1. Turn the ignition switch OFF.

2. Disconnect the air mix door motor (driver side) connector.

3. Check for continuity between the air mix door motor (driver side) harness connector and ground.

Air mix door motor (driver side)		(-)	Continuity
		—	
Connector	Terminal		
M252	2	Ground	Existed

Is the inspection result normal?

YES >> Replace the air mix door motor (driver side).

NO >> Repair the harnesses or connectors.

B2634, B2635 AIR MIX DOOR MOTOR PBR (PASSENGER SIDE)

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

B2634, B2635 AIR MIX DOOR MOTOR PBR (PASSENGER SIDE)

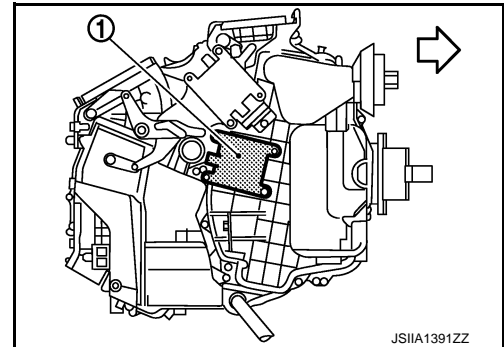
Description

INFOID:000000011488885

AIR MIX DOOR MOTOR (PASSENGER SIDE)

- The air mix door motor (passenger side) (1) is installed to the heater & cooling unit assembly.

←: **Vehicle front**



- The LCU (Local Control Unit) is installed to each door motor so as to perform the multiplex communication control (LAN) between each door motor of the mode door motor, air mix door motor and intake door motor in one communication line.
- When each LCU receives the control signal (combination of the pulse wave with two types of amplitude) from the A/C auto amp., it moves each door to the appropriate position based on the door position detection signal of each PBR (Potentio Balance Resistor). When the movement was completed, each LCU transmits the signal that reports the movement completion to the A/C auto amp.

DTC Logic

INFOID:000000011488886

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	Diagnostic item is detected when...	Possible causes
B2634	PASS AIR MIX DOOR MOT	Air mix door PBR (passenger side) position 95% or less	<ul style="list-style-type: none">• Air mix door motor (passenger side) (PBR internal circuit is shorted)• A/C auto amp.• Harness and connector (LAN communication line is open or shorted)
B2635		Air mix door PBR (passenger side) position 5% or more	<ul style="list-style-type: none">• Air mix door motor (passenger side) (PBR internal circuit is open)• A/C auto amp.• Harness and connector (LAN communication line is open or shorted)

DTC CONFIRMATION PROCEDURE

1. PERFORM SELF-DIAGNOSIS

Ⓜ With CONSULT

1. Perform the "SELF-DIAGNOSIS".
2. Check if any DTC is detected in the self-diagnostic results.

NOTE:

If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to [HAC-37. "DTC Logic"](#) or [HAC-38. "DTC Logic"](#).

Is DTC "B2634" or "B2635" displayed?

YES >> Perform the diagnosis of air mix door motor system (passenger side). Refer to [HAC-54. "Diagnosis Procedure"](#).

NO >> GO TO 2.

2. FUNCTION INSPECTION

1. Operate the temperature control dial (passenger side) and raise the set temperature to 32.0°C (90°F) after warming up the engine.
2. Check that warm air blows from passenger side outlets.
3. Operate the compressor.
4. Operate the temperature control dial (passenger side) and lower the set temperature to 18.0°C (60°F).

B2634, B2635 AIR MIX DOOR MOTOR PBR (PASSENGER SIDE)

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

5. Check that the cool air blows from the passenger side outlets.

Does it operate normally?

YES >> INSPECTION END

NO >> Check the air mix door system (passenger side) installation condition. Repair or replace the malfunctioning parts.

Diagnosis Procedure

INFOID:00000001148887

1. CHECK BATTERY VOLTAGE OF AIR MIX DOOR MOTOR (PASSENGER SIDE)

1. Turn the ignition switch ON.

2. Check voltage between the air mix door motor (passenger side) harness connector and ground.

(+)		(-)	Voltage (Approx.)
Air mix door motor (passenger side)		—	
Connector	Terminal		
M255	1	Ground	12V

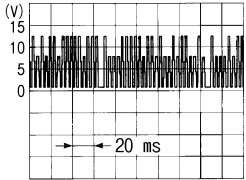
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

2. CHECK SIGNAL OF AIR MIX DOOR MOTOR (PASSENGER SIDE)

Check output waveform between the air mix door motor (passenger side) harness connector and ground with the oscilloscope.

(+)		(-)	Output waveform
Air mix door motor (passenger side)		—	
Connector	Terminal		
M255	3	Ground	

SJIA1453J

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3. CHECK GROUND CIRCUIT OF AIR MIX DOOR MOTOR (PASSENGER SIDE)

1. Turn the ignition switch OFF.

2. Disconnect the air mix door motor (passenger side) connector.

3. Check for continuity between the air mix door motor (passenger side) harness connector and ground.

Air mix door motor (passenger side)		(-)	Continuity
		—	
Connector	Terminal		
M255	2	Ground	Existed

Is the inspection result normal?

YES >> Replace the air mix door motor (passenger side).

NO >> Repair the harnesses or connectors.

B2636, B2637, B2638, B2639, B2654, B2655 MODE DOOR MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

B2636, B2637, B2638, B2639, B2654, B2655 MODE DOOR MOTOR

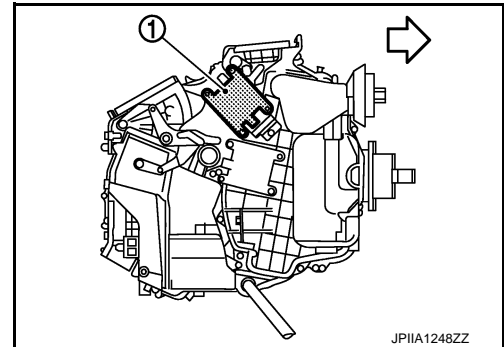
Description

INFOID:000000011488888

MODE DOOR MOTOR

- The mode door motor (1) is installed to the heater & cooling unit assembly.

←: **Vehicle front**



- The LCU (Local Control Unit) is installed to each door motor so as to perform the multiplex communication control (LAN) between each door motor of the mode door motor, air mix door motor and intake door motor in one communication line.
- When each LCU receives the control signal (combination of the pulse wave with two type of amplitude) from the A/C auto amp., it moves each door to the appropriate position based on the door position detection signal of each PBR (Potentio Balance Resistor). When the movement was completed, each LCU transmits the signal that reports the movement completion to the A/C auto amp.

DTC Logic

INFOID:000000011488889

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	Diagnostic item is detected when...	Possible cause
B2636	DR VENT DOOR FAIL	When the malfunctioning door position is detected at VENT position	<ul style="list-style-type: none"> Mode door motor (PBR internal circuit is open or shorted) A/C auto amp. Harness and connector (LAN communication line is open or shorted)
B2637	DR B/L DOOR FAIL	When the malfunctioning door position is detected at B/L position	
B2638	DR D/F1 DOOR FAIL	When the malfunctioning door position is detected at FOOT position	
B2639	DR DEF DOOR FAIL	When the malfunctioning door position is detected at DEF position	
B2654	D/F2 DOOR FAIL	When the malfunctioning door position is detected at D/F position	
B2655	B/L2 DOOR FAIL	When the malfunctioning door position is detected at B/L2 position	

DTC CONFIRMATION PROCEDURE

1. PERFORM SELF-DIAGNOSIS

- Perform the "SELF-DIAGNOSIS".
- Check if any DTC is detected in the self-diagnostic results.

NOTE:

If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to [HAC-37, "DTC Logic"](#) or [HAC-38, "DTC Logic"](#).

Is DTC "B2636", "B2637", "B2638", "B2639", "B2654" or "B2655" displayed?

- YES >> Perform the diagnosis of mode door motor system. Refer to [HAC-56, "Diagnosis Procedure"](#).
 NO >> GO TO 2.

2. FUNCTION INSPECTION

- Operate MODE switch and DEF switch.
- Check that the air outlets change according to each indicated air outlet by placing a hand in front of the outlets. Refer to [VTL-3, "System Description"](#).

Does it operate normally?

- YES >> INSPECTION END

B2636, B2637, B2638, B2639, B2654, B2655 MODE DOOR MOTOR

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Check the mode door system installation condition. Repair or replace the malfunctioning parts.

Diagnosis Procedure

INFOID:000000011488890

1. CHECK MODE DOOR MOTOR POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between the mode door motor harness connector and ground.

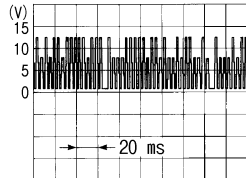
(+)		(-)	Voltage (Approx.)
Mode door motor		—	
Connector	Terminal		
M253	1	Ground	12 V

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2. CHECK MODE DOOR MOTOR SIGNAL

Check output waveform between the mode door motor harness connector and ground with the oscilloscope.

(+)		(-)	Output waveform
Mode door motor		—	
Connector	Terminal		
M253	3	Ground	 SJIA1453J

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3. CHECK MODE DOOR MOTOR GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the mode door motor connector.
3. Check for continuity between the mode door motor harness connector and ground.

Mode door motor		(-)	Continuity
Mode door motor		—	
Connector	Terminal		
M253	2	Ground	Existed

Is the inspection result normal?

- YES >> Replace the Mode door motor.
NO >> Repair the harnesses or connectors.

B263D, B263E, B263F INTAKE DOOR MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

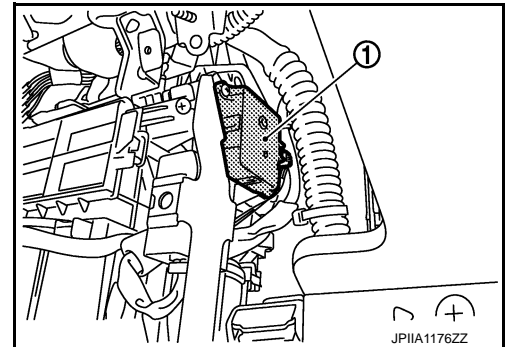
B263D, B263E, B263F INTAKE DOOR MOTOR

Description

INFOID:000000011488891

INTAKE DOOR MOTOR

- The intake door motor (1) is installed to the blower unit.
- The LCU (Local Control Unit) is installed to each door motor so as to perform the multiplex communication control (LAN) between each door motor of the mode door motor, air mix door motor and intake door motor in one communication line.
- When each LCU receives the control signal (combination of the pulse wave with two type of amplitude) from the A/C auto amp., it moves each door to the appropriate position based on the door position detection signal of each PBR (Potentio Balance Resistor). When the movement was completed, each LCU transmits the signal that reports the movement completion to the A/C auto amp.



DTC Logic

INFOID:000000011488892

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	Diagnostic item is detected when...	Possible cause
B263D	FRE DOOR FAIL	When the malfunctioning intake door position is detected at FRE position	<ul style="list-style-type: none"> • Intake door motor (PBR internal circuit is open or shorted) • A/C auto amp. • Harness and connector (LAN communication line is open or shorted)
B263E	20P FRE DOOR FAIL	When the malfunctioning intake door position is detected at 20%FRE position	
B263F	REC DOOR FAIL	When the malfunctioning intake door position is detected at REC position	

DTC CONFIRMATION PROCEDURE

1.PERFORM SELF-DIAGNOSIS

ⓂWith CONSULT

1. Perform the "SELF-DIAGNOSIS".
2. Check if any DTC is detected in the self-diagnostic results.

NOTE:

If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to [HAC-37, "DTC Logic"](#) or [HAC-38, "DTC Logic"](#).

Is DTC "B263D", "B263E" or "B263F" displayed?

- YES >> Perform the diagnosis of intake door motor system. Refer to [HAC-57, "Diagnosis Procedure"](#).
 NO >> GO TO 2.

2.FUNCTION INSPECTION

1. Press REC switch to set the air outlet to recirculation.
2. The REC switch indicator turns on.
3. Listen to intake sound and confirm air inlets change.
4. Press FRE switch to set the air outlet to fresh air intake.
5. The FRE switch indicator turns on.
6. Listen to intake sound and confirm air inlets change.

Does it operate normally?

- YES >> INSPECTION END
 NO >> Check the intake door system installation condition. Repair or replace the malfunctioning parts.

Diagnosis Procedure

INFOID:000000011488893

1.CHECK BATTERY VOLTAGE OF INTAKE DOOR MOTOR

1. Turn the ignition switch ON.

B263D, B263E, B263F INTAKE DOOR MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

2. Check voltage between the intake door motor harness connector and ground.

(+)		(-)	Voltage (Approx.)
Intake door motor		—	
Connector	Terminal		
M254	1	Ground	12 V

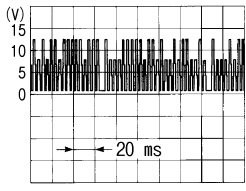
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

2.CHECK INTAKE DOOR MOTOR SIGNAL

Check output waveform between the intake door motor harness connector and ground with the oscilloscope.

(+)		(-)	Output waveform
Intake door motor		—	
Connector	Terminal		
M254	3	Ground	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3.CHECK INTAKE DOOR MOTOR GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the intake door motor connector.
3. Check for continuity between the intake door motor harness connector and ground.

Intake door motor		(-)	Continuity
Connector	Terminal	—	
M254	2	Ground	Existed

Is the inspection result normal?

YES >> Replace the Intake door motor.

NO >> Repair the harnesses or connectors.

POWER SUPPLY AND GROUND CIRCUIT

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT

A/C AUTO AMP.

A/C AUTO AMP. : Diagnosis Procedure

INFOID:000000011488894

1. CHECK FUSE

Check 10A fuses [Nos. 3, 6 and 19, located in the fuse block (J/B)].

NOTE:

Refer to [PG-85. "Fuse, Connector and Terminal Arrangement"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the fuse after repairing the applicable circuit.

2. CHECK A/C AUTO AMP. POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the A/C auto amp. connector.
3. Check voltage between A/C auto amp. harness connector and ground.

(+)		(-)	Voltage (Approx.)		
A/C auto amp.		—	Ignition switch position		
Connector	Terminal		OFF	ACC	ON
M66	40	Ground	Battery voltage	Battery voltage	Battery voltage
	17		0 V	Battery voltage	Battery voltage
	20		0 V	0 V	Battery voltage

Is the inspection result normal?

YES >> Repair the harnesses or connectors.

NO >> GO TO 3.

3. CHECK A/C AUTO AMP. GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Check continuity between A/C auto amp. harness connector and ground.

A/C auto amp.		—	Continuity
Connector	Terminal		
M66	19	Ground	Existed
	39		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the harnesses or connectors.

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HAC

DOOR MOTOR COMMUNICATION CIRCUIT

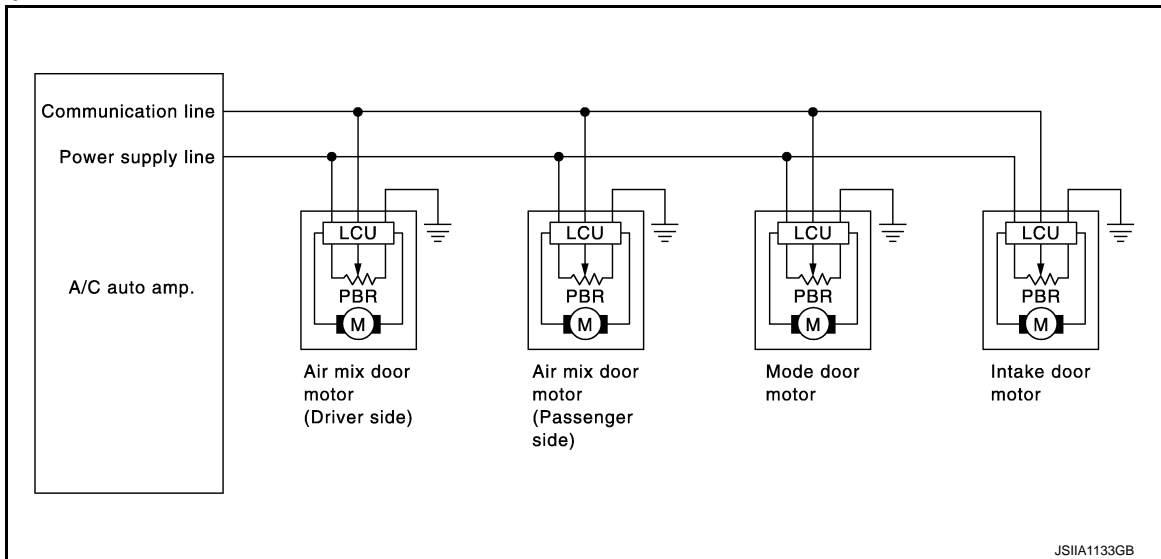
< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

DOOR MOTOR COMMUNICATION CIRCUIT

Description

INFOID:000000011488895



JSIIA1133GB

- LCU (Local Control Unit) is built in to each door motor. And detects door position by PBR (Potentiometer 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 control each door to the appropriate position depending on the control signal from A/C auto amp. When the door movement was completed, transmits the signal of door movement completion to A/C auto amp.

Diagnosis Procedure

INFOID:000000011488896

NOTE:

If all of door motors DTC are detected, check this circuit.

1. CHECK COMMUNICATION SIGNAL

1. Turn the ignition switch ON.
2. Check output waveform between A/C auto amp. harness connector and ground with the oscilloscope.

(+)		(-)	Output waveform
A/C auto amp.		—	
Connector	Terminal		
M66	10	Ground	

SJIA1453J

Is the inspection result normal?

- YES >> GO TO 3.
NO >> GO TO 2.

2. CHECK COMMUNICATION SIGNAL CIRCUIT FOR SHORT

1. Turn the ignition switch OFF.
2. Disconnect the following connectors;
 - A/C auto amp.
 - Mode door motor
 - Intake door motor

DOOR MOTOR COMMUNICATION CIRCUIT

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

- Air mix door motor (driver side and passenger side)
- 3. Check continuity between A/C auto amp. harness connector and ground.

A/C auto amp.		—	Continuity
Connector	Terminal		
M66	10	Ground	Not existed

Is the inspection result normal?

- YES >> Replace A/C auto amp.
- NO >> Repair the harnesses or connectors.

3.CHECK COMMUNICATION SIGNAL CIRCUIT FOR OPEN

- 1. Turn the ignition switch OFF.
- 2. Disconnect the A/C auto amp. and the mode door motor connectors.
- 3. Check continuity between A/C auto amp. harness connector and the mode door motor harness connector.

A/C auto amp.		Mode door motor		Continuity
Connector	Terminal	Connector	Terminal	
M66	10	M253	3	Existed

Is the inspection result normal?

- YES >> Replace A/C auto amp.
- NO >> Repair the harnesses or connectors.

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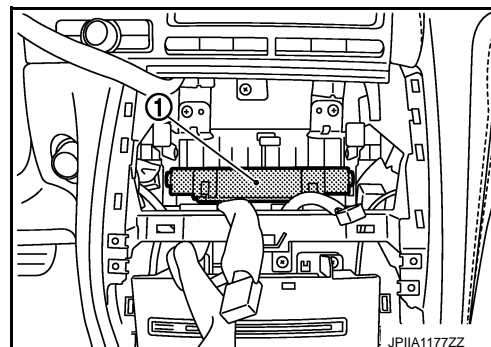
A/C AUTO AMP.

Description

INFOID:000000011488897

A/C AUTO AMP. (AIR CONDITIONER AUTOMATIC AMPLIFIER)

- The A/C auto amp. (1) has a built-in microcomputer which processes information sent from various sensors needed for air conditioner operation.
- The air mix door motors, mode door motor, intake door motor, blower motor and compressor are then controlled.
- When the various switches and temperature control dial are operated, data is input to the A/C auto amp. from the AV control unit using CAN communication.
- Self-diagnosis functions are also built into A/C auto amp. to provide quick check of malfunctions in the auto air conditioner system.



JP1A1177Z

Component Function Check

INFOID:000000011488898

1. CHECK OPERATION

1. Press the AUTO switch, and then check that "AUTO" is shown on the display.
2. Operate the temperature control dial (driver side). Check that the fan speed or discharge air changes (the discharge air temperature or fan speed varies depending on the ambient temperature, in-vehicle temperature, and set temperature).

Does it operate normally?

YES >> INSPECTION END

NO >> Perform the diagnosis for the A/C auto amp. Refer to [HAC-62, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000011488899

1. INSPECTION BY FAIL-SAFE FUNCTION

1. Turn the ignition switch ON.
2. After approximately 30 seconds, check that the air conditioner is operated by the fail-safe function (the operation display of air conditioner is not performed). Refer to [HAC-81, "Fail-safe"](#).

Is the fail-safe function operated?

YES >> GO TO 3.

NO >> GO TO 2.

2. CHECK A/C AUTO AMP. POWER SUPPLY CIRCUIT AND GROUND CIRCUIT

Check A/C auto amp. power supply circuit and ground circuit. Refer to [HAC-59, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace parts according to the inspection results.

3. CHECK PRESET SWITCH

Check the preset switch. Refer to [AV-153, "Symptom Table"](#).

Is the inspection result normal?

YES >> Replace A/C auto amp.

NO >> Repair or replace parts according to the inspection results.

BLOWER MOTOR

[AUTOMATIC AIR CONDITIONER]

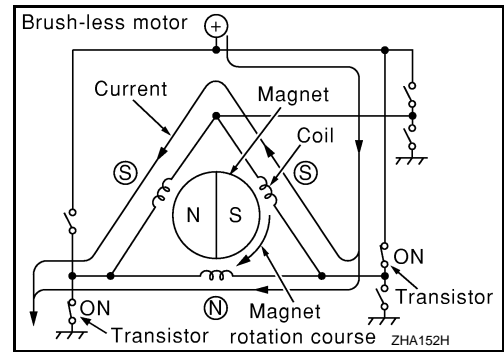
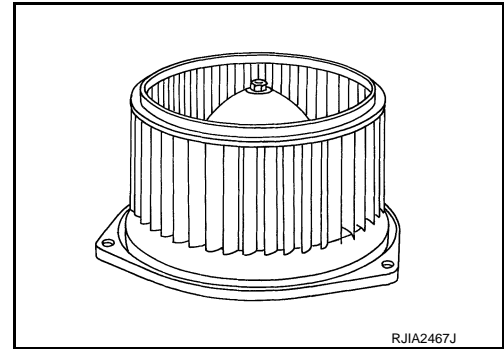
< DTC/CIRCUIT DIAGNOSIS >

BLOWER MOTOR

Description

INFOID:000000011488900

- The blower motor utilizes a brush-less motor with a rotating magnet.
- Quietness is improved over previous motors where the brush was the point of contact and the coil rotated.



Component Function Check

INFOID:000000011488901

1. CHECK OPERATION

1. Warm up the engine.
2. Operate the fan control dial. Check that the fan speed and indicator unit are switched for all blower speeds.

Does it operate normally?

YES >> INSPECTION END

NO >> Perform the diagnosis for the blower motor. Refer to [HAC-63. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000011488902

1. SELF-DIAGNOSIS RESULT CHECK

④ With CONSULT

1. Perform the "SELF-DIAGNOSIS".
2. Check if any DTC is detected in the self-diagnostic results.

NOTE:

If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to [HAC-37. "DTC Logic"](#) or [HAC-38. "DTC Logic"](#).

Is any DTC displayed?

YES >> Perform the diagnosis that is applicable to the sensor and door motor. Refer to [HAC-82. "DTC Index"](#).

NO >> GO TO 2.

2. PERFORM ACTIVE TEST

④ With CONSULT

1. Perform the "HVAC TEST" of HVAC active test item.
2. Check that the blower motor control signal changes according to each indicator number.

BLOWER MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

	Test item						
	MODE 1	MODE 2	MODE 3	MODE 4	MODE 5	MODE 6	MODE 7
Mode door position	VENT	B/L 1	B/L 2	FOOT	D/F	DEF	—
Intake door position	REC	REC	20% FRE	FRE	FRE	FRE	—
Air mix door position (driver & passenger side)	FULL COOL	FULL COOL	FULL HOT	FULL HOT	FULL HOT	FULL HOT	—
Blower fan motor control signal duty ratio	37%	91%	65%	65%	65%	91%	—
Magnet clutch	ON	ON	OFF	OFF	ON	ON	—
ECV	100%	100%	0%	0%	50%	100%	—

NOTE:

- Perform the inspection of each output device after starting the engine because the compressor is operated.
- If the Mode 7 is selected, the malfunction is displayed but it is normal.

Does it operate normally?

YES >> INSPECTION END
 NO >> GO TO 3.

3. CHECK THE BLOWER MOTOR POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the blower motor connector.
3. Turn the ignition switch ON.
4. Check voltage between the blower motor harness connector and ground.

Blower motor		(+)	(-)	Voltage
Connector	Terminal	—		
M109	1	Ground		Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
 NO >> GO TO 7.

4. CHECK THE BLOWER MOTOR GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Check for continuity between the blower motor harness connector and ground.

Blower motor		—	Continuity
Connector	Terminal		
M109	3	Ground	Existed

Is the inspection result normal?

YES >> GO TO 5.
 NO >> Repair the harnesses or connectors.

5. CHECK THE BLOWER MOTOR CIRCUIT CONTINUITY

1. Disconnect the A/C auto amp. connector.
2. Check for continuity between the blower motor harness connector and A/C auto amp. harness connector.

Blower motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M109	2	M66	32	Existed

Is the inspection result normal?

BLOWER MOTOR

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 6.
 NO >> Repair the harnesses or connectors.

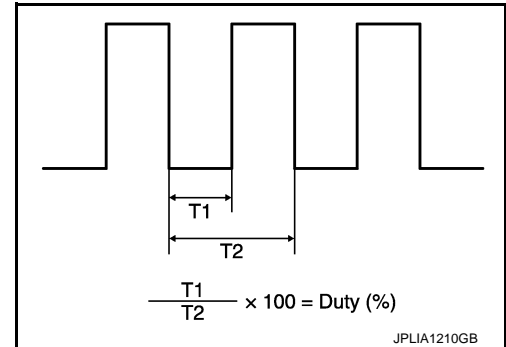
6. CHECK A/C AUTO AMP. OUTPUT SIGNAL

1. Connect the blower motor connector.
2. Connect the A/C auto amp. connector.
3. Turn the ignition switch ON.
4. Set the mode switch to VENT.
5. Change fan speed from Lo to Hi, and check duty ratios between blower motor harness connector and ground by using an oscilloscope.

NOTE:

Calculate the drive signal duty ratio as shown in the figure.
 T2 = Approx. 1.6 ms

Blower motor		Condition		Duty ratio (Approx.)
Connector	Terminal	Fan speed (manual) VENT mode		
M109	2	1st		25 %
		2nd		33 %
		3rd		41 %
		4th		51 %
		5th		61 %
		6th		71 %
		7th		77 %



Is the inspection result normal?

- YES >> Replace the blower motor.
 NO >> Replace the A/C auto amp.

7. CHECK POWER VOLTAGE OF BLOWER RELAY

1. Turn the ignition switch OFF.
2. Remove the blower relay. Refer to [PG-85, "Fuse, Connector and Terminal Arrangement"](#).
3. Turn the ignition switch ON.
4. Check the voltage between blower relay fuse block side terminal and ground. Refer to [PG-83, "Description"](#) for relay terminal assignment.

(+)	(-)	Voltage
Blower relay	—	
1	Ground	Battery voltage
3		

Is the inspection result normal?

- YES >> GO TO 8.
 NO >> Check ignition power supply circuit. Refer to [PG-6, "Wiring Diagram - BATTERY POWER SUPPLY -"](#).

8. CHECK BLOWER RELAY

1. Turn the ignition switch OFF.
2. Install the blower relay. Refer to [PG-85, "Fuse, Connector and Terminal Arrangement"](#).
3. Turn the ignition switch ON.
4. Check the operating sound of blower relay.

Is the inspection result normal?

- YES >> GO TO 9.
 NO >> Replace the blower relay.

9. CHECK FUSE

Check 15A fuses [Nos. 21 and 22, located in the fuse block (J/B)].

BLOWER MOTOR

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

NOTE:

Refer to [PG-85, "Fuse, Connector and Terminal Arrangement"](#).

Is the inspection result normal?

YES >> Repair the harnesses or connectors.

NO >> Replace the fuse after repairing the applicable circuit.

Component Inspection

INFOID:000000011488903

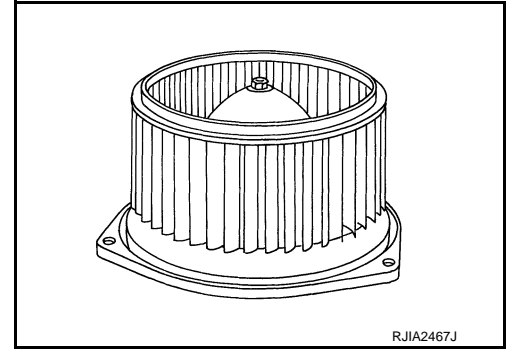
1. CHECK THE BLOWER MOTOR

1. Remove the blower motor. Refer to [VTL-15, "Exploded View"](#).
2. Check that the blower motor turns smoothly.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the blower motor.



MAGNET CLUTCH

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

MAGNET CLUTCH

Description

INFOID:000000011488904

The magnet clutch is the device that drives the compressor with the signal from IPDM E/R.

Component Function Check

INFOID:000000011488905

1.CHECK OPERATION

1. Turn the fan control dial ON.
2. Press the A/C switch.
3. Check that the indicator of the A/C switch turns ON. Check visually and by sound that the compressor operates.
4. Press the A/C switch again.
5. Check that the indicator of the A/C switch turns OFF. Check visually and by sound that the compressor stops.

Does it operate normally?

YES >> INSPECTION END

NO >> Go to diagnosis procedure. Refer to [HAC-67, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000011488906

1.CHECK CHARGED REFRIGERANT

Connect the recovery/recycling recharging equipment to the vehicle and perform the pressure inspection with the gauge.

Is there refrigerant?

YES >> GO TO 2.

NO >> Check for refrigerant leakages detecting fluorescent leak detector. Refer to [HA-36, "Inspection"](#).

2.CHECK MAGNET CLUTCH OPERATION

Perform auto active test of IPDM E/R. Refer to [PCS-9, "Diagnosis Description"](#).

Does it operate normally?

YES >> GO TO 6.

NO >> GO TO 3.

3.CHECK MAGNET CLUTCH

1. Turn the ignition switch OFF.
2. Disconnect the magnet clutch connector.
3. Directly apply the battery voltage to the magnet clutch. Check for operation visually and by sound.

Does it operate normally?

YES >> GO TO 4.

NO >> Replace the compressor.

4.CHECK MAGNET CLUTCH CIRCUIT CONTINUITY

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between magnet clutch harness connector and IPDM E/R harness connector.

IPDM E/R		Magnet clutch		Continuity
Connector	Terminal	Connector	Terminal	
E7	48	F35	1	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses and connectors.

5.CHECK FUSE

MAGNET CLUTCH

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

Check 10A fuse (No. 49, located in the IPDM E/R).

NOTE:

Refer to [PG-85, "Fuse, Connector and Terminal Arrangement"](#).

Is the inspection result normal?

YES >> Replace IPDM E/R.

NO >> Replace the fuse after repairing the applicable circuit.

6.CHECK SELF-DIAGNOSIS RESULT CHECK

Ⓜ With CONSULT

1. Perform the "SELF-DIAGNOSIS".

2. Check if any DTC is detected in the self-diagnostic results.

NOTE:

If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to [HAC-37, "DTC Logic"](#) or [HAC-38, "DTC Logic"](#).

Is any DTC displayed?

YES >> Perform the diagnosis that is applicable to the sensor and door motor. Refer to [HAC-82, "DTC Index"](#).

NO >> GO TO 7.

7.CHECK A/C AUTO AMP. OUTPUT SIGNAL

Ⓜ With CONSULT

1. Perform the "DATA MONITOR" of HVAC. Refer to [HAC-71, "Reference Value"](#).

2. Check A/C switch signal and blower fan motor switch signal.

Monitor item	Condition	Status
COMP REQ SIG	A/C switch: OFF	Off
	A/C switch: ON	On
FAN REQ SIG	Fan control dial: OFF	Off
	Fan control dial: ON	On

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace A/C auto amp.

8.CHECK REFRIGERANT PRESSURE SENSOR

Check the refrigerant pressure sensor. Refer to [EC-560, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace the malfunctioning parts.

ECV (ELECTRICAL CONTROL VALVE)

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

ECV (ELECTRICAL CONTROL VALVE)

Description

INFOID:000000011488907

The ECV (electrical control valve) is installed in the compressor and controls it for emitting appropriate amount of refrigerant when necessary.

Diagnosis Procedure

INFOID:000000011488908

1. CHECK FUSE

Check 10A fuse [No. 3, located in the fuse block (J/B)].

NOTE:

Refer to [PG-85, "Fuse, Connector and Terminal Arrangement"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the fuse after repairing the applicable circuit.

2. CHECK ECV POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the ECV connector.
3. Turn the ignition switch ON.
4. Check voltage between ECV harness connector and ground.

(+)		(-)	Voltage
ECV		—	
Connector	Terminal		
F36	2	Ground	Battery voltage

Is the inspection result normal?

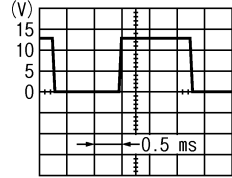
YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3. CHECK ECV CONTROL SIGNAL

 With CONSULT

1. Turn the ignition switch OFF.
2. Connect the ECV connector.
3. Perform the "HVAC TEST": MODE 5 of HVAC active test mode.
4. Check output waveform between the A/C auto amp. harness connector and ground with the oscilloscope.

(+)		(-)	Condition	Output waveform
A/C auto amp.		—		
Connector	Terminal			
M66	24	Ground	HVAC TEST: MODE 5	Duty ratio: approx. 50 %  <small>SJIA1607E</small>

Is the inspection result normal?

YES >> Replace the compressor.

NO >> GO TO 4.

4. CHECK CONTINUITY BETWEEN ECV AND A/C AUTO AMP.

1. Turn the ignition switch OFF.
2. Disconnect the ECV connector.

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ECV (ELECTRICAL CONTROL VALVE)

[AUTOMATIC AIR CONDITIONER]

< DTC/CIRCUIT DIAGNOSIS >

3. Disconnect the A/C auto amp. connector.
4. Check continuity between ECV harness connector and A/C auto amp. harness connector.

ECV		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
F36	3	M66	24	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

5.CHECK ECV

Check continuity between ECV connector terminals.

ECV		Continuity
Terminal	Terminal	
2	3	Existed

Is the inspection result normal?

YES >> Replace the A/C auto amp.

NO >> Replace the compressor.

A/C AUTO AMP.

< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONER]

ECU DIAGNOSIS INFORMATION

A/C AUTO AMP.

Reference Value

INFOID:000000011488909

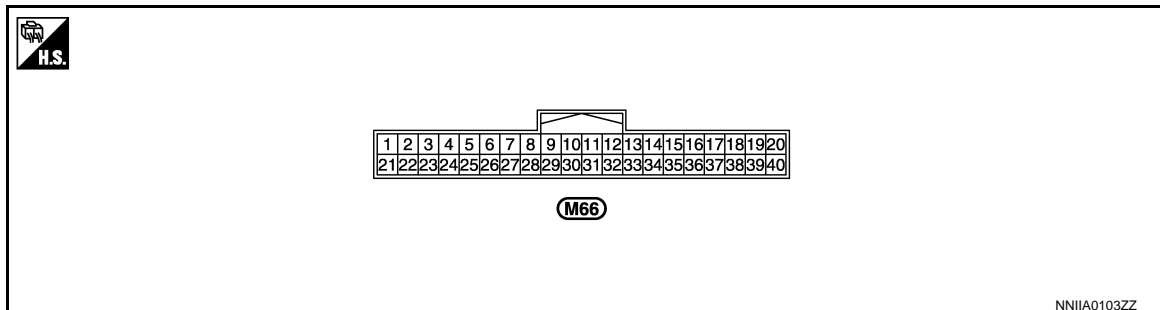
CONSULT DATA MONITOR REFERENCE VALUES

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition		Value/Status
COMP REQ SIG	Engine: Run at idle after warming up	A/C switch: ON (Compressor operation status)	On
		A/C switch: OFF	Off
FAN REQ SIG	Engine: Run at idle after warming up	Blower motor: ON	On
		Blower motor: OFF	Off
AMB TEMP SEN	Ignition switch ON	—	-22 – 131°F (-30 – 55°C)
IN-VEH TEMP	Ignition switch ON	—	-22 – 131°F (-30 – 55°C)
INT TEMP SEN	Ignition switch ON	—	-22 – 131°F (-30 – 55°C)
SUNLOAD SEN	Ignition switch ON	—	0 – 1045 w/m ²
AMB SEN CAL	Ignition switch ON	—	-22 – 131°F (-30 – 55°C)
IN-VEH CAL	Ignition switch ON	—	-22 – 131°F (-30 – 55°C)
INT TEMP CAL	Ignition switch ON	—	-22 – 131°F (-30 – 55°C)
SUNL SEN CAL	Ignition switch ON	—	0 – 1045 w/m ²
FAN DUTY	Engine: Run at idle after warming up	Blower motor: ON	25 – 81
		Blower motor: OFF	0
XM	Ignition switch ON	—	-100 – 155
ENG COOL TEMP	Ignition switch ON	—	Values according to coolant temperature
VEHICLE SPEED	Driving	—	Equivalent to speedometer reading

TERMINAL LAYOUT

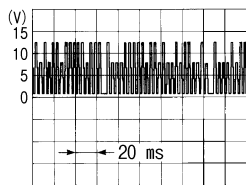
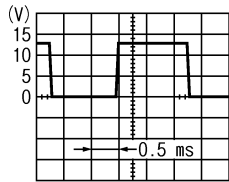
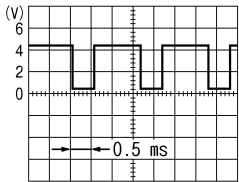


PHYSICAL VALUES

A/C AUTO AMP.

< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONER]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (L)	Ground	CAN - H	Input/ Output	—	—
2 (P)	Ground	CAN - L	Input/ Output	—	—
10 (L)	Ground	A/C LAN signal	Input/ Output	Ignition switch ON	 <p style="text-align: right; font-size: small;">SJIA1453J</p>
11 (R)	Ground	Each door motor power supply	—	Ignition switch ON	12 V
15 (O)	Ground	Sunload sensor signal	Input	—	0 – 4.8 V Output voltage varies with sunload amount
16 (R)	Ground	Intake sensor signal	Input	—	0 – 4.8 V Output voltage varies with intake temperature
17 (SB)	Ground	ACC power supply	—	Ignition switch ACC	Battery voltage
19 (B)	Ground	Ground	—	Ignition switch ON	0 V
20 (G)	Ground	Ignition power supply	—	Ignition switch ON	Battery voltage
24 (O)	Ground	ECV signal	Output	<ul style="list-style-type: none"> • Ignition switch ON • HVAC TEST: MODE 5 	 <p style="text-align: right; font-size: small;">SJIA1607E</p>
32 (L)	Ground	Blower motor control signal	Output	<ul style="list-style-type: none"> • Ignition switch ON • Fan speed: 1st speed (manual) 	 <p style="text-align: right; font-size: small;">JSIIA0096ZZ</p>
34 (Y)	Ground	A/C auto amp. connecting recognition signal	Output	Ignition switch ON	5 V
35 (P)	Ground	Ambient sensor signal	Input	—	0 – 4.8 V Output voltage varies with ambient temperature
36 (LG)	Ground	In-vehicle sensor signal	Input	—	0 – 4.8 V Output voltage varies with in-vehicle temperature
37 (O)	Ground	Sensor ground	—	Ignition switch ON	0 V

A/C AUTO AMP.

< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONER]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
39 (B)	Ground	Ground	—	Ignition switch ON	0 V
40 (Y)	Ground	Battery power supply	—	Ignition switch OFF	Battery voltage

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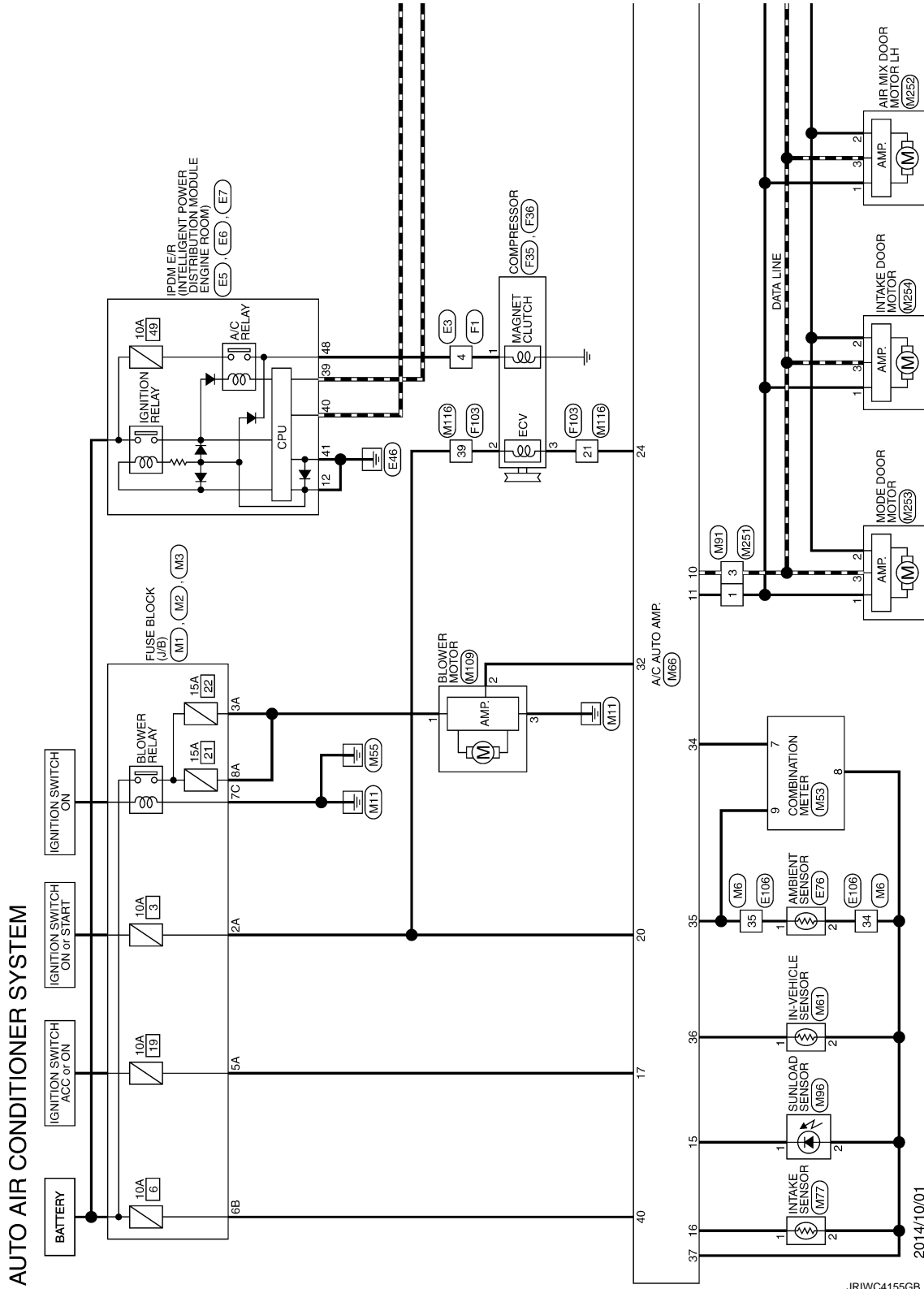
A/C AUTO AMP.

< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONER]

Wiring Diagram - AIR CONDITIONER CONTROL SYSTEM -

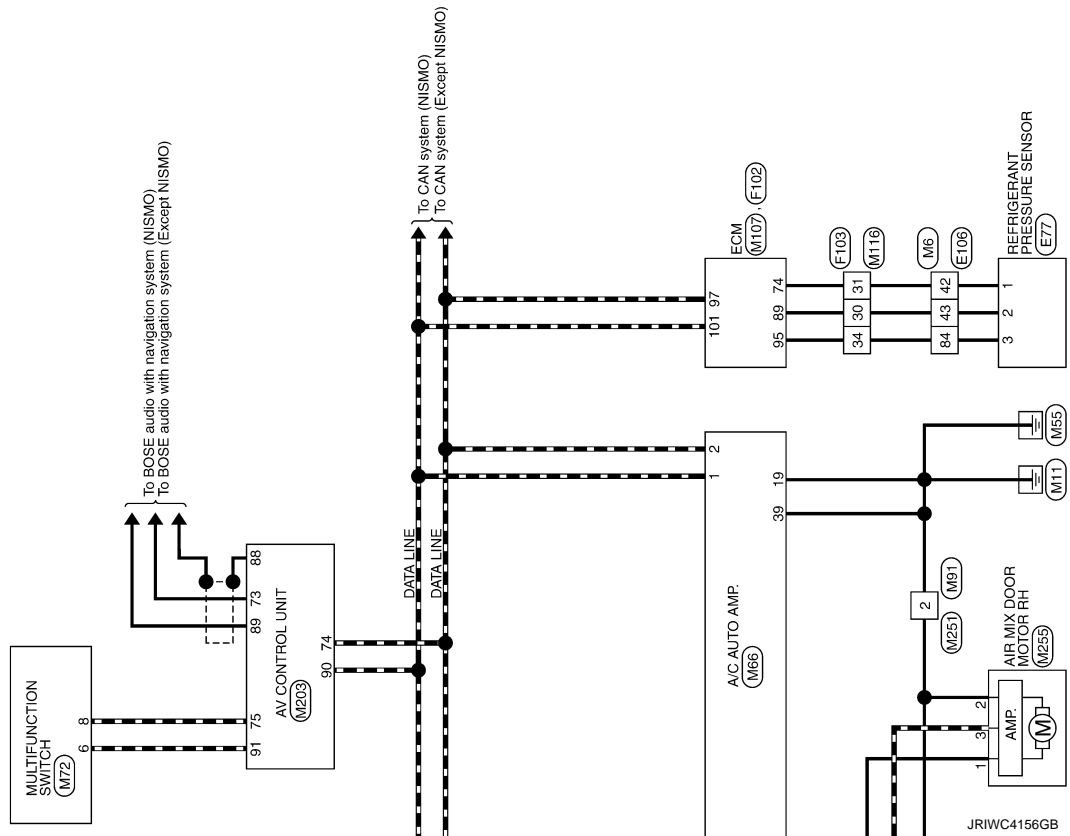
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A/C AUTO AMP.

< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONER]



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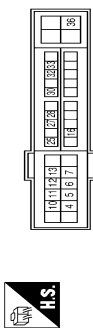
AUTO AIR CONDITIONER SYSTEM

Connector No.	E3
Connector Name	WIRE TO WIRE
Connector Type	RS08FB-FR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	LG	-
3	W	-
4	L	-
5	P	-
6	V	-
7	SHIELD	-
8	G	-

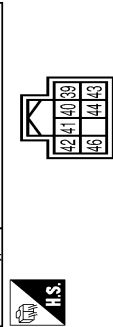
Connector No.	E5
Connector Name	FOOLER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V



Terminal No.	Color Of Wire	Signal Name [Specification]
4	V	-
5	L	-
6	Y	-
7	R	-
10	W	-
11	SB	-
12	BMW	-
13	R	-
18	LG	-
23	EG	-
27	Y	-

28	G	-
30	GR	-
32	L	-
33	P	-
36	LG	-

Connector No.	E5
Connector Name	FOOLER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
39	P	-
40	L	-
41	BY	-
42	G	-
43	SB	-
44	W	-
46	EG	-

Connector No.	E7
Connector Name	FOOLER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH20FW-CS12-M4



Terminal No.	Color Of Wire	Signal Name [Specification]
48	L	-
49	P	-
53	LG	-
54	W	-

55	BG	-
56	R	-
57	G	-
58	Y	-
69	BG	-
70	G	-
71	SB	-
74	LG	-
76	P	-
77	BMW	-
80	W	-

Connector No.	E76
Connector Name	AMBIENT SENSOR
Connector Type	RS02FB



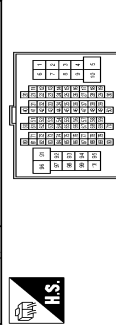
Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	AMBIENT SENSOR SIGNAL
2	P	SENSOR GROUND

Connector No.	E77
Connector Name	REFRIGERANT PRESSURE SENSOR
Connector Type	FK03FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	L	-
3	P	-

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
3	BG	-
4	BG	-
6	B	-
7	RG	-
8	P	-
9	W	-
10	Y	-
11	SB	-
12	BG	-
13	P	-
14	L	-
15	SB	-
16	BG	-
17	SHIELD	-
18	L	-
19	P	-
20	B	-
21	Y	-
22	V	-
23	Y	-
24	V	-
25	BR	-
26	L	-
27	SHIELD	-
28	G	-
29	R	-
30	W	-
31	V	-
32	G	-
33	GR	-
34	P	-
35	LG	-
36	G	-

A/C AUTO AMP.

< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONER]

AUTO AIR CONDITIONER SYSTEM

37	Y	-	-
38	SB	-	-
39	GR	-	-
40	GR	-	-
41	V	-	-
42	V	-	-
43	L	-	-
44	BR	-	-
45	G	-	-
46	SB	-	-
48	BG	-	-
49	L	-	-
50	R	-	-
51	SHIELD	-	-
60	P	-	-
61	L	-	-
71	LG	-	-
72	SB	-	-
74	P	-	-
75	BR	-	-
76	LG	-	-
77	V	-	-
78	BR	-	-
79	W	-	-
80	Y	-	-
81	GR	-	-
82	BG	-	-
84	P	-	-
85	P	-	-
86	GR	-	-
87	R	-	-
88	L	-	-
89	BG	-	-
90	G	-	-
91	GR	-	-
92	R	-	-
93	R	-	-
94	LG	-	-
95	G	-	-
96	GR	-	-
97	L	-	-
98	BG	-	-
99	BG	-	-
100	L	-	-

Connector No.	F1
Connector Name	WIRE TO WIRE
Connector Type	RS08MB-PR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	LG	-
3	Y	-
4	O	-
5	R	-
6	V	-
7	SHIELD	-
8	P	-

Connector No.	F35
Connector Name	COMPRESSOR
Connector Type	RS01FB



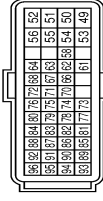
Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	MAGNET CLUTCH POWER SUPPLY

Connector No.	F36
Connector Name	COMPRESSOR
Connector Type	FK02FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
2	Y	ECV POWER SUPPLY
3	O	ECV SIGNAL

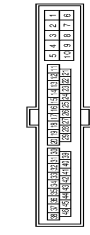
Connector No.	F102
Connector Name	ECM
Connector Type	RH40FBR-R28-L-LH-Z



Terminal No.	Color Of Wire	Signal Name [Specification]
49	Y	THROTTLE CONTROL MOTOR RELAY POWER SUPPLY (BANK 1)
50	SB	THROTTLE CONTROL MOTOR (OPEN) (BANK 1)
51	G	EVAPORATOR TEMPERATURE CONTROL SOLENOID VALVE (BANK 2)
52	L	EVAPORATOR TEMPERATURE CONTROL SOLENOID VALVE (BANK 1)
53	BR	THROTTLE CONTROL MOTOR (CLOSE) (BANK 1)
54	B	ECM GROUND
55	R	HEATED OXYGEN SEN2 HEATER
56	W	HEATED OXYGEN SEN2 HEATER B2
58	G	WGCC
61	GR	SENSOR GROUND
62	B	SENSOR GROUND
63	O	CAMSHAFT POSITION SENSOR PHASE1 (BANK 1)
64	BR	CRANKSHAFT POSITION SENSOR (POS)
66	Y	SENSOR GROUND
67	Y	CAMSHAFT POSITION SENSOR PHASE1 (BANK 2)
68	B	SENSOR GROUND
70	SB	SENSOR GROUND
71	SHIELD	SENSOR GROUND

72	W	KNOCK SENSOR (2GAIN)
73	W	HEATED OXYGEN SENSOR 2
74	R	SENSOR GROUND
75	P	SENSOR GROUND
76	W	KNOCK SENSOR (2GAIN)
77	GR	HEATED OXYGEN SEN 2-B2
78	LG	SENSOR GROUND
79	L	TPRES#2
80	L	TPRES#1
81	O	A/F SENSOR 1
82	V	A/F SEN 1-B1
83	G	POWER STEERING PRESSURE SENSOR
84	SB	SENSOR POWER SUPPLY
85	BR	A/F SEN 1-B2
86	V	A/F SEN 1-B2
87	W	SENSOR POWER SUPPLY
88	L	SENSOR POWER SUPPLY
89	L	REFRIGERANT PRESSURE SENSOR
90	O	SENSOR POWER SUPPLY
91	P	SENSOR POWER SUPPLY
92	R	SENSOR POWER SUPPLY
93	GR	SUBPUMP#V-
94	SB	SUBPUMP#V-
95	Y	SENSOR POWER SUPPLY
96	V	SENSOR POWER SUPPLY

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK36FW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	R	-
3	W	-
6	O	-
7	B	-
8	B	-
9	W	-
11	B	-
12	LG	-

A B C D E F G H J K L M N O P

HAC

A/C AUTO AMP.

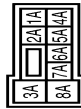
< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONER]

AUTO AIR CONDITIONER SYSTEM

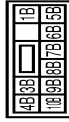
13	SB	-
14	LG	-
15	G	-
16	W	-
19	GR	-
20	R	-
21	O	-
26	L	-
27	P	-
28	LG	-
29	R	-
30	L	-
31	R	-
32	W	-
33	W	-
34	Y	-
39	Y	-

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2



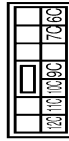
Terminal Color Of No.	Wire	Signal Name [Specification]
1A	V	-
2A	G	-
3A	L	-
4A	LG	-
5A	SB	-
6A	Y	-
7A	R	-
8A	L	-

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



Terminal Color Of No.	Wire	Signal Name [Specification]
10B	Y	-
1B	R	-
3B	P	-
4B	G	-
5B	EG	-
6B	Y	-
7B	R	-
8B	R	-
9B	SB	-

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FW-CS



Terminal Color Of No.	Wire	Signal Name [Specification]
10C	L	-
11C	R	-
12C	W	-
6C	R	-
7C	B	-
9C	BR	-

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

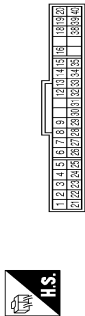


Terminal Color Of No.	Wire	Signal Name [Specification]
1	L	-
3	R	-
4	G	-
5	V	-
6	P	-
7	W	-
8	V	-
9	L	-
10	Y	-
11	G	-
12	BG	-
13	R	-
14	L	-
15	BR	-
16	R	-
17	SHIELD	-
18	L	-
19	P	-
20	B	-
21	W	-
22	GR	-
23	L	-
24	V	-
25	BR	-
26	G	-
27	SHIELD	-
29	R	-
30	W	-
31	V	-
32	G	-
33	GR	-
34	LG	-
35	P	-
36	L	-
37	W	-

38	Y	-
39	GR	-
40	BG	-
41	W	-
42	R	-
43	Y	-
44	BR	-
45	G	-
46	LG	-
48	W	-
49	L	-
50	R	-
51	SHIELD	-
60	SB	-
61	V	-
71	W	-
72	LG	-
74	R	-
75	BR	-
76	LG	-
77	R	-
78	BR	-
79	W	-
80	Y	-
81	BG	-
82	SB	-
84	Y	-
85	P	-
86	GR	-
87	R	-
88	L	-
89	G	-
90	P	-
91	W	-
92	R	-
93	LG	-
94	W	-
95	SB	-
96	L	-
97	L	-
98	Y	-
99	BG	-
100	L	-

AUTO AIR CONDITIONER SYSTEM

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	SAB40FW



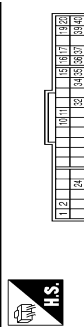
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	BATTERY POWER SUPPLY
2	W	IGNITION POWER SUPPLY
3	B	GROUND
4	B	ILLUMINATION GROUND
5	B	GROUND
6	W	METER CONTROL SWITCH GROUND
7	Y	AC AUTO AMP CONNECTION SIGNAL
8	SB	AMBIENT SENSOR GROUND
9	P	AMBIENT SENSOR SIGNAL
12	L	VEHICLE SPEED SIGNAL (2-PULSE)
13	V	VEHICLE SPEED SIGNAL (8-PULSE)
14	B	OIL PRESSURE SENSOR GROUND
15	R	AIR BAG SIGNAL
16	R	LED HEAD LAMP (RH) WARNING SIGNAL
18	L	FUEL LEVEL SENSOR GROUND
19	R	OIL LEVEL SENSOR GROUND
20	W	OIL LEVEL SENSOR SIGNAL
21	L	CAN-H
22	P	CAN-L
23	LG	ILLUMINATION CONTROL SWITCH SIGNAL (I)
24	BR	ILLUMINATION CONTROL SWITCH SIGNAL (O)
25	G	TRIP A/B RESET SWITCH SIGNAL
26	BG	ENTER SWITCH SIGNAL
27	SB	SELECT SWITCH SIGNAL
28	BR	ALTERNATOR
29	G	SEAT BELT Buckle SWITCH SIGNAL (PASSENGER SIDE)
30	LG	SEAT BELT Buckle SWITCH SIGNAL (DRIVER SIDE)
31	V	PARKING BRAKE SWITCH SIGNAL
32	V	BRAKE FLUID LEVEL SWITCH SIGNAL
33	L	WASHER LEVEL SWITCH SIGNAL
34	GR	OIL PRESSURE SENSOR POWER
35	W	OIL PRESSURE SENSOR SIGNAL
38	BG	FUEL LEVEL SENSOR SIGNAL
39	Y	LED HEAD LAMP (LH) WARNING SIGNAL
40	V	ILLUMINATION CONTROL

Connector No.	M61
Connector Name	IN-VEHICLE SENSOR
Connector Type	A02FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	IN-VEHICLE SENSOR SIGNAL
2	W	SENSOR GROUND

Connector No.	M66
Connector Name	AC AUTO AMP.
Connector Type	SAB40FW



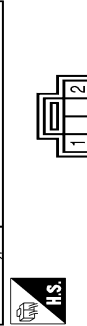
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
10	L	AC LAN SIGNAL
11	R	EACH DOOR MOTOR POWER SUPPLY
15	BG	SUNLOAD SENSOR SIGNAL
16	R	INTAKE SENSOR SIGNAL
17	SB	ACC POWER SUPPLY
19	B	GROUND
20	G	IGNITION POWER SUPPLY
24	BG	ECV SIGNAL
32	L	BLOWER MOTOR CONTROL SIGNAL
34	Y	AC AUTO AMP CONNECTION SIGNAL
35	P	AMBIENT SENSOR SIGNAL
36	LG	IN-VEHICLE SENSOR SIGNAL
37	BG	SENSOR GROUND
39	B	GROUND
40	Y	BATTERY POWER SUPPLY

Connector No.	M72
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	V	ACC
4	P	ILL CONT
5	P	ILL CONT
6	G	AV COMM (H)
8	R	AV COMM (L)
9	BR	SW GND
14	SB	DISK EJECT SIGNAL

Connector No.	M77
Connector Name	INTAKE SENSOR
Connector Type	TR04FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	INTAKE SENSOR SIGNAL
2	BG	SENSOR GROUND

Connector No.	M91
Connector Name	WIFE TO WIFE
Connector Type	A03MMW-P



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	L	-

Connector No.	M96
Connector Name	SUNLOAD SENSOR
Connector Type	K02FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BG	SUNLOAD SENSOR SIGNAL
2	P	SENSOR GROUND

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HAC

AUTO AIR CONDITIONER SYSTEM

Connector No.	M107
Connector Name	ECM
Connector Type	RH24FGY-RZ8-R-LH-Z



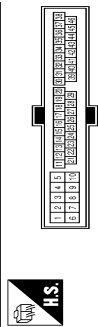
Terminal No.	Color Of Wire	Signal Name [Specification]
97	P	CAN COMMUNICATION LINE
98	SB	SENSOR POWER SUPPLY V
100	BR	SENSOR POWER SUPPLY V
101	L	CAN COMMUNICATION LINE
102	G	ASC/D STEERING SWITCH
103	GR	SENSOR GROUND
104	P	ACCELERATOR PEDAL POSITION SENSOR L
105	W	ECM RELAY (SELF SHUT-OFF)
106	LG	IGNITION SWITCH
107	BG	SENSOR GROUND
108	L	ACCELERATOR PEDAL POSITION SENSOR 2
109	L	SAVALVERLY
110	P	STOP LAMP SWITCH
111	GR	PNP SIGNAL
113	SB	ENGINE SPEED OUTPUT SIGNAL
114	V	DATA LINK CONNECTOR
117	R	ASC/D BRAKE SWITCH
118	W	POWER SUPPLY FOR ECM (BACK-UP)
120	BR	SAPMPRLY
121	P	POWER SUPPLY FOR ECM
122	V	POWER SUPPLY FOR ECM
124	B	ECM GROUND
126	L	FUEL PUMP RELAY
127	G	THROTTLE CONTROL MOTOR RELAY
128	B	ECM GROUND

Connector No.	M109
Connector Name	BLOWER MOTOR
Connector Type	NS03FW-M3



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	BLOWER MOTOR POWER SUPPLY
2	L	BLOWER MOTOR CONTROL SIGNAL
3	B	GROUND

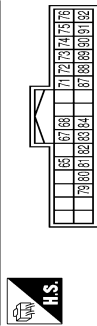
Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK38MW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	R	-
3	W	-
6	P	-
7	B	-
8	B	-
9	W	-
11	B	-
12	LG	-
13	B	-
14	BR	-
15	G	-
16	W	-
19	W	-
20	R	-
21	BG	-
26	L	-

27	Y	-
28	LG	-
29	BR	-
30	Y	-
31	R	-
32	LG	-
33	LG	-
34	Y	-
39	V	-

Connector No.	M203
Connector Name	AV CONTROL UNIT
Connector Type	TH82FW-4H



Terminal No.	Color Of Wire	Signal Name [Specification]
65	R	PARKING BRAKE
67	W	COMPOSITE IMAGE GND
68	R	COMPOSITE IMAGE SIGNAL
71	SHIELD	MICROPHONE GND
72	L	MICROPHONE VCC
73	V	COMM (CONT-DISP)
74	P	CAN-L
75	R	AV COMM (L)
76	R	AV COMM (L)
79	R	ILLUMINATION
80	W	IGNITION
81	BG	REVERSE
82	V	VEHICLE SPEED (8-PULSE)
83	SHIELD	SHIELD
84	B	COMPOSITE SYNCHRONIZING SIGNAL
87	P	SHIELD
88	SHIELD	SHIELD
89	SB	COMM (DISP-CONT)
90	L	CAN-H
91	G	AV COMM (H)
92	G	AV COMM (H)

Connector No.	M251
Connector Name	WIRE TO WIRE
Connector Type	A03FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	L	-

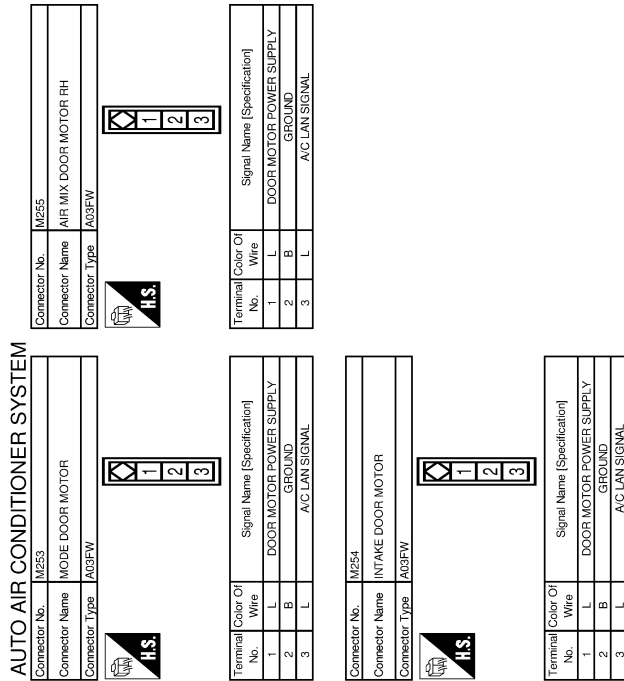
Connector No.	M252
Connector Name	AIR MIX DOOR MOTOR LH
Connector Type	A03FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	DOOR MOTOR POWER SUPPLY
2	B	GROUND
3	L	ACLAN SIGNAL

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HAC



Fail-safe

JRIWC4162GB

INFOID:000000011488911

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.

A/C AUTO AMP.

< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONER]

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

DTC Inspection Priority Chart

INFOID:000000011488912

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> B2578: IN-VEHICLE SENSOR B2579: IN-VEHICLE SENSOR B257B: AMBIENT SENSOR B257C: AMBIENT SENSOR B2581: INTAKE SENSOR B2582: INTAKE SENSOR B2630: SUNLOAD SENSOR B2631: SUNLOAD SENSOR B2632: DR AIR MIX DOOR MOT B2633: DR AIR MIX DOOR MOT B2634: PASS AIR MIX DOOR MOT B2635: PASS AIR MIX DOOR MOT B2636: DR VENT DOOR FAIL B2637: DR B/L DOOR FAIL B2638: DR D/F1 DOOR FAIL B2639: DR DEF DOOR FAIL B263D: FRE DOOR FAIL B263E: 20P FRE DOOR FAIL B263F: REC DOOR FAIL B2654: D/F2 DOOR FAIL B2655: B/L2 DOOR FAIL

DTC Index

INFOID:000000011488913

DTC	Items (CONSULT screen terms)	Reference
U1000	CAN COMM CIRCUIT	HAC-37, "DTC Logic"
U1010	CONTROL UNIT (CAN)	HAC-38, "DTC Logic"
B2578	IN-VEHICLE SENSOR	HAC-39, "DTC Logic"
B2579	IN-VEHICLE SENSOR	HAC-39, "DTC Logic"
B257B	AMBIENT SENSOR	HAC-42, "DTC Logic"
B257C	AMBIENT SENSOR	HAC-42, "DTC Logic"
B2581	INTAKE SENSOR	HAC-45, "DTC Logic"
B2582	INTAKE SENSOR	HAC-45, "DTC Logic"
B2630*	SUNLOAD SENSOR	HAC-48, "DTC Logic"
B2631*	SUNLOAD SENSOR	HAC-48, "DTC Logic"
B2632	DR AIR MIX DOOR MOT	HAC-51, "DTC Logic"
B2633	DR AIR MIX DOOR MOT	HAC-51, "DTC Logic"
B2634	PASS AIR MIX DOOR MOT	HAC-53, "DTC Logic"
B2635	PASS AIR MIX DOOR MOT	HAC-53, "DTC Logic"

A/C AUTO AMP.

< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONER]

DTC	Items (CONSULT screen terms)	Reference
B2636	DR VENT DOOR FAIL	HAC-55, "DTC Logic"
B2637	DR B/L DOOR FAIL	HAC-55, "DTC Logic"
B2638	DR D/F1 DOOR FAIL	HAC-55, "DTC Logic"
B2639	DR DEF DOOR FAIL	HAC-55, "DTC Logic"
B263D	FRE DOOR FAIL	HAC-57, "DTC Logic"
B263E	20P FRE DOOR FAIL	HAC-57, "DTC Logic"
B263F	REC DOOR FAIL	HAC-57, "DTC Logic"
B2654	D/F2 DOOR FAIL	HAC-55, "DTC Logic"
B2655	B/L2 DOOR FAIL	HAC-55, "DTC Logic"

*: Perform self-diagnosis under sunshine. When performing indoors, aim a light more than 60 W at sunload sensor, otherwise self-diagnosis indicates even though the sunload sensor is functioning normally.

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HAC

AUTOMATIC AIR CONDITIONER SYSTEM

< SYMPTOM DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

SYMPTOM DIAGNOSIS

AUTOMATIC AIR CONDITIONER SYSTEM

Diagnosis Chart By Symptom

INFOID:000000011488914

Symptom	Check item	Reference
A/C system does not activate.	Power supply and ground circuit	HAC-59. "A/C AUTO AMP. : Diagnosis Procedure"
A/C system cannot be controlled.	A/C auto amp.	HAC-62. "Diagnosis Procedure"
<ul style="list-style-type: none"> • Air outlet does not change. • Mode door motor does not operate normally. 	Mode door motor	HAC-55. "DTC Logic"
<ul style="list-style-type: none"> • Discharge air temperature of driver side does not change. • The air mix door motor of driver side does not operate normally. 	Air mix door motor (driver side)	HAC-51. "DTC Logic"
<ul style="list-style-type: none"> • Discharge air temperature of passenger side does not change. • The air mix door motor of passenger side does not operate normally. 	Air mix door motor (passenger side)	HAC-53. "DTC Logic"
<ul style="list-style-type: none"> • Intake door does not change. • Intake door motor does not operate normally. 	Intake door motor	HAC-57. "DTC Logic"
Blower motor operation is malfunctioning.	Blower motor	HAC-63. "Diagnosis Procedure"
Magnet clutch does not operate.	Magnet clutch	HAC-67. "Diagnosis Procedure"
<ul style="list-style-type: none"> • Insufficient cooling • No cool air comes out. (Air flow volume is normal.) 	ECV	HAC-69. "Diagnosis Procedure"
	Insufficient cooling	HAC-85. "Diagnosis Procedure"
<ul style="list-style-type: none"> • Insufficient heating • No warm air comes out. (Air flow volume is normal.) 	Insufficient heating	HAC-87. "Diagnosis Procedure"
<ul style="list-style-type: none"> • Noise • Noise is heard when the A/C system operates. 	Noise	HAC-90. "Diagnosis Procedure"
<ul style="list-style-type: none"> • Memory function does not operate normally. • The setting is not maintained. (It returns to the initial condition) 	Memory function	HAC-92. "Diagnosis Procedure"

INSUFFICIENT COOLING

[AUTOMATIC AIR CONDITIONER]

< SYMPTOM DIAGNOSIS >

INSUFFICIENT COOLING

Description

INFOID:000000011488915

Symptom

- Insufficient cooling
- No cool air comes out. (Air flow volume is normal.)

Diagnosis Procedure

INFOID:000000011488916

1.CHECK MAGNET CLUTCH OPERATION

1. Turn the ignition switch ON.
2. Turn the fan control dial ON.
3. Press the A/C switch.
4. Check that the indicator of the A/C switch turns ON. Check visually and by sound that the compressor operates.
5. Press the A/C switch again.
6. Check that the indicator of the A/C switch turns OFF. Check that the compressor stops.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Magnet clutch system malfunction. Refer to [HAC-67. "Diagnosis Procedure"](#).

2.CHECK DRIVE BELT

Check tension of the drive belt. Refer to [EM-15. "Checking"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Adjust or replace drive belt according to the inspection results.

3.CHECK REFRIGERANT CYCLE PRESSURE

Connect the recovery/recycling recharging equipment to the vehicle and perform the pressure inspection with the gauge. Refer to [HA-8. "Trouble Diagnosis For Unusual Pressure"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace the parts according to the inspection results.

4.CHECK PERFORMANCE CHART

Connect recovery/recycling recharging equipment to the vehicle and perform the performance test. Refer to [HA-34. "Performance Chart"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 7.

5.CHECK AMBIENT TEMPERATURE DISPLAY

Check that there is not much difference between actual ambient temperature and indicated temperature on information display in combination meter.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Perform the diagnosis for the A/C auto amp. connection recognition signal. Refer to [MWI-80. "Diagnosis Procedure"](#).

6.CHECK SETTING OF TEMPERATURE SETTING TRIMMER

 With CONSULT

1. Select "TEMP SET CORRECT" of HVAC work support item. Refer to [HAC-8. "Temperature Setting Trimmer"](#).
2. Check that the temperature setting trimmer is set to "+ direction".

NOTE:

The control temperature can be set with the setting of the temperature setting trimmer.

INSUFFICIENT COOLING

< SYMPTOM DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

3. Set the difference between the set temperature and control temperature to "0".

>> INSPECTION END

7. CHECK CHARGED REFRIGERANT AMOUNT

1. Connect recovery/recycling recharging equipment to the vehicle and discharge the refrigerant.
2. Recharge with the proper amount of refrigerant.

Are the symptoms solved?

YES >> INSPECTION END

NO >> Refer to [HAC-84, "Diagnosis Chart By Symptom"](#) and perform the appropriate diagnosis.

INSUFFICIENT HEATING

< SYMPTOM DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

INSUFFICIENT HEATING

Description

INFOID:000000011488917

Symptom

- Insufficient heating
- No warm air comes out. (Air flow volume is normal.)

Diagnosis Procedure

INFOID:000000011488918

1.CHECK COOLING SYSTEM

1. Check engine coolant level and check for leakage. Refer to [CO-9, "Inspection"](#).
2. Check radiator cap. Refer to [CO-13, "RESERVOIR TANK CAP : Inspection"](#).
3. Check water flow sounds of engine coolant. Refer to [CO-10, "Refilling"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Refill the engine coolant and repair or replace the parts according to the inspection results.

2.CHECK OPERATION

1. Turn temperature dial (driver side) and raise temperature setting to 32.0°C (90°F) after warming up the engine.
2. Check that warm air blows from the outlets.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

3.CHECK SETTING OF TEMPERATURE SETTING TRIMMER

ⓂWith CONSULT

1. Select "TEMP SET CORRECT" of HVAC work support item. Refer to [HAC-8, "Temperature Setting Trimmer"](#).
2. Check that the temperature setting trimmer is set to "– direction".
NOTE:
The control temperature can be set by the temperature setting trimmer.
3. Set the difference between the set temperature and control temperature to "0".

Are the symptoms solved?

YES >> INSPECTION END

NO >> GO TO 4.

4.CHECK SELF-DIAGNOSIS RESULT CHECK

ⓂWith CONSULT

1. Perform the "SELF-DIAGNOSIS".
2. Check if any DTC is detected in the self-diagnostic results.
NOTE:
If DTC is displayed along with DTC U1000 or U1010, first diagnose the DTC U1000 or U1010. Refer to [HAC-37, "DTC Logic"](#) or [HAC-38, "DTC Logic"](#).

Is any DTC displayed?

YES >> Perform the diagnosis that is applicable to the sensor and the door motor. Refer to [HAC-82, "DTC Index"](#).

NO >> GO TO 5.

5.CHECK EACH OUTPUT DEVICE

ⓂWith CONSULT

1. Select "HVAC TEST" of HVAC active test item. Refer to [HAC-35, "CONSULT Function"](#).
NOTE:
Perform the ACTIVE TEST after starting the engine because the compressor is operated.
2. Refer to the table and check the outlet, inlet, air flow temperature, blower motor control signal, magnet clutch operation, and air mix ratio. Visually check each operating condition, by listening for noise, touching air outlets with a hand, etc.

INSUFFICIENT HEATING

< SYMPTOM DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

	Test item						
	MODE 1	MODE 2	MODE 3	MODE 4	MODE 5	MODE 6	MODE 7
Mode door position	VENT	B/L 1	B/L 2	FOOT	D/F	DEF	—
Intake door position	REC	REC	20% FRE	FRE	FRE	FRE	—
Air mix door position (driver & passenger side)	FULL COLD	FULL COLD	FULL HOT	FULL HOT	FULL HOT	FULL HOT	—
Blower fan motor control signal duty ratio	37%	91%	65%	65%	65%	91%	—
Magnetic clutch	ON	ON	OFF	OFF	ON	ON	—
ECV	100%	100%	0%	0%	50%	100%	—

NOTE:

- Perform the inspection of each output device after starting the engine because the compressor is operated.
- If the MODE 7 is selected, the malfunction is displayed but it is normal.

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%

JSIIA1182GB

Does it operate normally?

- YES >> GO TO 6.
- NO-1 >> Air outlet does not change. Refer to [HAC-56, "Diagnosis Procedure"](#).
- NO-2 >> Air inlet does not change. Refer to [HAC-57, "Diagnosis Procedure"](#).
- NO-3 >> Discharge air temperature does not change (driver side). Refer to [HAC-52, "Diagnosis Procedure"](#).
- NO-4 >> Discharge air temperature does not change (passenger side). Refer to [HAC-54, "Diagnosis Procedure"](#).
- >> Blower motor does not operate normally. Refer to [HAC-63, "Diagnosis Procedure"](#).
- NO-5 >> Magnet clutch does not operate. Refer to [HAC-67, "Diagnosis Procedure"](#).

6. CHECK AIR LEAKAGE FROM DUCT

Check duct and nozzle, etc. of the air conditioner system for air leakage.

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> Repair or replace parts according to the inspection results.

7. CHECK HEATER HOSE INSTALLATION CONDITION

Check the heater hose installation condition visually (for twists, crushes, etc.).

Is the inspection result normal?

- YES >> GO TO 8.
- NO >> Repair or replace parts according to the inspection results.

8. CHECK TEMPERATURE OF HEATER HOSE

1. Check the temperature of inlet hose and outlet hose of heater core.

INSUFFICIENT HEATING

< SYMPTOM DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

2. Check that the inlet side of heater core is hot and the outlet side is slightly lower than/almost equal to the inlet side.

CAUTION:

Always perform the temperature inspection in a short period of time because the engine coolant temperature is very hot.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace the heater core after performing the procedures after the cooling system inspection. GO TO 1.

9.REPLACE HEATER CORE

Replace the heater core. Refer to heater core. Refer to [HA-49. "Exploded View \(GT-R certified NISSAN dealer\)"](#).

Are symptoms solved?

YES >> INSPECTION END

NO >> Perform the procedures again after the cooling system inspection. GO TO 1.

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HAC

NOISE**Description**

INFOID:000000011488919

Symptom

- Noise
- Noise is heard when the A/C system operates.

Diagnosis Procedure

INFOID:000000011488920

1.CHECK OPERATION

1. Operate the A/C system and check the operation. Refer to [HAC-7. "Description & Inspection"](#).
2. Check the parts where noise is occurring.

Can the parts where noise is occurring be checked?

- YES-1 >> Noise from blower motor: GO TO 2.
 YES-2 >> Noise from compressor: GO TO 3.
 YES-3 >> Noise from expansion valve: GO TO 4.
 YES-4 >> Noise from cooler piping (pipe, flexible hose): GO TO 6.
 YES-5 >> Noise from drive belt: GO TO 7.
 NO >> INSPECTION END

2.CHECK THE BLOWER MOTOR

1. Remove the blower motor.
2. Remove foreign materials that are in the blower unit.
3. Check the noise from the blower motor again.

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace the blower motor.

3.CHECK COMPRESSOR

Perform trouble diagnosis for the compressor and check the compressor. Refer to [HA-11. "Symptom Table"](#).

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Refill the refrigerant or replace the compressor according to the inspection results.

4.CHECK WITH GAUGE PRESSURE

Perform the diagnosis with the gauge pressure. Refer to [HA-8. "Trouble Diagnosis For Unusual Pressure"](#).

Is the inspection result normal?

- YES >> GO TO 5.
 NO >> Repair or replace parts according to the inspection results.

5.CHECK EXPANSION VALVE

1. Correct the refrigerant with recovery/recycling recharging equipment.
2. Recharge with the proper amount of the collected refrigerant after recycling or new refrigerant.
3. Check for the noise from expansion valve again.

Are the malfunction solved?

- YES >> INSPECTION END
 NO >> Replace expansion valve.

6.CHECK COOLER PIPING (PIPE, FLEXIBLE HOSE)

1. Check the cooler piping (pipes, flexible hoses) (for deformation and damage, etc.).
2. Check the installation condition of clips and brackets, etc. of the cooler piping (pipes, flexible hoses).

Is the inspection result normal?

- YES >> Fix the line with rubber or come vibration absorbing material.
 NO >> Repair or replace parts according to the inspection results.

7.CHECK DRIVE BELT

NOISE

< SYMPTOM DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

Check tension of the drive belt. Refer to [EM-15. "Checking"](#).

Is the inspection result normal?

YES >> Check the noise from compressor: GO TO 3.

NO >> Adjust or replace drive belt according to the inspection results.

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MEMORY FUNCTION DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

[AUTOMATIC AIR CONDITIONER]

MEMORY FUNCTION DOES NOT OPERATE

Description

INFOID:000000011488921

Symptom

- Memory function does not operate normally.
- The setting is not maintained. (It returns to the initial condition.)

Diagnosis Procedure

INFOID:000000011488922

1. CHECK OPERATION

1. Turn the ignition switch ON.
2. Set temperature control dial (driver side) to 32.0°C (90°F).
3. Press the OFF switch.
4. Turn the ignition switch OFF.
5. Turn the ignition switch ON.
6. Press the AUTO switch.
7. Check that the set temperature is maintained.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. CHECK POWER SUPPLY AND GROUND CIRCUIT OF A/C AUTO AMP.

Check power supply and ground circuit of the A/C auto amp. Refer to [HAC-59, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the A/C auto amp.

NO >> Repair or replace malfunctioning part.

PRECAUTION

PRECAUTIONS

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

INFOID:000000011488923

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.

Precautions for Removing Battery Terminal

INFOID:000000011488924

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

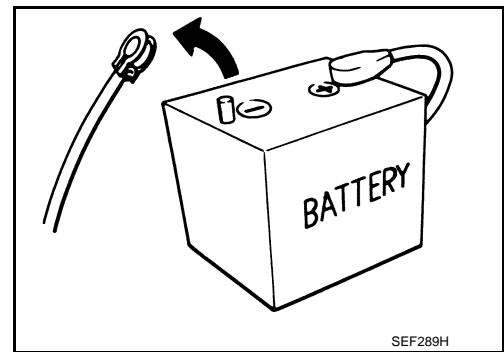
NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

NOTE:

The removal of 12V battery may cause a DTC detection error.



Precaution for Battery Service

INFOID:000000011488925

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.

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PRECAUTIONS

< PRECAUTION >

[AUTOMATIC AIR CONDITIONER]

General Precautions

INFOID:000000011488926

CAUTION:

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

PRESET SWITCH

< REMOVAL AND INSTALLATION >

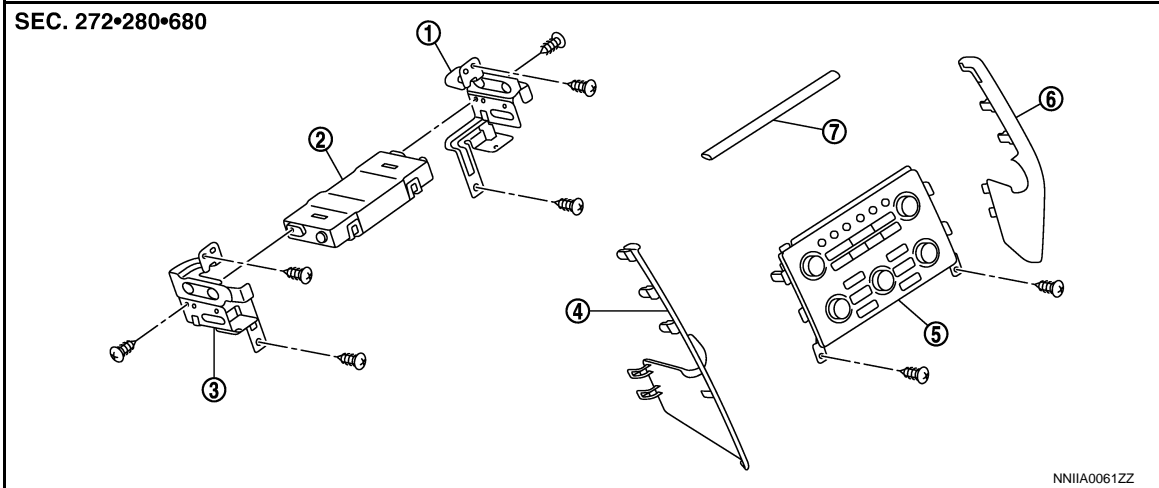
[AUTOMATIC AIR CONDITIONER]

REMOVAL AND INSTALLATION

PRESET SWITCH

Exploded View

INFOID:000000011488927



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| 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:000000011488928

REMOVAL

Refer to [AV-180. "Exploded View"](#).

INSTALLATION

Installation is basically the reverse order of removal.

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A/C AUTO AMP.

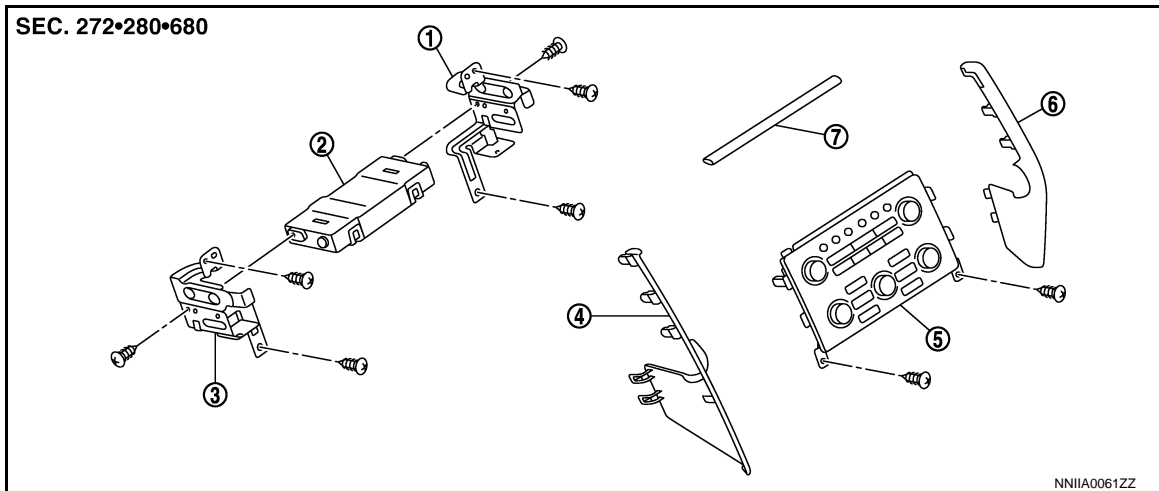
< REMOVAL AND INSTALLATION >

[AUTOMATIC AIR CONDITIONER]

A/C AUTO AMP.

Exploded View

INFOID:000000011488929



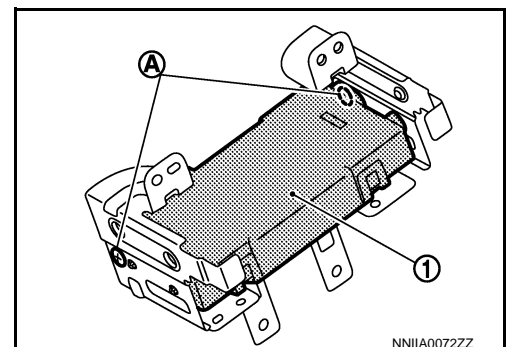
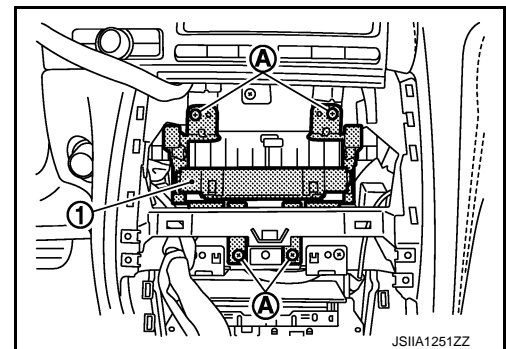
- | | | |
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| 1. A/C auto amp. bracket RH | 2. A/C auto amp. | 3. A/C auto amp. bracket LH |
| 4. Instrument panel garnish LH | 5. Preset switch | 6. Instrument panel garnish RH |
| 7. Instrument panel garnish | | |

Removal and Installation

INFOID:000000011488930

REMOVAL

1. Remove preset switch. Refer to [AV-180, "Exploded View"](#).
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

< REMOVAL AND INSTALLATION >

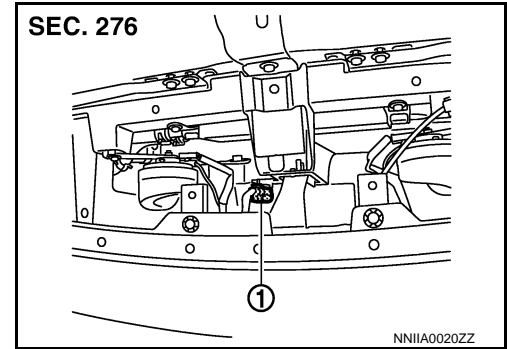
[AUTOMATIC AIR CONDITIONER]

AMBIENT SENSOR

Exploded View

INFOID:000000011488931

1. Ambient sensor



Removal and Installation

INFOID:000000011488932

REMOVAL

1. Remove radiator cover. Refer to [DLK-221, "Exploded View \(GT-R certified NISSAN dealer\)"](#).
2. Disconnect ambient sensor connector, and then remove ambient sensor.

INSTALLATION

Installation is basically the reverse order of removal.

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IN-VEHICLE SENSOR

< REMOVAL AND INSTALLATION >

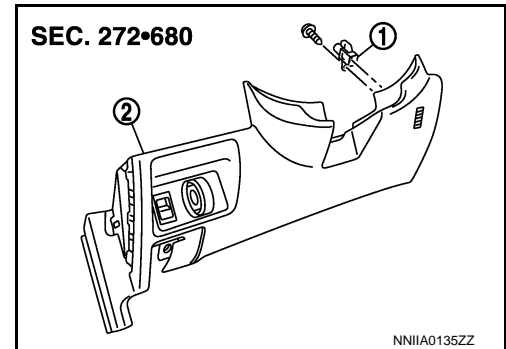
[AUTOMATIC AIR CONDITIONER]

IN-VEHICLE SENSOR

Exploded View

INFOID:000000011488933

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



Removal and Installation

INFOID:000000011488934

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

< REMOVAL AND INSTALLATION >

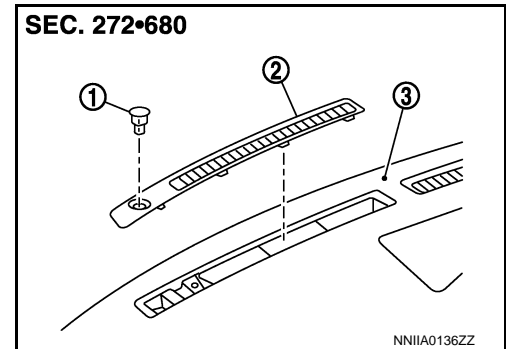
[AUTOMATIC AIR CONDITIONER]

SUNLOAD SENSOR

Exploded View

INFOID:000000011488935

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

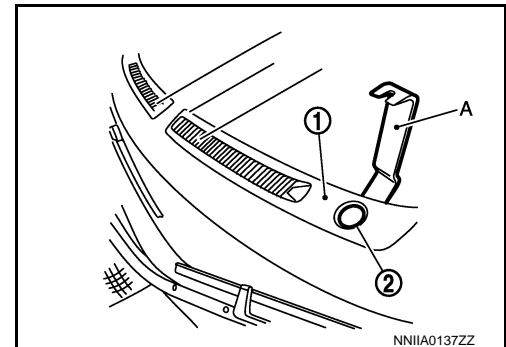


Removal and Installation

INFOID:000000011488936

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.

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INTAKE SENSOR

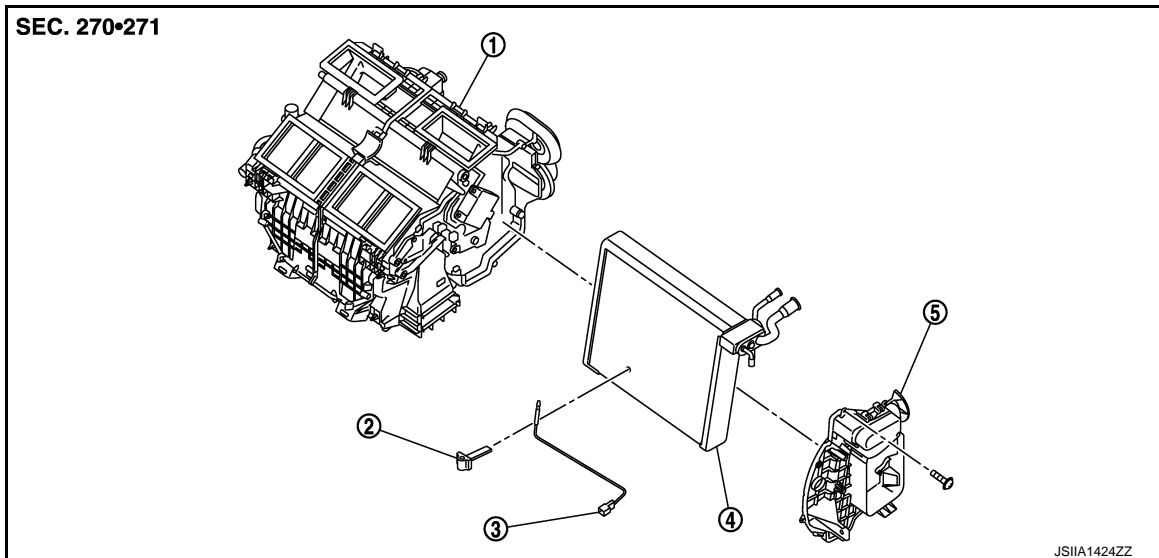
< REMOVAL AND INSTALLATION >

[AUTOMATIC AIR CONDITIONER]

INTAKE SENSOR

Exploded View (GT-R certified NISSAN dealer)

INFOID:000000011488937



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|-----------------------------------|--------------------------|------------------|
| 1. Heater & cooling unit assembly | 2. Intake sensor bracket | 3. Intake sensor |
| 4. Evaporator assembly | 5. Evaporator cover | |

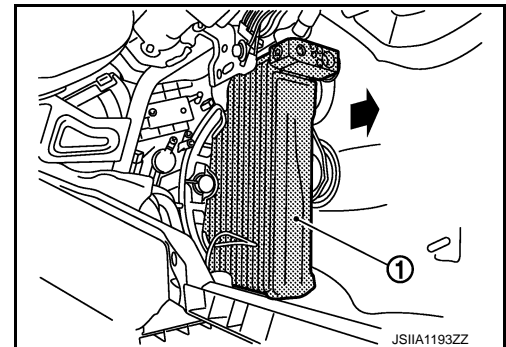
Refer to [GI-4, "Components"](#) for symbols in the figure.

Removal and Installation (GT-R certified NISSAN dealer)

INFOID:000000011488938

REMOVAL

1. Remove low-pressure pipe 1 and high-pressure pipe 3. Refer to [HA-42, "Exploded View \(GT-R certified NISSAN dealer\)"](#).
CAUTION:
Cap or wrap the joint of the cooler piping with suitable material such as vinyl tape to avoid the entry of air.
2. Disconnect intake sensor connector.
3. Slide evaporator (1) to passenger side, and then remove evaporator from heater & cooling unit assembly.



4. Remove intake sensor from evaporator.

INSTALLATION

Installation is basically the reverse order of removal.

CAUTION:

- Replace O-rings with new ones. Then apply compressor oil to them when installing.
- Mark the mounting position of intake sensor bracket prior to removal so that the reinstalled sensor can be located in the same position.
- Female-side piping connection is thin and easy to deform. Slowly insert the male-side piping straight in axial direction.

INTAKE SENSOR

< REMOVAL AND INSTALLATION >

[AUTOMATIC AIR CONDITIONER]

- Insert piping securely until a click is heard.
- After piping connection is completed, pull male-side piping by hand to make sure that connection does not come loose.
- Check for leakages when recharging refrigerant.

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REFRIGERANT PRESSURE SENSOR

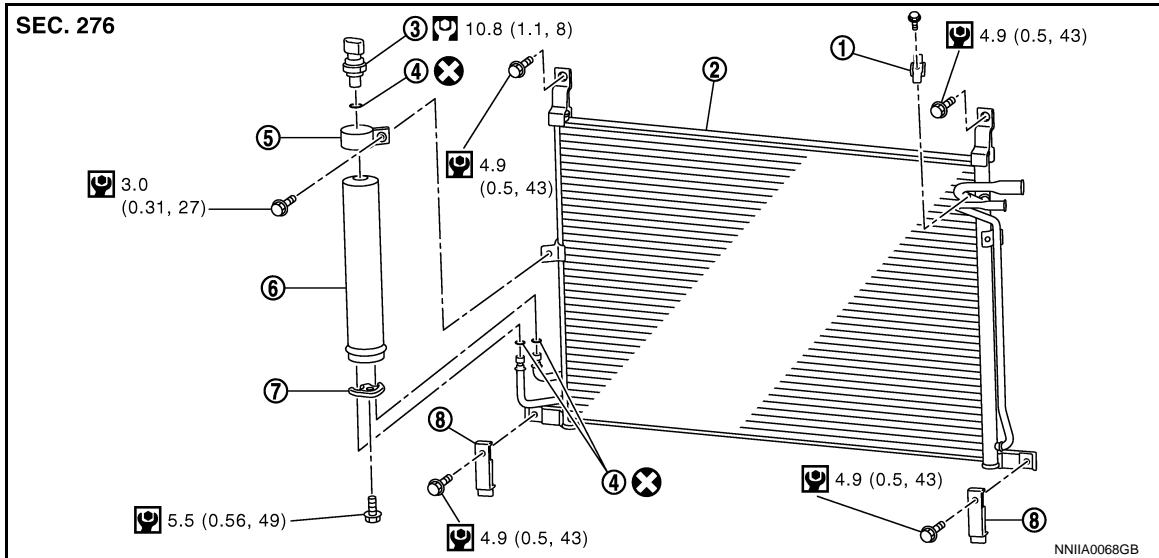
< REMOVAL AND INSTALLATION >

[AUTOMATIC AIR CONDITIONER]

REFRIGERANT PRESSURE SENSOR

Exploded View (GT-R certified NISSAN dealer)

INFOID:000000011488939



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|------------|----------------------------|--------------------------------|
| 1. Clip | 2. Condenser | 3. Refrigerant pressure sensor |
| 4. O-ring | 5. Liquid tank bracket | 6. Liquid tank |
| 7. Bracket | 8. Condenser lower bracket | |

Refer to [GI-4, "Components"](#) for symbols in the figure.

Removal and Installation (GT-R certified NISSAN dealer)

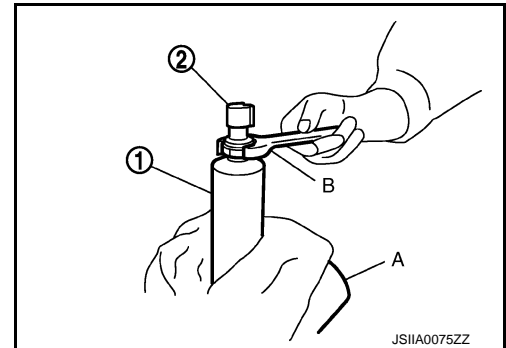
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REMOVAL

1. Remove liquid tank. Refer to [HAC-102, "Exploded View \(GT-R certified NISSAN dealer\)"](#).
2. Fix the liquid tank (1) with a vise (A). Remove the refrigerant pressure sensor (2) with a wrench (B).

CAUTION:

Be careful not to damage liquid tank.



INSTALLATION

Installation is basically the reverse order of removal.

CAUTION:

- Replace O-ring with new one. Then apply compressor oil to them when installing.
- Check for leakages when recharging refrigerant.

DOOR MOTOR

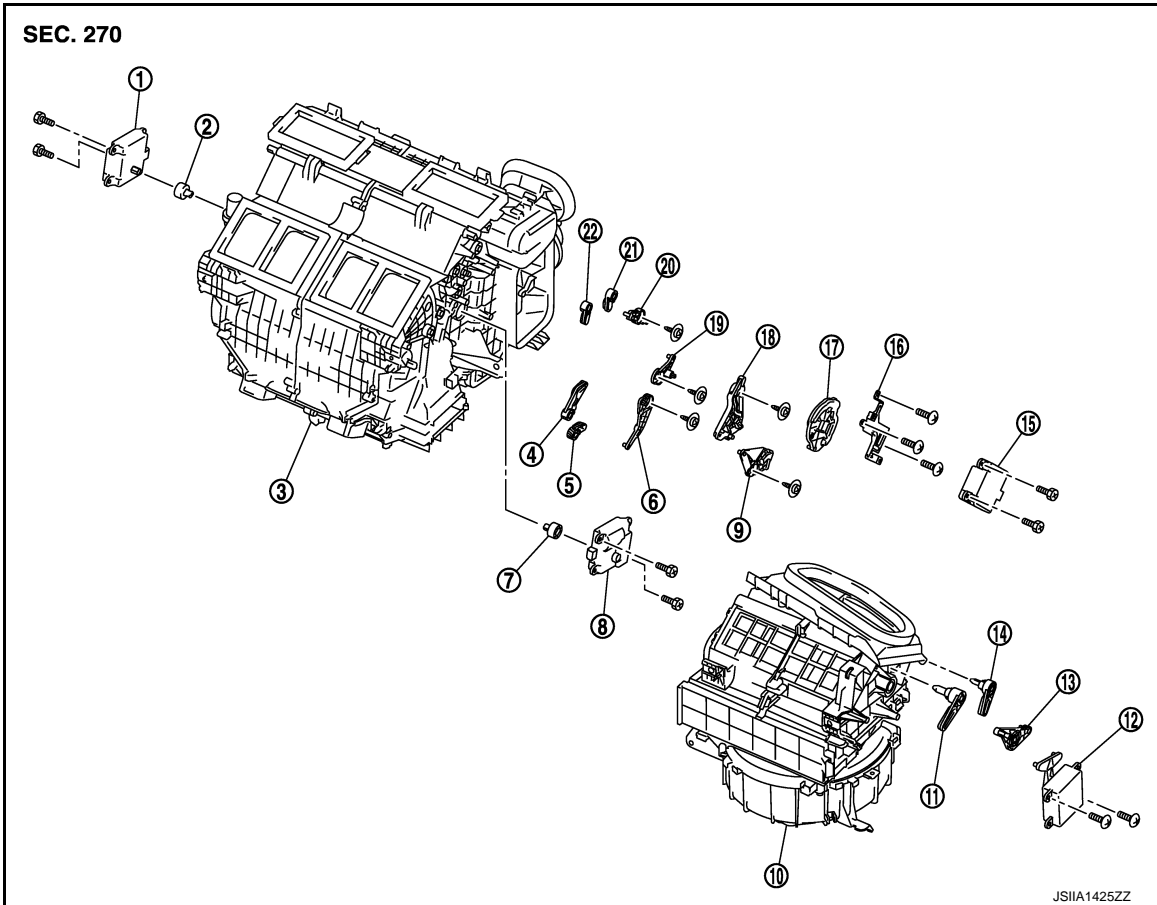
< REMOVAL AND INSTALLATION >

[AUTOMATIC AIR CONDITIONER]

DOOR MOTOR

Exploded View

INFOID:000000011488941



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|-------------------------------------|--|-----------------------------------|
| 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:000000011488942

REMOVAL

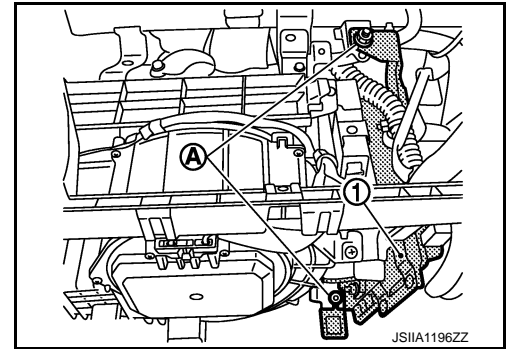
1. Remove instrument panel (assist). Refer to [IP-12, "Exploded View"](#).

DOOR MOTOR

< REMOVAL AND INSTALLATION >

[AUTOMATIC AIR CONDITIONER]

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



4. Remove power steering control unit. Refer to [STC-22. "Exploded View \(GT-R certified NISSAN dealer\)"](#).
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:000000011488943

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:000000011488944

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

DOOR MOTOR

< REMOVAL AND INSTALLATION >

[AUTOMATIC AIR CONDITIONER]

Installation is basically the reverse order of removal.

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