SECTION HAC

HEATER & AIR CONDITIONING CONTROL SYSTEM

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000011254812

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

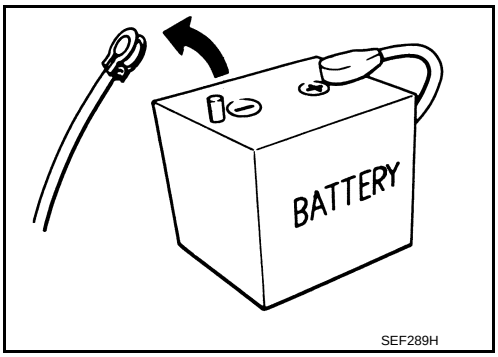
WARNING:

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:0000000011254813



- 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.

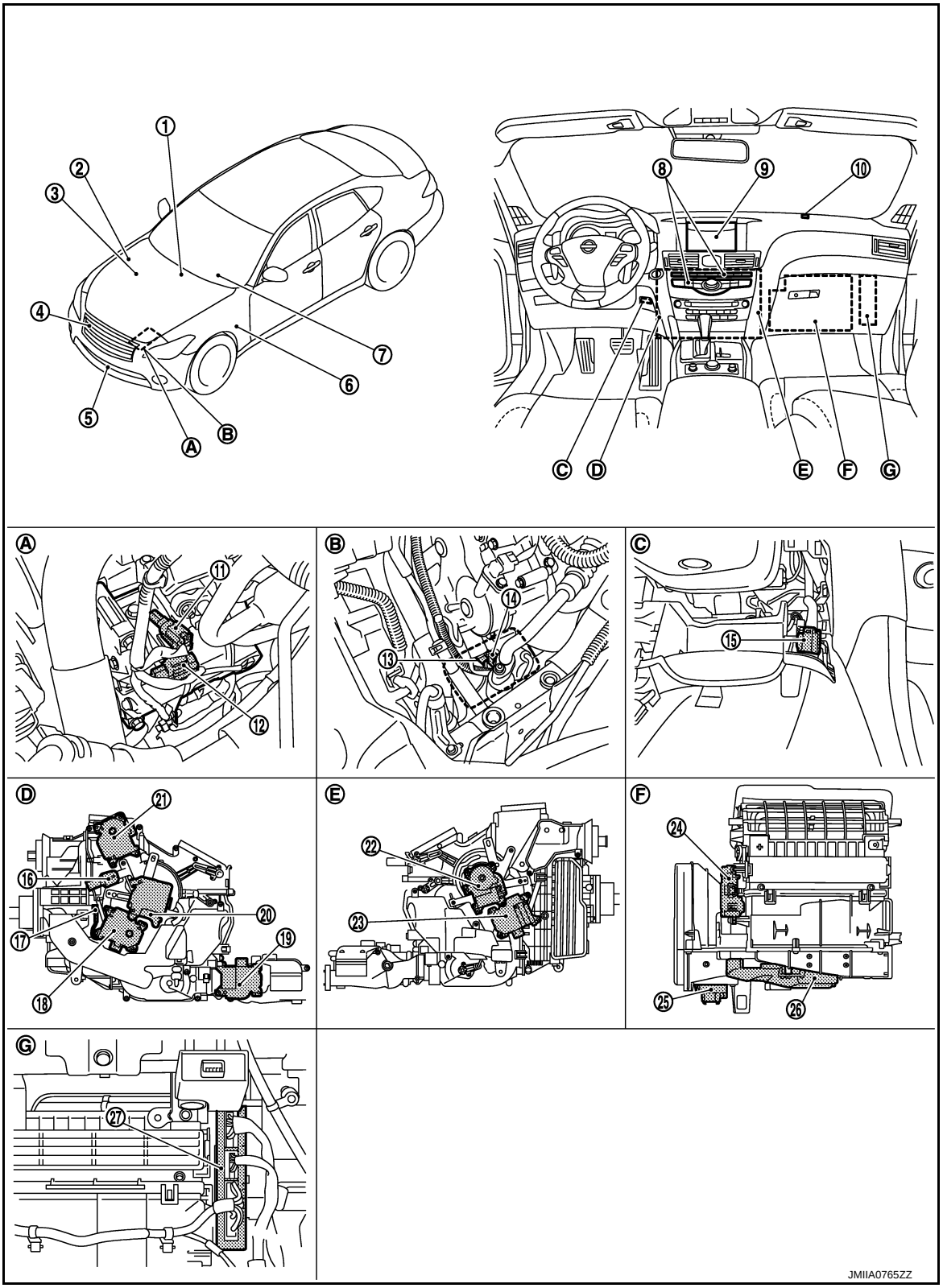
SYSTEM DESCRIPTION

COMPONENT PARTS

AUTOMATIC AIR CONDITIONING SYSTEM

AUTOMATIC AIR CONDITIONING SYSTEM : Component Parts Location

INFOID:0000000011254814



1. AV control unit
   Refer to AV-13, "Component Parts Location" (base audio without navigation) or AV-150, "Component Parts Location" (BOSE audio with navigation).
2. IPDM E/R
   Refer to PCS-5, "IPDM E/R : Component Parts Location".
3. ECM
   VQ37VHR: Refer to EC-24, "ENGINE CONTROL SYSTEM : Component Parts Location".
   VK56VD: Refer to EC-553, "ENGINE CONTROL SYSTEM : Component Parts Location".
4. Refrigerant pressure sensor
5. Ambient sensor
6. BCM
   BCS-4, "BODY CONTROL SYSTEM : Component Parts Location".
7. Combination meter
   Refer to MWI-6, "METER SYSTEM : Component Parts Location".
8. Multifunction switch
9. Display
10. Sunload sensor
11. ECV (Electrical Control Valve)
12. Magnet clutch
13. Magnet clutch
14. ECV (Electrical Control Valve)
15. In-vehicle sensor
16. Aspirator
17. Intake sensor
18. Air mix door motor (Driver side)
19. Rear mode door motor
20. Mode door motor (Driver side)
21. Upper ventilator door motor
22. Mode door motor (Passenger side)
23. Air mix door motor (Passenger side)
24. Intake door motor
25. Power transistor
26. Blower motor
27. A/C auto amp.

A. Compressor (VQ37VHR)
B. Compressor (VK56VD)
C. Lower instrument panel LH is removed
D. Left side of heater & cooling unit assembly
E. Right side of heater & cooling unit assembly
F. Rear side of blower unit
G. Instrument lower panel RH is removed

AUTOMATIC AIR CONDITIONING SYSTEM : Component Description

INFOID:0000000011254815

Component parts		Description
Blower unit	Blower motor	Refer to HAC-7.
	Intake door motor	Refer to HAC-7.
	Power transistor	Refer to HAC-7.
Compressor	ECV (Electrical Control Valve)	ECV (electrical control valve) is installed on the compressor and controls it for emitting appropriate amount of refrigerant when necessary.
	Magnet clutch	• Magnet clutch is the device that drives the compressor with the signal from IPDM E/R. • Compressor is driven by the magnet clutch which is magnetized by electric power supply.
Heater & cooling unit assembly	Air mix door motor (Driver side)	Refer to HAC-8.
	Air mix door motor (Passenger side)	Refer to HAC-8.
	Aspirator	Refer to HAC-8.
	Intake sensor	Intake sensor measures evaporator fin temperature. This sensor uses thermistor that decreases electrical resistance as temperature increases.
	Mode door motor (Driver side)	Refer to HAC-8.
	Mode door motor (Passenger side)	Refer to HAC-8.
	Rear mode door motor	Refer to HAC-9.
	Upper ventilator door motor	Refer to HAC-9.
Ambient sensor		Ambient sensor measures ambient air temperature. This sensor uses thermistor that decreases electrical resistance as temperature increases.
AV control unit		AV control unit transmits A/C switch operation signal to A/C auto amp. via CAN communication line.

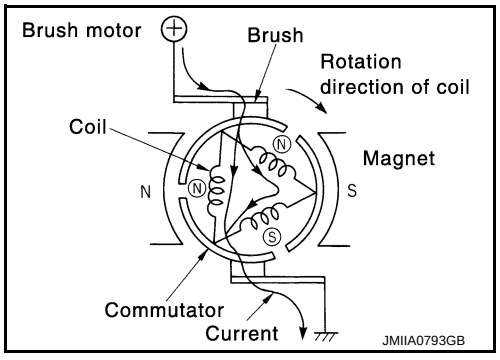
Component parts	Description
A/C auto amp.	A/C auto amp. controls air conditioning system by inputting and calculating signals from each sensor and each switch. A/C auto amp. has self-diagnosis function. Diagnosis of air conditioning system can be performed quickly.
BCM	BCM transmits key ID signal to A/C auto amp. via CAN communication line.
Display	Display indicates operation status of air conditioning system. Display has touch panel function that can be used to control air conditioning system.
ECM	ECM controls compressor according to status of engine and refrigerant.
Engine coolant temperature sensor	Engine coolant temperature sensor measures engine coolant temperature. This sensor uses thermistor that decreases electrical resistance as temperature increases.
In-vehicle sensor	In-vehicle sensor measures temperature of intake air through aspirator to passenger room. This sensor uses thermistor that decreases electrical resistance as temperature increases.
IPDM E/R	A/C relay is integrated in IPDM E/R. IPDM E/R operates A/C relay when A/C compressor request signal is received from ECM via CAN communication line.
Multifunction switch	Multifunction switch integrates A/C controller and AV operation switch. A/C switch operation signal is transmitted from multifunction switch to AV control unit via communication line.
Refrigerant pressure sensor	Refer to HAC-9.
Sunload sensor	Sunload sensor measures sunload amount. This sensor is a dual system so that sunload for driver side and passenger side are measured separately. This sensor converts sunload amount to voltage signal by photodiode and transmits to A/C auto amp.

BLOWER UNIT

BLOWER UNIT : Blower Motor

INFOID:0000000011254819

Brush motor, that rotates coil while brush functions as contact points, is adopted for blower motor. Rotation speed changes according to voltage from power transistor.



BLOWER UNIT : Intake Door Motor

INFOID:0000000011254820

- Intake door motor consists of motor that drives door and PBR (Potentio Balance Register) that detects door position.
- Motor operates intake door according to control signal from A/C auto amp.
- PBR (Potentio Balance Register) transmits PBR feedback signal to A/C auto amp. according to motor position.
- According to PBR feedback signal, A/C auto amp. monitors that motor is in an appropriate door position.

BLOWER UNIT : Power Transistor

INFOID:0000000011254821

- Power transistor, that uses MOS field effect transistor, is adopted for blower motor speed control.
  NOTE:
  MOS field effect transistor is a transistor for which the gate portion is composed of a metal electrode on an oxide layer of semiconductor. Field effect transistor is controlled by voltage, while ordinary transistor is controlled by current. Electrode of field effect transistor is called source, drain, or gate, while electrode of ordinary transistor is called emitter, collector, or base.

- Power transistor continuously controls voltage to blower motor (approximately 0 to 16 V), according to gate voltage from A/C auto amp.
- This power transistor does not require a HI relay even when the maximum voltage is applied to blower motor at HI status, because voltage drop is nominal.

HEATER & COOLING UNIT ASSEMBLY

HEATER & COOLING UNIT ASSEMBLY : Air Mix Door Motor (Driver Side)

INFOID:0000000011254822

- Air mix door motor (driver side) consists of motor that drives door and PBR (Potentio Balance Register) that detects door position.
- Motor operates air mix door (driver side) according to control signal from A/C auto amp.
- PBR (Potentio Balance Register) transmits PBR feedback signal to A/C auto amp. according to motor position.
- According to PBR feedback signal, A/C auto amp. monitors that motor is in an appropriate door position.

HEATER & COOLING UNIT ASSEMBLY : Air Mix Door Motor (Passenger Side)

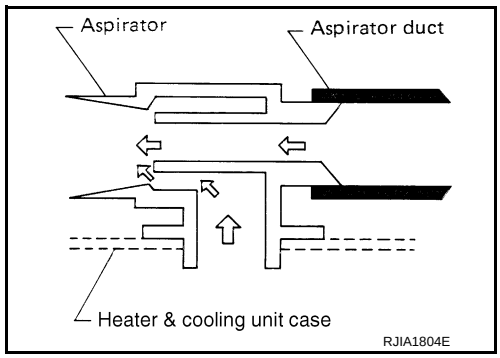
INFOID:0000000011254823

- Air mix door motor (passenger side) consists of motor that drives door and PBR (Potentio Balance Register) that detects door position.
- Motor operates air mix door (passenger side) and rear air mix door according to control signal from A/C auto amp.
- PBR (Potentio Balance Register) transmits PBR feedback signal to A/C auto amp. according to motor position.
- According to PBR feedback signal, A/C auto amp. monitors that motor is in an appropriate door position.

HEATER & COOLING UNIT ASSEMBLY : Aspirator

INFOID:0000000011254824

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



HEATER & COOLING UNIT ASSEMBLY : Mode Door Motor (Driver Side)

INFOID:0000000011254825

- Mode door motor (driver side) consists of motor that drives door and PBR (Potentio Balance Register) that detects door position.
- Motor operates ventilator door (driver side), foot door (driver side) and defroster door according to control signal from A/C auto amp.
- PBR (Potentio Balance Register) transmits PBR feedback signal to A/C auto amp. according to motor position.
- According to PBR feedback signal, A/C auto amp. monitors that motor is in an appropriate door position.

HEATER & COOLING UNIT ASSEMBLY : Mode Door Motor (Passenger side)

INFOID:0000000011254826

- Mode door motor (passenger side) consists of motor that drives door and PBR (Potentio Balance Register) that detects door position.
- Motor operates ventilator door (passenger side) and foot door (passenger side) according to control signal from A/C auto amp.
- PBR (Potentio Balance Register) transmits PBR feedback signal to A/C auto amp. according to motor position.
- According to PBR feedback signal, A/C auto amp. monitors that motor is in an appropriate door position.

HEATER & COOLING UNIT ASSEMBLY : Rear Mode Door Motor

INFOID:0000000011254827

- Rear mode door motor consists of motor that drives door and PBR (Potentio Balance Register) that detects door position.
- Motor operates rear mode door according to control signal from A/C auto amp.
- PBR (Potentio Balance Register) transmits PBR feedback signal to A/C auto amp. according to motor position.
- According to PBR feedback signal, A/C auto amp. monitors that motor is in an appropriate door position.

HEATER & COOLING UNIT ASSEMBLY : Upper Ventilator Door Motor

INFOID:0000000011254828

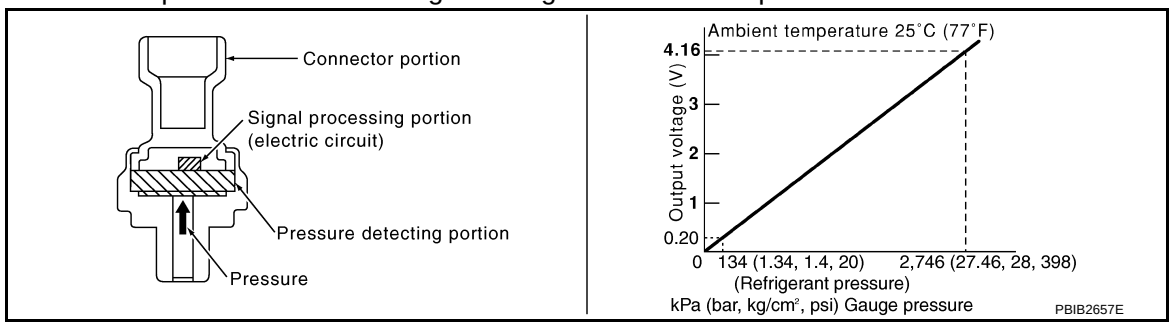
- Upper ventilator door motor consists of motor that drives door and PBR (Potentio Balance Register) that detects door position.
- Motor operates upper ventilator door according to control signal from A/C auto amp.
- PBR (Potentio Balance Register) transmits PBR feedback signal to A/C auto amp. according to motor position.
- According to PBR feedback signal, A/C auto amp. monitors that motor is in an appropriate door position.

Refrigerant Pressure Sensor

INFOID:0000000011254829

Description

Refrigerant pressure sensor is installed to upper portion of liquid tank. The refrigerant pressure sensor converts high-pressure side refrigerant pressure into voltage and outputs it to ECM. ECM operates cooling system protection and idle speed control according to voltage value that is input.



Structure and operation

The refrigerant pressure sensor is a capacitance type sensor. It consists of a pressure detection area and a signal processing area. The pressure detection area, which is a variable capacity condenser, changes internal static capacitance according to pressure force. The signal processing area detects the static capacitance of the pressure detection area, converts the static capacitance into a voltage value, and transmits the voltage value to ECM.

SYSTEM

AUTOMATIC AIR CONDITIONING SYSTEM

AUTOMATIC AIR CONDITIONING SYSTEM : System Diagram

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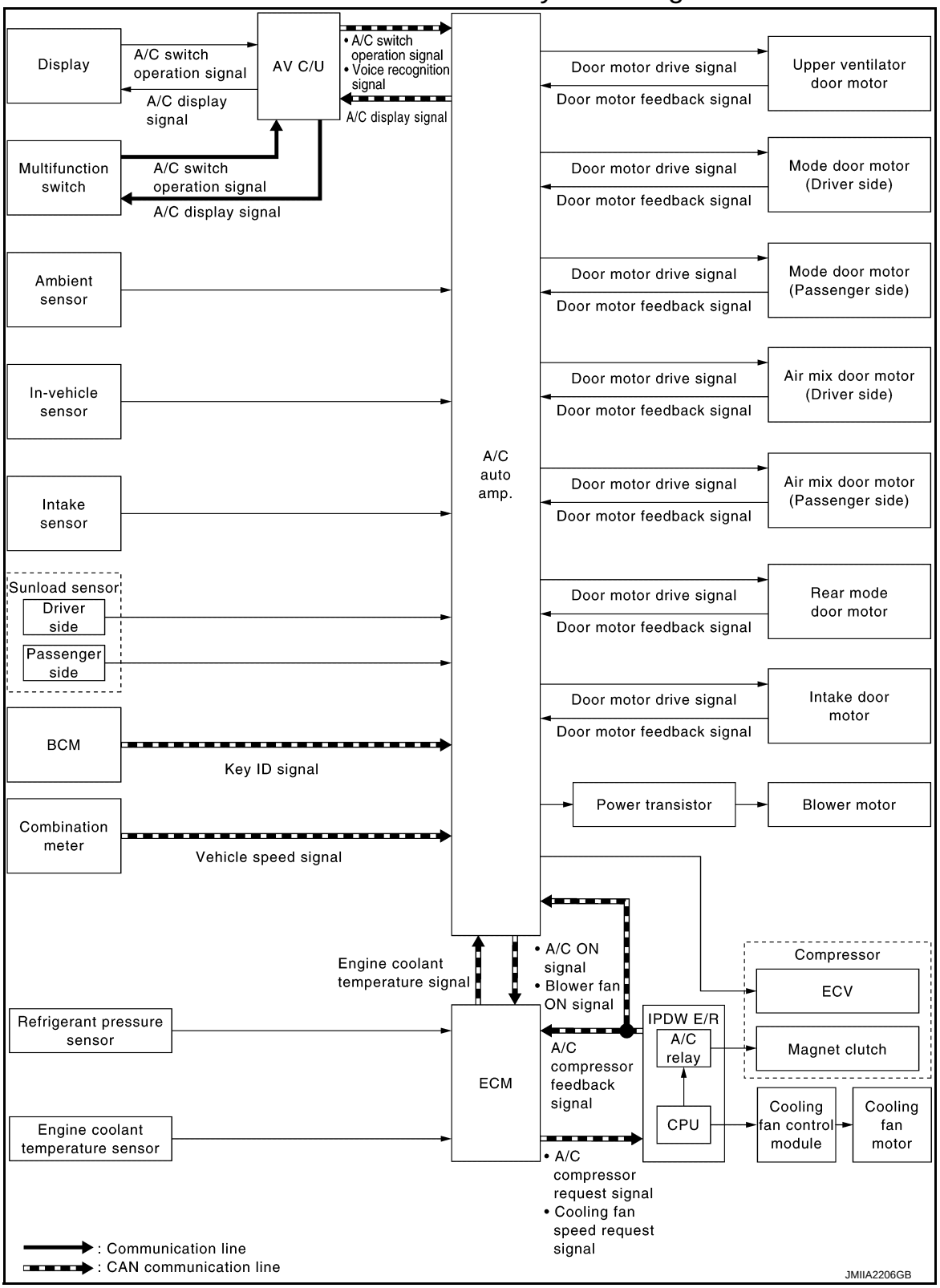


AUTOMATIC AIR CONDITIONING SYSTEM : System Description

INFOID:0000000011254831

- Automatic air conditioning system is controlled by each function of A/C auto amp., ECM, IPDM E/R and BCM.

Control by A/C auto amp.

- HAC-11, "AUTOMATIC AIR CONDITIONING SYSTEM : Air Flow Control"
- HAC-12, "AUTOMATIC AIR CONDITIONING SYSTEM : Air Inlet Control"
- HAC-12, "AUTOMATIC AIR CONDITIONING SYSTEM : Air Inlet Control"
- HAC-13, "AUTOMATIC AIR CONDITIONING SYSTEM : Air Outlet Control"
- HAC-13, "AUTOMATIC AIR CONDITIONING SYSTEM : Compressor Control"
- HAC-13, "AUTOMATIC AIR CONDITIONING SYSTEM : Door Control"
- HAC-16, "AUTOMATIC AIR CONDITIONING SYSTEM : Temperature Control"
- HAC-16, "AUTOMATIC AIR CONDITIONING SYSTEM : Intelligent Key Interlock Function"
- Correction for input value of each sensor

Ambient sensor (setting temperature correction)

- A/C auto amp. controls passenger room temperature so that the optimum level always matches the temperature level that passenger may feel. Correction is applied to the target temperature that is set using temperature control dial, according to ambient temperature detected by ambient sensor.

In-vehicle sensor (setting temperature correction)

- Passenger room temperature from in-vehicle sensor is corrected for each air conditioning control (driver side and passenger side)

Intake sensor (intake temperature correction)

- A/C auto amp. performs correction to change recognition intake temperature of A/C auto amp. more quickly when difference is larger between recognition intake temperature and intake temperature from intake temperature sensor. The correction is performed to change recognition intake temperature more slowly when difference is smaller.

Sunload sensor (sunload amount correction)

- Sunload amount from sunload sensor is corrected for each air conditioning control (driver side and passenger side).
- A/C auto amp. performs correction to change recognition sunload amount of A/C auto amp. slowly when sunload amount changes excessively, for example when entering or exiting a tunnel.

Control by ECM

- Cooling fan control
  Refer to EC-50, "COOLING FAN CONTROL : System Description" (VQ37VHR) or EC-579, "COOLING FAN CONTROL : System Description" (VK56VD).
- Air conditioning cut control
  Refer to EC-48, "AIR CONDITIONING CUT CONTROL : System Description" (VQ37VHR) or EC-585, "AIR CONDITIONING CUT CONTROL : System Description" (VK56VD).

Control by IPDM E/R

- Relay control
  Refer to PCS-6, "RELAY CONTROL SYSTEM : System Description".
- Cooling fan control
  Refer to PCS-9, "POWER CONTROL SYSTEM : System Description".

Control by BCM

- Intelligent key interlock function.
  Refer to DLK-16, "INTELLIGENT KEY SYSTEM : System Description".
- Various operations of air conditioning system are transmitted from multifunction switch and display to AV control unit via communication line (except display) and from AV control unit to A/C auto amp. via CAN communication. A/C auto amp. sends each indication information to AV control unit via CAN communication. AV control unit displays each type of indication information that is received.

AUTOMATIC AIR CONDITIONING SYSTEM : Air Flow Control

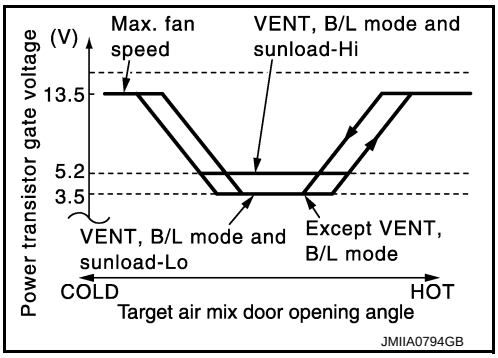
INFOID:0000000011254832

DESCRIPTION

- A/C auto amp. changes gate voltage to power transistor and controls air flow in 31 stages based on target air flow. When air flow is to be increased, gate voltage to power transistor increases gradually for preventing excessive large amount of air flow.
- In addition to manual control and automatic control, air flow control is consist of low coolant temperature starting control, fan speed control at door motor operation and fan speed control at voice recognition.

AUTOMATIC AIR FLOW CONTROL

- A/C auto amp. decides target air flow depending on target air mix door opening angle.
- A/C auto amp. changes voltage to power transistor gate and controls air flow in 31 stages, so that target air flow is achieved.
- When air outlet is VENT or B/L, the minimum air flow is changed depending on sunload.



LOW COOLANT TEMPERATURE STARTING CONTROL

A/C auto amp. does not operate bower motor when engine coolant temperature is approximately 37°C (99°F) or less, for preventing a cold discharged air flow. After this, gate voltage applied to power transistor gradually, and blower motor operates.

FAN SPEED CONTROL AT DOOR MOTOR OPERATION

When mode door motor is activated while air flow is more than the specified value, A/C auto amp. reduces temporarily fan speed so that mode door moves smoothly.

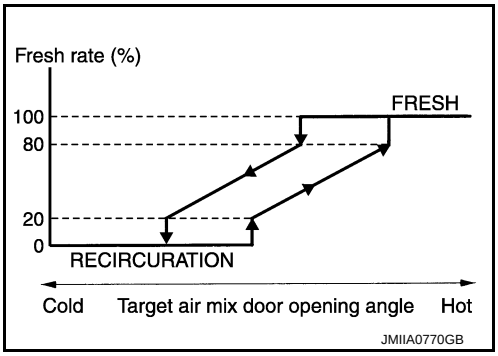
FAN SPEED CONTROL AT VOICE RECOGNITION

When the voice control (voice command) switch is operated during air flow automatic control, A/C auto amp. decreases the air flow of the blower motor once and controls the air flow so as not to disturb the voice recognition function. This control continues while voice recognition function is operating.

AUTOMATIC AIR CONDITIONING SYSTEM : Air Inlet Control

INFOID:0000000011254833

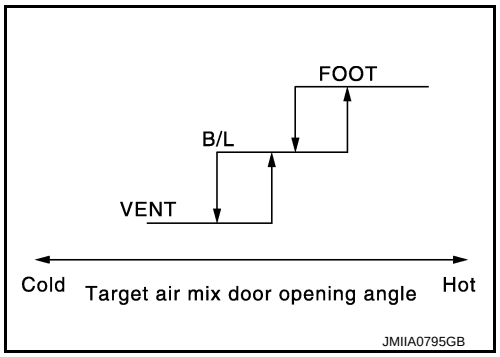
Intake door automatic control selects FRE, 20 – 80% FRE, or REC depending on a target air mix door opening angle.



AUTOMATIC AIR CONDITIONING SYSTEM : Air Outlet Control

INFOID:0000000011254834

While air outlet is in automatic control, A/C auto amp. selects the mode door position depending on a target air mix door angle.



AUTOMATIC AIR CONDITIONING SYSTEM : Compressor Control

INFOID:0000000011254835

DESCRIPTION

- When the compressor activation condition is satisfied while blower motor is activated, A/C auto amp. transmits A/C ON signal and blower fan ON signal to ECM via CAN communication.
- ECM judges that the compressor can be activated depending on each sensors state (refrigerant pressure sensor signal, throttle position sensor signal, and others). And transmits air conditioner relay control signal to IPDM E/R via CAN communication.
- IPDM E/R turns air conditioner relay ON and activates the compressor depending on request from ECM.

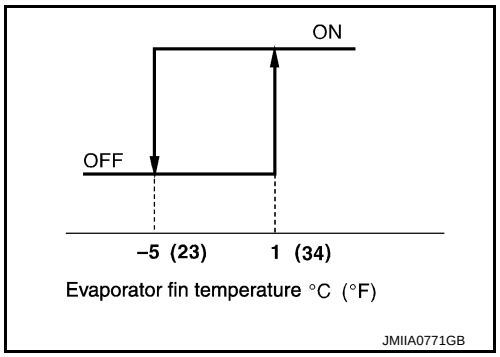
COMPRESSOR PROTECTION CONTROL AT PRESSURE MALFUNCTION

When high-pressure side value that is detected by refrigerant pressure sensor is as per the following state, ECM requests IPDM E/R to turn air conditioner relay OFF and stops the compressor.

- 3.12 MPa (31.20 bar, 31.8 kg/cm^2, 452 psi) or more (When the engine speed is less than 1,500 rpm)
- 2.74 MPa (27.40 bar, 27.9 kg/cm^2, 397 psi) or more (When the engine speed is 1,500 rpm or more)
- 0.12 MPa (1.20 bar, 1.2 kg/cm^2, 17 psi) or less

LOW TEMPERATURE PROTECTION CONTROL

- When intake sensor detects that evaporator fin temperature is –5°C (23°F) or less, A/C auto amp. requests ECM to turn compressor OFF, and stops the compressor.
- When the evaporator fin temperature returns to 1°C (34°F) or more, the compressor is activated.



OPERATING RATE CONTROL

When set temperature is other than fully cold or air outlet is “VENT”, “B/L” or “FOOT” A/C auto amp. controls the compressor activation depending on ambient temperature.

AIR CONDITIONING CUT CONTROL

When the engine is running in excessively high load condition, ECM requests IPDM E/R to turn air conditioner relay OFF, and stops the compressor. Refer to EC-48, "AIR CONDITIONING CUT CONTROL : System Description" (VQ37VHR) or EC-585, "AIR CONDITIONING CUT CONTROL : System Description" (VK56VD) for details.

AUTOMATIC AIR CONDITIONING SYSTEM : Door Control

INFOID:0000000011254836

DOOR MOTOR CONTROL

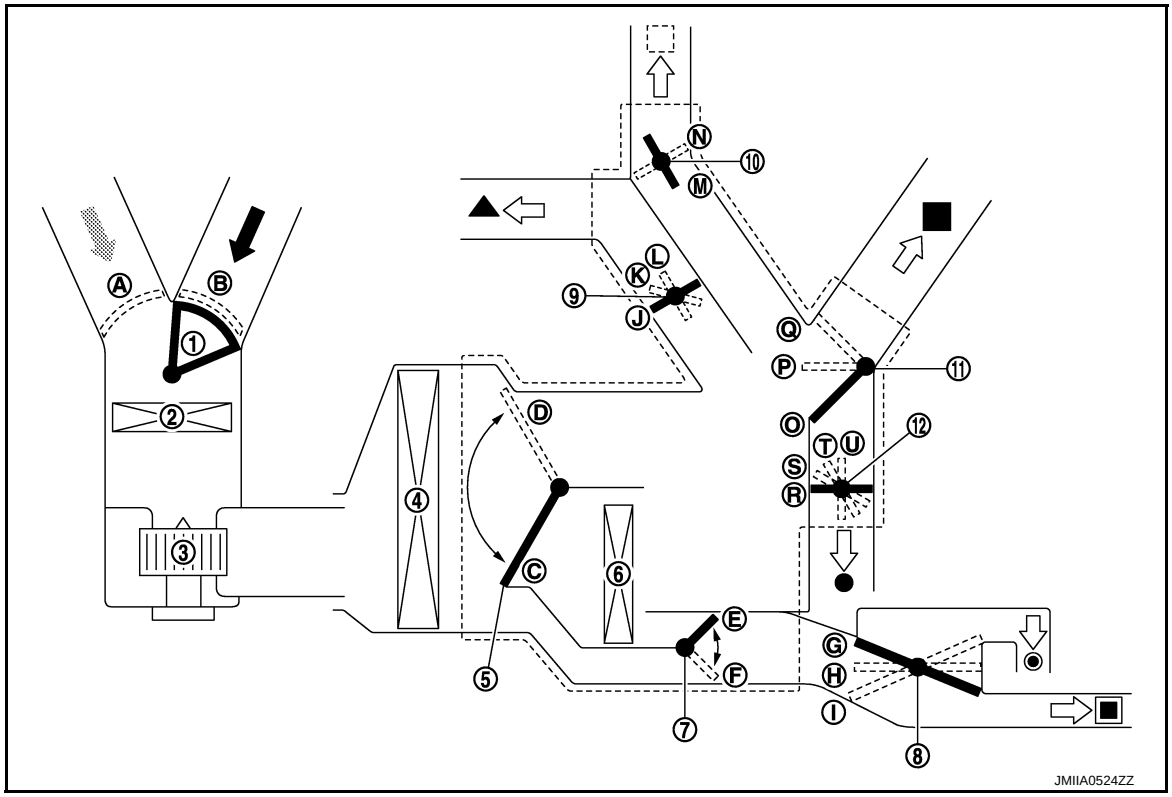
- The A/C auto amp. receives data from each sensor.
- When control signal from A/C auto amp. is received, each door motor of intake, air mix (driver side and passenger side), mode (driver side and passenger side), upper ventilator (driver side and passenger side) and

rear mode operates door to the optimum position based on PBR (Potentio Balance Resistor) door position detection signal.

SWITCHES AND THEIR CONTROL FUNCTIONS

NOTE:

For LH/RH independent temperature and air outlet adjustment function, construction indicated by broken line as shown in the figure is divided to driver side and passenger side by divider plate.



1. Intake door
2. In-cabin microfilter
3. Blower motor
4. Evaporator
5. Air mix door (driver side / passenger side)
6. Heater core
7. Rear air mix door
8. Rear mode door
9. Defroster door
10. Upper ventilator door
11. Ventilator door (driver side / passenger side)
12. Foot door (driver side / passenger side)

Fresh air | Recirculation air | Defroster

Upper ventilator | Ventilator | Foot

Rear foot | Rear ventilator

Switch position				Door position											
				Ventilator door		Foot door		Defroster door	Rear mode door	Upper ventilator door	Intake door	Air mix door		Rear air mix door
				Driver side	Passenger side	Driver side	Passenger side					Driver side	Passenger side	
AUTO switch	ON			AUTO						—	AUTO			
MODE switch (Driver side)	DUAL: OFF	VENT		O		R		J	G	—				
		B/L		P		T		J	H	—				
		FOOT		Q		U		K	I	—				
		D/F		Q		T		L	I	—				
MODE switch (Driver side)	DUAL: ON	VENT		O	—	R	—	J	—					
		B/L		P	—	T	—	J	—					
		FOOT		Q	—	U	—	K	—					
		D/F		Q		T		L	—					
MODE switch (Passenger side)	DUAL: ON	VENT		—	O	—	R	—	G	—				
		B/L		—	P	—	T	—	H	—				
		FOOT		—	Q	—	U	—	I	—				
DEF switch	ON			Q		R		L	I	—				
	OFF			—										
Upper Vent	ON			—						M	—			
	OFF			—						N	—			
FRE switch*	ON			—							B	—		
REC switch*	ON			—							A	—		
Temperature control switch (Driver side)	DUAL: OFF	18°C (60°F)		—		S		—				C		E
		18.5°C – 31.5°C (61°F – 89°F)		—								AUTO		
		32°C (90°F)		—								D		F
Temperature control switch (Driver side)	DUAL: ON	18°C (60°F)		—		S		—				C		—
		18.5°C – 31.5°C (61°F – 89°F)		—								AUTO		—
		32°C (90°F)		—								D		—
Temperature control switch (Passenger side)		18°C (60°F)		—		S		—				C		E
		18.5°C – 31.5°C (61°F – 89°F)		—								AUTO		
		32°C (90°F)		—								D		F
OFF switch	OFF			Q		U		K	I	—	—			

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

AIR DISTRIBUTION

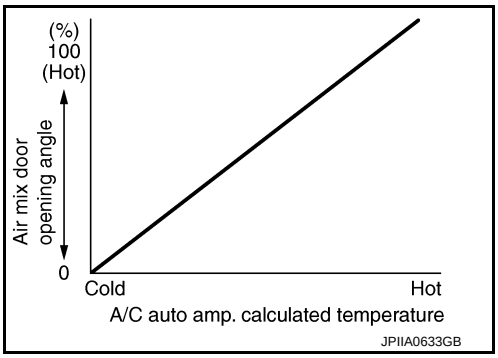
Discharge air flow												
Mode position	Condition				Air outlet / distribution							
					VENT				FOOT		DEF	
					Front		Upper	Rear	Front	Rear		
					Center	Side						
	• DUAL: OFF • Rear ventilator: Close	Upper Vent: ON	Temperature control switch (driver side)	18°C (60°F)	34.5%	34.5%	10.0%	13.0%	8.0%	—	—
				Other than 18°C (60°F)*	38.0%	38.0%	11.0%	13.0%	—	—	—
			—		24.0%	24.0%	10.0%	12.0%	19.0%	11.0%	—
			—		—	14.0%	14.0%	7.0%	24.0%	22.0%	19.0%
			—		—	11.0%	12.0%	5.0%	20.0%	22.0%	30.0%
		—			—	11.0%	—	—	—	—	89.0%

*: Air blow is also supplied to front foot until passenger room temperature stabilizes when temperature setting is other than 18°C (60°F). At that time, air blowing is the same as 18°C (60°F) setting.

AUTOMATIC AIR CONDITIONING SYSTEM : Temperature Control

INFOID:0000000011254837

- When ignition switch is in the ON position, A/C auto amp. always automatically controls temperature regardless of air conditioning operational state.
- A/C auto amp. calculates the target air mix door opening angle depending on set temperature, in-vehicle temperature, ambient temperature and sunload.
- Air mix door is controlled depending on the comparison of current air mix door opening angle and target air mix door opening angle.
- Regardless of in-vehicle temperature, ambient temperature and sunload, air mix door is fixed at the fully cold position when set temperature is 18.0°C (60°F), and at the fully hot position when set temperature is 32.0°C (90°F).



AUTOMATIC AIR CONDITIONING SYSTEM : Intelligent Key Interlock Function

INFOID:0000000011254838

DESCRIPTION

- Setting value of air conditioning system when ignition switch is previously OFF can be memorized for each Intelligent Key. Air conditioning system is automatically operated by the setting value.
  NOTE:
  Setting value can be memorized for up to 3 Intelligent Keys.
- Interlock items are as per the following table.

Operation	Conditions
Multifunction switch	AUTO switch (ON / OFF)
	Setting temperature (Setting value)
	Air flow (Setting value)
	Air inlet (FRE / REC)
	Air outlet (VENT / B/L / FOOT / D/F / DEF)
“Climate” menu screen	“A/C” (ON / OFF)
	“DUAL” (ON / OFF)
	“Upper Vent” (ON / OFF)

Operation Description

Memory

1. Unlock door using Intelligent Key or driver door request switch.
2. BCM transmits Key ID signal to A/C auto amp. via CAN communication line.
3. When ignition switch turns OFF, A/C auto amp. memorizes setting information (setting temperature, air inlet status, and others) of air conditioning system to memory for each Key ID.

Readout

1. Unlock door using Intelligent Key or driver door request switch.
2. BCM transmits Key ID signal to A/C auto amp. via CAN communication line.
3. When ignition switch turns ON, A/C auto amp. operates automatically air conditioning system according to setting information of Key ID that is received.
   NOTE:
   When Intelligent Key interlock function operates, “Connection with the key has been done.” is displayed.

AUTOMATIC AIR CONDITIONING SYSTEM : Fail-safe

INFOID:0000000011491952

FAIL-SAFE FUNCTION

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

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

OPERATION

AUTOMATIC AIR CONDITIONING SYSTEM

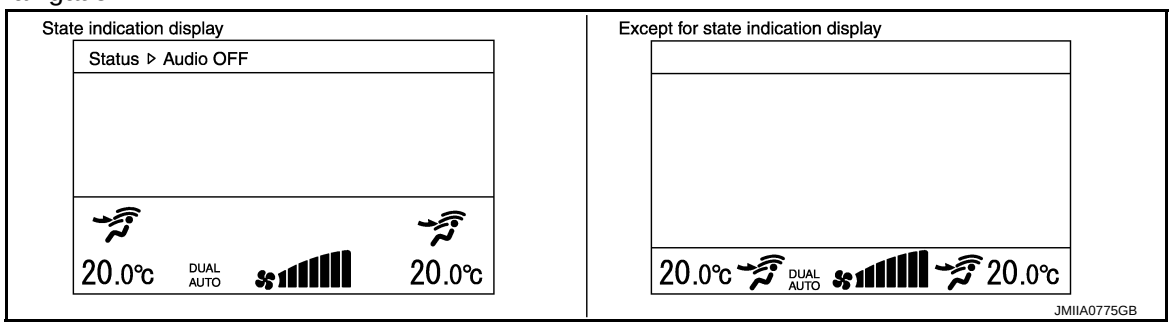
AUTOMATIC AIR CONDITIONING SYSTEM : Switch Name and Function

INFOID:0000000011254849

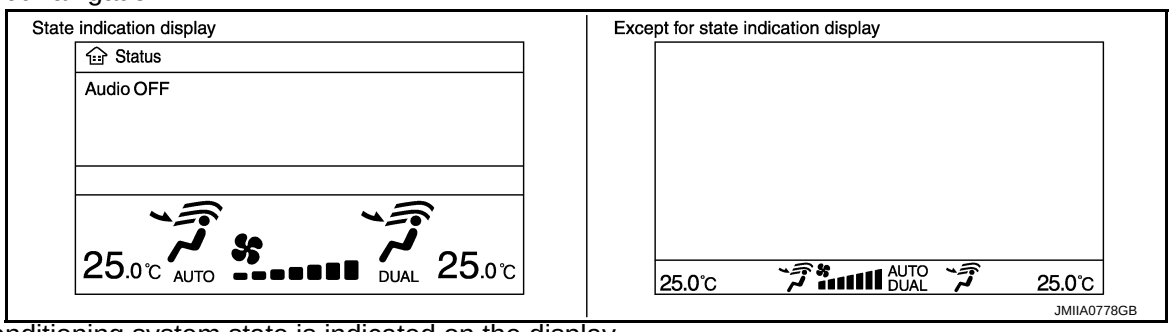
OPERATION AND DISPLAY

A/C Display

- With navigation

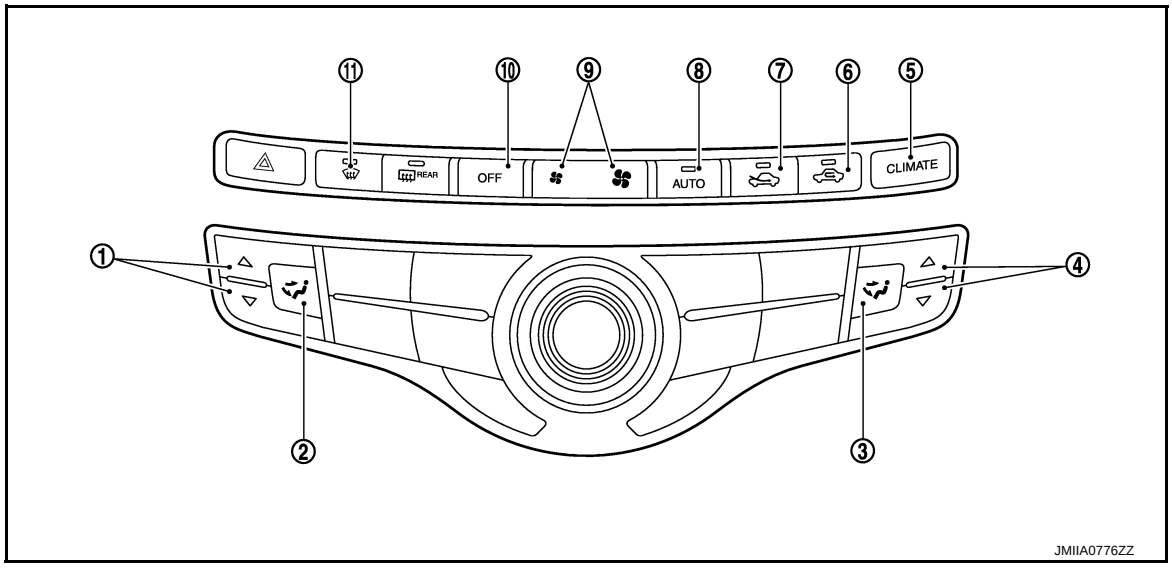


- Without navigation



- Air conditioning system state is indicated on the display.
- When “Status” on multifunction switch is pressed while air conditioning system is in the ON position, the display changes to state indication display of air conditioning system. When air conditioning system is operated while navigation system (with navigation) or audio system is displayed, air conditioning system state is indicated in the lower portion of display for several seconds.
- When MODE switch is pressed while air conditioning system is in the OFF position, state indication display is indicated for several seconds.

A/C Controller (Multifunction switch)



1. Temperature control switch (Driver side)
2. MODE switch (Driver side)
3. MODE switch (Passenger side)
4. Temperature control switch (Passenger side)
5. CLIMATE switch
6. REC switch
7. FRE switch
8. AUTO switch
9. Fan switch
10. OFF switch
11. DEF switch

Switch Operation

Switch name	Function
AUTO switch	When this switch is pressed, switch indicator lamp and “AUTO” indicator on display“, and then air conditioning system starts automatic control. **NOTE:** When air inlet is not selected manually, air inlet changes to automatic control.
CLIMATE switch	“Climate” menu is indicated on display when this switch is pressed.
DEF switch	DEF mode (switch indicator lamp) changes between ON ⇔ OFF each time this switch is pressed. When DEF switch is pressed while air conditioning system is in the ON position • When DEF mode turns ON, air conditioning system becomes the following status. - Air flow: Automatic control (If fan speed other than “AUTO” is selected before pressing DEF switch, fan speed is manual control) - Air inlet: Fresh air intake - Air outlet: DEF - Compressor: ON • When DEF mode turns OFF, air conditioning system status returns to the previous status before DEF mode is selected. When DEF switch is pressed while air conditioning system is in the OFF position • Air conditioning system turns ON and becomes the following status. - Air flow: Automatic control - Air inlet: Fresh air intake - Air outlet: DEF - Compressor: ON • When DEF mode turns OFF, entire air conditioning system is set to auto mode. **NOTE:** Automatic control is released (“AUTO” is not displayed) when this switch is pressed while air conditioning system is in automatic control (“AUTO” is displayed).
Fan switch	Fan speed is selected within a range of 1st – 7th speed using this switch. **NOTE:** • Air conditioning system turns ON when this switch is operated while air conditioning system is in OFF position. • Automatic air flow control is released (“AUTO” is not displayed) when this switch is pressed while air conditioning system is in automatic control (“AUTO” is displayed).
FRE switch	• Switch indicator lamp turns ON and air inlet is set to fresh air intake (FRE) when this switch is pressed. • Press and held for 2 seconds or more, intake switch indicator blinks 2 times and air inlet is set to automatic control. (Intake switch indicator indicates air inlet state during automatic control.) **NOTE:** Air inlet can be changed when air conditioning system is in the OFF position.
MODE switch (Driver side)	Air outlet can be changes from VENT ⇒ B/L ⇒ FOOT ⇒ D/F ⇒ VENT each time this switch is pressed. **NOTE:** • Air outlet can be changed when air conditioning system is in the OFF position. • Automatic air outlet control is released (“AUTO” is not displayed) when this switch is pressed while air conditioning system is in automatic control (“AUTO” is displayed).
MODE switch (Passenger side)	• The system is set to LH/RH independent status (“DUAL” displays) by operating this switch. Air outlet of passenger side can be changed without changing air outlet of driver side. • Air outlet can be changes from VENT ⇒ B/L ⇒ FOOT ⇒ VENT each time this switch is pressed. **NOTE:** • Air outlet can be changed when air conditioning system is in the OFF position. • Automatic air outlet control is released (“AUTO” is not displayed) when this switch is pressed while air conditioning system is in automatic control (“AUTO” is displayed). • When DEF mode is ON, MODE switch (passenger side) is inoperative.

Switch name	Function
OFF switch	• When this switch is pressed, air conditioning system turns OFF. • When air conditioning system turns OFF, air inlet and air outlet become the following status. - Air inlet: Automatic control - Air outlet: FOOT
REC switch	• Switch indicator lamp turns ON and air inlet is set to recirculation (REC) when this switch is pressed. • Press and held for 2 seconds or more, intake switch indicator blinks 2 times and air inlet is set to automatic control. (Intake switch indicator indicates air inlet state during automatic control.) **NOTE:** Air inlet can be changed when air conditioning system is in the OFF position.
Temperature control switch (Driver side)	Setting temperature is selected using this switch within a range between 18°C (60°F) and 32°C (90°F) at a rate of 0.5°C (1.0°F) per adjustment. • ▲ Press: Setting temperature increases • ▼ Press: Setting temperature decreases **NOTE:** When air conditioning system is OFF, setting temperature can be selected only while air conditioning system status screen [only when MODE switch (driver side) is pressed] is indicated on display.
Temperature control switch (Passenger side)	• The system is set to LH/RH independent status (“DUAL” displays) by operating this switch. Outlet air flow temperature of passenger side can be changed without changing outlet air flow temperature of driver side. • Setting temperature is selected using this switch within a range between 18°C (60°F) and 32°C (90°F) at a rate of 0.5°C (1.0°F) per adjustment. - ▲ Press: Setting temperature increases - ▼ Press: Setting temperature decreases **NOTE:** • When air conditioning system is OFF, setting temperature can be selected only while air conditioning system status screen [only when MODE switch (passenger side) is pressed] is indicated on display. • When DEF mode is ON, temperature control switch (passenger side) is inoperative.

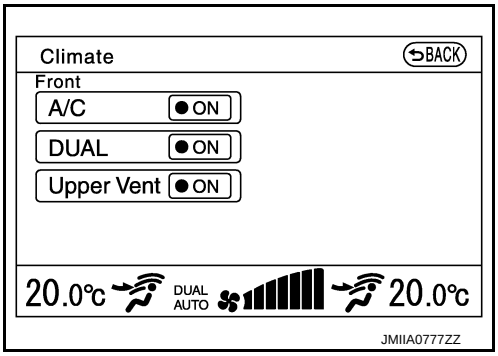
AUTOMATIC AIR CONDITIONING SYSTEM : Menu Displayed by Pressing Each Switch

INFOID:0000000011254850

“CLIMATE” MENU

“Climate” menu screen is displayed when CLIMATE switch of multifunction switch is pressed.

• With navigation



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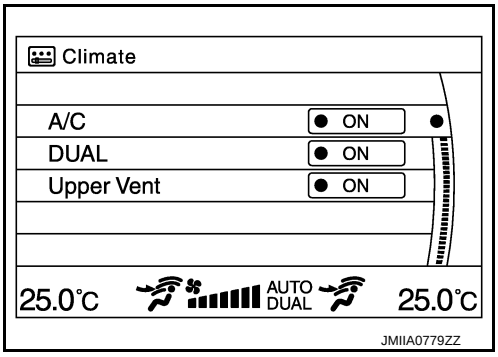
• Without navigation



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Menu	Function
A/C	ON ⇔ OFF of compressor is selected. **NOTE:** Selection does not operate when blower motor is OFF.
DUAL	ON ⇔ OFF of LH/RH independent function (temperature and air outlet) is selected. **NOTE:** • Setting temperature and outlet for passenger seat is the same as that for driver seat when LH/RH independent function is OFF. • Selection does not operate when blower motor is OFF.
Upper Vent	ON ⇔ OFF of air blowing from upper ventilator is selected. **NOTE:** Selection does not operate when blower motor is OFF and air outlet is DEF.

DIAGNOSIS SYSTEM (A/C AUTO AMP.)

Description

INFOID:0000000011254853

Air conditioning system performs self-diagnosis, operation check, function diagnosis, and various settings using diagnosis function of each control unit.

ECU	Diagnostic item (CONSULT)	
A/C auto amp.	HVAC	Self Diagnostic Result
		Data Monitor
		Active Test
		Work support
AV control unit	MULTI AV	Self Diagnostic Result
	Multi AV system on board diagnosis function	
ECM	ENGINE	Self Diagnostic Result
		Data Monitor
IPDM E/R	IPDM E/R	Self Diagnostic Result
		Data Monitor
	Auto active test	

CONSULT Function

INFOID:0000000011254854

APPLICATION ITEM

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

Diagnostic mode	Description
Ecu Identification	Displays the part number of A/C auto amp.
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.
Configuration	• The vehicle specification that is written in A/C auto amp. can be displayed or stored. • The vehicle specification can be written when A/C auto amp. is replaced.

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.

ECU IDENTIFICATION

Part number of A/C auto amp. can be checked.

NOTE:

When the vehicle specification is written to A/C auto amp. using control unit setting, part number of A/C auto amp. is updated to match the vehicle specification.

SELF DIAGNOSTIC RESULT

Diagnosis result that is judged by A/C auto amp. can be checked. Refer to HAC-31, "DTC Index".

DATA MONITOR

Input/output signal of A/C auto amp. can be checked.

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.
DR TARGET A/TEMP	[°C]	Target discharge air temperature (driver side) judged by A/C auto amp. depending on the temperature setting and the value from each sensor.
PA TARGET A/TEMP	[°C]	Target discharge air temperature (passenger side) judged by A/C auto amp. depending on the temperature setting and the value from each sensor.
AMB TEMP SEN	[°C]	Ambient temperature value converted from ambient sensor signal received from ambient sensor.
IN-VEH TEMP	[°C]	In-vehicle temperature value converted from in-vehicle sensor signal received from in-vehicle sensor.
INT TEMP SEN	[°C]	Evaporator fin temperature value converted from intake sensor signal received from intake sensor.
AMB SEN CAL	[°C]	Ambient temperature value calculated by A/C auto amp.
IN-VEH CAL	[°C]	In-vehicle temperature value calculated by A/C auto amp.
INT TEMP CAL	[°C]	Evaporator fin temperature value calculated by A/C auto amp.
ENG COOL TEMP	[°C]	Engine coolant temperature signal value received from ECM via CAN communication.
DR SUNLOAD SEN	[w/m^2]	Sunload value (driver side) converted from sunload sensor signal (driver side) received from sunload sensor.
PASS SUNLOAD SEN	[w/m^2]	Sunload value (passenger side) converted from sunload sensor signal (passenger side) received from sunload sensor.
DR SUNL SEN CAL	[w/m^2]	Sunload value (driver side) calculated by A/C auto amp.
PASS SUNL SEN CAL	[w/m^2]	Sunload value (passenger side) calculated by A/C auto amp.
COMP ECV DUTY	[%]	Duty ratio of ECV (electrical control valve) judged by A/C auto amp.
BLOWER MOT VOLT	[V]	Gate voltage to power transistor that is judged by A/C auto amp.
VEHICLE SPEED	[Mph (km/h)]	Vehicle speed signal value received from combination meter via CAN communication.

ACTIVE TEST

The signals used to activate each device forcibly supplied from A/C auto amp. operation check of air conditioning system can be performed.

Test item	Description
HVAC TEST	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.

Check each output device

	Test item						
	MODE 1	MODE 2	MODE 3	MODE 4	MODE 5	MODE 6	MODE 7
Mode door motor (driver side) position	VENT 1	VENT 2	B/L	B/L	FOOT	D/F	DEF
Mode door motor (passenger side) position	VENT 1	VENT 2	B/L	B/L	FOOT	D/F	DEF
Rear mode door motor position	VENT	VENT	B/L	B/L	FOOT	FOOT	DEF
Intake door motor position	REC	REC	20% FRE	20% FRE	FRE	FRE	FRE
Air mix door motor (driver side) position	FULL COLD	FULL COLD	FULL COLD	FULL HOT	FULL HOT	FULL HOT	FULL HOT
Air mix door motor (passenger side) position	FULL COLD	FULL COLD	FULL COLD	FULL HOT	FULL HOT	FULL HOT	FULL HOT
Power transistor gate voltage	4 V	4 V	7 V	7 V	11.5 V	11.5 V	4 V
Magnet clutch	ON	ON	ON	ON	OFF	OFF	ON

	Test item						
	MODE 1	MODE 2	MODE 3	MODE 4	MODE 5	MODE 6	MODE 7
ECV control signal (duty ratio)	60%	60%	30%	30%	0%	0%	70%
Upper ventilator door motor position	OPEN	CLOSE	CLOSE	OPEN	CLOSE	CLOSE	CLOSE

NOTE:
Perform the inspection of each output device after start in the engine because the compressor is operated.

WORK SUPPORT

Setting change of each setting functions can be performed.

Work item	Description	Reference
TEMP SET CORRECT	If the temperature felt by the customer is different from 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-55, "AUTOMATIC AIR CONDITIONING SYSTEM : Temperature Setting Trimmer"
REC MEMORY SET	Setting change of inlet port memory function (REC) can be performed.	HAC-55, "AUTOMATIC AIR CONDITIONING SYSTEM : Inlet Port Memory Function (REC)"
FRE MEMORY SET	Setting change of inlet port memory function (FRE) can be performed.	HAC-56, "AUTOMATIC AIR CONDITIONING SYSTEM : Inlet Port Memory Function (FRE)"
BLOW SET	Setting change of foot position setting trimmer can be performed.	HAC-56, "AUTOMATIC AIR CONDITIONING SYSTEM : Foot Position Setting Trimmer"

CONFIGURATION

The vehicle specification that is written in A/C auto amp. can be displayed or stored.
The vehicle specification can be written when A/C auto amp. is replaced.
Refer to HAC-54, "Description".

ECU DIAGNOSIS INFORMATION

A/C AUTO AMP.

Reference Value(AUTOMATIC AIR CONDITIONING)

INFOID:0000000011254855

CONSULT DATA MONITOR REFERENCE VALUES

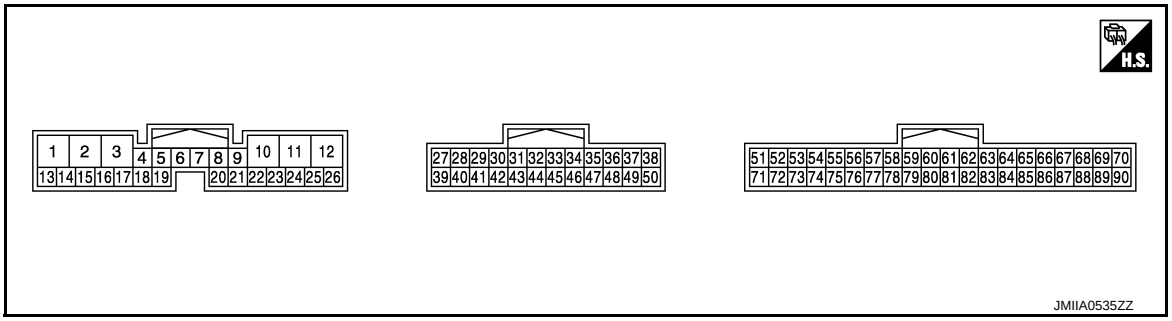
NOTE:

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": ON (Compressor operation status)	On
		"A/C": OFF	Off
FAN REQ SIG	Engine: Run at idle after warming up	Blower motor: ON	On
		Blower motor: OFF	Off
DR TARGET A/TEMP	Ignition switch ON		Values depending on target air flow temperature (driver side)
PA TARGET A/TEMP	Ignition switch ON		Values depending on target air flow temperature (passenger side)
AMB TEMP SEN	Ignition switch ON		Equivalent to ambient temperature
IN-VEH TEMP	Ignition switch ON		Equivalent to in-vehicle temperature
INT TEMP SEN	Ignition switch ON		Values depending on evaporator fin temperature
AMB SEN CAL	Ignition switch ON		Equivalent to ambient temperature
IN-VEH CAL	Ignition switch ON		Equivalent to in-vehicle temperature
INT TEMP CAL	Ignition switch ON		Values depending on evaporator fin temperature
ENG COOL TEMP	Ignition switch ON		Values depending on engine coolant temperature
DR SUNLOAD SEN	Ignition switch ON		Values depending on sunload (driver side)
PASS SUNLOAD SEN	Ignition switch ON		Values depending on sunload (passenger side)
DR SUNL SEN CAL	Ignition switch ON		Values depending on sunload (driver side)
PASS SUNL SEN CAL	Ignition switch ON		Values depending on sunload (passenger side)
COMP ECV DUTY	Engine: Run at idle after warming up	Active test (HVAC test): MODE 1	60%
		Active test (HVAC test): MODE 2	60%
		Active test (HVAC test): MODE 3	30%
		Active test (HVAC test): MODE 4	30%
		Active test (HVAC test): MODE 5	0%
		Active test (HVAC test): MODE 6	0%
		Active test (HVAC test): MODE 7	70%

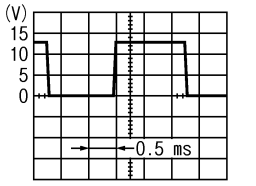
Monitor item	Condition		Value/Status
BLOWER MOT VOLT	Engine: Run at idle after warming up	Active test (HVAC test): MODE 1	4 V
		Active test (HVAC test): MODE 2	4 V
		Active test (HVAC test): MODE 3	7 V
		Active test (HVAC test): MODE 4	7 V
		Active test (HVAC test): MODE 5	11.5 V
		Active test (HVAC test): MODE 6	11.5 V
		Active test (HVAC test): MODE 7	4 V
VEHICLE SPEED	Turn drive wheels and compare CONSULT value with the speedometer indication.		Equivalent to speedometer reading

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire dolor)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (L)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (W)	Ground	Ignition power supply	Input	Ignition switch ON		Battery voltage
6 (R)	Ground	Blower motor feedback signal	Input	• Ignition switch ON • Air inlet: VENT	Fan speed: OFF	Battery voltage
					Fan speed: 1st (manual)	10.0 V
					Fan speed: 2nd (manual)	8.3 V
					Fan speed: 3rd (manual)	7.0 V
					Fan speed: 4th (manual)	5.7V
					Fan speed: 5th (manual)	4.3 V
					Fan speed: 6th (manual)	3.0 V
					Fan speed: 7th (manual)	1.0 V

Terminal No. (Wire dolor)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
7 (L)	Ground	Power transistor control signal	Output	• Ignition switch ON • Air inlet: VENT	Fan speed: OFF	0 V
					Fan speed: 1st (manual)	3.5 V
					Fan speed: 2nd (manual)	5.2 V
					Fan speed: 3rd (manual)	6.5 V
					Fan speed: 4th (manual)	7.8 V
					Fan speed: 5th (manual)	9.2 V
					Fan speed: 6th (manual)	10.5 V
					Fan speed: 7th (manual)	12.5 V
10 (B)	—	Ground	—	—		—
11 (P)	—	CAN-L	Input/ Output	—		—
12 (L)	—	CAN-H	Input/ Output	—		—
13 (V)	Ground	ACC power supply	Input	Ignition switch ACC		Battery voltage
17 (BG)	Ground	ECV (electrical control valve) control signal	Output	• Ignition switch ON • Active test (HVAC test): MODE 1		 SJIA1607E
23 (W)	Ground	Drive mode select switch (SNOW) signal	Input	• Ignition switch ON • Drive mode select switch position: SNOW		0 V
				Other than the above		12 V
24 (L)	Ground	Drive mode select switch (ECO) signal	Input	• Ignition switch ON • Drive mode select switch position: ECO		0 V
				Other than the above		12 V
25 (G)	Ground	Drive mode select switch (STANDARD) signal	Input	• Ignition switch ON • Drive mode select switch position: STANDARD		0 V
				Other than the above		12 V
26 (Y)	Ground	Drive mode select switch (SPORT) signal	Input	• Ignition switch ON • Drive mode select switch position: SPORT		0 V
				Other than the above		12 V
31 (BG)	Ground	Ambient sensor signal	Input	Ignition switch ON		0 – 4.8 V Output voltage varies with ambient temperature

Terminal No. (Wire dolor)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
32 (LG)	Ground	In-vehicle sensor signal	Input	Ignition switch ON		0 – 4.8 V Output voltage varies with in-vehicle temperature
35 (L)	Ground	Sunload sensor (driver side) signal	Input	Ignition switch ON		0 – 4.8 V Output voltage varies with amount of sunload (driver side)
39 (W)	Ground	Sensor power supply	Output	Ignition switch ON		5 V
41* (L)	Ground	Heated steering wheel relay control signal	Output	Ignition switch ON	Within 30 seconds after turning ON the heated steering switch.	0 V
					Other than the above	12 V
44 (B)	—	Ground	—	—		—
45* (G)	Ground	Heated steering wheel switch signal	Input	Ignition switch ON	Heated steering wheel switch: While pressing	0 V
					Other than the above	12 V
47 (P)	Ground	Sunload sensor (passenger side) signal	Input	Ignition switch ON		0 – 4.8 V Output voltage varies with amount of sunload (passenger side)
51 (B)	Ground	Intake sensor signal	Input	Ignition switch ON		0 – 4.8 V Output voltage varies with amount of evaporator fin temperature
53 (G)	Ground	Air mix door motor (driver side) PBR feedback signal	Input	• Ignition switch ON • Set temperature: 18°C (60°F) • “DUAL”: OFF		4.0 V
				• Ignition switch ON • Set temperature: 32°C (90°F) • “DUAL”: OFF		1.0 V
54 (P)	Ground	Mode door motor (driver side) PBR feedback signal	Input	• Ignition switch ON • Air outlet: VENT • “DUAL”: OFF		4.0 V
				• Ignition switch ON • Air outlet: DEF • “DUAL”: OFF		1.0 V
55 (L/B)	Ground	Intake door motor PBR feedback signal	Input	• Ignition switch ON • Air inlet: REC		4.0 V
				• Ignition switch ON • Air inlet: FRE		1.0 V
58 (P/B)	Ground	Rear mode door motor PBR feedback signal	Input	• Ignition switch ON • Air outlet: VENT • “DUAL”: OFF		4.0 V
				• Ignition switch ON • Air outlet: DEF • “DUAL”: OFF		1.0 V

Terminal No. (Wire dolor)		Description		Condition	Reference value (Approx.)
+	–	Signal name	Input/ Output		
61 (BR)	Ground	Air mix door motor (driver side) COOL drive signal	Output	• Ignition switch ON • Set temperature: 32°C (90°F)→18°C (60°F) • “DUAL”: OFF	12 V
				• Ignition switch ON • Set temperature: 18°C (60°F)→32°C (90°F) • “DUAL”: OFF	0 V
63 (V)	Ground	Mode door motor (driver side) VENT drive signal	Output	• Ignition switch ON • Air outlet: DEF→VENT • “DUAL”: OFF	12 V
				• Ignition switch ON • Air outlet: VENT→DEF • “DUAL”: OFF	0 V
64 (R/B)	Ground	Mode door motor (passenger side) VENT drive signal	Output	• Ignition switch ON • Air outlet: DEF→VENT • “DUAL”: OFF	12 V
				• Ignition switch ON • Air outlet: VENT→DEF • “DUAL”: OFF	0 V
65 (L/R)	Ground	Intake door motor REC drive signal	Output	• Ignition switch ON • Air inlet: FRE→REC	12 V
				• Ignition switch ON • Air inlet: REC→FRE	0 V
66 (BR/B)	Ground	Upper ventilator door motor CLOSE drive signal	Output	• Ignition switch ON • “Upper Vent”: ON→OFF	12 V
				• Ignition switch ON • “Upper Vent”: OFF→ON	0 V
67 (LG)	Ground	Air mix door motor (passenger side) HOT drive signal	Output	• Ignition switch ON • Set temperature: 18°C (60°F)→32°C (90°F) • “DUAL”: OFF	12 V
				• Ignition switch ON • Set temperature: 32°C (90°F)→18°C (60°F) • “DUAL”: OFF	0 V
68 (R/W)	Ground	Rear mode door motor VENT drive signal	Output	• Ignition switch ON • Air outlet: DEF→VENT • “DUAL”: OFF	12 V
				• Ignition switch ON • Air outlet: VENT→DEF • “DUAL”: OFF	0 V
71 (R)	Ground	Each door motor PBR power supply	Output	Ignition switch ON	5 V
73 (SB)	Ground	Mode door motor (passenger side) PBR feedback signal	Input	• Ignition switch ON • Air outlet: VENT • “DUAL”: OFF	4.0 V
				• Ignition switch ON • Air outlet: DEF • “DUAL”: OFF	1.0 V

Terminal No. (Wire dolor)		Description		Condition	Reference value (Approx.)
+	–	Signal name	Input/ Output		
74 (L)	Ground	Air mix door motor (driver side) PBR feedback signal	Input	• Ignition switch ON • Set temperature: 18°C (60°F) • “DUAL”: OFF	4.0 V
				• Ignition switch ON • Set temperature: 32°C (90°F) • “DUAL”: OFF	1.0 V
75 (G/B)	Ground	Upper ventilator door motor PBR feedback signal	Input	• Ignition switch ON • “Upper Vent”: ON	3.0 V
				• Ignition switch ON • “Upper Vent”: OFF	1.0 V
79 (W)	—	Intake sensor ground / Each door motor PBR ground	—	—	—
81 (Y)	Ground	Air mix door motor (driver side) HOT drive signal	Output	• Ignition switch ON • Set temperature: 18°C (60°F)→32°C (90°F) • “DUAL”: OFF	12 V
				• Ignition switch ON • Set temperature: 32°C (90°F)→18°C (60°F) • “DUAL”: OFF	0 V
83 (B)	Ground	Mode door motor (driver side) DEF drive signal	Output	• Ignition switch ON • Air outlet: VENT→DEF • “DUAL”: OFF	12 V
				• Ignition switch ON • Air outlet: DEF→VENT • “DUAL”: OFF	0 V
84 (W/B)	Ground	Mode door motor (passenger side) DEF drive signal	Output	• Ignition switch ON • Air outlet: VENT→DEF • “DUAL”: OFF	12 V
				• Ignition switch ON • Air outlet: DEF→VENT • “DUAL”: OFF	0 V
85 (LG/B)	Ground	Intake door motor FRE drive signal	Output	• Ignition switch ON • Air inlet: REC→FRE	12 V
				• Ignition switch ON • Air inlet: FRE→REC	0 V
86 (Y/B)	Ground	Upper ventilator door motor OPEN drive signal	Output	• Ignition switch ON • “Upper Vent”: OFF→ON	12 V
				• Ignition switch ON • “Upper Vent”: ON→OFF	0 V
87 (GR)	Ground	Air mix door motor (passenger side) COOL drive signal	Output	• Ignition switch ON • Set temperature: 32°C (90°F)→18°C (60°F) • “DUAL”: OFF	12 V
				• Ignition switch ON • Set temperature: 18°C (60°F)→32°C (90°F) • “DUAL”: OFF	0 V

Terminal No. (Wire dolor)		Description		Condition	Reference value (Approx.)
+	–	Signal name	Input/ Output		
88 (B/W)	Ground	Rear mode door motor FOOT drive signal	Output	• Ignition switch ON • Air outlet: VENT→DEF • “DUAL”: OFF	12 V
				• Ignition switch ON • Air outlet: DEF→VENT • “DUAL”: OFF	0 V

*: With heated steering wheel

Fail-safe

INFOID:0000000011254856

FAIL-SAFE FUNCTION

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

Compressor : ON
Air outlet : AUTO
Air inlet : FRE (Fresh air intake)
Fan speed : AUTO
Set temperature : Setting before communication malfunction

DTC Index

INFOID:0000000011254857

DTC	Items (CONSULT screen terms)	Reference
U1000	CAN COMM CIRCUIT	HAC-57, "DTC Logic"
U1010	CONTROL UNIT(CAN)	HAC-58, "DTC Logic"
B2578	IN-VEHICLE SENSOR	HAC-59, "DTC Logic"
B2579	IN-VEHICLE SENSOR	HAC-59, "DTC Logic"
B257B	AMBIENT SENSOR	HAC-62, "DTC Logic"
B257C	AMBIENT SENSOR	HAC-62, "DTC Logic"
B2581	INTAKE SENSOR	HAC-65, "DTC Logic"
B2582	INTAKE SENSOR	HAC-65, "DTC Logic"
B2630*	SUNLOAD SENSOR	HAC-68, "DTC Logic"
B2631*	SUNLOAD SENSOR	HAC-68, "DTC Logic"
B2750	DR AIR MIX DOOR MOT	HAC-71, "DTC Logic"
B2751	DR AIR MIX DOOR MOT	HAC-71, "DTC Logic"
B2752	DR AIR MIX DOOR MOT	HAC-71, "DTC Logic"
B2753	PASS AIR MIX DOOR MOT	HAC-76, "DTC Logic"
B2754	PASS AIR MIX DOOR MOT	HAC-76, "DTC Logic"
B2755	PASS AIR MIX DOOR MOT	HAC-76, "DTC Logic"
B2756	DR MODE DOOR MOTOR	HAC-81, "DTC Logic"
B2757	DR MODE DOOR MOTOR	HAC-81, "DTC Logic"
B2758	DR MODE DOOR MOTOR	HAC-81, "DTC Logic"
B2759	PASS MODE DOOR MOT	HAC-86, "DTC Logic"
B275A	PASS MODE DOOR MOT	HAC-86, "DTC Logic"

DTC	Items (CONSULT screen terms)	Reference
B275B	PASS MODE DOOR MOT	HAC-86, "DTC Logic"
B275C	INTAKE DOOR MOTOR	HAC-91, "DTC Logic"
B275D	INTAKE DOOR MOTOR	HAC-91, "DTC Logic"
B275E	INTAKE DOOR MOTOR	HAC-91, "DTC Logic"
B275F	DR UP VENT DOOR MOT	HAC-96, "DTC Logic"
B2760	DR UP VENT DOOR MOT	HAC-96, "DTC Logic"
B2761	DR UP VENT DOOR MOT	HAC-96, "DTC Logic"
B2762	REAR MODE DOOR MOT	HAC-101, "DTC Logic"
B2763	REAR MODE DOOR MOT	HAC-101, "DTC Logic"
B2764	REAR MODE DOOR MOT	HAC-101, "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.

NOTE:

If all of door motors DTC (B2750 – B2764) are detected, check door motor PBR circuit. Refer to HAC-106, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure".

ECM, IPDM E/R

List of ECU Reference

INFOID:0000000011254858

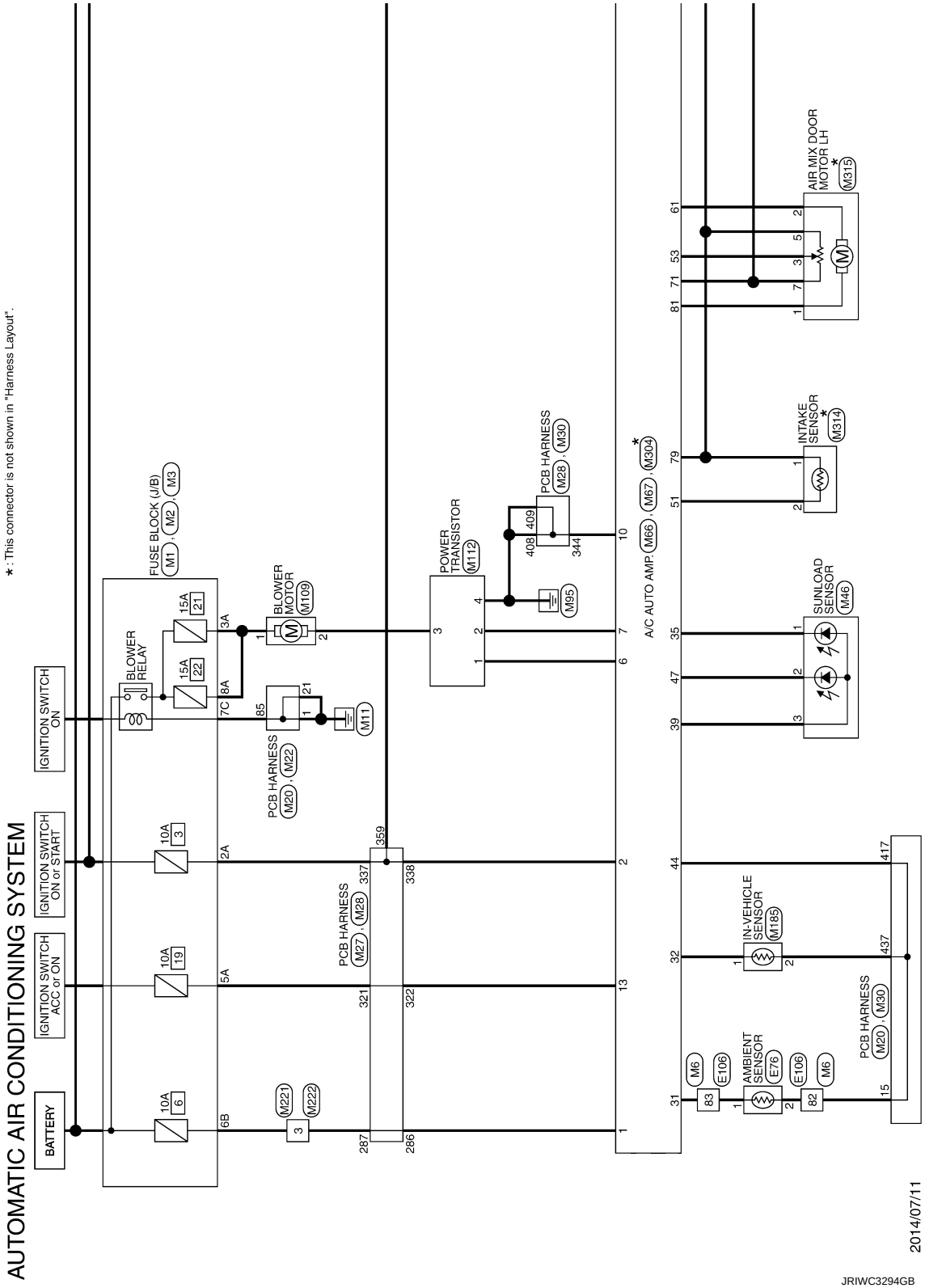
ECU		Reference
ECM	VQ37VHR	EC-83, "Reference Value"
		EC-100, "Fail safe"
		EC-102, "DTC Inspection Priority Chart"
		EC-103, "DTC Index"
	VK56VD	EC-617, "Reference Value"
		EC-640, "Fail-safe"
		EC-643, "DTC Inspection Priority Chart"
		EC-645, "DTC Index"
IPDM E/R		PCS-16, "Reference Value"
		PCS-23, "Fail-safe"
		PCS-24, "DTC Index"

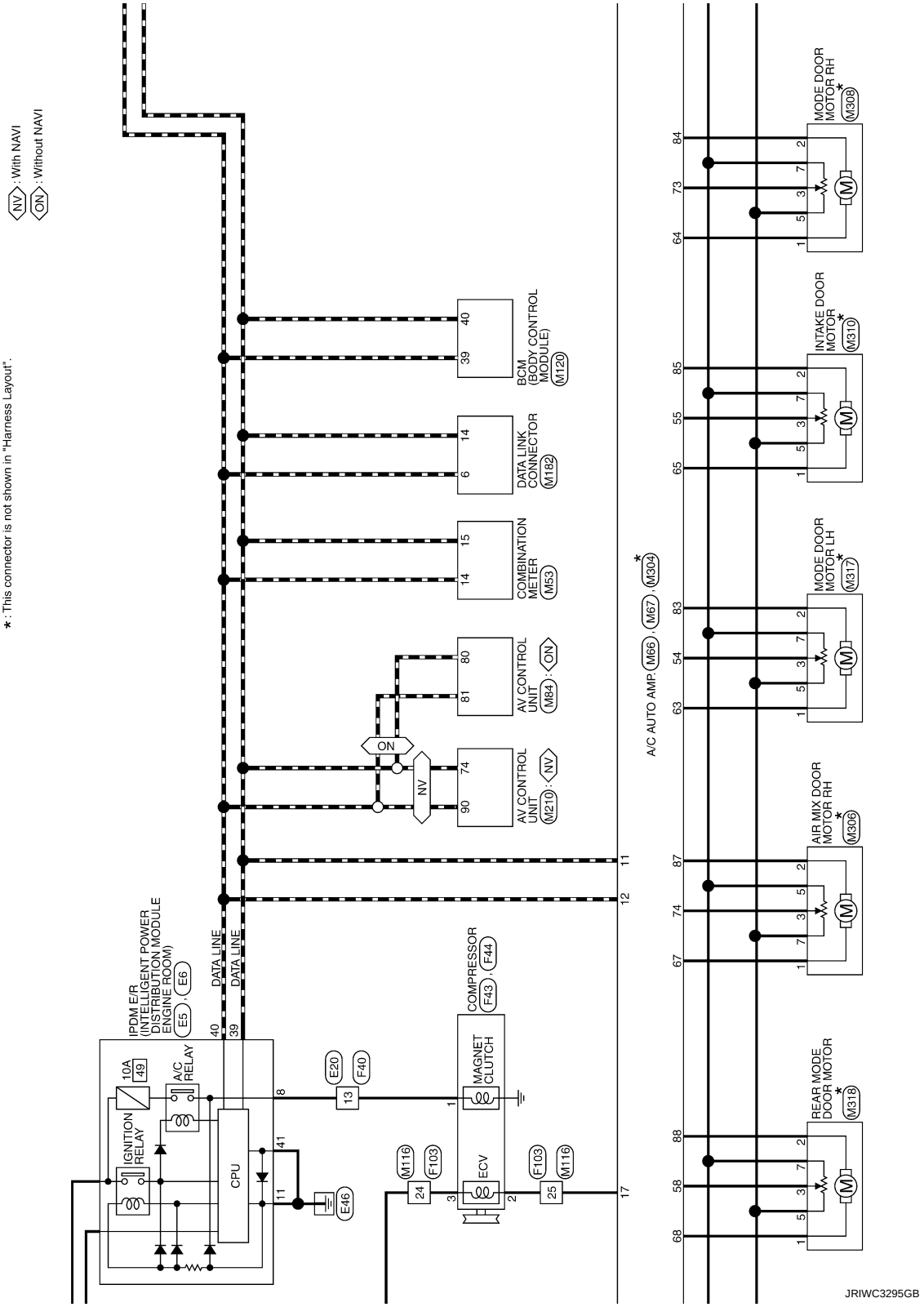
WIRING DIAGRAM

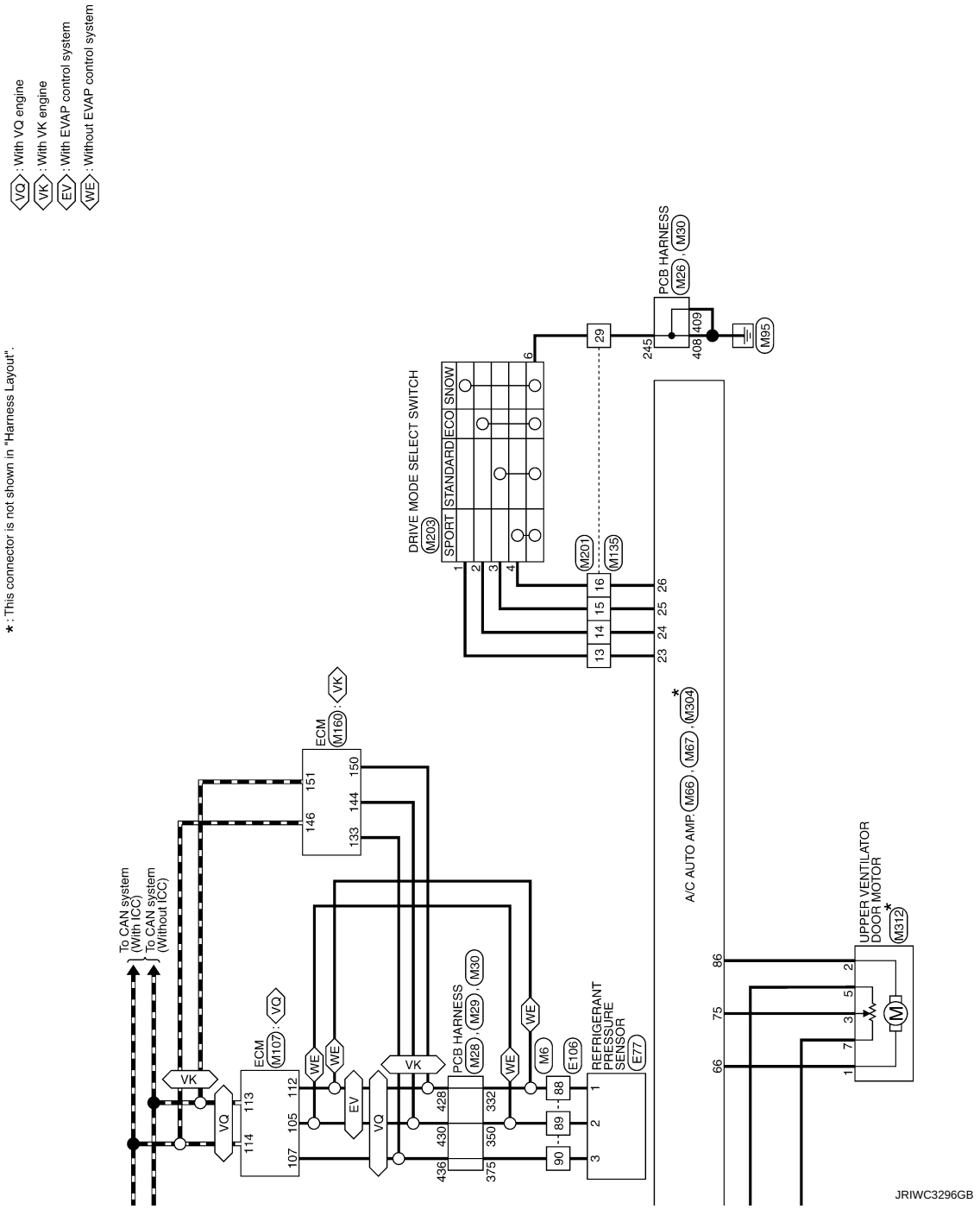
AUTOMATIC AIR CONDITIONING SYSTEM

Wiring Diagram

INFOID:0000000011254859

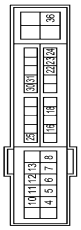



NV : With NAVI
ON : Without NAVI
* : This connector is not shown in "Harness Layout".
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5, E6
10A 49
A/C RELAY
IGNITION RELAY
CPU
DATA LINE
DATA LINE
BCM (BODY CONTROL MODULE) M120
DATA LINK CONNECTOR M182
COMBINATION METER M53
AV CONTROL UNIT M84 : ON
AV CONTROL UNIT M210 : NV
COMPRESSOR F43, F44
MAGNET CLUTCH
ECV
E20, F40
E46
M116, F103
F103, M116
A/C AUTO AMP. M66, M67, M304*
MODE DOOR MOTOR RH* M308
INTAKE DOOR MOTOR* M310
MODE DOOR MOTOR LH* M317
AIR MIX DOOR MOTOR RH* M306
REAR MODE DOOR MOTOR* M318
JRIWC3295GB


VQ : With VQ engine
VK : With VK engine
EV : With EVAP control system
WE : Without EVAP control system
*: This connector is not shown in "Harness Layout".
DRIVE MODE SELECT SWITCH
M203
SPORT
STANDARD
ECO
SNOW
PCB HARNESS
M26, M30
M95
M201
M135
A/C AUTO AMP.
M66, M67, M304
UPPER VENTILATOR DOOR MOTOR
M312
ECM
M160 : VK
M107 : VQ
PCB HARNESS
M28, M29, M30
REFRIGERANT PRESSURE SENSOR
E77
M6
E106
To CAN system (With ICC)
To CAN system (Without ICC)
JRIWC3296GB

AUTOMATIC AIR CONDITIONING SYSTEM

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

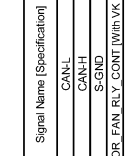


Terminal No.	Color Of Wire	Signal Name [Specification]
4	W	ENG_SOL
5	P	IGN_COIL
6	R	ECM_VB [With VQ engine]
6	SB	ECM_VB [With VK engine]
7	R	ETC [With VK engine]
7	Y	ETC [With VQ engine]
8	L/Y	A/C COMP [With VK engine]
8	P	A/C_COMP [With VQ engine]
10	V	ECM_BAT
11	B	P-GND
12	G	ABS_ECU
13	GR	FUEL_PUMP [With VQ engine]
13	W	FUEL_PUMP [With VK engine]
16	V	WIPER_AUTOSTOP
18	Y	IGN_SIGNAL
22	BR	ALT-C
23	P	DTRL_RLY
24	O	HOOD_SW
25	LG	SUB_ECU
30	BR	PUSH_START_SW
31	BR	NP_SW [With VK engine]
31	W	NP_SW [With VQ engine]
36	GR	F/L_IGN_SW

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH40FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
39	P	CAN-L
40	L	CAN-H
41	B	S-GND
42	V	MOTOR_FAN_RLY_CONT [With VK engine]
42	Y	MOTOR_FAN_RLY_CONT [With VQ engine]
43	SB	DTETNT_SW
44	GR	HORN_RLY [With VK engine]
44	LG	HORN_RLY [With VQ engine]
45	G	HORN_SW
46	BR	START_CONT

Connector No.	E20
Connector Name	WIRE TO WIRE
Connector Type	SAA36MB-RS8-SHZ6

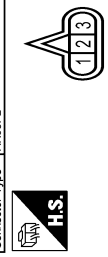


Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	-
2	SHIELD	-
3	L/B	-
4	SHIELD	-
5	L/W	-
6	W	-
7	L/B	-
9	P	-
10	G	-
11	W	- [With VK engine]
11	Y	- [With VQ engine]
12	V	-
13	L	-
14	LG	- [With VK engine]
14	V	- [With VQ engine]
15	SB	-
16	GR	-
19	W	-
20	BR	-
21	G	-
22	O	-
23	L	-
24	GR	-
25	Y	-
28	V	-
29	Y	-
30	B	-
31	LG	-
32	W	-
33	BR	-
34	O	-
37	SHIELD	-
38	G	-
39	Y	-
40	R	-
41	W	-
42	L	-
43	B	-
46	SHIELD	-
47	R	-
48	L	-
49	G	-
50	B	-
51	Y	-
52	W	-

Connector No.	E76
Connector Name	AMBIENT SENSOR
Connector Type	RS02FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	SB	-

Connector No.	E77
Connector Name	REFRIGERANT PRESSURE SENSOR
Connector Type	RK03FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	LG	-
3	W	-

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AUTOMATIC AIR CONDITIONING SYSTEM

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

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	W	-
3	SB	-
4	LG	-
5	O	-
6	W	-
7	GR	-
8	G	-
9	Y	-
10	BR	-
11	SB	-
12	L	-
13	GR	-
14	GR	-
15	V	-
16	Y	-
17	GR	-
18	V	-
20	BR	-
21	P	-
22	L	-
23	P	-
27	SHIELD	-
28	L/O	-
29	W/L	-
31	BR	-
32	G	-
33	O	-
34	Y	-
36	G	-
37	V	-
41	BR	-
44	W	-
45	L	-
46	GR	-
47	V	-
48	G	-
49	O	-
50	LG	-
54	R	-
55	B	-
60	W	-
61	G	-
62	Y	-
63	BR	-
64	B	-
65	Y	-
66	R	-
67	SB	-
68	G	-
69	SHIELD	-
70	W	-
71	W	-
72	R	-
73	G	-
74	Y	-
75	B	-
76	SHIELD	-
77	O	-
78	SB	-
80	V	-
82	SB	-
83	GR	-
84	Y	-
85	Y	-
86	L	-
87	V	-
88	BR	-
89	LG	-
90	W	-
91	W	-
92	P	-
93	LG	-
94	BR	-
95	W	-
97	R	-
98	Y	-
99	V	-
100	V	-

Connector No.	F40
Connector Name	WIRE TO WIRE
Connector Type	SAA36FB-RS8-SHZ8

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	-
2	SHIELD	-
3	L/B	-
4	SHIELD	-
5	L/W	-
6	R	- [With VK engine]
6	W	- [With VQ engine]
7	L/B	-
9	W	-
10	G	-
11	G	- [With VK engine]
11	R	- [With VQ engine]
12	W	-
13	P	-
14	V	-
15	R	-
16	O	- [With VK engine]
16	Y	- [With VQ engine]
19	L	-
20	GR	-
21	G	-
22	W	-
23	L	-
24	Y	-
25	LG	-
28	R	-
29	W	-
30	B	-
31	V	-
32	BR	- [With VQ engine]
32	LG	- [With VK engine]
33	P	- [With VQ engine]
33	Y	- [With VK engine]
34	O	-
37	SHIELD	-
38	L/G	- [With VK engine]
38	O/L	- [With VQ engine]
39	L/Y	- [With VK engine]
39	P	- [With VQ engine]
40	W/L	-
41	O/L	- [With VK engine]
41	W	- [With VQ engine]
42	LG	- [With VQ engine]
42	O	- [With VK engine]
43	O	- [With VQ engine]
43	W	- [With VK engine]
46	SHIELD	-
47	L/G	- [With VK engine]
47	W	- [With VQ engine]
48	BR	- [With VK engine]
48	L/Y	- [With VQ engine]
49	O/L	- [With VQ engine]
49	W/L	- [With VK engine]
50	O/L	- [With VK engine]
50	W/L	- [With VQ engine]
51	O	- [With VK engine]
51	SB	- [With VQ engine]
52	O	- [With VQ engine]
52	W	- [With VK engine]

Connector No.	F43
Connector Name	COMPRESSOR
Connector Type	RK02FGY

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	O	-
3	BR	-

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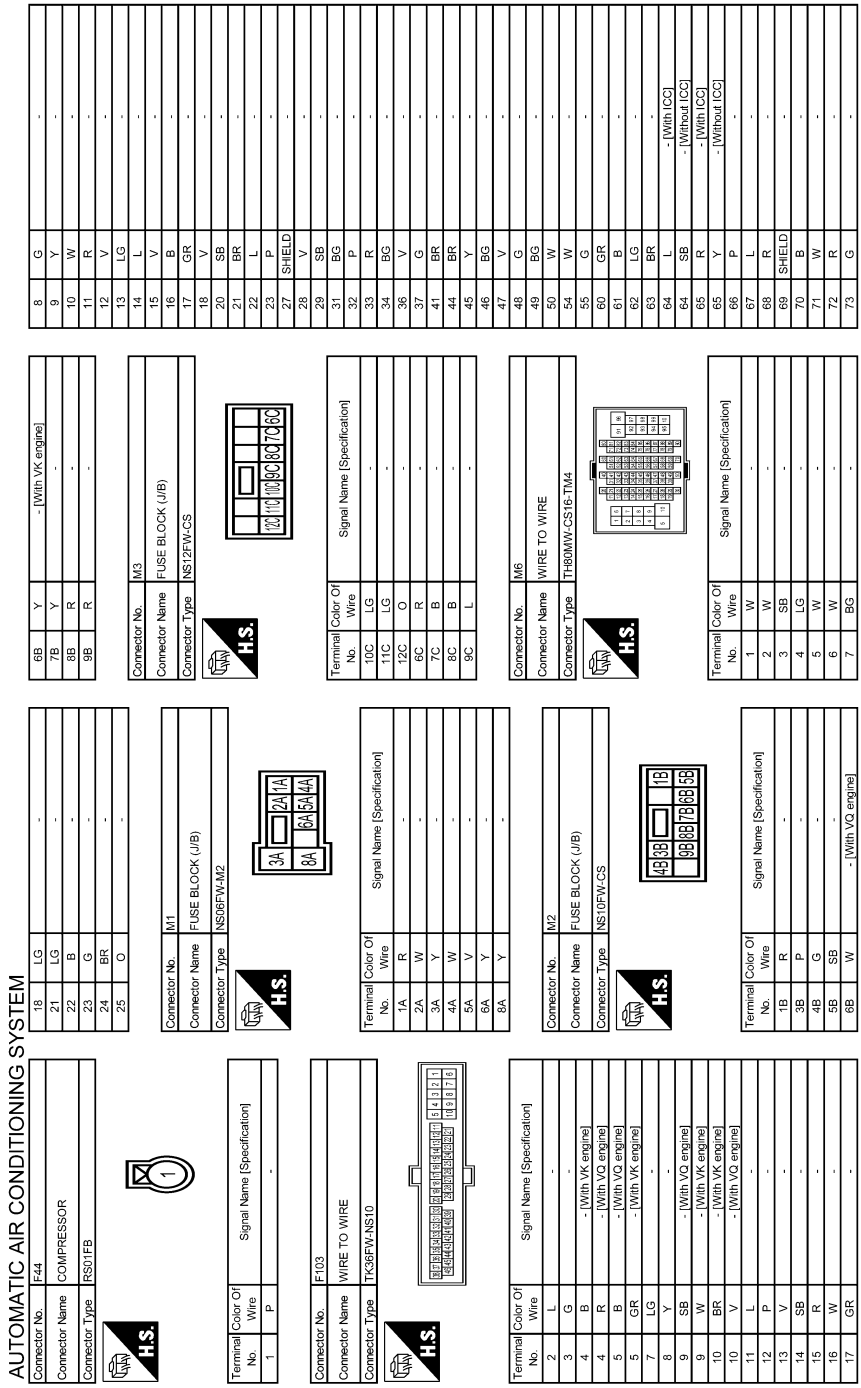

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AUTOMATIC AIR CONDITIONING SYSTEM

74	Y	-
75	B	-
76	SHIELD	-
77	B	-
78	V	-
80	G	-
82	B	-
83	BG	-
84	SB	-
85	Y	-
86	L	-
87	V	-
88	V	-
89	LG	-
90	BG	-
91	W	-
92	BG	-
93	G	-
94	Y	-
95	W	-
97	SB	-
98	R	-
99	W	-
100	L	-

Connector No.	M20
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH

H.S.

17	R	-
18	P	-
19	W	-
21	B	-
22	R	- [With ICC]
22	Y	- [Without ICC]
23	L	- [With ICC]
23	SB	- [Without ICC]
24	L	-
27	P	-
31	V	-
33	V	-
35	L	-
36	P	-
38	L	-
40	Y	-

Connector No.	M22
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH

H.S.

100	G	-
101	L	-
102	P	-
103	B	-
104	BR	-
105	R	-
107	Y	-
108	Y	-
109	BR	-
110	Y	-
112	B	-
113	P	-
114	L	-
116	B	-
117	B	- [With VK engine]
117	BG	- [With VQ engine]
118	B	-
119	LG	-
120	V	-

Connector No.	M26
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH

H.S.

255	B	-
258	R	-
259	L	-
260	BG	-
261	P	-
262	P	-
267	P	-
268	Y	-
269	G	-
270	Y	-
271	BR	-
272	G	-
273	R	-
274	R	-
275	Y	-
276	B	-
277	G	-
278	R	-
279	R	-
280	Y	-

Connector No.	M27
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	B	-
3	Y	-
4	G	-
5	R	-
6	W	-
11	BR	-
12	R	-
15	B	-
16	SHIELD	-

Terminal No.	Color Of Wire	Signal Name [Specification]
81	L	-
82	P	-
83	B	-
84	B	-
85	B	-
86	B	-
87	B	-
88	B	-
89	Y	-
91	V	-
92	V	-
93	B	-
94	B	-
95	LG	-
96	BR	-
97	G	-
98	G	-
99	G	-

Terminal No.	Color Of Wire	Signal Name [Specification]
241	L	-
242	L	-
243	R	- [With ICC]
243	Y	- [Without ICC]
244	L	- [With ICC]
244	SB	- [Without ICC]
245	B	-
246	B	-
247	B	-
248	SHIELD	-
251	SHIELD	-
252	B	-
253	B	-
254	B	- [With heated seat]
254	W	- [With climate controlled seat]

Terminal No.	Color Of Wire	Signal Name [Specification]
281	O	-
282	BG	-
283	BG	-
284	BG	-
286	W	-
287	Y	-
289	SHIELD	-
290	B	-
291	SHIELD	-
292	B	-
293	B	-
294	B	-
295	B	-
296	GR	-

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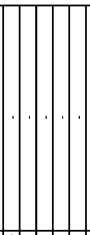
AUTOMATIC AIR CONDITIONING SYSTEM

297	B	-
298	B	-
299	L	-
300	W	-
301	R	-
302	R	-
303	R	-
304	SHIELD	-
305	P	-
306	V	-
309	G	-
310	R	-
311	W	-
312	B	-
313	B	-
314	Y	-
315	G	-
316	R	-
317	W	-
318	SHIELD	-
319	V	-
320	W	-

Connector No.	M28
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH

H.S.

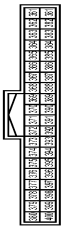


Terminal No.	Color Of Wire	Signal Name [Specification]
321	V	-
322	V	-
324	B	-
325	L	-
326	L	-
327	P	-
328	P	-
330	B	-
331	V	-
332	V	-
335	B	-
337	W	-

338	W
343	L
344	B
345	Y
346	L
347	P
348	GR
349	V
350	LG
351	P
352	R
353	P
358	W
359	W
360	G

Connector No.	M29
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
361	W	-
362	W	-
363	Y	-
366	B	-
367	B	-
368	G	-
374	BG	-
375	BG	-
376	V	-
377	V	-
378	B	-
380	R	-
381	G	-
382	V	-
384	GR	-
395	P	-
396	L	-
400	V	-

Connector No.	M30
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
402	R	-
403	R	-
406	B	-
407	V	-
408	B	-
409	B	-
410	B	-
411	B	-
413	Y	-
414	BR	-
416	LG	-
417	B	-
419	SB	-
420	SHIELD	-
422	V	-
427	P	-
428	V	-
429	P	-
430	LG	-
431	B	-
432	Y	-
435	V	-
436	BG	-
437	B	-
438	P	-
439	L	-
440	B	-

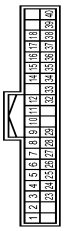
Connector No.	M46
Connector Name	SUNLOAD SENSOR
Connector Type	TC03FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	LH SIG
2	P	RH SIG
3	W	PWR

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	BATTERY POWER SUPPLY
2	BG	IGNITION SIGNAL
3	GR	VEHICLE SPEED SIGNAL (2-PULSE)
4	R	VEHICLE SPEED SIGNAL (8-PULSE)
5	B	ILLUMINATION CONTROL SIGNAL
6	B	METER CONTROL SWITCH GROUND
7	SB	ENTER SWITCH SIGNAL
8	LG	SELECT SWITCH SIGNAL
9	G	ILLUMINATION CONTROL SWITCH SIGNAL (+)
10	GR	ILLUMINATION CONTROL SWITCH SIGNAL (-)
11	L	TRIP RESET SWITCH SIGNAL
12	B	GROUND
14	L	CAN-H
15	P	CAN-L
16	R	AIR BAG SIGNAL
17	G	LED HEADLAMP (RH) WARNING SIGNAL
18	V	LED HEADLAMP (LH) WARNING SIGNAL

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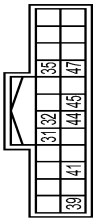
AUTOMATIC AIR CONDITIONING SYSTEM

23	B	GROUND
24	B	FUEL LEVEL SENSOR GROUND
25	W	ALTERNATOR SIGNAL
26	V	PARKING BRAKE SWITCH SIGNAL
27	V	BRAKE FLUID LEVEL SWITCH SIGNAL
28	G	SECURITY SIGNAL
29	L	WASHER LEVEL SWITCH SIGNAL
32	G	PADDLE SHIFTER SHIFT DOWN SIGNAL
33	BG	PADDLE SHIFTER SHIFT UP SIGNAL
34	G	FUEL LEVEL SENSOR SIGNAL
35	W	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
36	G	PASSENGER SEAT BELT WARNING SIGNAL
37	G	NON-MANUAL MODE SIGNAL
38	V	MANUAL MODE SHIFT DOWN SIGNAL
39	L	MANUAL MODE SHIFT UP SIGNAL
40	W	MANUAL MODE SIGNAL

Connector No.	M67
Connector Name	A/C AUTO AMP.
Connector Type	TH24FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
31	BG	AMBIENT SENSOR SIGNAL
32	LG	IN-VEHICLE SENSOR SIGNAL
35	L	SUNLOAD SENSOR (DR) SIGNAL
39	W	SENSOR POWER SUPPLY
41	L	HEATED STEERING WHEEL RELAY CONTROL SIGNAL
44	B	GROUND
45	G	HEATED STEERING WHEEL SWITCH SIGNAL
47	P	SUNLOAD SENSOR (PASS) SIGNAL

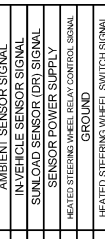
Connector No.	M66
Connector Name	A/C AUTO AMP.
Connector Type	TH20FW-TB6

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	BATTERY POWER SUPPLY
2	W	IGNITION POWER SUPPLY
6	R	BLOWER MOTOR F/B SIGNAL
7	L	POWER TRANSISTOR CONTROL SIGNAL
10	B	GROUND
11	P	CAN-L
12	L	CAN-H
13	V	ACC POWER SUPPLY
17	BG	ECV CONTROL SIGNAL
23	W	DRIVE MODE SELECT SW (SNOW)
24	L	DRIVE MODE SELECT SW (ECO)
25	G	DRIVE MODE SELECT SW (STANDARD)
26	Y	DRIVE MODE SELECT SW (SPORT)

Connector No.	M84
Connector Name	AV CONTROL UNIT
Connector Type	TH32FW-NH

H.S.

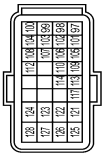


Terminal No.	Color Of Wire	Signal Name [Specification]
76	LG	AV COMM (L)
77	SB	AV COMM (H)
78	LG	AV COMM (L)
79	SB	AV COMM (H)
80	P	CAN-L
81	L	CAN-H
82	BR	SW GND
86	SHIELD	SHIELD
87	P	TEL VOICE SIGNAL (+)
88	L	TEL VOICE SIGNAL (-)
92	R	VEHICLE SPEED (8-PULSE)
93	V	PARKING BRAKE

94	BG	REVERSE
95	W	IGNITION
96	SB	DISK EJECT SIGNAL

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

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
97	R	ACCELERATOR PEDAL POSITION SENSOR 1
98	Y	ACCELERATOR PEDAL POSITION SENSOR 2
99	G	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1)
100	W	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 1)
101	SB	ASCD STEERING SWITCH
102	P	FUEL TANK PRESSURE SENSOR
103	L	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2)
104	B	SENSOR GROUND [Without ICC]
105	LG	SENSOR GROUND [With ICC]
106	P	REFRIGERANT PRESSURE SENSOR
107	BG	FUEL TANK TEMPERATURE SENSOR
108	Y	AVCC2 PDPRESIFTPRES
109	BR	GND ASCD SW
110	V	TRANSMISSION RANGE SWITCH
112	V	ENGINE SPEED SIGNAL OUTPUT
113	P	GNDA PDPRESIFTPRES
114	L	CAN COMMUNICATION LINE
117	V	DATA LINK CONNECTOR
121	G	EVAP CANISTER VENT CONTROL VALVE
122	P	STOP LAMP SWITCH
123	B	ECM GROUND
124	B	ECM GROUND
125	SB	POWER SUPPLY FOR ECM
126	BR	ASCD BRAKE SWITCH
127	B	ECM GROUND
128	B	ECM GROUND

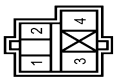
Connector No.	M109
Connector Name	BLOWER MOTOR
Connector Type	SNA02FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	R	-

Connector No.	M112
Connector Name	POWER TRANSISTOR
Connector Type	SLB03FW-SMA2

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	FAN F/B
2	L	FANOUT
3	R	SIG
4	B	GND

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AUTOMATIC AIR CONDITIONING SYSTEM

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK36MW-NS10

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	SB	-
3	Y	-
4	B	- [With VK engine]
4	SB	- [With VQ engine]
5	B	-
7	W	-
8	Y	-
9	SB	- [With VQ engine]
9	W	- [With VK engine]
10	SB	-
11	L	-
12	P	-
13	V	-
14	R	-
15	Y	-
16	SB	-
17	BR	-
18	LG	-
21	LG	-
22	B	-
23	W	-
24	W	-
25	BG	-

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	RR WINDOW DEFG RLY CONT
2	BG	COMBI SW INPUT 5
3	SB	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	P	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	P	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	W	OPTICAL SENSOR
16	SB	DIMMER SIGNAL
17	Y	SENSOR PWR SPLY
18	B	RECEIVER / SENSOR GND
19	V	TURN SIG RH OUTPUT (FRONT)
20	G	TURN SIG LH OUTPUT (FRONT)
21	P	NATS ANT AMP
22	GR	KYLS ENT RECEIVER RSSI
23	G	SECURITY IND CONT
24	L	DONGLE LINK
25	G	NATS ANT AMP
26	G	I-KEY IDENTIFICATION
29	G	HAZARD SW
30	O	TR LID OPNR SW
31	W	DR DOOR UNLK SENSOR
32	BR	COMBI SW OUTPUT 5
33	R	COMBI SW OUTPUT 4
34	V	COMBI SW OUTPUT 3
35	Y	COMBI SW OUTPUT 2
36	LG	COMBI SW OUTPUT 1
37	R	P POSITION
39	L	CAN-H
40	P	CAN-L

Connector No.	M135
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	BG	-
5	L	- [With heated seat]
5	V	- [With climate controlled seat]
6	GR	- [With heated seat]
6	P	- [With climate controlled seat]
7	SB	-
10	G	- [With climate controlled seat]
10	GR	- [With heated seat]
11	BG	- [With heated seat]
11	L	- [With climate controlled seat]
12	Y	-
13	W	-
14	L	-
15	G	-
16	Y	-
17	P	- [With heated seat]
17	W	- [With climate controlled seat]
18	BR	-
19	GR	-
20	B	-
21	R	-
22	B	- [With heated seat]
22	W	- [With climate controlled seat]
23	BG	-
24	V	-
25	B	- [With heated seat]
25	LG	- [With climate controlled seat]
26	R	- [With heated seat]
26	SB	- [With climate controlled seat]
27	B	- [With heated seat]
27	P	- [With climate controlled seat]
28	B	-
29	B	-
30	V	-
32	L	-

Connector No.	M160
Connector Name	ECM
Connector Type	MAB55FB-MEB10-LH-Z

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
111	W	FUEL INJECTOR DRIVER POWER SUPPLY
112	W	FUEL INJECTOR DRIVER POWER SUPPLY
114	B	ECM GROUND
115	B	ECM GROUND
120	G	EVAP CANISTER VENT CONTROL VALVE
122	V	VVEL ACTUATOR MOTOR RELAY ARMATURE SIGNAL (VVEL CONTROL MODULE)
123	BG	THROTTLE CONTROL MOTOR RELAY
125	P	FUEL PUMP CONTROL MODULE (FPCM)
126	Y	ACCELERATOR PEDAL POSITION SENSOR 2
128	SB	ASCD STEERING SWITCH
129	B	SENSOR GROUND [Without ICC]
129	BR	SENSOR GROUND [With ICC]
130	Y	SENSOR GROUND
131	L	SENSOR POWER SUPPLY
133	BG	SENSOR POWER SUPPLY
134	P	FUEL TANK TEMPERATURE SENSOR
136	R	ACCELERATOR PEDAL POSITION SENSOR 1
137	G	SENSOR POWER SUPPLY
138	P	BATTERY CURRENT SENSOR
139	BG	BATTERY TEMPERATURE SENSOR
140	W	SENSOR GROUND
141	G	IGNITION SWITCH
142	GR	FUEL PUMP CONTROL MODULE (FPCM) CHECK
143	P	FUEL TANK PRESSURE SENSOR
144	LG	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	BR	ASCD BRAKE SWITCH
150	V	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	W	POWER SUPPLY FOR ECM (BACK-UP)
158	P	STOP LAMP SWITCH
161	Y	ENG COMMUNICATION LINE
163	W	ECM RELAY (SELF SHUT-OFF)
166	BG	ENG COMMUNICATION LINE
169	V	ENGINE SPEED SIGNAL OUTPUT
171	SB	POWER SUPPLY FOR ECM

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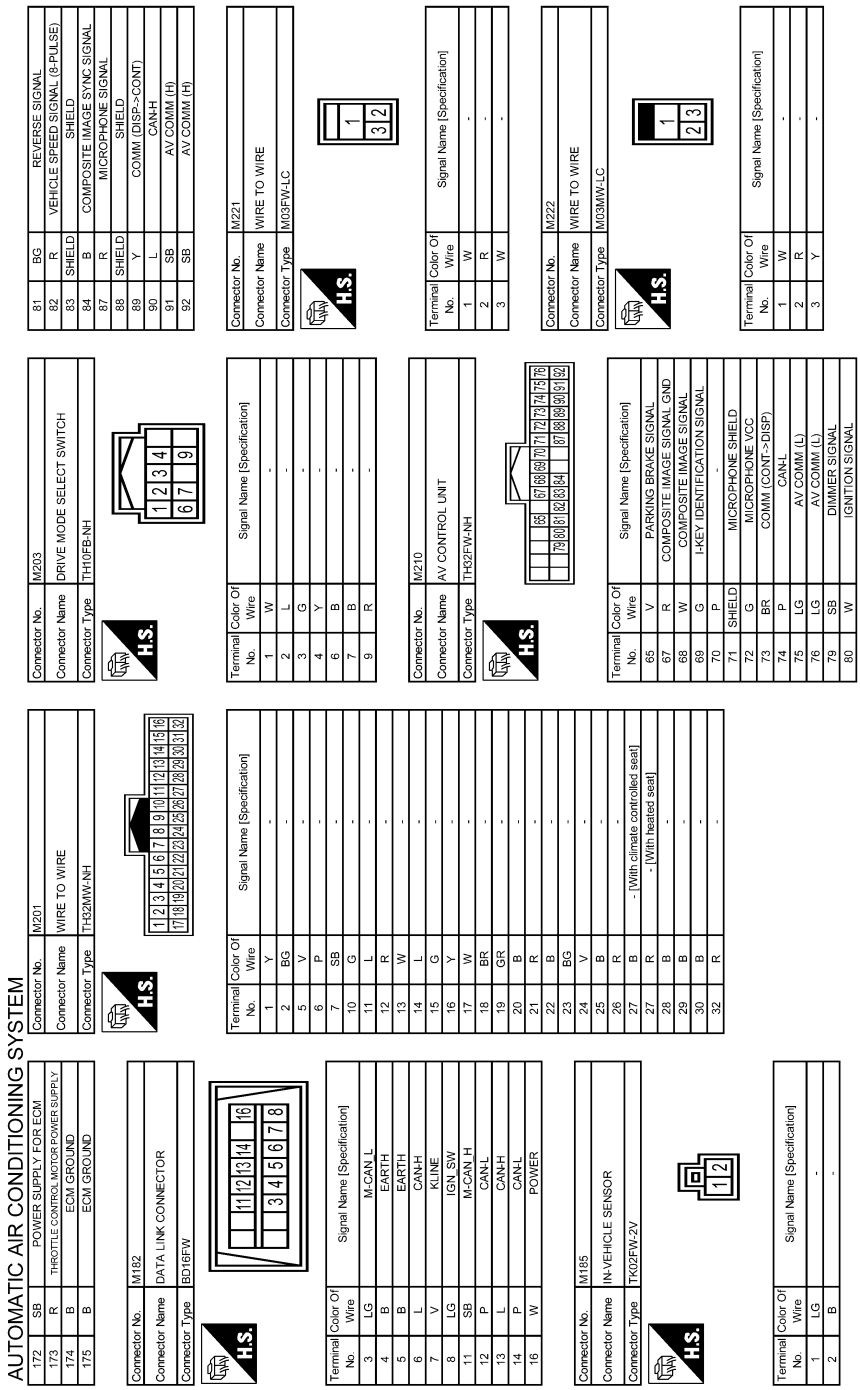

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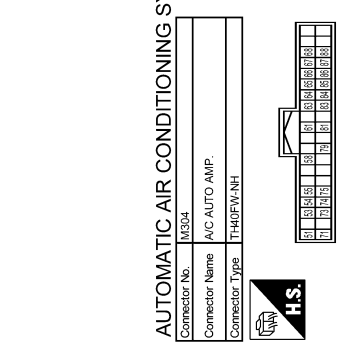
AUTOMATIC AIR CONDITIONING SYSTEM

Connector No.	M304
Connector Name	A/C AUTO AMP.
Connector Type	TH40FW-NH

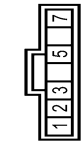


Terminal No.	Color Of Wire	Signal Name [Specification]
51	B	INTAKE SENSOR SIGNAL
53	G	AIR MIX DOOR MOTOR (DR) PBR F/B SIGNAL
54	P	MODE DOOR MOTOR (DR) PBR F/B SIGNAL
55	L/B	INTAKE DOOR MOTOR PBR F/B SIGNAL
58	P/B	RR MODE DOOR MOTOR PBR F/B SIGNAL
61	BR	AIR MIX DOOR MOTOR (DR) COOL DRIVE SIGNAL
63	V	MODE DOOR MOTOR (DR) VENT DRIVE SIGNAL
64	R/B	MODE DOOR MOTOR (PASS) VENT DRIVE SIGNAL
65	L/R	INTAKE DOOR MOTOR REC DRIVE SIGNAL
66	BR/B	UP VENT DOOR MOTOR CLOSE DRIVE SIGNAL
67	LG	AIR MIX DOOR MOTOR (PASS) HOT DRIVE SIGNAL
68	R/W	RR MODE DOOR MOTOR VENT DRIVE SIGNAL
71	R	EACH DOOR MOTOR PBR POWER SUPPLY
73	SB	MODE DOOR MOTOR (PASS) PBR F/B SIGNAL
74	L	AIR MIX DOOR MOTOR (PASS) PBR F/B SIGNAL
75	G/B	UP VENT DOOR MOTOR PBR F/B SIGNAL
79	W	INTAKE SENSOR GROUND, EACH DOOR MOTOR PBR GROUND
81	Y	AIR MIX DOOR MOTOR (DR) HOT DRIVE SIGNAL
83	B	MODE DOOR MOTOR (DR) DEF DRIVE SIGNAL
84	W/B	MODE DOOR MOTOR (PASS) DEF DRIVE SIGNAL
85	LG/B	INTAKE DOOR MOTOR FRE DRIVE SIGNAL
86	Y/B	UP VENT DOOR MOTOR OPEN DRIVE SIGNAL
87	GR	AIR MIX DOOR MOTOR (PASS) COOL DRIVE SIGNAL
88	B/W	RR MODE DOOR MOTOR FOOT DRIVE SIGNAL

Connector No.	M306
Connector Name	AIR MIX DOOR MOTOR RH
Connector Type	JAA07FH

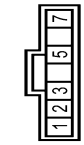
Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	GR	-
3	L	-
5	W	-
7	R	-

Connector No.	M308
Connector Name	MODE DOOR MOTOR RH
Connector Type	JAA07FH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	W/B	-
3	SB	-
5	R	-
7	W	-

Connector No.	M310
Connector Name	INTAKE DOOR MOTOR
Connector Type	JAA07FH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/R	-
2	LG/B	-
3	L/B	-
5	R	-
7	W	-

Connector No.	M312
Connector Name	UPPER VENTILATOR DOOR MOTOR
Connector Type	JAA07FH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR/B	-
2	Y/B	-
3	G/B	-
5	W	-
7	R	-

Connector No.	M314
Connector Name	INTAKE SENSOR
Connector Type	TK02FW-2V

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

Connector No.	M315
Connector Name	AIR MIX DOOR MOTOR LH
Connector Type	JAA07FH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	BR	-
3	G	-
5	W	-
7	R	-

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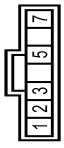
AUTOMATIC AIR CONDITIONING SYSTEM

Connector No.	M317
Connector Name	MODE DOOR MOTOR LH
Connector Type	JAA07FH

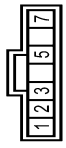
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	B	-
3	P	-
5	R	-
7	W	-

Connector No.	M318
Connector Name	REAR MODE DOOR MOTOR
Connector Type	JAA07FH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/W	-
2	B/W	-
3	P/B	-
5	R	-
7	W	-

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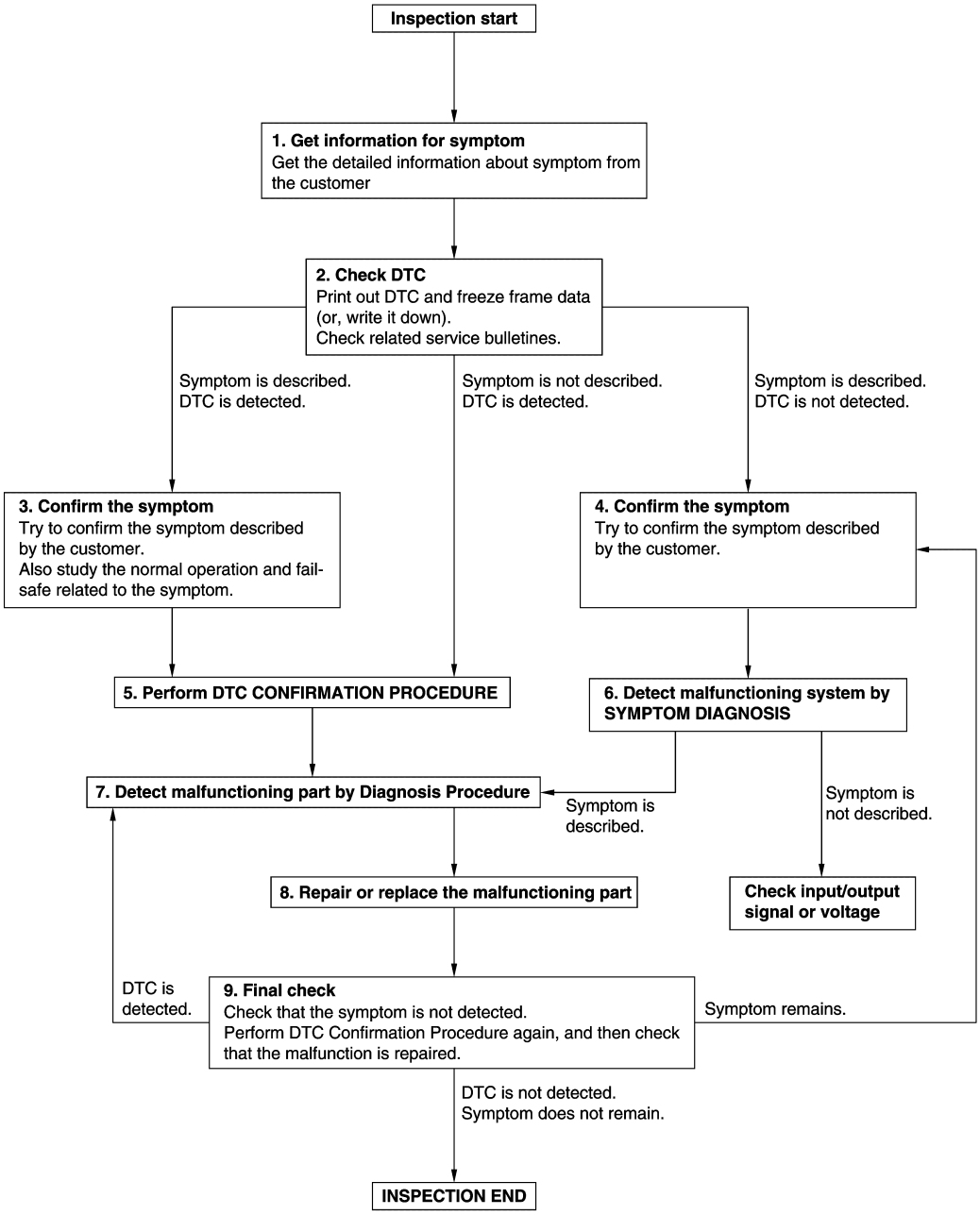
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000011254860

OVERALL SEQUENCE



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DETAILED FLOW

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-44, "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

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.
NO >> Check according to GI-44, "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.

OPERATION INSPECTION
AUTOMATIC AIR CONDITIONING SYSTEM
AUTOMATIC AIR CONDITIONING SYSTEM : Work Procedure

INFOID:0000000011254862

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

Check condition : Engine running at normal operating temperature.

OPERATION INSPECTION
1.CHECK BLOWER MOTOR

Operate the fan switch. Check that the fan speed changes. Check the operation for all fan speeds.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Blower motor system malfunction. Refer to HAC-109, "Diagnosis Procedure".

2.CHECK LH/RH INDEPENDENT AIR OUTLET ADJUSTMENT FUNCTION

1. Operate MODE switch (driver side) and the DEF switch. Check that the air outlets change according to each indicated air outlet by placing a hand in front of the outlets (driver side). Refer to VTL-6, "System Description".
2. Operate MODE switch (passenger side) and the DEF switch. Check that the air outlets change according to each indicated air outlet by placing a hand in front of the outlets (passenger side). Refer to VTL-6, "System Description".
3. Press CLIMATE switch. The “Climate” menu screen is indicated on display.
4. Touch “DUAL”. Check that the air outlet setting (LH/RH) is unified to the driver side air outlet setting.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Refer to HAC-117, "Symptom Table" and perform the appropriate diagnosis.

3.CHECK DISCHARGE AIR (“UPPER VENT”)

1. Press MODE switch to set the air outlet to other than D/F or DEF.
2. Touch “Upper Vent”. Check that air flow blows from upper ventilator.
3. Touch “Upper Vent” again. Check that air flow from upper ventilator stops.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Upper ventilator system malfunction. Refer to HAC-96, "Diagnosis Procedure".

4.CHECK INTAKE AIR

1. Press REC switch to set the air inlet to recirculation. The REC switch indicator turns ON.
2. Listen to intake sound and confirm air inlets change.
3. Press FRE switch again to set the air inlet to fresh air intake. The FRE switch indicator turns ON.
4. 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-91, "Diagnosis Procedure".

5.CHECK COMPRESSOR

1. Touch “A/C”. Check visually and by sound that the compressor operates.
2. Touch “A/C” again. Check that the compressor stops.

Is the inspection result normal?

YES >> GO TO 6.
NO >> Compressor does not operate. Refer to HAC-119, "Diagnosis Procedure".

6.CHECK LH/RH INDEPENDENT TEMPERATURE ADJUSTMENT FUNCTION

1. Operate the temperature control switch (driver side). Check that the discharge air temperature (driver side) changes.
2. Operate the temperature control switch (passenger side). Check that the discharge air temperature (passenger side) changes.
3. Touch “DUAL”. Check that the air temperature setting (LH/RH) is unified to the driver side temperature setting.

Is the inspection result normal?

YES >> GO TO 7.
NO >> Refer to HAC-117, "Symptom Table" and perform the appropriate diagnosis.

7. CHECK WITH TEMPERATURE SETTING LOWERED

1. Operate the compressor.
2. Operate the temperature control switch and lower the set temperature to 18°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-121, "Diagnosis Procedure".

8. CHECK TEMPERATURE INCREASE

1. Turn temperature control switch to raise temperature setting at 32°C (90°F).
2. Check that warm air blows from outlets.

Is the inspection result normal?

YES >> GO TO 9.
NO >> Insufficient heating. Refer to HAC-122, "Diagnosis Procedure".

9. CHECK AUTO MODE

1. Press AUTO switch to confirm that “AUTO” is indicated on the display.
2. Operate the temperature control switch to 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 >> GO TO 10.
NO >> Refer to HAC-117, "Symptom Table" and perform the appropriate diagnosis.

10. CHECK MEMORY FUNCTION

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

Is the inspection result normal?

YES >> GO TO 11.
NO >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".

11. CHECK INTELLIGENT KEY INTERLOCK FUNCTION

1. Operate fan switch. Set fan speed to 1st speed.
2. Turn ignition switch OFF.
3. Lock door using Intelligent Key or driver door request switch.
4. Switch to another Intelligent Key and unlock door using Intelligent Key or driver door request switch.
5. Turn ignition switch ON.
6. Operate fan switch. Set fan speed to 7th speed.
7. Operate temperature control switch (driver side). Decrease setting temperature to 18.0°C (60°F).
8. Turn ignition switch OFF.
9. Lock door using Intelligent Key or driver door request switch.
10. Switch to another Intelligent Key and unlock door using Intelligent Key or driver door request switch.
11. Turn ignition switch ON.
12. Check that “Connection with the key has been done.” is indicated on display and that air conditioning system starts to operate automatically by setting temperature to 32.0°C (90°F) and fan speed to 1st.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Intelligent Key interlock function malfunctioning. Refer to HAC-123, "Diagnosis Procedure".

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (A/C AUTO AMP.)

Description

INFOID:0000000011254864

When replacing A/C auto amp., save or print current vehicle specification with CONSULT “Configuration” before replacement.

BEFORE REPLACEMENT

NOTE:
If “READ CONFIGURATION” can not be used, use the “WRITE CONFIGURATION - Manual setting” after replacing A/C auto amp.

AFTER REPLACEMENT

CAUTION:
- **When replacing A/C auto amp., you must perform “WRITE CONFIGURATION” with CONSULT.**
- **Never perform “WRITE CONFIGURATION” except for new A/C auto amp.**

Work Procedure

INFOID:0000000011254865

1.SAVING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “READ CONFIGURATION” to save or print current vehicle specification. Refer to HAC-54, "Description".
NOTE:
If “READ CONFIGURATION” can not be used, use the “WRITE CONFIGURATION - Manual setting” after replacing A/C auto amp.

>> GO TO 2.

2.REPLACE A/C AUTO AMP.

Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “WRITE CONFIGURATION - Config file” or “WRITE CONFIGURATION - Manual setting” to write vehicle specification. Refer to HAC-54, "Work Procedure".

>> WORK END

CONFIGURATION (HVAC)

Description

INFOID:0000000011254866

Vehicle specification needs to be written with CONSULT because it is not written after replacing A/C auto amp. Configuration has three functions as follows

Function	Description
READ CONFIGURATION	• Reads the vehicle configuration of current A/C auto amp. • Saves the read vehicle configuration.
WRITE CONFIGURATION - Manual setting	Writes the vehicle configuration with manual setting.
WRITE CONFIGURATION - Config file	Writes the vehicle configuration with saved data.

CAUTION:

- **When replacing A/C auto amp., you must perform “WRITE CONFIGURATION” with CONSULT.**
- **Never perform “WRITE CONFIGURATION” except for new A/C auto amp.**

Work Procedure

INFOID:0000000011254867

1.WRITING MODE SELECTION

CONSULT Configuration
Select “CONFIGURATION” of A/C auto amp.

When writing saved data>>GO TO 2.
When writing manually>>GO TO 3.

2.PERFORM “WRITE CONFIGURATION - CONFIG FILE”

CONSULT Configuration
Perform “WRITE CONFIGURATION - Config file”.

>> WORK END

3.PERFORM “WRITE CONFIGURATION - MANUAL SETTING”

CONSULT Configuration
1. Select "WRITE CONFIGURATION - Manual setting".
2. Select "SETTING".
3. Select "OK".
4. When "COMMAND FINISHED", select "END".

>> GO TO 4.

4.OPERATION CHECK

Confirm that each function controlled by A/C auto amp. operates normally.

>> WORK END

SYSTEM SETTING

AUTOMATIC AIR CONDITIONING SYSTEM

AUTOMATIC AIR CONDITIONING SYSTEM : Temperature Setting Trimmer

INFOID:0000000011254868

DESCRIPTION

If the temperature felt by the customer is different from 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.

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°C (–6°F) = 22.0°C (72°F) and the temperature becomes lower than the temperature setting.

AUTOMATIC AIR CONDITIONING SYSTEM : Inlet Port Memory Function (REC)

INFOID:0000000011254869

DESCRIPTION

- If the ignition switch is turned to the OFF position while the REC indicator is set to ON (recirculation), “Perform the memory” or “Do not perform the memory” of REC indicator ON (recirculation) condition can be selected.
- If “Perform the memory” was set, the REC indicator 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.

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)

AUTOMATIC AIR CONDITIONING SYSTEM : Inlet Port Memory Function (FRE)

INFOID:0000000011254870

DESCRIPTION

- If the ignition switch is turned to the OFF position while the FRE indicator is set to ON (fresh air intake), “Perform the memory” or “Do not perform the memory” of FRE indicator ON (fresh air intake) condition can be selected.
- If “Perform the memory” was set, the FRE indicator 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.

HOW TO SET

With CONSULT

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)

AUTOMATIC AIR CONDITIONING SYSTEM : Foot Position Setting Trimmer

INFOID:0000000011254871

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 (initial status)	OPEN	CLOSE
	Mode 2	OPEN	OPEN
	Mode 3	CLOSE	OPEN
	Mode 4	CLOSE	CLOSE

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000011254876

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-35, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart" for details of the communication signal.

DTC Logic

INFOID:0000000011254877

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	DTC detection condition	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

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON and wait at least 2 seconds or more.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-57, "Diagnosis Procedure".
NO >> Refer to GI-44, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000011254878

1. CHECK CAN COMMUNICATION SYSTEM

Check CAN communication system. Refer to LAN-25, "Trouble Diagnosis Flow Chart".

>> INSPECTION END

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000011254879

Initial diagnosis of A/C auto amp.

DTC Logic

INFOID:0000000011254880

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	DTC detection condition	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.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-58, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254881

1.REPLACE A/C AUTO AMP.

Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".

>> INSPECTION END

B2578, B2579 IN-VEHICLE SENSOR

DTC Logic

INFOID:0000000011254882

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to HAC-57, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. HAC-58, "DTC Logic".

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B2578	IN-VEHICLE SENSOR	The in-vehicle sensor recognition temperature is too high.	• In-vehicle sensor • A/C auto amp. • Harness or connectors (The sensor circuit is open or shorted.)
B2579		The in-vehicle sensor recognition temperature is too low.	

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-59, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254883

1. CHECK IN-VEHICLE SENSOR POWER SUPPLY

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

+		–	Voltage (Approx.)
In-vehicle sensor			
Connector	Terminal		
M185	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 2.

2. CHECK IN-VEHICLE SENSOR POWER SUPPLY CIRCUIT FOR OPEN

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

In-vehicle sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M185	1	M67	32	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK IN-VEHICLE SENSOR POWER SUPPLY CIRCUIT FOR GROUND SHORT

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

In-vehicle sensor		—	Continuity
Connector	Terminal		
M185	1	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK IN-VEHICLE SENSOR POWER SUPPLY CIRCUIT FOR BATTERY SHORT

1. Turn ignition switch ON.
2. Check voltage between in-vehicle sensor harness connector and ground.

+		–	Voltage (Approx.)
In-vehicle sensor			
Connector	Terminal		
M185	1	Ground	0 V

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair harness or connector.

5.CHECK IN-VEHICLE SENSOR GROUND CIRCUIT

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

In-vehicle sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M185	2	M67	44	Existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair harness or connector.

6.CHECK IN-VEHICLE SENSOR

Check in-vehicle sensor. Refer to HAC-60, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace in-vehicle sensor. Refer to HAC-127, "Removal and Installation".

7.CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection

INFOID:0000000011254884

1.CHECK IN-VEHICLE SENSOR

1. Turn ignition switch OFF.
2. Disconnect in-vehicle sensor connector.

3. Check resistance between in-vehicle sensor terminals.

Terminal		Condition	Resistance: kΩ
		Temperature: °C (°F)	
1	2	–15 (5)	12.90
		–10 (14)	9.68
		–5 (23)	7.35
		0 (32)	5.63
		5 (41)	4.35
		10 (50)	3.40
		15 (59)	2.68
		20 (68)	2.12
		25 (77)	1.70
		30 (86)	1.37
		35 (95)	1.11
		40 (104)	0.91
		45 (113)	0.75

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace in-vehicle sensor. Refer to HAC-127, "Removal and Installation".

B257B, B257C AMBIENT SENSOR

DTC Logic

INFOID:0000000011254885

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to HAC-57, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. HAC-58, "DTC Logic".

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B257B	AMBIENT SENSOR	The ambient sensor recognition temperature is too high.	• Ambient sensor • A/C auto amp. • Harness or connectors (The sensor circuit is open or shorted.)
B257C		The ambient sensor recognition temperature is too low.	

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-62, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254886

1. CHECK AMBIENT SENSOR POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect ambient sensor connector.
3. Turn 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 5.
NO >> GO TO 2.

2. CHECK AMBIENT SENSOR POWER SUPPLY CIRCUIT FOR OPEN

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

Ambient sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
E76	1	M67	31	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK AMBIENT SENSOR POWER SUPPLY CIRCUIT FOR GROUND SHORT

Check continuity between ambient sensor harness connector and ground.

Ambient sensor		—	Continuity
Connector	Terminal		
E76	1	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK AMBIENT SENSOR POWER SUPPLY CIRCUIT FOR BATTERY SHORT

1. Turn ignition switch ON.
2. Check voltage between ambient sensor harness connector and ground.

+		–	Voltage (Approx.)
Ambient sensor			
Connector	Terminal		
E76	1	Ground	0 V

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair harness or connector.

5.CHECK AMBIENT SENSOR GROUND CIRCUIT

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

Ambient sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
E76	2	M67	44	Existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair harness or connector.

6.CHECK AMBIENT SENSOR

Check ambient sensor. Refer to HAC-63, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace ambient sensor. Refer to HAC-126, "Removal and Installation".

7.CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection

INFOID:0000000011254887

1.CHECK AMBIENT SENSOR

1. Turn ignition switch OFF.
2. Disconnect ambient sensor connector.

3. Check resistance between the ambient sensor terminals.

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 ambient sensor. Refer to HAC-126, "Removal and Installation".

B2581, B2582 INTAKE SENSOR

DTC Logic

INFOID:0000000011254888

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to HAC-57, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. HAC-58, "DTC Logic".

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B2581	INTAKE SENSOR	The intake sensor recognition temperature is too high.	• Intake sensor • A/C auto amp. • Harness or connectors (The sensor circuit is open or shorted.)
B2582		The intake sensor recognition temperature is too low.	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-65, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254889

1.CHECK INTAKE SENSOR POWER SUPPLY

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

+		–	Voltage (Approx.)
Intake sensor			
Connector	Terminal		
M314	2	Ground	5 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 2.

2.CHECK INTAKE SENSOR POWER SUPPLY CIRCUIT FOR OPEN

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

Intake sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M314	2	M304	51	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK INTAKE SENSOR POWER SUPPLY CIRCUIT FOR GROUND SHORT

Check continuity between intake sensor harness connector and ground.

Intake sensor		—	Continuity
Connector	Terminal		
M314	2	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK INTAKE SENSOR POWER SUPPLY CIRCUIT FOR BATTERY SHORT

1. Turn ignition switch ON.
2. Check voltage between intake sensor harness connector and ground.

+		–	Voltage (Approx.)
Intake sensor			
Connector	Terminal		
M314	2	Ground	0 V

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair harness or connector.

5.CHECK INTAKE SENSOR GROUND CIRCUIT

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

Intake sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M314	1	M304	79	Existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair harness or connector.

6.CHECK INTAKE SENSOR

Check intake sensor. Refer to HAC-66, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace intake sensor. Refer to HAC-129, "Removal and Installation".

7.CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection

INFOID:0000000011254890

1.CHECK INTAKE SENSOR

1. Turn ignition switch OFF.
2. Disconnect intake sensor connector.

3. Check resistance between intake sensor terminals.

Terminal		Condition	Resistance: kΩ
		Temperature: °C (°F)	
1	2	–15 (5)	10.92
		–10 (14)	8.24
		–5 (23)	6.29
		0 (32)	4.85
		5 (41)	3.77
		10 (50)	2.96
		15 (59)	2.34
		20 (68)	1.87
		25 (77)	1.50
		30 (86)	1.21
		35 (95)	0.99
		40 (104)	0.81
		45 (113)	0.67

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace intake sensor. Refer to HAC-129, "Removal and Installation".

B2630, B2631 SUNLOAD SENSOR

DTC Logic

INFOID:0000000011254893

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to HAC-57, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. HAC-58, "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.

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B2630	SUNLOAD SENSOR	Detected calorie at sunload sensor 4793 W/m^2 (4121 kcal/m^2·h) or more.	• Sunload sensor • A/C auto amp. • Harness or connectors (The sensor circuit is open or shorted.)
B2631		Detected calorie at sunload sensor 75.6 W/m^2 (64.97 kcal/m^2·h) or less.	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-68, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254894

1.CHECK SUNLOAD SENSOR POWER SUPPLY CIRCUIT

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

+		–	Voltage (Approx.)
Sunload sensor			
Connector	Terminal		
M46	3	Ground	5 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 2.

2.CHECK SUNLOAD SENSOR POWER SUPPLY CIRCUIT FOR OPEN

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

Sunload sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M46	3	M67	39	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3. CHECK SUNLOAD SENSOR POWER SUPPLY CIRCUIT FOR GROUND SHORT

Check continuity between sunload sensor harness connector and ground.

Sunload sensor		—	Continuity
Connector	Terminal		
M46	3	Ground	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK SUNLOAD SENSOR POWER SUPPLY CIRCUIT FOR BATTERY SHORT

1. Turn ignition switch ON.
2. Check voltage between sunload sensor harness connector and ground.

+		–	Voltage (Approx.)
Sunload sensor			
Connector	Terminal		
M46	3	Ground	0 V

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair harness or connector.

5. CHECK SUNLOAD SENSOR GROUND CIRCUIT

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

Sunload sensor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M46	1	M67	47	Existed
	2		35	

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair harness or connector.

6. CHECK SUNLOAD SENSOR

Check sunload sensor. Refer to HAC-70, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace sunload sensor. Refer to HAC-128, "Removal and Installation".

7. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection

INFOID:0000000011254895

1. CHECK SUNLOAD SENSOR

1. Turn ignition switch OFF.
2. Disconnect sunload sensor connector.
3. Check resistance between the sunload sensor terminals.

Terminal		Condition	Resistance: kΩ
		Sunload amount: kW/m^2 kcal/m^2·h)	
1 (Passenger side) 2 (Driver side)	3	0	More than 17000
		0.233 (200)	59.9
		0.465 (400)	49.9
		0.698 (600)	39.9
		0.770 (662)	36.8
		0.930 (800)	29.9
		1.163 (1,000)	19.9
		1.396 (1,200)	9.8

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 fair weather is equivalent to approximately 0.77 kW/m^2 (662 kcal/m^2·h).

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace sunload sensor. Refer to HAC-128, "Removal and Installation".

B2750, B2751, B2752 AIR MIX DOOR MOTOR (DRIVER SIDE)

DTC Logic

INFOID:0000000011254896

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to HAC-57, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. HAC-58, "DTC Logic".
- If all of door motors DTC (B2750 – B2764) are detected, check door motor PBR power supply and ground circuit. Refer to HAC-106, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure".

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B2750	DR AIR MIX DOOR MOT	Air mix door motor (driver side) PBR feedback signal voltage is too low.	• Air mix door motor (driver side) • Air mix door motor (driver side) control linkage installation condition • A/C auto amp. • Harness or connectors (The motor circuit is open or shorted.)
B2751		Air mix door motor (driver side) PBR feedback signal voltage is too high.	
B2752		Stop position of air mix door motor (driver side) is malfunctioning.	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-71, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254897

1.CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) OPERATION

1. Turn ignition switch ON.
2. Operate temperature control switch (driver side) and check by operation sound that air mix door motor (driver side) operates.

Is the inspection result normal?

YES >> GO TO 8.
NO >> GO TO 2.

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

Check voltage between air mix door motor (LH) harness connector and ground.

+		–	Condition		Voltage (Approx.)
Air mix door motor (LH)					
Connector	Terminal				
M315	1	Ground	Set temperature (driver side)	18°C (60°F) → 32°C (90°F)	12 V
	2			32°C (90°F) → 18°C (60°F)	

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 3.

3.CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) DRIVE SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect air mix door motor LH harness connector and A/C auto amp. harness connector.
3. Check continuity between air mix door motor LH harness connector and A/C auto amp. harness connector.

Air mix door motor LH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M315	1	M304	81	Existed
	2		61	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) DRIVE SIGNAL CIRCUIT FOR GROUND SHORT

Check continuity between air mix door motor LH harness connector and ground.

Air mix door motor LH		—	Continuity
Connector	Terminal		
M315	1	Ground	Not existed
	2		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair harness or connector.

5. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) DRIVE SIGNAL CIRCUIT FOR BATTERY SHORT

1. Turn ignition switch ON.
2. Check voltage between air mix door motor LH harness connector and ground.

+		–	Voltage (Approx.)
Air mix door motor LH			
Connector	Terminal		
M315	1	Ground	0 V
	2		

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

6. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE)

Check air mix door motor (driver side). Refer to HAC-74, "Component Inspection (Motor)".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace air mix door motor (driver side). Refer to HAC-131, "AIR MIX DOOR MOTOR : Removal and Installation".

7. CHECK INSTALLATION OF AIR MIX DOOR MOTOR (DRIVER SIDE) CONTROL LINKAGE

Check air mix door motor (driver side) control linkage is properly installed. Refer to HAC-130, "Exploded View".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair or replace malfunctioning parts.

8. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) PBR FEEDBACK SIGNAL

Operate temperature control switch (driver side) and check by voltage between A/C auto amp. harness connector and ground.

+		–	Condition		Voltage (Approx.)
A/C auto amp.					
Connector	Terminal				
M304	53	Ground	Set temperature (driver side)	18°C (60°F)	4 V
				32°C (90°F)	1 V

Is the inspection result normal?

YES >> GO TO 15.
NO >> GO TO 9.

9. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) PBR FEEDBACK SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect air mix door motor LH harness connector and A/C auto amp. harness connector.
3. Check continuity between air mix door motor LH harness connector and A/C auto amp. harness connector.

Air mix door motor LH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M315	3	M304	53	Existed

Is the inspection result normal?

YES >> GO TO 10.
NO >> Repair harness or connector.

10. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) PBR FEEDBACK SIGNAL CIRCUIT FOR SHORT

Check continuity between air mix door motor LH harness connector and ground.

Air mix door motor LH		—	Continuity
Connector	Terminal		
M315	3	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 11.
NO >> Repair harness or connector.

11. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) PBR POWER SUPPLY

1. Reconnect A/C auto amp. harness connector.
2. Turn ignition switch ON.
3. Check voltage between air mix door motor LH harness connector and ground.

+		–	Voltage (Approx.)
Air mix door motor LH			
Connector	Terminal		
M315	7	Ground	5 V

Is the inspection result normal?

YES >> GO TO 13.
NO >> GO TO 12.

12. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) PBR POWER SUPPLY CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. harness connector.
3. Check continuity between air mix door motor LH harness connector and A/C auto amp. harness connector.

Air mix door motor LH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M315	7	M304	71	Existed

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

13. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) PBR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. harness connector.
3. Check continuity between air mix door motor LH harness connector and A/C auto amp. harness connector.

Air mix door motor LH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M315	5	M304	79	Existed

Is the inspection result normal?

YES >> GO TO 14.
NO >> Repair harness or connector.

14. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) PBR

Check air mix door motor (driver side) PBR. Refer to HAC-74, "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Replace air mix door motor (driver side). Refer to HAC-131, "AIR MIX DOOR MOTOR : Removal and Installation".

15. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection (Motor)

INFOID:0000000011254898

1. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE)

1. Turn ignition switch OFF.
2. Disconnect the air mix door motor LH harness connector.
3. Supply air mix door motor (driver side) terminals with battery voltage and check by visually and operation sound that air mix door motor (driver side) operates.

Terminal		Operation direction
+	–	
1	2	Full hot
2	1	Full cold

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace air mix door motor (driver side). Refer to HAC-131, "AIR MIX DOOR MOTOR : Removal and Installation".

Component Inspection (PBR)

INFOID:0000000011254899

1. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) PBR

Check resistance between air mix door motor (driver side) PBR terminals.

Terminal		Resistance (Ω)
5	3	Except 0 or ∞
	7	

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace air mix door motor (driver side). Refer to HAC-131, "AIR MIX DOOR MOTOR : Removal and Installation".

B2753, B2754, B2755 AIR MIX DOOR MOTOR (PASSENGER SIDE)

DTC Logic

INFOID:0000000011254900

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to HAC-57, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. HAC-58, "DTC Logic".
- If all of door motors DTC (B2750 – B2764) are detected, check door motor PBR power supply and ground circuit. Refer to HAC-106, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure".

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B2753	PASS AIR MIX DOOR MOT	Air mix door motor (passenger side) PBR feedback signal voltage is too low.	• Air mix door motor (passenger side) • Air mix door motor (passenger side) control linkage installation condition • A/C auto amp. • Harness or connectors (The motor circuit is open or shorted.)
B2754		Air mix door motor (passenger side) PBR feedback signal voltage is too high.	
B2755		Stop position of air mix door motor (passenger side) is malfunctioning.	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-76, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254901

1.CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) OPERATION

1. Turn ignition switch ON.
2. Operate temperature control switch (passenger side) and check by operation sound that air mix door motor (passenger side) operates.

Is the inspection result normal?

YES >> GO TO 8.
NO >> GO TO 2.

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

Check voltage between air mix door motor RH harness connector and ground.

+		–	Condition		Voltage (Approx.)
Air mix door motor RH					
Connector	Terminal				
M306	1	Ground	Set temperature (passenger side)	18°C (60°F) → 32°C (90°F)	12 V
	2			32°C (90°F) → 18°C (60°F)	

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 3.

3.CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) DRIVE SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect air mix door motor RH harness connector and A/C auto amp. harness connector.
3. Check continuity between air mix door motor RH harness connector and A/C auto amp. harness connector.

Air mix door motor RH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M306	1	M304	67	Existed
	2		87	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) DRIVE SIGNAL CIRCUIT FOR GROUND SHORT

Check continuity between air mix door motor RH harness connector and ground.

Air mix door motor RH		—	Continuity
Connector	Terminal		
M306	1	Ground	Not existed
	2		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair harness or connector.

5. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) DRIVE SIGNAL CIRCUIT FOR BATTERY SHORT

1. Turn ignition switch ON.
2. Check voltage between air mix door motor RH harness connector and ground.

+		–	Voltage (Approx.)
Air mix door motor RH			
Connector	Terminal		
M315	1	Ground	0 V
	2		

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

6. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE)

Check air mix door motor (passenger side). Refer to HAC-79, "Component Inspection (Motor)".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace air mix door motor (passenger side). Refer to HAC-131, "AIR MIX DOOR MOTOR : Removal and Installation".

7. CHECK INSTALLATION OF AIR MIX DOOR MOTOR (PASSENGER SIDE) CONTROL LINKAGE

Check air mix door motor (passenger side) control linkage is properly installed. Refer to HAC-130, "Exploded View".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair or replace malfunctioning parts.

8. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) PBR FEEDBACK SIGNAL

Operate temperature control switch (passenger side) and check by voltage between A/C auto amp. harness connector and ground.

+		–	Condition		Voltage (Approx.)
A/C auto amp.					
Connector	Terminal				
M304	74	Ground	Set temperature (passenger side)	18°C (60°F)	4 V
				32°C (90°F)	1 V

Is the inspection result normal?

YES >> GO TO 15.
NO >> GO TO 9.

9. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) PBR FEEDBACK SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect air mix door motor RH harness connector and A/C auto amp. harness connector.
3. Check continuity between air mix door motor RH harness connector and A/C auto amp. harness connector.

Air mix door motor RH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M306	3	M304	74	Existed

Is the inspection result normal?

YES >> GO TO 10.
NO >> Repair harness or connector.

10. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) PBR FEEDBACK SIGNAL CIRCUIT FOR SHORT

Check continuity between air mix door motor RH harness connector and ground.

Air mix door motor RH		—	Continuity
Connector	Terminal		
M306	3	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 11.
NO >> Repair harness or connector.

11. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) PBR POWER SUPPLY

1. Reconnect A/C auto amp. harness connector.
2. Turn ignition switch ON.
3. Check voltage between air mix door motor RH harness connector and ground.

+		–	Voltage (Approx.)
Air mix door motor RH			
Connector	Terminal		
M306	7	Ground	5 V

Is the inspection result normal?

YES >> GO TO 13.
NO >> GO TO 12.

12. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) PBR POWER SUPPLY CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. harness connector.
3. Check continuity between air mix door motor RH harness connector and A/C auto amp. harness connector.

Air mix door motor RH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M306	7	M304	71	Existed

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

13. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) PBR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. harness connector.
3. Check continuity between air mix door motor RH harness connector and A/C auto amp. harness connector.

Air mix door motor RH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M306	5	M304	79	Existed

Is the inspection result normal?

YES >> GO TO 14.
NO >> Repair harness or connector.

14. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) PBR

Check air mix door motor (passenger side) PBR. Refer to HAC-79, "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Replace air mix door motor (passenger side). Refer to HAC-131, "AIR MIX DOOR MOTOR : Removal and Installation".

15. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection (Motor)

INFOID:0000000011254902

1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE)

1. Turn ignition switch OFF.
2. Disconnect air mix door motor RH harness connector.
3. Supply air mix door motor (passenger side) terminals with battery voltage and check by visually and operation sound that air mix door motor (passenger side) operates.

Terminal		Operation direction
+	–	
1	2	Full hot
2	1	Full cold

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace air mix door motor (passenger side). Refer to HAC-131, "AIR MIX DOOR MOTOR : Removal and Installation".

Component Inspection (PBR)

INFOID:0000000011254903

1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) PBR

Check resistance between air mix door motor (passenger side) PBR terminals.

Terminal		Resistance (Ω)
5	3	Except 0 or ∞
	7	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace air mix door motor (passenger side). Refer to HAC-131, "AIR MIX DOOR MOTOR : Removal and Installation".

B2756, B2757, B2758 MODE DOOR MOTOR (DRIVER SIDE)

DTC Logic

INFOID:0000000011254904

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to HAC-57, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. HAC-58, "DTC Logic".
- If all of door motors DTC (B2750 – B2764) are detected, check door motor PBR power supply and ground circuit. Refer to HAC-106, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure".

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B2756	DR MODE DOOR MOTOR	Mode door motor (driver side) PBR feedback signal voltage is too low.	• Mode door motor (driver side) • Mode door motor (driver side) control linkage installation condition • A/C auto amp. • Harness or connectors (The motor circuit is open or shorted.)
B2757		Mode door motor (driver side) PBR feedback signal voltage is too high.	
B2758		Stop position of mode door motor (driver side) is malfunctioning.	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-81, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254905

1.CHECK MODE DOOR MOTOR (DRIVER SIDE) OPERATION

1. Turn ignition switch ON.
2. Operate MODE switch (driver side) and check by operation sound that mode door motor (driver side) operates.

Is the inspection result normal?

YES >> GO TO 8.
NO >> GO TO 2.

2.CHECK MODE DOOR MOTOR (DRIVER SIDE) DRIVE SIGNAL

1. Press MODE switch (driver side) and DEF switch.
2. Check voltage between mode door motor LH harness connector and ground.

+		–	Condition		Voltage (Approx.)
Mode door motor LH					
Connector	Terminal				
M317	1	Ground	Air outlet	DEF → VENT	12 V
	2			VENT → DEF	

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 3.

3. CHECK MODE DOOR MOTOR (DRIVER SIDE) DRIVE SIGNAL CIRCUIT FOR OPEN

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

Mode door motor LH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M317	1	M304	63	Existed
	2		83	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK MODE DOOR MOTOR (DRIVER SIDE) DRIVE SIGNAL CIRCUIT FOR GROUND SHORT

Check continuity between mode door motor LH harness connector and ground.

Mode door motor LH		—	Continuity
Connector	Terminal		
M317	1	Ground	Not existed
	2		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair harness or connector.

5. CHECK MODE DOOR MOTOR (DRIVER SIDE) DRIVE SIGNAL CIRCUIT FOR BATTERY SHORT

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

+		–	Voltage (Approx.)
Mode door motor LH			
Connector	Terminal		
M317	1	Ground	0 V
	2		

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

6. CHECK MODE DOOR MOTOR (DRIVER SIDE)

Check mode door motor (driver side). Refer to HAC-84, "Component Inspection (Motor)".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace mode door motor (driver side). Refer to HAC-130, "MODE DOOR MOTOR : Removal and Installation".

7. CHECK INSTALLATION OF MODE DOOR MOTOR (DRIVER SIDE) CONTROL LINKAGE

Check mode door motor (driver side) control linkage is properly installed. Refer to HAC-130, "Exploded View".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair or replace malfunctioning parts.

8. CHECK MODE DOOR MOTOR (DRIVER SIDE) PBR FEEDBACK SIGNAL

1. Operate MODE switch (driver side) and DEF switch.

2. Check voltage between A/C auto amp. harness connector and ground.

+		–	Condition		Voltage (Approx.)
A/C auto amp.					
Connector	Terminal				
M304	54	Ground	Air outlet	VENT	4 V
				DEF	1 V

Is the inspection result normal?

YES >> GO TO 15.
NO >> GO TO 9.

9. CHECK MODE DOOR MOTOR (DRIVER SIDE) PBR FEEDBACK SIGNAL CIRCUIT FOR OPEN

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

Mode door motor LH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M317	3	M304	54	Existed

Is the inspection result normal?

YES >> GO TO 10.
NO >> Repair harness or connector.

10. CHECK MODE DOOR MOTOR (DRIVER SIDE) PBR FEEDBACK SIGNAL CIRCUIT FOR SHORT

Check continuity between mode door motor LH harness connector and ground.

Mode door motor LH		—	Continuity
Connector	Terminal		
M317	3	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 11.
NO >> Repair harness or connector.

11. CHECK MODE DOOR MOTOR (DRIVER SIDE) PBR POWER SUPPLY

1. Reconnect A/C auto amp. harness connector.
2. Turn ignition switch ON.
3. Check voltage between mode door motor LH harness connector and ground.

+		–	Voltage (Approx.)
Mode door motor LH			
Connector	Terminal		
M317	5	Ground	5 V

Is the inspection result normal?

YES >> GO TO 13.
NO >> GO TO 12.

12. CHECK MODE DOOR MOTOR (DRIVER SIDE) PBR POWER SUPPLY CIRCUIT FOR OPEN

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

Mode door motor LH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M317	5	M304	71	Existed

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

13. CHECK MODE DOOR MOTOR (DRIVER SIDE) PBR GROUND CIRCUIT

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

Mode door motor LH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M317	7	M304	79	Existed

Is the inspection result normal?

YES >> GO TO 14.
NO >> Repair harness or connector.

14. CHECK MODE DOOR MOTOR (DRIVER SIDE) PBR

Check mode door motor (driver side) PBR. Refer to HAC-84, "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Replace mode door motor (driver side). Refer to HAC-130, "MODE DOOR MOTOR : Removal and Installation".

15. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection (Motor)

INFOID:0000000011254906

1. CHECK MODE DOOR MOTOR (DRIVER SIDE)

1. Turn ignition switch OFF.
2. Disconnect the mode door motor LH harness connector.
3. Supply mode door motor (driver side) terminals with battery voltage and check by visually and operation sound that mode door motor (driver side) operates.

Terminal		Operation direction
+	–	
1	2	VENT
2	1	DEF

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace mode door motor (driver side). Refer to HAC-130, "MODE DOOR MOTOR : Removal and Installation".

Component Inspection (PBR)

INFOID:0000000011254907

1. CHECK MODE DOOR MOTOR (DRIVER SIDE) PBR

Check resistance between mode door motor (driver side) PBR terminals.

Terminal		Resistance (Ω)
7	3	Except [0 or ∞]
	5	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mode door motor (driver side). Refer to HAC-131, "AIR MIX DOOR MOTOR : Removal and Installation".

B2759, B275A, B275B MODE DOOR MOTOR (PASSENGER SIDE)

DTC Logic

INFOID:0000000011254908

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to HAC-57, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. HAC-58, "DTC Logic".
- If all of door motors DTC (B2750 – B2764) are detected, check door motor PBR power supply and ground circuit. Refer to HAC-106, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure".

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B2759	PASS MODE DOOR MOT	Mode door motor (passenger side) PBR feedback signal voltage is too low.	• Mode door motor (passenger side) • Mode door motor (passenger side) control linkage installation condition • A/C auto amp. • Harness or connectors (The motor circuit is open or shorted.)
B275A		Mode door motor (passenger side) PBR feedback signal voltage is too high.	
B275B		Stop position of mode door motor (passenger side) is malfunctioning.	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-86, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254909

1.CHECK MODE DOOR MOTOR (PASSENGER SIDE) OPERATION

1. Turn ignition switch ON.
2. Operate MODE switch (driver side) and DEF switch.
   NOTE:
   “DUAL”: OFF
3. Check operation sound that mode door motor (passenger side) operates.

Is the inspection result normal?

YES >> GO TO 8.
NO >> GO TO 2.

2.CHECK MODE DOOR MOTOR (PASSENGER SIDE) DRIVE SIGNAL

1. Press MODE switch (driver side) and DEF switch.
   NOTE:
   “DUAL”: OFF
2. Check voltage between mode door motor RH harness connector and ground.

+		–	Condition		Voltage (Approx.)
Mode door motor RH					
Connector	Terminal				
M308	1	Ground	Air outlet	DEF → VENT	12 V
	2			VENT → DEF	

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 3.

3. CHECK MODE DOOR MOTOR (PASSENGER SIDE) DRIVE SIGNAL CIRCUIT FOR OPEN

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

Mode door motor RH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M308	1	M304	64	Existed
	2		84	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK MODE DOOR MOTOR (PASSENGER SIDE) DRIVE SIGNAL CIRCUIT FOR GROUND SHORT

Check continuity between mode door motor RH harness connector and ground.

Mode door motor RH		—	Continuity
Connector	Terminal		
M308	1	Ground	Not existed
	2		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair harness or connector.

5. CHECK MODE DOOR MOTOR (PASSENGER SIDE) DRIVE SIGNAL CIRCUIT FOR BATTERY SHORT

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

+		–	Voltage (Approx.)
Mode door motor RH			
Connector	Terminal		
M308	1	Ground	0 V
	2		

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

6. CHECK MODE DOOR MOTOR (PASSENGER SIDE)

Check mode door motor (passenger side). Refer to HAC-89, "Component Inspection (Motor)".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace mode door motor (passenger side). Refer to HAC-130, "MODE DOOR MOTOR : Removal and Installation".

7. CHECK INSTALLATION OF MODE DOOR MOTOR (PASSENGER SIDE) CONTROL LINKAGE

Check mode door motor (passenger side) control linkage is properly installed. Refer to HAC-130, "Exploded View".

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair or replace malfunctioning parts.

8. CHECK MODE DOOR MOTOR (PASSENGER SIDE) PBR FEEDBACK SIGNAL

1. Operate MODE switch (driver side) and DEF switch.
   NOTE:
   "DUAL": OFF
2. Check voltage between A/C auto amp. harness connector and ground.

+		–	Condition		Voltage (Approx.)
A/C auto amp.					
Connector	Terminal				
M304	73	Ground	Air outlet	VENT	4 V
				DEF	1 V

Is the inspection result normal?

YES >> GO TO 15.
NO >> GO TO 9.

9. CHECK MODE DOOR MOTOR (PASSENGER SIDE) PBR FEEDBACK SIGNAL CIRCUIT FOR OPEN

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

Mode door motor RH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M308	3	M304	73	Existed

Is the inspection result normal?

YES >> GO TO 10.
NO >> Repair harness or connector.

10. CHECK MODE DOOR MOTOR (PASSENGER SIDE) PBR FEEDBACK SIGNAL CIRCUIT FOR SHORT

Check continuity between mode door motor RH harness connector and ground.

Mode door motor RH		—	Continuity
Connector	Terminal		
M308	3	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 11.
NO >> Repair harness or connector.

11. CHECK MODE DOOR MOTOR (PASSENGER SIDE) PBR POWER SUPPLY

1. Reconnect A/C auto amp. harness connector.
2. Turn ignition switch ON.
3. Check voltage between mode door motor RH harness connector and ground.

+		–	Voltage (Approx.)
Mode door motor RH			
Connector	Terminal		
M308	5	Ground	5 V

Is the inspection result normal?

YES >> GO TO 13.
NO >> GO TO 12.

12. CHECK MODE DOOR MOTOR (PASSENGER SIDE) PBR POWER SUPPLY CIRCUIT FOR OPEN

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

Mode door motor RH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M308	5	M304	71	Existed

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

13. CHECK MODE DOOR MOTOR (PASSENGER SIDE) PBR GROUND CIRCUIT

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

Mode door motor RH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M308	7	M304	79	Existed

Is the inspection result normal?

YES >> GO TO 14.
NO >> Repair harness or connector.

14. CHECK MODE DOOR MOTOR (PASSENGER SIDE) PBR

Check mode door motor (passenger side) PBR. Refer to HAC-90, "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Replace mode door motor (passenger side). Refer to HAC-130, "MODE DOOR MOTOR : Removal and Installation".

15. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection (Motor)

INFOID:0000000011254910

1. CHECK MODE DOOR MOTOR (PASSENGER SIDE)

1. Turn ignition switch OFF.
2. Disconnect mode door motor RH harness connector.
3. Supply mode door motor (passenger side) terminals with battery voltage and check by visually and operation sound that mode door motor (passenger side) operates.

Terminal		Operation direction
+	–	
1	2	VENT
2	1	DEF

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace mode door motor (passenger side). Refer to HAC-130, "MODE DOOR MOTOR : Removal and Installation".

Component Inspection (PBR)

INFOID:0000000011254911

1. CHECK MODE DOOR MOTOR (PASSENGER SIDE) PBR

Check resistance between mode door motor (passenger side) PBR terminals.

Terminal		Resistance (Ω)
7	3	Except [0 or ∞]
	5	

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace mode door motor (passenger side). Refer to HAC-131, "AIR MIX DOOR MOTOR : Removal and Installation".

B275C, B275D, B275E INTAKE DOOR MOTOR

DTC Logic

INFOID:0000000011254912

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to HAC-57, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. HAC-58, "DTC Logic".
- If all of door motors DTC (B2750 – B2764) are detected, check door motor PBR power supply and ground circuit. Refer to HAC-106, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure".

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B275C	INTAKE DOOR MOTOR	Intake door motor PBR feedback signal voltage is too low.	• Intake door motor • Intake door motor control linkage installation condition • A/C auto amp. • Harness or connectors (The motor circuit is open or shorted.)
B275D		Intake door motor PBR feedback signal voltage is too high.	
B275E		Stop position of intake door motor is malfunctioning.	

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-91, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254913

1. CHECK INTAKE DOOR MOTOR OPERATION

1. Turn ignition switch ON.
2. Operate FRE switch and REC switch.
3. Listen to intake sound and confirm air inlets change.

Does it operate normally?

YES >> GO TO 8.
NO >> GO TO 2.

2. CHECK INTAKE DOOR MOTOR DRIVE SIGNAL

1. Operate FRE switch and REC switch.
2. Check voltage between intake door motor harness connector and ground.

+		–	Condition		Voltage (Approx.)
Intake door motor					
Connector	Terminal				
M310	1	Ground	Inlet duct	REC → FRE	12 V
	2			FRE → REC	

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 3.

3. CHECK INTAKE DOOR MOTOR DRIVE SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. connector.
3. Disconnect intake door motor connector.
4. Check continuity between intake door motor harness connector and A/C auto amp. harness connector.

Intake door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M310	1	M304	85	Existed
	2		65	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK INTAKE DOOR MOTOR DRIVE SIGNAL CIRCUIT FOR GROUND SHORT

Check continuity between intake door motor harness connector and ground.

Intake door motor		—	Continuity
Connector	Terminal		
M310	1	Ground	Not existed
	2		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair harness or connector.

5. CHECK INTAKE DOOR MOTOR DRIVE SIGNAL CIRCUIT FOR BATTERY SHORT

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

+		–	Voltage (Approx.)
Intake door motor			
Connector	Terminal		
M310	1	Ground	0 V
	2		

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

6. CHECK INTAKE DOOR MOTOR

Check intake door motor. Refer to HAC-94, "Component Inspection (Motor)".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace intake door motor. Refer to HAC-131, "INTAKE DOOR MOTOR : Removal and Installation".

7. CHECK INSTALLATION OF INTAKE DOOR MOTOR CONTROL LINKAGE

Check intake door motor control linkage is properly installed. Refer to HAC-130, "Exploded View".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair or replace malfunctioning parts.

8. CHECK INTAKE DOOR MOTOR PBR FEEDBACK SIGNAL

1. Operate FRE switch and REC switch.
2. Check voltage between A/C auto amp. harness connector and ground.

+		–	Condition		Voltage (Approx.)
A/C auto amp.					
Connector	Terminal				
M304	55	Ground	Inlet duct	REC	4 V
				FRE	1 V

Is the inspection result normal?

YES >> GO TO 15.
NO >> GO TO 9.

9. CHECK INTAKE DOOR MOTOR PBR FEEDBACK SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. connector.
3. Disconnect intake door motor connector.
4. Check continuity between intake door motor harness connector and A/C auto amp. harness connector.

Intake door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M310	3	M304	55	Existed

Is the inspection result normal?

YES >> GO TO 10.
NO >> Repair harness or connector.

10. CHECK INTAKE DOOR MOTOR PBR FEEDBACK SIGNAL CIRCUIT FOR SHORT

Check continuity between intake door motor harness connector and ground.

Intake door motor		—	Continuity
Connector	Terminal		
M310	3	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 11.
NO >> Repair harness or connector.

11. CHECK INTAKE DOOR MOTOR PBR POWER SUPPLY

1. Connect A/C auto amp. connector.
2. Turn ignition switch ON.
3. Check voltage between intake door motor harness connector and ground.

+		–	Voltage (Approx.)
Intake door motor			
Connector	Terminal		
M310	5	Ground	5 V

Is the inspection result normal?

YES >> GO TO 13.
NO >> GO TO 12.

12. CHECK INTAKE DOOR MOTOR PBR FEEDBACK PBR POWER SUPPLY CIRCUIT FOR OPEN

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

Intake door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M310	5	M304	71	Existed

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

13. CHECK INTAKE DOOR MOTOR PBR FEEDBACK PBR GROUND CIRCUIT

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

Intake door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M310	7	M304	79	Existed

Is the inspection result normal?

YES >> GO TO14.
NO >> Repair harness or connector.

14. CHECK INTAKE DOOR MOTOR PBR

Check intake door motor PBR. Refer to HAC-94, "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Replace intake door motor. Refer to HAC-131, "INTAKE DOOR MOTOR : Removal and Installation".

15. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection (Motor)

INFOID:0000000011254914

1. CHECK INTAKE DOOR MOTOR

1. Turn ignition switch OFF.
2. Disconnect intake door motor connector.
3. Supply intake door motor terminals with battery voltage and check by visually and operation sound that intake door motor operates.

Terminal		Operation direction
+	–	
1	2	FRE
2	1	REC

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace intake door motor. Refer to HAC-131, "INTAKE DOOR MOTOR : Removal and Installation".

Component Inspection (PBR)

INFOID:0000000011254915

1. CHECK INTAKE DOOR MOTOR PBR

Check resistance between intake door motor terminals.

Terminal		Resistance (Approx.)
7	3	Except [0 or ∞]
	5	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace intake door motor. Refer toHAC-131, "INTAKE DOOR MOTOR : Removal and Installation".

B275F, B2760, B2761 UPPER VENTILATOR DOOR MOTOR

DTC Logic

INFOID:0000000011254916

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to HAC-57, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. HAC-58, "DTC Logic".
- If all of door motors DTC (B2750 – B2764) are detected, check door motor PBR power supply and ground circuit. Refer to HAC-106, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure".

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B275F	DR UP VENT DOOR MOT	Upper ventilator door motor PBR feedback signal voltage is too low.	• Upper ventilator door motor • Upper ventilator door motor installation condition • A/C auto amp. • Harness or connectors (The motor circuit is open or shorted.)
B2760		Upper ventilator door motor PBR feedback signal voltage is too high.	
B2761		Stop position of upper ventilator door motor is malfunctioning.	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-96, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254917

1.CHECK UPPER VENTILATOR DOOR MOTOR OPERATION

1. Turn ignition switch ON.
2. Touch “Upper Vent” in “Climate” screen and check by operation sound that upper ventilator door motor operates.

Does upper ventilator door motor operate?

YES >> GO TO 8.
NO >> GO TO 2.

2.CHECK UPPER VENTILATOR DOOR MOTOR DRIVE SIGNAL

Check voltage between upper ventilator door motor harness connector and ground when “Upper Vent” in “Climate” screen is touched.

+		–	Condition		Voltage (Approx.)
Upper ventilator door motor					
Connector	Terminal				
M312	1	Ground	Upper Vent	ON → OFF	12 V
	2			OFF → ON	

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 3.

3.CHECK UPPER VENTILATOR DOOR MOTOR DRIVE SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. connector.
3. Disconnect upper ventilator door motor connector.
4. Check continuity between upper ventilator door motor harness connector and A/C auto amp. harness connector.

Upper ventilator door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M312	1	M304	66	Existed
	2		86	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK UPPER VENTILATOR DOOR MOTOR DRIVE SIGNAL CIRCUIT FOR GROUND SHORT

Check continuity between upper ventilator door motor harness connector and ground.

Upper ventilator door motor		—	Continuity
Connector	Terminal		
M312	1	Ground	Not existed
	2		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair harness or connector.

5.CHECK UPPER VENTILATOR DOOR MOTOR DRIVE SIGNAL CIRCUIT FOR BATTERY SHORT

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

+		–	Voltage (Approx.)
Upper ventilator door motor			
Connector	Terminal		
M312	1	Ground	0 V
	2		

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

6.CHECK UPPER VENTILATOR DOOR MOTOR

Check upper ventilator door motor. Refer to HAC-99, "Component Inspection (Motor)".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace upper ventilator door motor. Refer to HAC-131, "UPPER VENTILATOR DOOR MOTOR : Removal and Installation".

7.CHECK INSTALLATION OF UPPER VENTILATOR DOOR MOTOR

Check upper ventilator door motor is properly installed. Refer to HAC-130, "Exploded View".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair or replace malfunctioning parts.

8.CHECK UPPER VENTILATOR DOOR MOTOR PBR FEEDBACK SIGNAL

Check voltage between A/C auto amp. harness connector and ground when “Upper Vent” in “Climate” screen is touched.

+		–	Condition		Voltage (Approx.)
A/C auto amp.					
Connector	Terminal				
M304	75	Ground	Upper Vent	ON	4 V
				OFF	1 V

Is the inspection result normal?

YES >> GO TO 15.
NO >> GO TO 9.

9.CHECK UPPER VENTILATOR DOOR MOTOR PBR FEEDBACK SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. connector.
3. Disconnect upper ventilator door motor connector.
4. Check continuity between upper ventilator door motor harness connector and A/C auto amp. harness connector.

Upper ventilator door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M312	3	M304	75	Existed

Is the inspection result normal?

YES >> GO TO 10.
NO >> Repair harness or connector.

10.CHECK UPPER VENTILATOR DOOR MOTOR PBR FEEDBACK SIGNAL CIRCUIT FOR SHORT

Check continuity between upper ventilator door motor harness connector and ground.

Upper ventilator door motor		—	Continuity
Connector	Terminal		
M312	3	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 11.
NO >> Repair harness or connector.

11.CHECK UPPER VENTILATOR DOOR MOTOR PBR POWER SUPPLY

1. Connect A/C auto amp. connector.
2. Turn ignition switch ON.
3. Check voltage between upper ventilator door motor harness connector and ground.

+		–	Voltage (Approx.)
Upper ventilator door motor			
Connector	Terminal		
M312	7	Ground	5 V

Is the inspection result normal?

YES >> GO TO 13.
NO >> GO TO 12.

12.CHECK UPPER VENTILATOR DOOR MOTOR PBR POWER SUPPLY CIRCUIT FOR OPEN

1. Turn ignition switch OFF.

2. Disconnect A/C auto amp. connector.
3. Check continuity between upper ventilator door motor harness connector and A/C auto amp. harness connector.

Upper ventilator door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M312	7	M304	71	Existed

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

13. CHECK UPPER VENTILATOR DOOR MOTOR PBR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. connector.
3. Check continuity between upper ventilator door motor harness connector and A/C auto amp. harness connector.

Upper ventilator door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M312	5	M304	79	Existed

Is the inspection result normal?

YES >> GO TO 14.
NO >> Repair harness or connector.

14. CHECK UPPER VENTILATOR DOOR MOTOR PBR

Check upper ventilator door motor PBR. Refer to HAC-100, "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Replace upper ventilator door motor. Refer to HAC-131, "UPPER VENTILATOR DOOR MOTOR : Removal and Installation".

15. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunction parts.

Component Inspection (Motor)

INFOID:0000000011254918

1. CHECK UPPER VENTILATOR DOOR MOTOR

1. Turn ignition switch OFF.
2. Disconnect upper ventilator door motor connector.
3. Supply upper ventilator door motor terminals with battery voltage and check by visually and operation sound that upper ventilator door motor operates.

Terminal		Operation direction
+	–	
1	2	Close
2	1	Open

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace upper ventilator door motor. Refer toHAC-131, "UPPER VENTILATOR DOOR MOTOR : Removal and Installation".

Component Inspection (PBR)

INFOID:0000000011254919

1. CHECK UPPER VENTILATOR DOOR MOTOR PBR

Check resistance between upper ventilator door motor terminals.

Terminal		Resistance (Ω)
5	3	Other than [0 or ∞]
	7	

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace upper ventilator door motor. Refer to HAC-131, "UPPER VENTILATOR DOOR MOTOR : Removal and Installation".

B2762, B2763, B2764 REAR MODE DOOR MOTOR

DTC Logic

INFOID:0000000011254920

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to HAC-57, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. HAC-58, "DTC Logic".
- If all of door motors DTC (B2750 – B2764) are detected, check door motor PBR power supply and ground circuit. Refer to HAC-106, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure".

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B2762	REAR MODE DOOR MOT	Rear mode door motor PBR feedback signal voltage is too low.	• Rear mode door motor • Rear mode door motor installation condition • A/C auto amp. • Harness or connectors (The motor circuit is open or shorted.)
B2763		Rear mode door motor PBR feedback signal voltage is too high.	
B2764		Stop position of rear mode door motor is malfunctioning.	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “HVAC” using CONSULT.
3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-101, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011254921

1.CHECK REAR MODE DOOR MOTOR OPERATION

1. Turn ignition switch ON.
2. Operate MODE switch (driver side) and DEF switch and check by operation sound that rear mode door motor.
   NOTE:
   “DUAL”: OFF

Does rear mode door motor operate?

YES >> GO TO 8.
NO >> GO TO 2.

2.CHECK REAR MODE DOOR MOTOR DRIVE SIGNAL

Check voltage between rear mode door motor harness connector and ground, when MODE switch (driver side) and DEF switch are operated.

NOTE:
“DUAL”: OFF

+		–	Condition		Voltage (Approx.)
Rear mode door motor					
Connector	Terminal				
M318	1	Ground	Air outlet	DEF → VENT	12 V
	2			VENT → DEF	

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 3.

3.CHECK REAR MODE DOOR MOTOR DRIVE SIGNAL CIRCUIT FOR OPEN

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

Rear mode door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M318	1	M304	68	Existed
	2		88	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK REAR MODE DOOR MOTOR DRIVE SIGNAL CIRCUIT FOR GROUND SHORT

Check continuity between rear mode door motor harness connector and ground.

Rear mode door motor		—	Continuity
Connector	Terminal		
M318	1	Ground	Not existed
	2		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair harness or connector.

5.CHECK REAR MODE DOOR MOTOR DRIVE SIGNAL CIRCUIT FOR BATTERY SHORT

1. Turn ignition switch ON.
2. rear mode door motor harness connector and ground.

+		–	Voltage (Approx.)
Rear mode door motor			
Connector	Terminal		
M318	1	Ground	0 V
	2		

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

6.CHECK REAR MODE DOOR MOTOR

Check rear mode door motor. Refer to HAC-104, "Component Inspection (Motor)".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace rear mode door motor. Refer to HAC-132, "REAR MODE DOOR MOTOR : Removal and Installation".

7.CHECK INSTALLATION OF REAR MODE DOOR MOTOR

Check rear mode door motor is properly installed. Refer to HAC-130, "Exploded View".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair or replace malfunctioning parts.

8. CHECK REAR MODE DOOR MOTOR PBR FEEDBACK SIGNAL

Check voltage between A/C auto amp. harness connector and ground when operate MODE switch (driver side) and DEF switch.

NOTE:
"DUAL": OFF

+		–	Condition		Voltage (Approx.)
A/C auto amp.					
Connector	Terminal				
M304	58	Ground	Air outlet	VENT	4 V
				DEF	1 V

Is the inspection result normal?

YES >> GO TO 15.
NO >> GO TO 9.

9. CHECK REAR MODE DOOR MOTOR PBR FEEDBACK SIGNAL CIRCUIT FOR OPEN

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

Rear mode door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M318	3	M304	58	Existed

Is the inspection result normal?

YES >> GO TO 10.
NO >> Repair harness or connector.

10. CHECK REAR MODE DOOR MOTOR PBR FEEDBACK SIGNAL CIRCUIT FOR SHORT

Check continuity between rear mode door motor harness connector and ground.

Rear mode door motor		—	Continuity
Connector	Terminal		
M318	3	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 11.
NO >> Repair harness or connector.

11. CHECK REAR MODE DOOR MOTOR PBR POWER SUPPLY

1. Connect A/C auto amp. connector.
2. Turn ignition switch ON.
3. Check voltage between rear mode door motor harness connector and ground.

+		–	Voltage (Approx.)
Rear mode door motor			
Connector	Terminal		
M318	5	Ground	5 V

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 12.

12. CHECK REAR MODE DOOR MOTOR PBR POWER SUPPLY CIRCUIT FOR OPEN

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

Rear mode door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M318	5	M304	71	Existed

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair harness or connector.

13. CHECK REAR MODE DOOR MOTOR PBR GROUND CIRCUIT

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

Rear mode door motor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M318	7	M304	79	Existed

Is the inspection result normal?

YES >> GO TO 14.
NO >> Repair harness or connector.

14. CHECK REAR MODE DOOR MOTOR PBR

Check rear mode door motor PBR.Refer to HAC-105, "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 15.
NO >> Replace rear mode door motor. Refer to HAC-132, "REAR MODE DOOR MOTOR : Removal and Installation".

15. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunction parts.

Component Inspection (Motor)

INFOID:0000000011254922

1. CHECK REAR MODE DOOR MOTOR

1. Turn ignition switch OFF.
2. Disconnect rear mode door motor connector.
3. Supply rear mode door motor terminals with battery voltage and check by visually and operation sound that rear mode door motor operates.

Terminal		Operation direction
+	–	
1	2	VENT
2	1	FOOT

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace rear mode door motor. Refer toHAC-131, "UPPER VENTILATOR DOOR MOTOR : Removal and Installation".

Component Inspection (PBR)

INFOID:0000000011254923

1.CHECK REAR MODE DOOR MOTOR PBR

Check resistance between rear mode door motor terminals.

Terminal		Resistance (Ω)
7	3	Other than 0 or ∞
	5	

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace rear mode door motor. Refer toHAC-131, "UPPER VENTILATOR DOOR MOTOR : Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT

A/C AUTO AMP.

A/C AUTO AMP. : Diagnosis Procedure

INFOID:0000000011254931

1.CHECK FUSE

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

NOTE:

Refer to PG-118, "Fuse, Connector and Terminal Arrangement".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the blown fuse after replacing the applicable circuit.

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

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

+		–	Voltage		
A/C auto amp.			Ignition switch position		
Connector	Terminal		OFF	ACC	ON
M66	1	Ground	Battery voltage	Battery voltage	Battery voltage
	2		Approx. 0 V	Approx. 0 V	Battery voltage
	13		Approx. 0 V	Battery voltage	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK A/C AUTO AMP. GROUND CIRCUIT

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

A/C auto amp.		—	Continuity
Connector	Terminal		
M66	10	Ground	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

DOOR MOTOR PBR (WITHOUT FOREST AIR)

DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure

INFOID:0000000011254933

NOTE:

Check this circuit when all DTCs of motor system (B2750 – B2764) are detected.

1.CHECK EACH DOOR MOTOR PBR POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect mode door motor LH connector.
3. Turn ignition switch ON.
4. Check voltage between mode door motor LH harness connector and ground.

+		–	Voltage (Approx.)
Mode door motor LH			
Connector	Terminal		
M317	5	Ground	5 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 2.

2.CHECK EACH DOOR MOTOR PBR POWER SUPPLY CIRCUIT FOR OPEN

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

Mode door motor LH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M317	5	M304	71	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK EACH DOOR MOTOR PBR POWER SUPPLY CIRCUIT FOR GROUND SHORT

1. Disconnect following connectors:
- Air mix door motor LH
- Air mix door motor RH
- Intake door motor
- Mode door motor RH
- Rear mode door motor
- Upper ventilator door motor

2. Check mode door motor LH harness connector and ground.

Mode door motor LH		—	Continuity
Connector	Terminal		
M317	5	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK EACH DOOR MOTOR PBR POWER SUPPLY CIRCUIT FOR BATTERY SHORT

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

+		–	Voltage (Approx.)
Mode door motor LH			
Connector	Terminal		
M317	5	Ground	0 V

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair harness or connector.

5.CHECK MODE DOOR MOTOR (DRIVER SIDE) PBR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. connector.

3. Check continuity between mode door motor LH harness connector and A/C auto amp. harness connector.

Mode door motor LH		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M317	7	M304	79	Existed

s the inspection result normal?

YES >> GO TO 6.
NO >> Repair harness or connector.

6. CHECK COMPONENT PARTS

Check following parts:
- Air mix door motor (driver side): Refer to HAC-74, "Component Inspection (PBR)".
- Air mix door motor (passenger side): Refer to HAC-79, "Component Inspection (PBR)".
- Intake door motor: Refer to HAC-94, "Component Inspection (PBR)".
- Mode door motor (driver side): Refer to HAC-84, "Component Inspection (PBR)".
- Mode door motor (passenger side): Refer to HAC-90, "Component Inspection (PBR)".
- Rear mode door motor: Refer to HAC-105, "Component Inspection (PBR)".
- Upper ventilator door motor: Refer to HAC-100, "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace malfunctioning parts.

7. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

BLOWER MOTOR

Diagnosis Procedure

INFOID:0000000011254934

1.CHECK BLOWER MOTOR POWER SUPPLY

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

+		–	Voltage
Blower motor			
Connector	Terminal		
M109	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 7.
NO >> GO TO 2.

2.CHECK FUSE

1. Turn ignition switch OFF.
2. Check 15 A fuses [Nos. 21 and 22, located in fuse block (J/B)].

NOTE:
Refer to PG-118, "Fuse, Connector and Terminal Arrangement".

Is the inspection result normal?

YES >> GO TO 3.
NG >> Replace the fuse after repairing the applicable circuit.

3.CHECK BLOWER MOTOR POWER SUPPLY CIRCUIT FOR OPEN

1. Disconnect fuse block (J/B) connector.
2. Check continuity between blower motor harness connector and fuse block (J/B) harness connector.

Blower motor		Fuse block (J/B)		Continuity
Connector	Terminal	Connector	Terminal	
M109	1	M1	3A	Existed
			8A	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK BLOWER MOTOR POWER SUPPLY CIRCUIT FOR SHORT

Check continuity between blower motor harness connector and ground.

Blower motor		—	Continuity
Connector	Terminal		
M109	1	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair harness or connector.

5.CHECK BLOWER RELAY GROUND CIRCUIT

1. Disconnect fuse block (J/B) connector.
2. Check continuity between fuse block (J/B) harness connector and ground.

Fuse block (J/B)		—	Continuity
Connector	Terminal		
M3	7C	Ground	Existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair harness or connector.

6. CHECK BLOWER RELAY

Check blower relay. Refer to HAC-113, "Component Inspection (Blower Relay)".

Is the inspection result normal?

YES >> Check ignition power supply circuit. Refer to PG-60, "Wiring Diagram - IGNITION POWER SUPPLY -".
NO >> Replace blower relay.

7. CHECK POWER TRANSISTOR POWER SUPPLY

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

+		–	Voltage
Power transistor			
Connector	Terminal		
M112	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 11.
NO >> GO TO 8.

8. CHECK POWER TRANSISTOR POWER SUPPLY CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect blower motor connector.
3. Check continuity between power transistor harness connector and blower motor harness connector.

Power transistor		Blower motor		Continuity
Connector	Terminal	Connector	Terminal	
M112	3	M109	2	Existed

Is the inspection result normal?

YES >> GO TO 9.
NO >> Repair harness or connector.

9. CHECK POWER TRANSISTOR POWER SUPPLY CIRCUIT FOR SHORT

Check continuity between power transistor harness connector and ground.

Power transistor		—	Continuity
Connector	Terminal		
M112	3	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 10.
NO >> Repair harness or connector.

10. REPLACE BLOWER MOTOR

Replace blower motor. Refer to VTL-18, "BLOWER MOTOR : Removal and Installation".

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 19.

11. CHECK POWER TRANSISTOR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between power transistor harness connector and ground.

Power transistor		—	Continuity
Connector	Terminal		
M112	4	Ground	Existed

Is the inspection result normal?

YES >> GO TO 12.
NO >> Repair harness or connector.

12. CHECK POWER TRANSISTOR CONTROL SIGNAL

1. Connect power transistor connector.
2. Turn ignition switch ON.
3. Operate mode switch to set VENT position.
4. Change fan speed from 1 to 7, and check voltage between power transistor harness connector and ground.

+		−	Condition	Voltage (Approx.)
Power transistor			Fan speed (manual) VENT mode	
Connector	Terminal			
M112	2	Ground	OFF	0 V
			1st	3.5 V
			2nd	5.2 V
			3rd	6.5 V
			4th	7.8 V
			5th	9.2 V
			6th	10.5 V
			7th	12.5 V

Is the inspection result normal?

YES >> GO TO 15.
NO >> GO TO 13.

13. CHECK POWER TRANSISTOR CONTROL SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect power transistor connector.
3. Connect A/C auto amp. connector.
4. Check continuity between power transistor harness connector and A/C auto amp. harness connector.

Power transistor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M112	2	M66	7	Existed

Is the inspection result normal?

YES >> GO TO 14.
NO >> Repair harness or connector.

14. CHECK POWER TRANSISTOR CONTROL SIGNAL CIRCUIT FOR SHORT

Check continuity between power transistor harness connector and ground.

Power transistor		—	Continuity
Connector	Terminal		
M112	2	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 18.
NO >> Repair harness or connector.

15. CHECK BLOWER MOTOR FEEDBACK SIGNAL

Change fan speed from 1 to 7, and check voltage between power transistor harness connector and ground.

+		−	Condition	Voltage (Approx.)
A/C auto amp.			Fan speed (manual) VENT mode	
Connector	Terminal			
M66	6	Ground	OFF	Battery voltage
			1st	10.0 V
			2nd	8.3 V
			3rd	7.0 V
			4th	5.7 V
			5th	4.3 V
			6th	3.0 V
			7th	1.0 V

Is the inspection result normal?

YES >> GO TO 18.
NO >> GO TO 16.

16. CHECK BLOWER MOTOR FEEDBACK SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect power transistor connector.
3. Disconnect A/C auto amp. connector.
4. Check continuity between A/C auto amp. harness connector and power transistor harness connector.

A/C auto amp.		Power transistor		Continuity
Connector	Terminal	Connector	Terminal	
M66	6	M112	1	Existed

Is the inspection result normal?

YES >> GO TO 17.
NO >> Repair harness or connector.

17. CHECK BLOWER MOTOR FEEDBACK SIGNAL CIRCUIT FOR SHORT

Check continuity between A/C auto amp. harness connector and ground.

A/C auto amp.		—	Continuity
Connector	Terminal		
M66	6	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 18.
NO >> Repair harness or connector.

18. REPLACE POWER TRANSISTOR

Replace power transistor. Refer to HAC-133, "Removal and Installation".

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 19.

19. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection (Blower Motor)

INFOID:0000000011254935

1. CHECK BLOWER MOTOR-I

1. Remove blower motor. Refer to VTL-18, "BLOWER MOTOR : Removal and Installation".
2. Check that there is not any mixing foreign materials in blower motor.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Remove foreign materials.

2. CHECK BLOWER MOTOR-II

Check that there is not breakage or damage in blower motor.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace blower motor. Refer to VTL-18, "BLOWER MOTOR : Removal and Installation".

3. CHECK BLOWER MOTOR-III

Check that blower motor turns smoothly.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace blower motor. Refer to VTL-18, "BLOWER MOTOR : Removal and Installation".

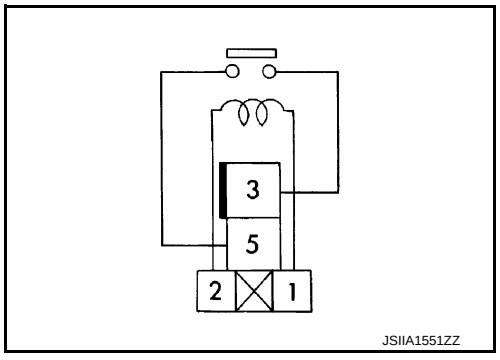
Component Inspection (Blower Relay)

INFOID:0000000011254936

1. CHECK BLOWER RELAY

1. Remove blower relay.
2. Check continuity between blower relay terminals 3 and 5 when the voltage is supplied between terminals 1 and 2.

Terminals		Voltage	Continuity
3	5	ON	Existed
		OFF	Not existed



Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace blower relay.

ECV (ELECTRICAL CONTROL VALVE)

Diagnosis Procedure

INFOID:0000000011254937

1.CHECK ECV (ELECTRICAL CONTROL VALVE) POWER SUPPLY

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

+		–	Voltage
Compressor			
Connector	Terminal		
F43	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 2.

2.CHECK FUSE

1. Turn ignition switch OFF.
2. Check 10 A fuse [No. 3, located in fuse block (J/B)].

NOTE:
Refer to PG-118, "Fuse, Connector and Terminal Arrangement".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the fuse after repairing the applicable circuit.

3.CHECK ECV POWER SUPPLY CIRCUIT FOR OPEN

1. Disconnect fuse block (J/B) connector.
2. Check continuity between compressor harness connector and fuse block (J/B) harness connector.

Compressor		Fuse block (J/B)		Continuity
Connector	Terminal	Connector	Terminal	
F43	3	M1	2A	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK ECV POWER SUPPLY CIRCUIT FOR SHORT

1. Disconnect A/C auto amp. connector.
2. Check continuity between compressor harness connector and ground.

Compressor		—	Continuity
Connector	Terminal		
F43	3	Ground	Not existed

Is the inspection result normal?

YES >> Check ignition power supply circuit. Refer to PG-60, "Wiring Diagram - IGNITION POWER SUPPLY -".
NO >> Repair harness or connector.

5.CHECK ECV CONTROL SIGNAL CIRCUIT FOR OPEN

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

Compressor		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
F43	2	M66	17	Existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair harness or connector.

6. CHECK ECV CONTROL SIGNAL CIRCUIT FOR SHORT

Check continuity between compressor harness connector and ground.

Compressor		—	Continuity
Connector	Terminal		
F43	2	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair harness or connector.

7. CHECK ECV

Check ECV. Refer to HAC-115, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.
NO >> Replace compressor. Refer to HA-32, "COMPRESSOR : Removal and Installation".

8. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection

INFOID:0000000011254938

1. CHECK ECV (ELECTRICAL CONTROL VALVE)

1. Turn ignition switch OFF.
2. Disconnect compressor connector.
3. Check continuity between compressor connector terminals.

Terminals		Condition	Resistance (kΩ)
		Temperature: °C (°F)	
2	3	20 (68)	10.1 – 11.1

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace compressor. Refer to HA-32, "COMPRESSOR : Removal and Installation".

MAGNET CLUTCH

Component Function Check

INFOID:0000000011254944

1.CHECK MAGNET CLUTCH OPERATION

Perform auto active test of IPDM E/R. Refer to PCS-11, "Diagnosis Description".

Does it operate normally?

YES >> INSPECTION END
NO >> Refer to HAC-116, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011254945

1.CHECK MAGNET CLUTCH

1. Turn ignition switch OFF.
2. Disconnect compressor 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 2.
NO >> Replace magnet clutch. Refer to HA-33, "MAGNET CLUTCH : Removal and Installation of Compressor Clutch".

2.CHECK MAGNET CLUTCH POWER SUPPLY CIRCUIT FOR OPEN

1. Disconnect IPDM E/R connector.
2. Check continuity between compressor harness connector and IPDM E/R harness connector.

Compressor		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F44	1	E5	8	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness and connector.

3.CHECK MAGNET CLUTCH POWER SUPPLY CIRCUIT FOR SHORT

Check continuity between compressor harness connector and ground

Compressor		Ground	Continuity
Connector	Terminal		
F44	1		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness and connector.

4.CHECK FUSE

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

NOTE:
Refer to PG-120, "Fuse, Connector and Terminal Arrangement".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> Replace the fuse after repairing the applicable circuit.

SYMPTOM DIAGNOSIS

AUTOMATIC AIR CONDITIONING SYSTEM

Symptom Table

INFOID:0000000011254946

NOTE:
Perform the self-diagnoses with CONSULT before performing the symptom diagnosis. If DTC is detected, perform the corresponding diagnosis.

Symptom		Corresponding malfunction part	Reference
• Air conditioning system does not activate. • Air conditioning system cannot be controlled (Multifunction switch). • Operation status of air conditioning system is not indicated on display.	Fail-safe activates	Multi AV system	• AV-119, "Symptom Table" (Base audio without navigation) • AV-393, "Symptom Table" (BOSE audio with navigation)
	Fail-safe does not activate	• Ignition power supply and ground circuit of A/C auto amp. • A/C auto amp.	HAC-106, "A/C AUTO AMP. : Diagnosis Procedure"
Discharge air temperature of driver side does not change.		Air mix door motor (driver side) system installation condition	Check air mix door motor (driver side) system is properly installed. Refer to HAC-130, "Exploded View".
Discharge air temperature of passenger side does not change.		Air mix door motor (passenger side) system installation condition	Check air mix door motor (passenger side) system is properly installed. Refer to HAC-130, "Exploded View".
Air outlet of driver side does not change (Except upper ventilation).		Mode door motor (driver side) system installation condition	Check mode door motor (driver side) system is properly installed. Refer to HAC-130, "Exploded View".
Air outlet of passenger side does not change (Except upper ventilation).		Mode door motor (passenger side) system installation condition	Check mode door motor (passenger side) system is properly installed. Refer to HAC-130, "Exploded View".
Air outlet of rear side does not change.		Rear mode door motor system installation condition	Check rear mode door motor system is properly installed. Refer to HAC-130, "Exploded View".
Air outlet of upper ventilator does not change.		Upper ventilator door motor system installation condition	Check upper ventilator door motor system is properly installed. Refer to HAC-130, "Exploded View".
Air inlet does not change.		Intake door motor system installation condition	Check intake door motor system is properly installed. Refer to HAC-130, "Exploded View".
Blower motor operation is malfunctioning.		• Power supply system of blower motor • The circuit between blower motor and power transistor. • The circuit between power transistor • Blower motor • Power transistor • A/C auto amp.	HAC-109, "Diagnosis Procedure"
Compressor does not operate.		• The circuit between magnet clutch and IPDM E/R • Magnet clutch • IPDM E/R (A/C relay) • The circuit between ECM and refrigerant pressure sensor • Refrigerant pressure sensor • CAN communication circuit • A/C auto amp.	HAC-119, "Diagnosis Procedure"

Symptom		Corresponding malfunction part	Reference
• Insufficient cooling. • No cool air comes out. (Air flow volume is normal.)		• Magnet clutch control system • Drive belt slipping • Cooler cycle • ECV (electrical control valve) • Air leakage from each duct • Temperature setting trimmer	HAC-121, "Diagnosis Procedure"
• Insufficient heating. • No warm air comes out. (Air flow volume is normal.)		• Engine cooling system • Heater hose • Heater core • Air leakage from each duct • Temperature setting trimmer	HAC-122, "Diagnosis Procedure"
Noise is heard when the A/C system operates.	During compressor operation	Cooler cycle	HA-28, "Symptom Table"
	During blower motor operation	• Mixing any foreign object in blower motor • Blower motor fan breakage • Blower motor rotation inferiority	HAC-113, "Component Inspection (Blower Motor)"
• Memory function does not operate normally. • The setting is not maintained. (It returns to the initial condition)		• Battery power supply and ground circuit of A/C auto amp. • A/C auto amp.	HAC-106, "A/C AUTO AMP. : Diagnosis Procedure"
Intelligent Key interlock function does not operate.		• Door lock system • CAN communication circuit • A/C auto amp.	HAC-123, "Diagnosis Procedure"

COMPRESSOR DOES NOT OPERATE

Description

INFOID:0000000011254948

Symptom: Compressor does not operate.

Diagnosis Procedure

INFOID:0000000011254949

NOTE:
- Perform self-diagnoses with CONSULT before performing symptom diagnosis. If DTC is detected, perform the corresponding diagnosis.
- Check that refrigerant is enclosed in cooler cycle normally. If refrigerant amount is shortage from proper amount, perform inspection of refrigerant leakage.

1.CHECK MAGNET CLUTCH OPERATION

Check magnet clutch. Refer to HAC-116, "Component Function Check".

Does it operate normally?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK REFRIGERANT PRESSURE SENSOR

Check refrigerant pressure sensor. Refer to EC-530, "Component Function Check" (VQ37VHR) or EC-1117, "Component Function Check" (VK56VD).

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK A/C AUTO AMP. OUTPUT SIGNAL

With CONSULT
Check “COMP REQ SIG” and “FAN REQ SIG” in “DATA MONITOR” mode of “HVAC” using CONSULT.

Monitor item	Condition		Status
COMP REQ SIG	“Climate” menu	ON	On
		OFF	Off
FAN REQ SIG	Blower motor	ON	On
		OFF	Off

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".

4.CHECK ECM INPUT SIGNAL

With CONSULT
Check “AIR COND SIG” and “HEATER FAN SW” in “DATA MONITOR” mode of “ECM” using CONSULT.

Monitor item	Condition		Status
COMP REQ SIG	“Climate” menu	ON	On
		OFF	Off
HEATER FAN SW	Blower motor	ON	On
		OFF	Off

Is the inspection result normal?

YES >> GO TO 5.
NO >> Check CAN communication system. Refer to LAN-25, "Trouble Diagnosis Flow Chart".

5.CHECK IPDM E/R INPUT SIGNAL

With CONSULT

1. Start engine.
2. Check “AC COMP REQ” in “DATA MONITOR” mode of “IPDM E/R” using CONSULT.

Monitor item	Condition		Status
AC COMP REQ	“Climate” menu	ON	On
		OFF	Off

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check CAN communication system. Refer to LAN-25, "Trouble Diagnosis Flow Chart".

INSUFFICIENT COOLING

Description

INFOID:0000000011254950

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

Diagnosis Procedure

INFOID:0000000011254951

NOTE:
Perform self-diagnoses with CONSULT before performing symptom diagnosis. If any DTC is detected, perform the corresponding diagnosis.

1. CHECK MAGNET CLUTCH OPERATION

1. Turn ignition switch ON.
2. Operate fan switch.
3. Touch “A/C”.
4. Check that “A/C” indicator turns ON. Check visually and by sound that compressor operates.
5. Touch “A/C” again.
6. Check that “A/C” indicator turns OFF. Check that compressor stops.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Perform diagnosis of “COMPRESSOR DOES NOT OPERATE” in “SYMPTOM DIAGNOSIS”. Refer to HAC-119, "Diagnosis Procedure".

2. CHECK DRIVE BELT

Check tension of drive belt. Refer to EM-22, "Checking" (VQ37VHR) or EM-182, "Checking" (VK56VD).

Is the inspection result normal?

YES >> GO TO 3.
NO >> Adjust or replace drive belt depending on the inspection results.

3. CHECK REFRIGERANT CYCLE PRESSURE

Connect recovery/recycling recharging equipment to the vehicle and perform pressure inspection with gauge. Refer to HA-28, "Trouble Diagnosis For Unusual Pressure".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace parts depending on the inspection results.

4. CHECK AIR LEAKAGE FROM EACH DUCT

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

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace parts depending on the inspection results.

5. CHECK SETTING OF TEMPERATURE SETTING TRIMMER

1. Check setting value of temperature setting trimmer. Refer to HAC-55, "AUTOMATIC AIR CONDITIONING SYSTEM : Temperature Setting Trimmer".
2. Check that temperature setting trimmer is set to “+ direction”.
   NOTE:
   The control temperature can be set with the setting of the temperature setting trimmer.
3. Set difference between set temperature and control temperature to “0”.

Is inspection result normal?

YES >> INSPECTION END
NO >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".

INSUFFICIENT HEATING

Description

INFOID:0000000011254952

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

Diagnosis Procedure

INFOID:0000000011254953

NOTE:
Perform self-diagnoses with CONSULT before performing symptom diagnosis. If any DTC is detected, perform the corresponding diagnosis.

1.CHECK COOLING SYSTEM

1. Check engine coolant level and check for leakage. Refer to CO-9, "Inspection" (VQ37VHR) or CO-37, "Inspection" (VK56VD).
2. Check reservoir tank cap. Refer to CO-9, "Inspection" (VQ37VHR) or CO-37, "Inspection" (VK56VD).
3. Check water flow sounds of the engine coolant. Refer to CO-10, "Refilling" (VQ37VHR) or CO-38, "Refilling" (VK56VD).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Refill engine coolant and repair or replace parts depending on the inspection results.

2.CHECK HEATER HOSE

Check installation of heater hose by visually or touching.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace parts depending on the inspection results.

3.CHECK HEATER CORE

1. Check temperature of inlet hose and outlet hose of heater core.
2. Check that 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 4.
NO >> Replace heater core. Refer to HA-46, "HEATER CORE : Removal and Installation".

4.CHECK AIR LEAKAGE FROM EACH DUCT

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

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace parts depending on the inspection results.

5.CHECK SETTING OF TEMPERATURE SETTING TRIMMER

1. Check setting value of temperature setting trimmer. Refer to HAC-55, "AUTOMATIC AIR CONDITIONING SYSTEM : Temperature Setting Trimmer".
2. Check that temperature setting trimmer is set to “– direction”.
   NOTE:
   The control temperature can be set by the temperature setting trimmer.
3. Set difference between the set temperature and control temperature to “0”.

Are the symptoms solved?

YES >> INSPECTION END
NO >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".

INTELLIGENT KEY INTERLOCK FUNCTION DOES NOT OPERATE

Description

INFOID:0000000011254954

Symptom: Intelligent Key interlock function does not operate.

Diagnosis Procedure

INFOID:0000000011254955

1.CHECK DOOR LOCK SYSTEM

Check door lock system Refer to DLK-69, "Work Flow".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-125, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

REMOVAL AND INSTALLATION

MULTIFUNCTION SWITCH

Removal and Installation

INFOID:0000000011254957

REMOVAL

Remove multifunction switch. Refer to the following.

- Refer to AV-137, "Removal and Installation". (BASE AUDIO WITHOUT NAVIGATION)
- Refer to AV-420, "Removal and Installation". (BOSE AUDIO WITH NAVIGATION)

INSTALLATION

Install in the reverse order of removal.

A/C AUTO AMP.

Exploded View

INFOID:0000000011254958

Refer to VTL-16, "Exploded View".

Removal and Installation

INFOID:0000000011254959

REMOVAL

CAUTION:

Before replacing A/C auto amp., perform “READ CONFIGURATION” to save or print current vehicle specification. Refer to HAC-53, "Description".

1. Remove glove box. Refer to IP-13, "Removal and Installation".
2. Remove fixing screws, and then remove A/C auto amp..

INSTALLATION

Note the following item, and then install in the reverse order of removal.

CAUTION:

Be sure to perform “WRITE CONFIGRATION” when replacing A/C auto amp.. Refer to HAC-53, "Work Procedure".

AMBIENT SENSOR

Removal and Installation

INFOID:0000000011254960

REMOVAL

1. Remove air duct. Refer to the following.
   - Refer to EM-29, "Removal and Installation". (VQ37VHR engine models)
   - Refer to EM-191, "Removal and Installation". (VK50VD engine models)
2. Disconnect harness connector, and then remove ambient sensor.

INSTALLATION

Install in the reverse order of removal.

IN-VEHICLE SENSOR

Removal and Installation

INFOID:0000000011254961

REMOVAL

1. Remove instrument lower panel LH. Refer to IP-13, "Removal and Installation".
2. Remove fixing screws, and then remove in-vehicle sensor.

INSTALLATION

Install in the reverse order of removal.

SUNLOAD SENSOR

Removal and Installation

INFOID:0000000011254962

REMOVAL

1. Remove front defroster grille. Refer to VTL-10, "FRONT DEFROSTER GRILLE : Removal and Installation". (Passenger side)
2. Disconnect harness connector, and then remove sunload sensor.

INSTALLATION

Install in the reverse order of removal.

INTAKE SENSOR

Exploded View

INFOID:0000000011254965

Refer to HA-43, "Exploded View".

Removal and Installation

INFOID:0000000011254966

REMOVAL

1. Remove evaporator assembly. Refer to HA-45, "HEATER & COOLING UNIT ASSEMBLY : Removal and Installation".
2. Remove intake sensor from evaporator assembly.

INSTALLATION

Note the following items, and then install in the reverse order of removal.

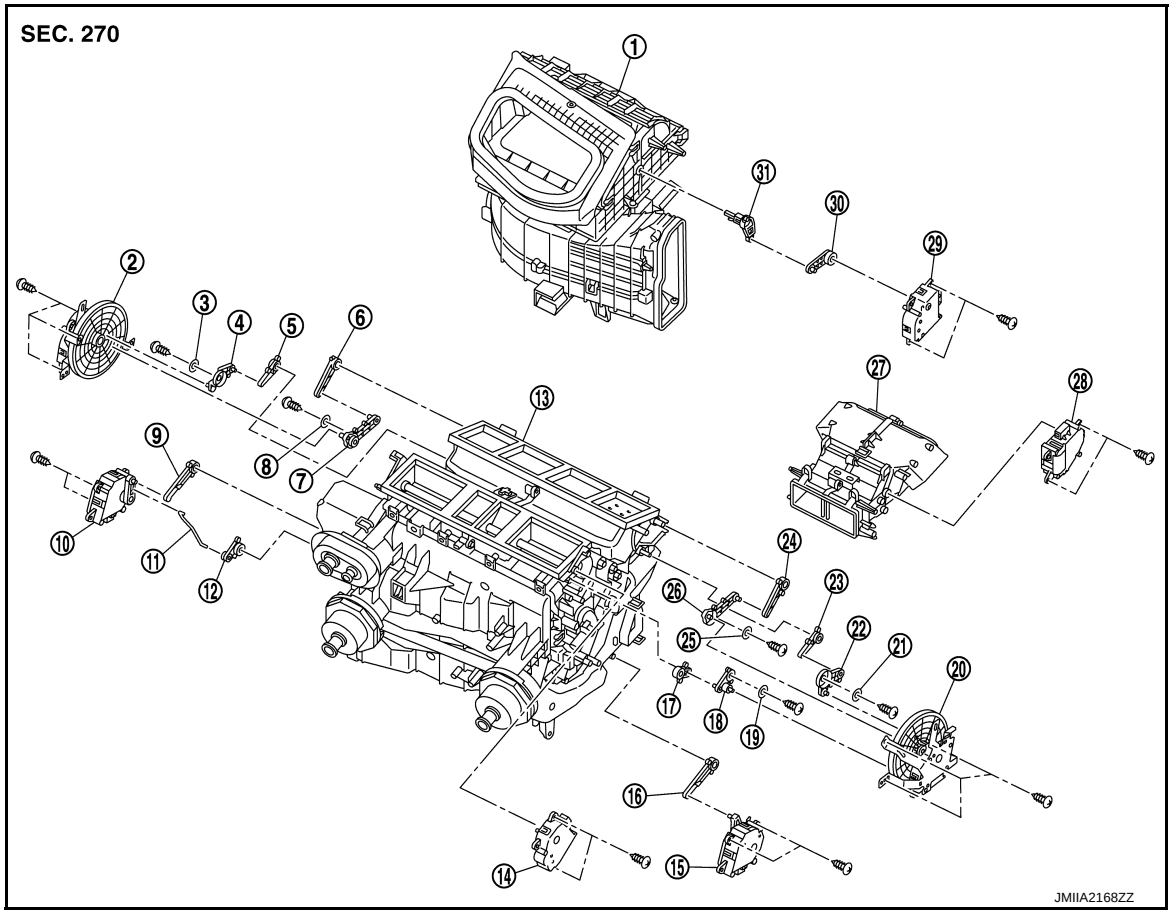
CAUTION:

- **Replace O-ring 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.**
- **Insert piping securely until a clicks 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. Refer to HA-19, "Leak Test".**

DOOR MOTOR

Exploded View

INFOID:0000000011254970



1. Blower unit
2. Mode door motor RH
3. Plate
4. Mode door link RH
5. Foot door lever RH
6. Ventilator door lever RH
7. Ventilator door link
8. Plate
9. Heater door lever
10. Air mix door motor
11. Rod
12. Air mix door lever
13. Heater & cooling unit assembly
14. Upper ventilator door motor
15. Air mix door motor LH
16. Heater door lever LH
17. Defroster door lever
18. Defroster door link
19. Plate
20. Mode door motor LH
21. Plate
22. Mode door link LH
23. Foot door lever LH
24. Ventilator door lever LH
25. Plate
26. Ventilator door link LH
27. Rear mode door case assembly
28. Rear mode door motor
29. Intake door motor
30. Intake door lever
31. Intake door link

MODE DOOR MOTOR

MODE DOOR MOTOR : Removal and Installation

INFOID:0000000011254971

REMOVAL

Driver Side

1. Remove A/C unit assembly. Refer to HA-45, "HEATER & COOLING UNIT ASSEMBLY : Removal and Installation".
2. Disconnect mode door motor connector.
3. Remove fixing screws, and then remove mode door motor LH.

Passenger Side

1. Remove A/C unit assembly. Refer to HA-45, "HEATER & COOLING UNIT ASSEMBLY : Removal and Installation".
2. Separate blower unit assembly and heater & cooling unit assembly.
3. Disconnect mode door motor connector.
4. Remove fixing screws, and then remove mode door motor RH.

INSTALLATION

Install in the reverse order of removal.

AIR MIX DOOR MOTOR

AIR MIX DOOR MOTOR : Removal and Installation

INFOID:0000000011254972

REMOVAL

Driver Side

1. Remove A/C unit assembly. Refer to HA-45, "HEATER & COOLING UNIT ASSEMBLY : Removal and Installation".
2. Disconnect air mix door motor connector.
3. Remove fixing screws, and then remove air mix door motor LH.

Passenger Side

1. Remove A/C unit assembly. Refer to HA-45, "HEATER & COOLING UNIT ASSEMBLY : Removal and Installation".
2. Separate blower unit assembly and heater & cooling unit assembly.
3. Disconnect air mix door motor connector.
4. Remove fixing screws, and then remove air mix door motor RH.

INSTALLATION

Install in the reverse order of removal.

INTAKE DOOR MOTOR

INTAKE DOOR MOTOR : Removal and Installation

INFOID:0000000011254973

REMOVAL

1. Remove A/C unit assembly. Refer to HA-45, "HEATER & COOLING UNIT ASSEMBLY : Removal and Installation".
2. Disconnect intake door motor connector.
3. Remove fixing screws, and then remove intake door motor.

INSTALLATION

Install in the reverse order of removal.

UPPER VENTILATOR DOOR MOTOR

UPPER VENTILATOR DOOR MOTOR : Removal and Installation

INFOID:0000000011254974

REMOVAL

1. Remove A/C unit assembly. Refer to HA-45, "HEATER & COOLING UNIT ASSEMBLY : Removal and Installation".
2. Disconnect upper ventilator door motor connector.
3. Remove fixing screws, and then remove upper ventilator door motor.

INSTALLATION

Install in the reverse order of removal.

REAR MODE DOOR MOTOR

REAR MODE DOOR MOTOR : Removal and Installation

INFOID:0000000011254975

REMOVAL

1. Remove instrument panel assembly. Refer to IP-13, "Removal and Installation".
2. Disconnect rear mode door motor connector.
3. Remove fixing screws, and then remove rear mode door motor.

INSTALLATION

Install in the reverse order of removal.

POWER TRANSISTOR

Exploded View

INFOID:0000000011254976

Refer to VTL-16, "Exploded View".

Removal and Installation

INFOID:0000000011254977

REMOVAL

1. Remove instrument lower cover. Refer to IP-13, "Removal and Installation".
2. Remove fixing screws, and then remove power transistor.

INSTALLATION

Install in the reverse order of removal.