SECTION HEATER & AIR CONDITIONING CONTROL SYSTEM

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< PRECAUTION > PRECAUTION PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT **PRE-TENSIONER**" INFOID:000000008132136

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. D 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.

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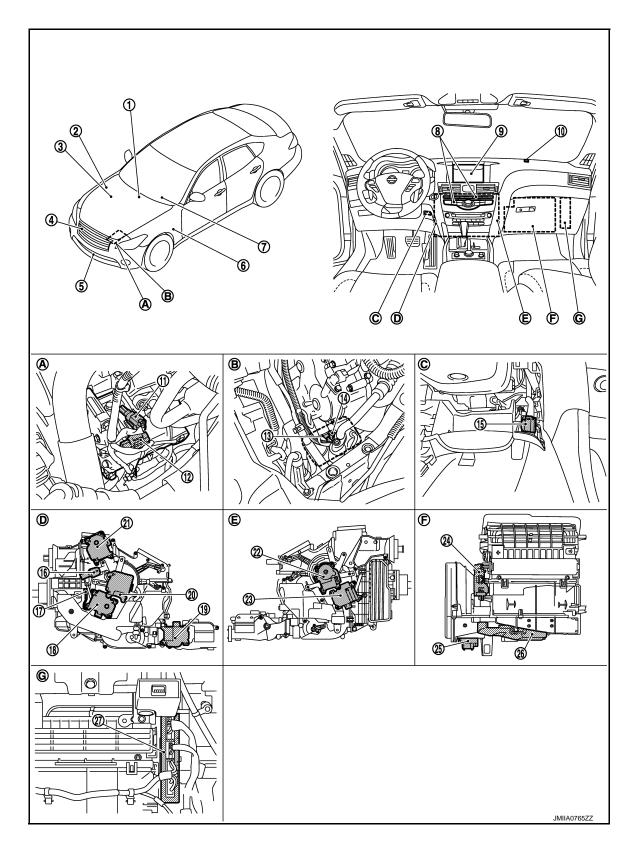
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SYSTEM DESCRIPTION

COMPONENT PARTS

AUTOMATIC AIR CONDITIONING SYSTEM

AUTOMATIC AIR CONDITIONING SYSTEM : Component Parts Location INFOLD.0000008132137



COMPONENT PARTS

[AUTOMATIC AIR CONDITIONING]

1.	AV control unit Refer to <u>AV-11, "Component Parts</u> <u>Location"</u> (base audio without navi- gation) or <u>AV-129, "Component Parts</u> <u>Location"</u> (BOSE audio with naviga- tion).	2.	IPDM E/R Refer to <u>PCS-5, "IPDM E/R : Compo-</u> nent Parts Location".	3.	ECM VQ37VHR: Refer to <u>EC-37, "EN-</u> <u>GINE CONTROL SYSTEM : Com-</u> <u>ponent Parts Location"</u> . VK56VD: Refer to <u>EC-948, "EN-</u> <u>GINE CONTROL SYSTEM : Com-</u> <u>ponent Parts Location"</u> .	A
4.	Refrigerant pressure sensor	5.	Ambient sensor	6.	BCM BCS-4, "BODY CONTROL SYS- TEM : Component Parts Location".	С
7.	Combination meter Refer to <u>MWI-6, "METER SYSTEM :</u> <u>Component Parts Location"</u> .	8.	Multifunction switch	9.	Display	D
10.	Sunload sensor	11.	ECV (Electrical Control Valve)	12.	Magnet clutch	
13.	Magnet clutch	14.	ECV (Electrical Control Valve)	15.	In-vehicle sensor	Е
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	F
25.	Power transistor	26.	Blower motor	27.	A/C auto amp.	
Α.	Compressor (VQ37VHR)	В.	Compressor (VK56VD)	C.	Lower instrument panel LH is re- moved	G
D.	Left side of heater & cooling unit as- sembly	E.	Right side of heater & cooling unit as- sembly	F.	Rear side of blower unit	0
G.	Instrument lower panel RH is re- moved					Н

INFOID:000000008132138

AUTOMATIC AIR CONDITIONING SYSTEM : Component Description

HAC

Cor	mponent parts	Description
Blower motor R		Refer to <u>HAC-11</u> .
Blower unit	Intake door motor	Refer to <u>HAC-11</u> .
	Power transistor	Refer to <u>HAC-11</u> .
	ECV (Electrical Control Valve)	ECV (electrical control valve) is installed on the compressor and controls it for emitting appropriate amount of refrigerant when necessary.
Compressor	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.
	Air mix door motor (Driver side)	Refer to <u>HAC-12</u> .
	Air mix door motor (Passenger side)	Refer to <u>HAC-12</u> .
	Aspirator	Refer to <u>HAC-12</u> .
Heater & cooling unit	Intake sensor	Intake sensor measures evaporator fin temperature. This sensor uses thermistor that decreases electrical resistance as temperature increases.
assembly	Mode door motor (Driver side)	Refer to <u>HAC-12</u> .
	Mode door motor (Passenger side)	Refer to <u>HAC-12</u> .
	Rear mode door motor	Refer to <u>HAC-12</u> .
	Upper ventilator door motor	Refer to <u>HAC-13</u> .
Ambient sensor		Ambient sensor measures ambient air temperature. This sensor uses ther- mistor 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

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONING]

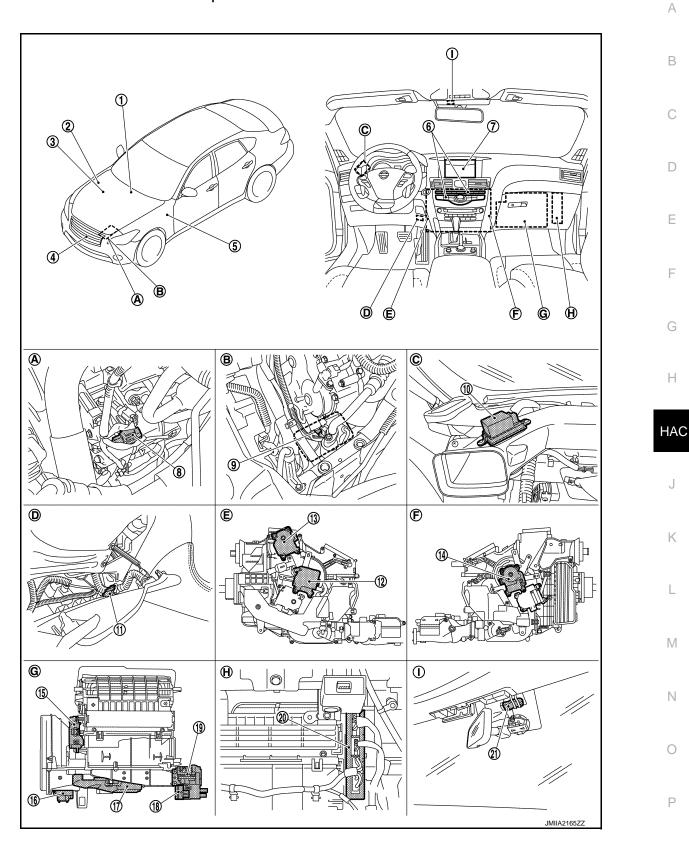
Component parts	Description
A/C auto amp.	A/C auto amp. controls air conditioning system by inputting and calculating signals from each sensor and each switch. A/C auto amp. has self-diagnosis function. Diagnosis of air conditioning system can be performed quickly.
BCM	BCM transmits key ID signal to 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 temper- ature 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 communica- tion 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 <u>HAC-13</u> .
Sunload sensor	Sunload sensor measures sunload amount. This sensor is a dual system so that sunload for driver side and passenger side are measured separate- ly. This sensor converts sunload amount to voltage signal by photodiode and transmits to A/C auto amp.

FOREST AIR SYSTEM

COMPONENT PARTS

[AUTOMATIC AIR CONDITIONING]

FOREST AIR SYSTEM : Component Parts Location



COMPONENT PARTS

[AUTOMATIC AIR CONDITIONING]

- 1. AV control unit Refer to AV-129, "Component Parts Location".
- 2. IPDM E/R Refer to PCS-5, "IPDM E/R : Component Parts Location".
- Exhaust gas/outside odor detecting 5. 4. sensor
- 7. Display
- 10. Ionizer
- 13. Upper ventilator door motor
- 16. Power transistor
- 19. Aroma motor
- Α. Compressor (VQ37VHR)
- D. Instrument lower panel LH is removed
- G. Rear side of blower unit

- 3. ECM
- BCM 6. BCS-4, "BODY CONTROL SYSTEM : Component Parts Location".
- Magnet clutch 8.
- 11. Inside odor detecting sensor
- 14. Mode door motor (Passenger side)
- 17. Blower motor
- 20. A/C auto amp.
- В. Compressor (VK56VD)
- Ε. Left side of heater & cooling unit assembly
- Instrument lower panel RH is re-Η. moved

- VQ37VHR: Refer to EC-37, "EN-GINE CONTROL SYSTEM : Component Parts Location". VK56VD: Refer to EC-948, "EN-GINE CONTROL SYSTEM : Component Parts Location".
- Multifunction switch
- 9. Magnet clutch
- 12. Mode door motor (Driver side)
- 15. Intake door motor
- 18. Aroma cartridge
- 21. Humidity sensor

I.

- C. Instrument panel assembly is removed
- F. Right side of heater & cooling unit assembly
 - Front camera finisher is removed

FOREST AIR SYSTEM : Component Description

Component parts		Description		
	Aroma cartridge	Aroma cartridge generates 2 kinds of aromas, leaf scent and fragrant wood, which have proven relaxing effects.		
	Aroma motor	Refer to <u>HAC-11</u> .		
Blower unit	Blower motor	Refer to <u>HAC-11</u> .		
	Intake door motor	Refer to <u>HAC-11</u> .		
	Power transistor	Refer to <u>HAC-11</u> .		
Compressor 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. 		
	Mode door motor (Driver side)	Refer to <u>HAC-12</u> .		
Heater & cooling unit as- sembly	Mode door motor (Passen- ger side)	Refer to <u>HAC-12</u> .		
	Upper ventilator door mo- tor	Refer to <u>HAC-13</u> .		
AV control unit		AV control unit transmits A/C switch operation signal to A/C auto amp. via CAN communication line.		
A/C auto amp.		A/C auto amp. controls Forest Air system by inputting and calculating signals from each sensor and each switch. A/C auto amp. has self-diagnosis function. Diagnosis of Forest Air 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 Forest Air system. Display has touch panel function that can be used to control Forest Air system.		
ECM		ECM controls compressor according to status of engine and refrigerant.		
Exhaust gas/outside odor detecting sensor		Exhaust gas/outside odor detecting sensor measures unpleasant odor out- side of passenger room. In addition to previous exhaust gas detection func- tion, unpleasant odor in ambient atmosphere is measured.		

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONING]

Component parts	Description	
Humidity sensor	Humidity sensor measures windshield temperature and passenger room hu- midity so that fogging on windshield is judged.	
Inside odor detecting sensor	Inside odor detecting sensor measures odor of cigarettes, foods, and other objects in passenger room.	
lonizer	lonizer generates an approximately equal proportional amount of positive and negative ions in the air.	
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 (FOREST switch)	FOREST switch is located in multifunction switch. Forest Air system can be operated when FOREST switch is pressed.	

BLOWER UNIT

BLOWER UNIT : Aroma Motor

- Aroma motor consists of motor that drives door and PBR (Potentio Balance Register) that detects door position.
- Motor operates aroma 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 : Blower Motor

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

- 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

• 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

Brush motor Brush motor Coil N Rotation direction of coil Magnet S Commutator Current 777 JMIIA0793GB

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INFOID:000000008132143

INFOID:000000008132144

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

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

- 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)

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INFOID:000000008132149

INFOID:000000008132151

INFOID:000000008132152

- 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

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 &

HEATER & COOLING UNIT ASSEMBLY : Mode Door Motor (Driver Side) INFOLD:000000008132150

- 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.

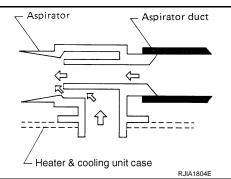
HEATER & COOLING UNIT ASSEMBLY : Mode Door Motor (Passenger side)

- sists of motor that drives door and PBR (Potentio Balance Register)
- 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

- 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.

HAC-12



[AUTOMATIC AIR CONDITIONING]

COMPONENT PARTS < SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONING]

• 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

- 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

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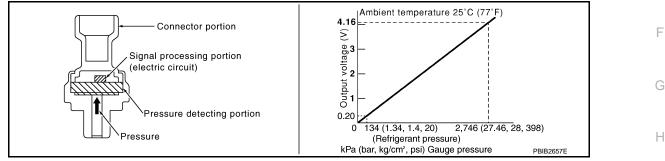
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Description

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.

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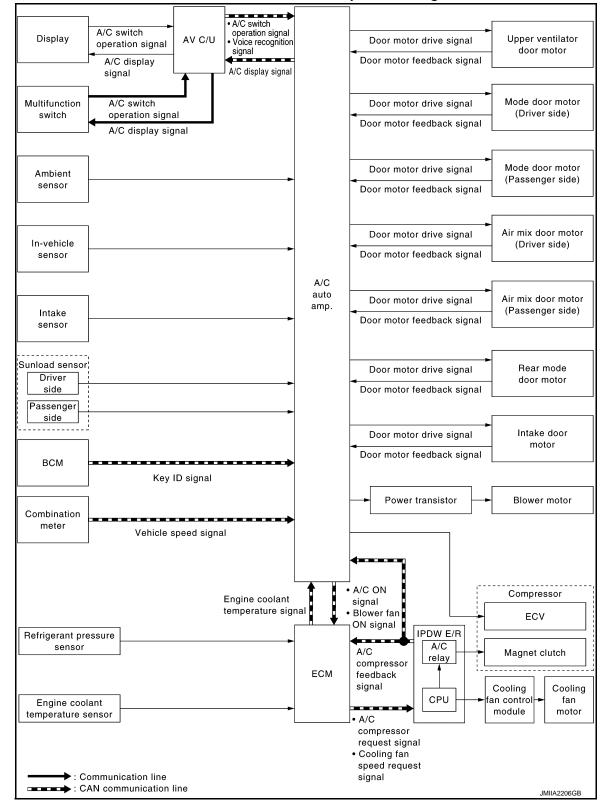
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< SYSTEM DESCRIPTION >

SYSTEM AUTOMATIC AIR CONDITIONING SYSTEM

AUTOMATIC AIR CONDITIONING SYSTEM : System Diagram



[AUTOMATIC AIR CONDITIONING]

AUTOMATIC AIR CONDITIONING SYSTEM : System Description	:000000008132158	Λ
 Automatic air conditioning system is controlled by each function of A/C auto amp., ECM, IPDM BCM. 	I E/R and	~
Control by A/C auto amp. - <u>HAC-15, "AUTOMATIC AIR CONDITIONING SYSTEM : Air Flow Control"</u> - <u>HAC-16, "AUTOMATIC AIR CONDITIONING SYSTEM : Air Inlet Control"</u>	E	3
 HAC-16, "AUTOMATIC AIR CONDITIONING SYSTEM : Air Inlet Control" HAC-17, "AUTOMATIC AIR CONDITIONING SYSTEM : Air Outlet Control" HAC-17, "AUTOMATIC AIR CONDITIONING SYSTEM : Compressor Control" 	C	2
 <u>HAC-17, "AUTOMATIC AIR CONDITIONING SYSTEM : Door Control"</u> <u>HAC-21, "AUTOMATIC AIR CONDITIONING SYSTEM : Temperature Control"</u> <u>HAC-21, "AUTOMATIC AIR CONDITIONING SYSTEM : Intelligent Key Interlock Function"</u> Correction for input value of each sensor 	C)
Ambient sensor (setting temperature correction)	E	-
 A/C auto amp. controls passenger room temperature so that the optimum level always matches the ature level that passenger may feel. Correction is applied to the target temperature that is set using ature 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 (c and passenger side) 	driver side	3
 Intake sensor (intake temperature correction) A/C auto amp. performs correction to change recognition intake temperature of A/C auto amp. mo when difference is larger between recognition intake temperature and intake temperature from in perature sensor. The correction is performed to change recognition intake temperature more slo difference is smaller. 	itake tem-	-
	HA	Ą١
 Sunload sensor (sunload amount correction) Sunload amount from sunload sensor is corrected for each air conditioning control (driver side and ger side). 		A
 Sunload sensor (sunload amount correction) Sunload amount from sunload sensor is corrected for each air conditioning control (driver side and ger side). A/C auto amp. performs correction to change recognition sunload amount of A/C auto amp. slo sunload amount changes excessively, for example when entering or exiting a tunnel. 	d passen-	J
 Sunload amount from sunload sensor is corrected for each air conditioning control (driver side and ger side). A/C auto amp. performs correction to change recognition sunload amount of A/C auto amp. slo 	d passen-	J
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DESCRIPTION

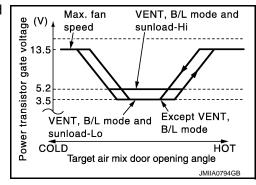
< SYSTEM DESCRIPTION >

< SYSTEM 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.

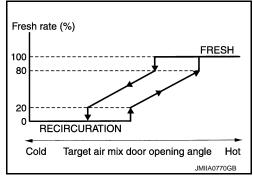
FAN SPEED CONTROL AT VOICE RECOGNITION

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:000000008132160

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



[AUTOMATIC AIR CONDITIONING]

AUTOMATIC AIR CONDITIONING SYSTEM : Air Outlet Control

INFOID:000000008132161

INFOID:000000008132162

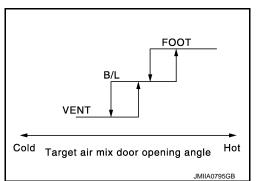
А

F

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HAC

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

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.

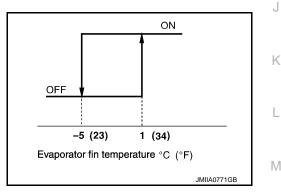
COMPRESSOR PROTECTION CONTROL AT PRESSURE MALFUNCTION

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/cm², 452 psi) or more (When the engine speed is less than 1,500 rpm)
- 2.74 MPa (27.40 bar, 27.9 kg/cm², 397 psi) or more (When the engine speed is 1,500 rpm or more)
 0.12 MPa (1.20 bar, 1.2 kg/cm², 17 psi) or loss
- 0.12 MPa (1.20 bar, 1.2 kg/cm², 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 <u>EC-61, "AIR CONDITIONING CUT CONTROL : System</u> <u>Description"</u> (VQ37VHR) or <u>EC-981, "AIR CONDITIONING CUT CONTROL : System Description"</u> (VK56VD) for details.

AUTOMATIC AIR CONDITIONING SYSTEM : Door Control

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

HAC-17

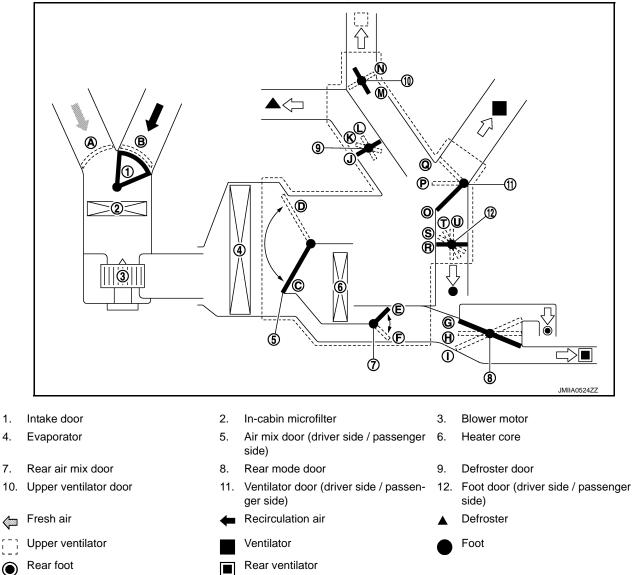
< SYSTEM DESCRIPTION >

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.



< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONING]

With Forest Air

	Door position																			
S					er door	de door	ilator door	door			nix door									
Switch position				Driver side	Passenger side	Driver side	Passenger side	Defroster door	Rear mode door	Upper ventilator door	Intake door	Driver side	Passenger side	Rear air mix door						
AUTO switch	ON	-	-			AL	ЛО	1	1			AL	ЛО							
		VENT	7		0		R	J	G			—								
MODE switch (Driver	DUAL: OFF	B/L	3		Р		Т	J	Н			_								
side)	DUAL. OFF	FOOT	. ,		Q		U	К	I			_								
		D/F	ġ.		Q		Т	L	I											
		VENT	*	0	_	R	_	J												
MODE switch (Driver	DUAL: ON	B/L	33	Р	-	Т	—	J			-	_								
side)	DOME. ON	FOOT	;	Q	—	U	—	К			-									
		D/F		1	Q		Т	L		1	-									
		VENT	7	_	0	_	R	_	G			—								
MODE switch (Pas- senger side)	DUAL: ON	B/L	3		Р	—	Т	—	Н			—								
		FOOT	3	_	Q	_	U	_	I			—								
DEF switch	ON	ŧ			Q		R	L	Ι			_								
	OFF										1									
Upper Vent		ON OFF				-				M N		-								
	FRE					-				IN	В	-								
Intake switch [*]	REC	6									A									
	NEO -		-₩- (60°F)	-			S				~		<u>с</u>	E						
Temperature control switch (Driver side)	DUAL: OFF	19 5°C 21					_						AUTO							
		32°C	(90°F)				-	_					D	F						
		18°C	(60°F)	-		S			_			С	-							
Temperature control switch (Driver side)								18.5°C – 31.5°C (61°F – 89°F)					-	_				AUT O	-	_
	DUAL: ON		(90°F)				-					D	-							
Temperature control switch (Passenger		18.5°C -	(60°F) - 31.5°C				S						C AL	E JTO						
side)			– 89°F) (90°F)										D	F						
OFF switch		OFF	(,		Q	1	U	К	1											

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

< SYSTEM DESCRIPTION >

Without Forest Air

								D	oor posi	tion					
Switch position					Ventilator door		F 001 0001	er door	de door	lator door	door	Air mix door		nix door	
				Driver side	Passenger side	Driver side	Passenger side	Defroster door	Rear mode door	Upper ventilator door	Intake door	Driver side	Passenger side	Rear air mix door	
AUTO switch	ON	-)	-			AL	ЛО			—		AU	ГО		
		VENT	7		0		R	J	G		I	_			
MODE switch	DUAL:	B/L	5		Р		Т	J	н			_			
(Driver side)	OFF	FOOT	Ĺ.		Q		U	К	I			_			
		D/F	*		Q		Т	L	I			_			
		VENT	4	0	_	R	_	J		1		_			
MODE switch	DUAL:	B/L	3	Р	_	Т		J				_			
(Driver side)	ON	FOOT	ć.	Q	_	U	_	К				_			
		D/F	*		Q		Т	L				_			
		VENT	ij	_	0	_	R	_	G			_			
MODE switch (Passenger side)	DUAL: ON	B/L	3	_	Р		Т	_	Н			_			
(i acconger clac)	on	FOOT	j.	_	Q		U	_	I			_			
	ON	<u> </u>			Q		R	L	I			_			
DEF switch	OFF	ŧ				1			_	I					
Upper Vent		ON								М			_		
		OFF		_					Ν			-			
FRE switch [*]	ON	Ś	-								В		_		
REC switch [*]	ON	ß					_				A		_	1	
Temperature		18°C		— S —					- C			E			
control switch	DUAL:	ol switch	- 18.5°C - 61°F)	- 31.5°C - 89°F)				-						AUTO	
(Driver side)		32°C					-					C)	F	
		18°C	(60°F)	-	_	S			_			С	-		
Temperature control switch (Driver side)		- 18.5°C - 61°F)	- 31.5°C - 89°F)				-					AUTO	-	_	
(Briver Side)	DUAL:	32°C (90°F)					-					D	-		
Temperature	ON	18°C			_		S						С	E	
control switch (Passenger side)		- 18.5°C - 61°F)	- 31.5°C - 89°F)					—					AL	ТО	
(32°C	(90°F)			1			1	T			D	F	
OFF switch		OFF			Q		U	К	Ι				-		

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

AIR DISTRIBUTION

				Discharge a	ir flow							-									
							Air ou	tlet / distr	ibution			-									
Mode		C	ondition			VE	NT		FC	OT		-									
position			JIUIUUI	Front Upper Rear Front				Front	_	Rear	DEF										
					Center	Side	opper	Neai	TION	Near											
			Temperature	18°C (60°F)	34.5%	34.5%	10.0%	13.0%	8.0%	_	—	-									
7		-				Uppor	Uppor	Uppor	Uppor	Uppor	Uppor	control switch (driver side)	Other than 18°C (60°F) ^{*1}	38.0%	38.0%	11.0%	13.0%	_	_	_	-
Ÿ	• DUAL: OFF					-		24.0%	24.0%	10.0%	12.0%	19.0%	11.0%	—	-						
ن.	Rear venti- lator: Close		-	_	_	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%	-									
₩ *2	1		_		_	9.0%	_	7.0%	_	20.0%	64.0%	-									

• *1: 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.

 *2: During automatic defogging control (with Forest Air). Refer to <u>HAC-25, "FOREST AIR SYSTEM : Auto-</u> matic <u>Defogging Control"</u>.

AUTOMATIC AIR CONDITIONING SYSTEM : Temperature Control

- Н

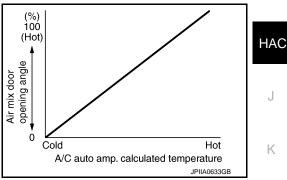
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- When ignition switch is in the ON position, A/C auto amp. always automatically controls temperature regardless of air conditioning operational state.
- A/C auto amp. calculates the target air mix door opening angle depending on set temperature, in-vehicle 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:000000008132165

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
	AUTO switch (ON / OFF)
	Setting temperature (Setting value)
Multifunction switch	Air flow (Setting value)
	Air inlet (FRE / REC)
	Air outlet (VENT / B/L / FOOT / D/F / DEF)

< SYSTEM DESCRIPTION >

Operation	Conditions			
	"A/C" (ON / OFF)			
"Climate" menu screen	"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.
- 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:000000008485011

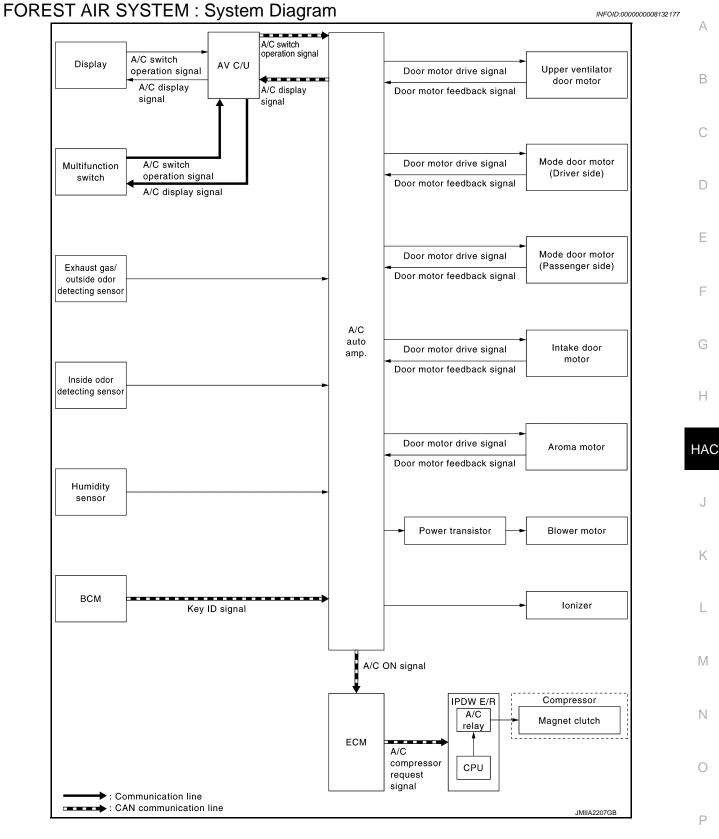
FAIL-SAFE FUNCTION

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
FOREST AIR SYSTEM	



[AUTOMATIC AIR CONDITIONING]



FOREST AIR SYSTEM : System Description

INFOID:000000008132178

 Forest Air system controls passenger room air. It maintains the cleanliness of the passenger room air using a in-cabin microfilter and a combination of each of the following functions. Passenger room air is also controlled for dehumidification, air flow, fragrance, and others, for providing comfortable space in the passenger room.
 NOTE:

< SYSTEM DESCRIPTION >

- Plasmacluster[™] ion technology developed by Sharp Corporation is installed in this item.
- Plasmacluster[™] is a trademark of Sharp Corporation.
- HAC-24, "FOREST AIR SYSTEM : Air Flow Control (Inside Odor Detecting Mechanism)"
- HAC-24, "FOREST AIR SYSTEM : Aroma Diffuser Control"
- HAC-25, "FOREST AIR SYSTEM : Automatic Defogging Control"
- HAC-25, "FOREST AIR SYSTEM : Automatic Intake Control (Exhaust Gas/Outside Odor Detecting Mechanism)"
- HAC-25, "FOREST AIR SYSTEM : Breezy Air Control"
- HAC-26, "FOREST AIR SYSTEM : Plasmacluster Control"
- Setting of Forest Air system can be memorized for each Intelligent Key. Refer to <u>HAC-26</u>, "FOREST AIR <u>SYSTEM</u> : Intelligent Key Interlock Function".
- "Forest Air setting" menu is displayed on screen that can operate and adjust Forest Air system [aroma diffuser control, automatic defogging control, automatic intake control (exhaust gas/outside odor detecting mechanism) and breezy air].
- "Forest Air Info" menu is displayed on screen that can be used to check operation status of Forest Air system visually.
- Various operations of Forest Air 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 indication information that is received.

FOREST AIR SYSTEM : Air Flow Control (Inside Odor Detecting Mechanism)

INFOID:000000008132179

DESCRIPTION

Inside odor detecting sensor detects passenger room odor (odor of cigarettes, foods, and other objects) in air flow through aspirator. Odor, when it is detected, is removed quickly by slightly increasing air flow and by facil-

itating supply amount of Plasmacluster[™] ions to passenger room and collection effect of in-cabin microfilter.

OPERATION DESCRIPTION

- Air flow control (inside odor detecting mechanism) operates when odor in passenger room is detected while FOREST switch is ON.
- Control status is displayed on "Forest Air Info" screen. Refer to <u>HAC-32, "FOREST AIR SYSTEM : Switch</u> <u>Name and Function"</u>.

NOTE:

- ON/OFF of air flow control (inside odor detecting mechanism) can be changed using "BLOWER MOTOR SETTING" in "WORK SUPPORT" mode of CONSULT. Refer to <u>HAC-68. "FOREST AIR SYSTEM : Air Flow</u> <u>Control (Inside Odor Detecting Mechanism) Setting"</u>.
- Air flow control (inside odor detecting mechanism) does not operate when ambient temperature is -2°C (28°F) or less.

FOREST AIR SYSTEM : Aroma Diffuser Control

INFOID:000000008132180

DESCRIPTION

2 kinds of aromas, leaf scent and fragrant wood, which have proven relaxing effects, are supplied alternately and intermittently to passenger room by outlet air flow of air conditioning system.

OPERATION DESCRIPTION

- Aroma diffuser control operates automatically when FOREST switch is ON and passenger room temperature is in stable status.
- For initial 15 minutes of operation, intermittent operation operates for aroma diffusing. For next 45 minutes, operation stops, preventing effect reduction caused by habituation of sense of smell. The 2 aromas switch alternately every 1 hour.
- Control status is displayed on "Forest Air Info" screen. Refer to <u>HAC-32, "FOREST AIR SYSTEM : Switch</u> <u>Name and Function"</u>.

NOTE:

- ON/OFF of aroma diffuser control can be changed by "Aroma" in "Forest Air Setting" menu. Refer to <u>HAC-</u><u>35</u>, "FOREST AIR SYSTEM : Menu Displayed by Pressing Each Switch".
- Details of aroma diffuser control can be changed using "AROMA SETTING" and "AROMA DIFFUSER SET-TING" in "WORK SUPPORT" mode of CONSULT. Refer to <u>HAC-67</u>, "FOREST AIR SYSTEM : Aroma Fragrance Intensity Setting" and <u>HAC-67</u>, "FOREST AIR SYSTEM : Aroma Fragrance Type Setting".

HAC-24

[AUTOMATIC AIR CONDITIONING]

FOREST AIR SYSTEM : Automatic Defogging Control INFOID:00000008132181 А DESCRIPTION A/C auto amp. detects fogging on windshield and front side window by calculating dew point temperature from glass temperature, passenger room temperature, and passenger room humidity that are detected by В humidity sensor located on upper windshield. Fogging prevention mode (fresh air intake, compressor ON, and mode position DEF) automatically operates when fogging is detected. Previously, dehumidification control continuously operates for preventing fogging. Now, dehumidification control operates only when it is necessary. Excessive dehumidification in passenger room is prevented. **OPERATION DESCRIPTION** D This control operates when fogging is detected while AUTO switch is ON. Control status is displayed on "Forest Air Info" screen. Refer to <u>HAC-32, "FOREST AIR SYSTEM : Switch</u> Name and Function". Е While automatic defogging function is activated, indicator lamp of DEF switch turns ON. When A/C auto amp. receives A/C operation signal (DEF switch ON) while automatic defogging function is activated, automatic defogging function stops, and does not activate for a specified period of time. NOTE: F ON/OFF and ON/OFF timing of automatic defogging control can be changed by "Auto Defogging Sensitivity" in "Forest Air Setting" menu. Refer to HAC-35, "FOREST AIR SYSTEM : Menu Displayed by Pressing Each Switch". Automatic defogging control does not operate when ambient temperature is -2°C (28°F) or less. FOREST AIR SYSTEM : Automatic Intake Control (Exhaust Gas/Outside Odor Detecting Mechanism) Н INFOID:000000008132182 DESCRIPTION HAC In addition to air inlet automatic control of automatic air conditioning system, A/C auto amp. controls automatically air inlet according to signal from exhaust gas/outside odor detecting sensor, so that unpleasant outside odor does not enter in passenger room. J **OPERATION DESCRIPTION** Air inlet switches to recirculation when exhaust gas or outside odor is detected while FOREST switch is ON. After that, air inlet switches to fresh air intake when exhaust gas or outside odor becomes not detectable. Control status is displayed on "Forest Air Info" screen. Refer to <u>HAC-32, "FOREST AIR SYSTEM : Switch</u> Κ Name and Function". NOTE: · Sensitivity of exhaust gas/outside odor detecting sensor can be changed by "Outside/Inside Air Mix" in "For-L est Air Setting" menu. Refer to HAC-35, "FOREST AIR SYSTEM : Menu Displayed by Pressing Each Switch". Automatic intake control (exhaust gas/outside odor detecting mechanism) does not operate when ambient temperature is -2°C (28°F) or less. In this case, control is only for control of automatic air inlet of automatic M air conditioning system. FOREST AIR SYSTEM : Breezy Air Control INFOID:000000008132183 Ν DESCRIPTION Air conditioning air flow similar to the air flow of a natural breeze is achieved through the random control of air flow switching timing from the upper ventilator and center ventilator. OPERATION DESCRIPTION This control automatically operates when FOREST switch is ON, air outlet mode is VENT or FOOT, and passenger room temperature is in stable status. Control status is displayed on "Forest Air Info" screen. Refer to HAC-32, "FOREST AIR SYSTEM : Switch Name and Function". NOTE: ON/OFF of breezy air control can be changed by "Breeze Mode" in "Forest Air Setting" menu. Level of breezy air can be selected by "Fan Speed Variance" in "Forest Air Setting" menu. Refer to HAC-35, "FOR-EST AIR SYSTEM : Menu Displayed by Pressing Each Switch".

• Breezy air control does not operate when air outlet is B/L, D/F, or DEF mode.

< SYSTEM DESCRIPTION >

HAC-25

FOREST AIR SYSTEM : Plasmacluster Control

DESCRIPTION

Plasmacluster[™] control eliminates microbes and reduces odor on interior surface by including high density Plasmacluster[™] ion in air conditioning outlet air flow.

OPERATION DESCRIPTION

- Plasmacluster[™] control operates by interlocking to blower motor. Plasmacluster[™] control operates when blower motor operates.
- Control status is displayed on air conditioning system display screen and "Forest Air Info" screen. Refer to <u>HAC-32, "FOREST AIR SYSTEM : Switch Name and Function"</u>.

NOTE:

- Plasmacluster[™] ion technology developed by Sharp Corporation is installed in this item.
- Plasmacluster[™] is a trademark of Sharp Corporation.

FOREST AIR SYSTEM : Intelligent Key Interlock Function

INFOID:000000008132185

DESCRIPTION

 Setting value of Forest Air system when ignition switch is previously OFF can be memorized for each Intelligent Key. Forest Air 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	FOREST switch (ON / OFF)
	"Breeze Mode" (ON / OFF)
	"Fan Speed Variance" (Low / High)
"Forest Air Setting" menu screen	"Outside/Inside Air Mix" (Setting value)
	"Auto Defogging Sensitivity" (Setting value)
	"Aroma" (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 ("Breeze Mode" status, "Aroma" status, and others) of Forest Air 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 Forest Air 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.

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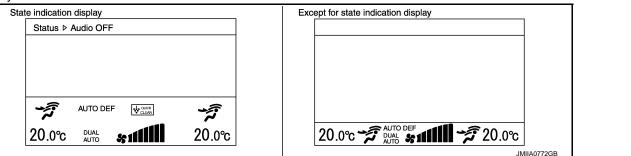
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OPERATION AUTOMATIC AIR CONDITIONING SYSTEM

AUTOMATIC AIR CONDITIONING SYSTEM : Switch Name and Function INFOLD:00000008132186

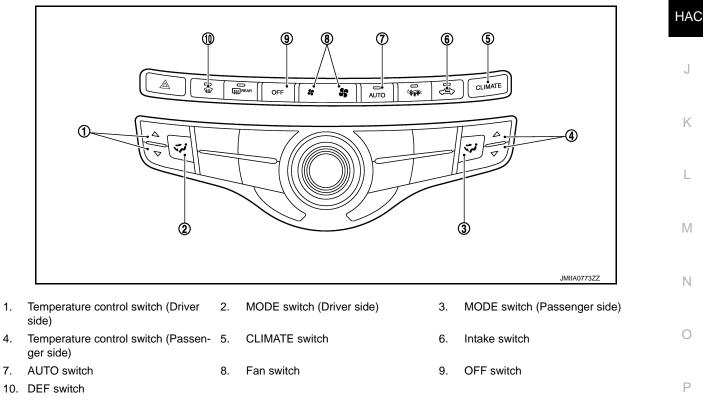
OPERATION AND DISPLAY (WITH FOREST AIR)

A/C Display



- 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 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)



Switch Operation

< SYSTEM DESCRIPTION >

Switch name	Function
AUTO switch	When this switch is pressed, switch indicator lamp and "AUTO" indicator on display", and then air con- ditioning 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: Tresh air intake Air outlet: DEF Compressor: ON 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 status. 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).
Intake switch	 Air inlet changes between recirculation (REC) ⇔ fresh air intake (FRE) each time this switch is pressed. Intake switch indicator ON: Recirculation Intake switch indicator OFF: Fresh air intake 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.
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

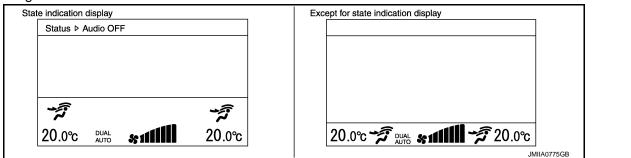
< SYSTEM DESCRIPTION >

Switch name	Function
	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.
Temperature control	 A Press: Setting temperature increases
switch (Driver side)	 ▼ 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.
	 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.
Temperature control	 A Press: Setting temperature increases
switch (Passenger side)	- ▼ Press: Setting temperature decreases NOTE:
	• When air conditioning system is OFF, setting temperature can be selected only while air condition- ing system status screen [only when MODE switch (passenger side) is pressed] is indicated on dis- play.
	When DEF mode is ON, temperature control switch (passenger side) is inoperative.

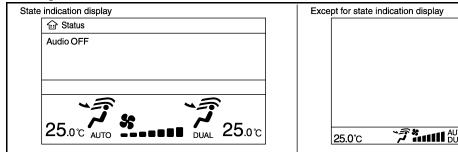
OPERATION AND DISPLAY (WITHOUT FOREST AIR)

A/C Display

With navigation



Without navigation



ce	pt for state in	dication display			
	25.0°C	ゔ゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚	25.0°C		
			JMIIA07	78GB	

- 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)

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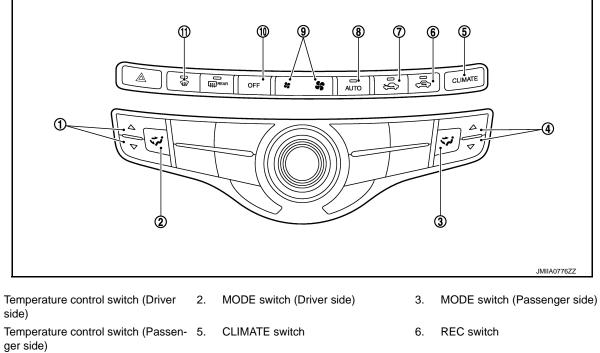
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9.

Fan switch

AUTO switch

11. DEF switch

8.

7. FRE switch

1.

4.

- 10. OFF 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 flow: Automatic control Air flow: Automatic control Air inlet: Fresh air intake Air outlet: DEF Compressor: ON 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. MOTE: 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).

< SYSTEM DESCRIPTION >

Switch name	Function		
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 putternatio control. (Intake awitch indicator indicator air inlet atoms) 		
	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. 		
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. 		
	 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 		
Temperature control switch (Driver side)	 ▼ 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. 		
	- A Press: Setting temperature increases		
	- ▼ Press: Setting temperature decreases NOTE:		
	 When air conditioning system is OFF, setting temperature can be selected only while air condition- ing system status screen [only when MODE switch (passenger side) is pressed] is indicated on dis- play. 		
	When DEF mode is ON, temperature control switch (passenger side) is inoperative.		

AUTOMATIC AIR CONDITIONING SYSTEM : Menu Displayed by Pressing Each Switch

"CLIMATE" MENU

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

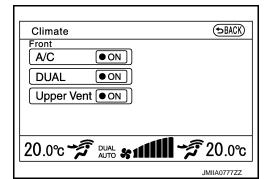
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< SYSTEM DESCRIPTION >

• With Forest Air

[AUTOMATIC AIR CONDITIONING]

Climate	
Front	Forest
	Forest Air Setting
	Forest Air Info
Upper Vent ON	
20.0°C 🐲 AUTO DEF	20.0°c
	JMIIA0774ZZ



• Without Forest Air and navigation

• Without Forest Air and with navigation

🔛 Climate	
A/C	• ON •
DUAL	• ON
Upper Vent	
25.0°C	JTO 7 25.0°C
	JMIIA0779ZZ

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 wher 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.

FOREST AIR SYSTEM

FOREST AIR SYSTEM : Switch Name and Function

OPERATION AND DISPLAY

< SYSTEM DESCRIPTION >

[AUTOMATIC AIR CONDITIONING]

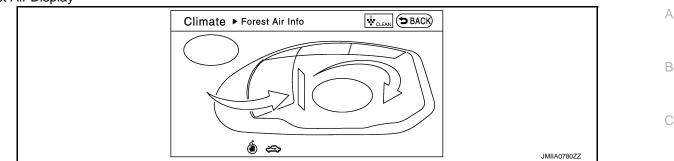
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Forest Air Display



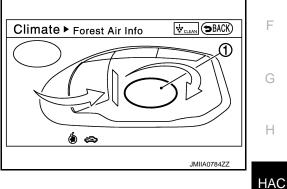
- Forest Air system state is indicated on the display.
- "Climate" menu is indicated on display when CLIMATE switch of multifunction switch is pressed while FOR-EST switch is ON. Operation status of Forest Air system is displayed when "Forest Air Info" is touched.

Air flow control (inside odor detecting mechanism)

- Display is switched as per the following description depending on interior air status
- Interior air status display (1) is blue, while interior air is in clean status.
- Interior air status display (1) is orange, while interior air is in dirty status.

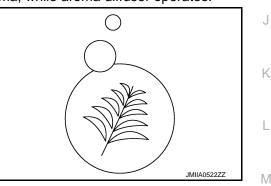
NOTE:

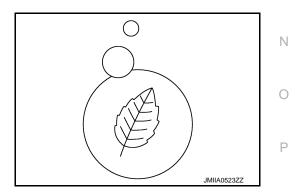
Interior air status display is not indicated, while air inlet is in manual control status.



Aroma diffuser control

- Display is switched as shown in the figure, depending on type of aroma, while aroma diffuser operates.
- Leaf scent



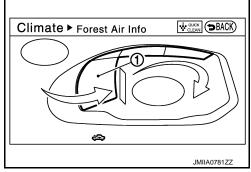


Fragrant wood

Automatic defogging control

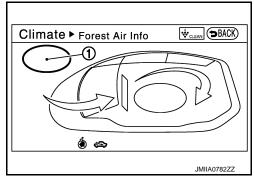
< SYSTEM DESCRIPTION >

Window portion (1) changes to white and automatic defogging operates, when windshield fogging is detected.



- Automatic intake control (exhaust gas/outside odor detecting mechanism) Display is switched as per the following description depending on ambient air status, air inlet status, and switching status of recirculation and fresh air intake.
- Ambient air status display (1) is blue, while ambient air is in clean status.
- Ambient air status display (1) is orange, while ambient air is in dirty status. NOTE:

Ambient air status display is not indicated, while air inlet is in manual control status.

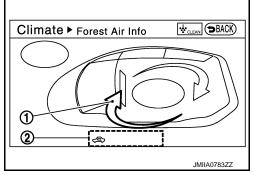


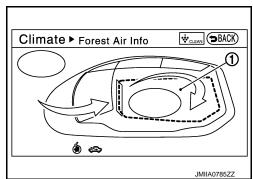
• Air inlet status is indicated by an arrow (1). Lower display (2) indicates air inlet status and control status (automatic control / manual control)

Air inlet status	Control status	Display
Recirculation	Automatic control	Ē
Recirculation	Manual operation	Manual Mode
Fresh air intake	Automatic control	Ś
	Manual operation	Manual Mode



- Animation that is imaged from breezy air (1) is displayed, while breezy air control is operated.





Plasmacluster[™] control

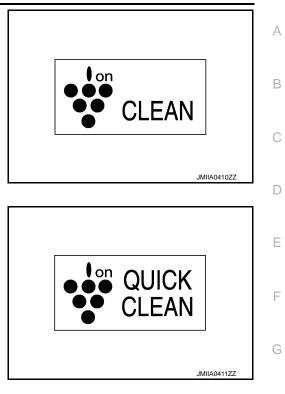
- Plasmacluster [™] ion display is switched as shown in the figure depending on air flow. NOTE:
 - Plasmacluster[™] ion technology developed by Sharp Corporation is installed in this item.
 - Plasmacluster[™] is a trademark of Sharp Corporation.

HAC-34

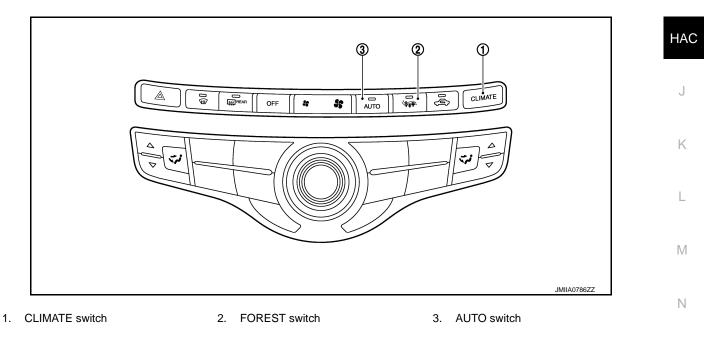
• When air flow is small

• When air flow is large





Forest Air Controller (Multifunction switch)



Switch name	Function
AUTO switch	When this switch is pressed, AUTO switch indicator lamp, "AUTO", and "AUTO DEF" on display turn ON, and then automatic defogging control starts.
CLIMATE switch	"Climate" menu is indicated on display when this switch is pressed.
FOREST switch	When this switch is pressed, AUTO switch indicator lamp, FOREST switch indicator lamp, "AUTO", and "AUTO DEF" on display turn ON, and then Forest Air system starts automatic control.

FOREST AIR SYSTEM : Menu Displayed by Pressing Each Switch

INFOID:000000008132191

"CLIMATE" MENU

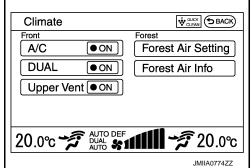
Revision: 2013 September

HAC-35

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

[AUTOMATIC AIR CONDITIONING]



Menu		Function	
Forest Air Set- ting	Breeze Mode	ON ⇔ OFF of breezy air is selected. NOTE: Selection does not operate when FOREST switch is OFF.	
	Fan Speed Vari- ance	Intensity of breezy air is selected. NOTE: Selection does not operate when FOREST switch is OFF or breezy air control is OFF.	
	Outside/Inside Air Mix	Balance of automatic intake control (exhaust gas/outside odor detecting mechanism) (priority of fresh air intake or recirculation) is selected. NOTE: Selection does not operate when FOREST switch is OFF.	
	Auto Defogging Sensitivity	Operation timing of automatic defogging control is adjusted or turned OFF. NOTE: Selection does not operate when AUTO switch is OFF.	
	Aroma	ON ⇔ OFF of aroma diffuser is selected. NOTE: Selection does not operate when FOREST switch is OFF.	
Forest Air Info		Operation status of Forest Air system is indicated. NOTE: Selection does not operate when FOREST switch is OFF.	

DIAGNOSIS SYSTEM (A/C AUTO AMP.)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (A/C AUTO AMP.)

Description

INFOID:000000008132192

А

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

ECU		Diagnostic item (CONSULT)		
		Self Diagnostic Result		
		Data Monitor	[
A/C auto amp.	(I) HVAC	Active Test		
		Work support		
AV control unit	MULTI AV	Self Diagnostic Result		
	Multi AV system on board dia	Multi AV system on board diagnosis function		
FOM	<u></u>	Self Diagnostic Result		
ECM		Data Monitor		
	@ .===	Self Diagnostic Result		
IPDM E/R	IPDM E/R	Data Monitor		
	Auto active test			

CONSULT Function

INFOID:000000008132193

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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-48, "DTC Index".

DATA MONITOR

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

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.		

DIAGNOSIS SYSTEM (A/C AUTO AMP.)

< SYSTEM DESCRIPTION >

[AUTOMÁTIC AIR CONDITIONING]

Monitor item [Unit]		Description
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 in- take 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.
RELATIVE HUMIDITY*	[%]	Relative humidity that is judged by A/C auto amp. according to value from humidity sensor.
AIR TEMP*	[°C]	Air temperature around humidity sensor that is judged by A/C auto amp. according to value from humidity sensor.
DEW POINT TEMP*	[°C]	Dew point temperature that is judged by A/C auto amp. according to value from humidity sensor.
GLASS TEMP*	[°C]	Glass temperature value that is converted from glass temperature sensor signal re- ceived from glass temperature sensor of humidity sensor portion.
GAS SEN LEVEL*		Contamination level of ambient air that is judged by A/C auto amp. according to value from exhaust gas/outside odor detecting sensor.

*: With Forest Air

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

With Forest Air

	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

DIAGNOSIS SYSTEM (A/C AUTO AMP.) [AUTOMÁTIC AIR CONDITIONING] < SYSTEM DESCRIPTION >

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

Without Forest Air

	Test item					F		
	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	G
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	Н
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	HA
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	J
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-66, "AUTOMATIC AIR CONDITIONING SYSTEM : Temperature Setting Trimmer"
REC MEMORY SET	Setting change of inlet port memory function (REC) can be per- formed.	HAC-66, "AUTOMATIC AIR CONDITIONING SYSTEM : Inlet Port Memory Function (REC)"
FRE MEMORY SET	Setting change of inlet port memory function (FRE) can be per- formed.	HAC-67, "AUTOMATIC AIR CONDITIONING SYSTEM : Inlet Port Memory Function (FRE)"
BLOW SET	Setting change of foot position setting trimmer can be performed.	HAC-67, "AUTOMATIC AIR CONDITIONING SYSTEM : Foot Position Setting Trimmer"

AC

L

DIAGNOSIS SYSTEM (A/C AUTO AMP.)

< SYSTEM DESCRIPTION >

[AUTOMÁTIC AIR CONDITIONING]

Work item	Description	Reference
AROMA SETTING [*]	Setting change of aroma fragrance intensity setting can be per- formed.	HAC-67, "FOREST AIR SYSTEM : Aroma Fra- grance Intensity Setting"
FRAGRANCE SETTING [*]	Setting change of aroma fragrance type setting can be performed.	HAC-67, "FOREST AIR SYSTEM : Aroma Fra- grance Type Setting"
BLOWER MOTOR SETTING [*]	Setting change of air flow control (inside odor detecting mechanism) setting can be performed.	HAC-68, "FOREST AIR SYSTEM : Air Flow Con- trol (Inside Odor Detect- ing Mechanism) Setting"
AROMA DIFFUSER SETTING*	Setting change of aroma diffuser presence setting can be per- formed.	HAC-68. "FOREST AIR SYSTEM : Aroma Diffus- er Presence Setting"

*: With Forest Air

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 <u>HAC-65</u>, "Description".

[AUTOMATIC AIR CONDITIONING]

А

ECU DIAGNOSIS INFORMATION A/C AUTO AMP.

Reference Value(AUTOMATIC AIR CONDITIONING)

INFOID:000000008132194 B

CONSULT DATA MONITOR REFERENCE VALUES

Monitor item		Condition	Value/Status
COMP REQ SIG	Engine: Run at idle after warming up	"A/C": ON (Compressor operation status)	On
	wanning up	"A/C": OFF	Off
FAN REQ SIG	Engine: Run at idle after	Blower motor: ON	On
FAN REQ 310	warming up	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 tempera- ture
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 tempera- ture
INT TEMP CAL	Ignition switch ON		Values depending on evaporator fin temperature
ENG COOL TEMP	Ignition switch ON		Values depending on engine cool- ant temperature
DR SUNLOAD SEN	Ignition switch ON		Values depending on sunload (driv- er side)
PASS SUNLOAD SEN	Ignition switch ON		Values depending on sunload (pas- senger side)
DR SUNL SEN CAL	Ignition switch ON		Values depending on sunload (driv- er side)
PASS SUNL SEN CAL	Ignition switch ON		Values depending on sunload (pas- senger side)
		Active test (HVAC test): MODE 1	60%
		Active test (HVAC test): MODE 2	60%
		Active test (HVAC test): MODE 3	30%
COMP ECV DUTY	Engine: Run at idle after warming up	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%

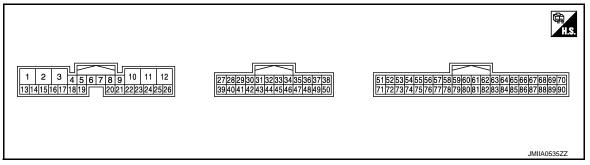
< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONING]

Monitor item		Condition	Value/Status
		Active test (HVAC test): MODE 1	4 V
		Active test (HVAC test): MODE 2	4 V
		Active test (HVAC test): MODE 3	7 V
BLOWER MOT VOLT	Engine: Run at idle after warming up	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 com eter indication.	Equivalent to speedometer reading	
RELATIVE HUMIDITY*	Ignition switch ON		Values depending on relative hu- midity
AIR TEMP*	Ignition switch ON		Equivalent to air temperature around humidity sensor
DEW POINT TEMP*	Ignition switch ON	Values depending on dew point temperature	
GLASS TEMP*	Ignition switch ON	Equivalent to windshield glass tem- perature	
GAS SEN LEVEL*	Ignition switch ON		Values depending on contamina- tion of ambient air

*: With Forest Air

TERMINAL LAYOUT



PHYSICAL VALUES

Termin (Wire o		Description		Condition	Reference value	
+	_	Signal name	Input/ Output	Condition	(Approx.)	
1 (L)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage	
2 (W)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage	

< ECU DIAGNOSIS INFORMATION >

	nal No. dolor)	Description			Condition	Reference value	
+	_	Signal name	Input/ Output		onation	(Approx.)	
					Fan speed: OFF	Battery voltage	
					Fan speed: 1st (manual)	10.0 V	
					Fan speed: 2nd (manual)	8.3 V	
6		Blower motor feedback sig-		 Ignition switch 	Fan speed: 3rd (manual)	7.0 V	
(R)	Ground	nal	Input	ON Air inlet: VENT 	Fan speed: 4th (manual)	5.7V	
				VENT	Fan speed: 5th (manual)	4.3 V	
					Fan speed: 6th (manual)	3.0 V	F
				Fan speed: 7th (manual)	1.0 V		
					Fan speed: OFF	0 V	
		ound Power transistor control sig- nal		• Ignition switch	Fan speed: 1st (manual)	3.5 V	
			Output		Fan speed: 2nd (manual)	5.2 V	ŀ
7					Fan speed: 3rd (manual)	6.5 V	ŀ
(L)	Ground			ON Air inlet: VENT 	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 swit	ch ACC	Battery voltage	
17 (BG)	Ground	ECV (electrical control valve) control signal	Output	 Ignition s Active tes MODE 1 	witch ON st (HVAC test):	(V) 15 10 5 0 ++	

< ECU DIAGNOSIS INFORMATION >

	nal No. dolor)	Description		Condition	Reference value
+	-	Signal name	Input/ Output	Condition	(Approx.)
20 ^{*1} (R)	Ground	Humidity sensor (SCK) sig- nal	Input/ Output	Ignition switch ON	(V) 15 10 5 0
21 ^{*1} (Y)	Ground	Humidity sensor (DATA) sig- nal	Input/ Output	Ignition switch ON	(Y) 15 10 5 0
22 ^{*1} (B)	_	Humidity sensor ground	_	_	_
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
30 ^{*1} (L)	Ground	Exhaust gas/outside odor de- tecting sensor signal	Input	Ignition switch ON NOTE: The signal is depending on measurement environment of the vehicle	(V) 6 4 2 0 • • • • • • • • • • • • • • • • • • •
31 (BG)	Ground	Ambient sensor signal	Input	Ignition switch ON	0 – 4.8 V Output voltage varies with ambient temperature
32 (LG)	Ground	In-vehicle sensor signal	Input	Ignition switch ON	0 – 4.8 V Output voltage varies with in-vehi- cle temperature
33 ^{*1} (LG)	Ground	Humidity sensor (windshield glass temperature) signal	Input	Ignition switch ON	0 – 4.8 V Output voltage varies with wind- shield glass temperature

< ECU DIAGNOSIS INFORMATION >

	nal No. dolor)	Description			Condition	Reference value
+	-	Signal name	Input/ Output		Sonation	(Approx.)
35 (L)	Ground	Sunload sensor (driver side) signal	Input	Ignition swit	tch ON	0 – 4.8 V Output voltage varies with amount of sunload (driver side)
36 ^{*1} (V)	Ground	Inside odor detecting sensor signal	Input	Ignition swit	tch ON	0 – 4.8 V Output voltage varies with amount of passenger room odor level
39 (W)	Ground	Sensor power supply	Output	Ignition swit	tch ON	5 V
41 ^{*2} (L)	Ground	Heated steering wheel relay control signal	Output	Ignition switch ON	Within 30 sec- onds after turn- ing ON the heated steering switch.	0 V
					Other than the above	12 V
42 ^{*1}	Ground	Ionizer (ON/OFF) control sig-	Output	 Ignition s¹Blower m		0 V
(W)	Ground	nal	Output	 Ignition sBlower m		12 V
44 (B)	_	Ground	_		_	_
45 ^{*2}	Ground	Heated steering wheel switch signal	Input	Ignition switch ON	Heated steering wheel switch: While pressing	0 V
(G)		switch signal		SWITCH ON	Other than the above	12 V
47 (P)	Ground	Sunload sensor (passenger side) signal	Input	Ignition swit	tch ON	0 – 4.8 V Output voltage varies with amount of sunload (passenger side)
51 (B)	Ground	Intake sensor signal	Input	Ignition swit	tch ON	0 – 4.8 V Output voltage varies with amount of evaporator fin temperature
52 ^{*1}	Orecord	Aroma motor PBR feedback	lucrost	 Ignition s Aroma disscent 	witch ON ffuser control: Leaf	1.0 V
(W/R)	Ground	signal	Input	 Ignition s Aroma dia grant woo 	ffuser control: Fra-	4.0 V
53	Ground	Air mix door motor (driver	Input	 Ignition s^a Set temp (60°F) "DUAL": 0 	erature: 18°C	4.0 V
(G)	Ground	side) PBR feedback signal	mput	 Ignition s^a Set temp (90°F) "DUAL": 0 	erature: 32°C	1.0 V
54	Ground	Mode door motor (driver	Incut	 Ignition s¹ Air outlet: "DUAL": 0 	VENT	4.0 V
(P)	Ground	side) PBR feedback signal	Input	 Ignition s Air outlet: "DUAL": (DEF	1.0 V

< ECU DIAGNOSIS INFORMATION >

Termir (Wire		Description			Reference value
+	_	Signal name	Input/ Output	Condition	(Approx.)
55		Intake door motor PBR feed-	1	Ignition switch ONAir inlet: REC	4.0 V
(L/B)	Ground	back signal	Input	 Ignition switch ON Air inlet: FRE	1.0 V
58	Ground	Rear mode door motor PBR	Input	 Ignition switch ON Air outlet: VENT "DUAL": OFF	4.0 V
(P/B)	Ground	feedback signal	Input	Ignition switch ONAir outlet: DEF"DUAL": OFF	1.0 V
61	Ground	Air mix door motor (driver	Output	 Ignition switch ON Set temperature: 32°C (90°F)→18°C (60°F) "DUAL": OFF 	12 V
(BR)	Ground	side) COOL drive signal	Output	 Ignition switch ON Set temperature: 18°C (60°F)→32°C (90°F) "DUAL": OFF 	0 V
62 ^{*1}	Ground	Aroma motor (Fragrant	Output	 Ignition switch ON Aroma diffuser control: Leaf scent→Fragrant wood 	12 V
(G/R)	Ground	wood) drive signal	Output	 Ignition switch ON Aroma diffuser control: Fra- grant wood→Leaf scent 	0 V
63	Ground	Mode door motor (driver	Output	 Ignition switch ON Air outlet: DEF→VENT "DUAL": OFF 	12 V
(V)	Cround	side) VENT drive signal	Output	 Ignition switch ON Air outlet: VENT→DEF "DUAL": OFF 	0 V
64	Ground	Mode door motor (passenger	Output	 Ignition switch ON Air outlet: DEF→VENT "DUAL": OFF 	12 V
(R/B)	Ground	side) VENT drive signal	Output	 Ignition switch ON Air outlet: VENT→DEF "DUAL": OFF 	0 V
65	Ground	Intake door motor REC drive	Output	 Ignition switch ON Air inlet: FRE→REC 	12 V
(L/R)	Clound	signal	Output	Ignition switch ONAir inlet: REC→FRE	0 V
66	Ground	Upper ventilator door motor	Output	 Ignition switch ON "Upper Vent": ON→OFF 	12 V
(BR/B)		CLOSE drive signal	Output	 Ignition switch ON "Upper Vent": OFF→ON 	0 V
67	Ground	Air mix door motor (passen-	Outout	 Ignition switch ON Set temperature: 18°C (60°F)→32°C (90°F) "DUAL": OFF 	12 V
(LG)	Ground	ger side) HOT drive signal	Output	 Ignition switch ON Set temperature: 32°C (90°F)→18°C (60°F) "DUAL": OFF 	0 V

< ECU DIAGNOSIS INFORMATION >

Termir (Wire	nal No. dolor)	Description			Reference value	A			
+	-	Signal name	Input/ Output	Condition	(Approx.)				
68	Ground	Rear mode door motor VENT	Output	 Ignition switch ON Air outlet: DEF→VENT "DUAL": OFF 	12 V	В			
(R/W)	Ground	drive signal	Output	 Ignition switch ON Air outlet: VENT→DEF "DUAL": OFF 	0 V	С			
71 (R)	Ground	Each door motor PBR power supply	Output	Ignition switch ON	5 V	D			
73	73 Cround	Mode door motor (passenger	Input	 Ignition switch ON Air outlet: VENT "DUAL": OFF	4.0 V	E			
(SB)	Ground	Ground side) PBR feedback signal	input	Ignition switch ONAir outlet: DEF"DUAL": OFF	1.0 V	F			
74	Cround	Air mix door motor (driver	loout	 Ignition switch ON Set temperature: 18°C (60°F) "DUAL": OFF 	4.0 V	G			
(L)		side) PBR feedback signal	side) PBR feedback signal	side) PBR feedback signal	side) PBR feedback signal		 Ignition switch ON Set temperature: 32°C (90°F) "DUAL": OFF 	1.0 V	Н
75	75 Opport Upper ventilator door mote	J Upper ventilator door motor	la a st	Ignition switch ON"Upper Vent": ON	3.0 V	HAC			
(G/B)	Ground	PBR feedback signal	Input	Ignition switch ON"Upper Vent": OFF	1.0 V				
79 (W)	_	Intake sensor ground / Each door motor PBR ground	_	_	_	J			
81	Oreand	Air mix door motor (driver	Output	 Ignition switch ON Set temperature: 18°C (60°F)→32°C (90°F) "DUAL": OFF 	12 V	K			
(Y)	Ground	side) HOT drive signal	Output	 Ignition switch ON Set temperature: 32°C (90°F)→18°C (60°F) "DUAL": OFF 	0 V	L			
82	Ground	Aroma motor (Leaf scent)	Quitout	 Ignition switch ON Aroma diffuser control: Fra- grant wood→Leaf scent 	12 V	M			
(LG/R)	Ground	drive signal	drive signal • Ignition switch ON		Aroma diffuser control: Leaf	0 V	N		
83	Ground	Mode door motor (driver	Mode door motor (driver ● Ignition switch ON ● Air outlet: VENT→DEF ● "DUAL": OFF	Node door motor (driver	 Air outlet: VENT→DEF 	12 V	0		
(B)		side) DEF drive signal	Output	 Ignition switch ON Air outlet: DEF→VENT "DUAL": OFF 	0 V	Р			
84	Ground	Mode door motor (passenger	Output	 Ignition switch ON Air outlet: VENT→DEF "DUAL": OFF 	12 V				
(W/B)		side) DEF drive signal	Culput	 Ignition switch ON Air outlet: DEF→VENT "DUAL": OFF 	0 V				

< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONING]

Termin (Wire		Description		Condition	Reference value
+	_	Signal name	Input/ Output	Condition	(Approx.)
85	Ground	Intake door motor FRE drive	Output	 Ignition switch ON Air inlet: REC→FRE 	12 V
(LG/B)	Ground	signal	Output	 Ignition switch ON Air inlet: FRE→REC 	0 V
86	Ground	Upper ventilator door motor	Output	 Ignition switch ON "Upper Vent": OFF→ON 	12 V
(Y/B)	Ground	OPEN drive signal	Output	 Ignition switch ON "Upper Vent": ON→OFF 	0 V
87	Ground	Air mix door motor (passen- ger side) COOL drive signal	Output	 Ignition switch ON Set temperature: 32°C (90°F)→18°C (60°F) "DUAL": OFF 	12 V
(GR)	Ground			 Ignition switch ON Set temperature: 18°C (60°F)→32°C (90°F) "DUAL": OFF 	0 V
88	Ground	Rear mode door motor	Output	 Ignition switch ON Air outlet: VENT→DEF "DUAL": OFF 	12 V
(B/W)	Ground	FOOT drive signal	Output	 Ignition switch ON Air outlet: DEF→VENT "DUAL": OFF 	0 V

*1: With Forest Air

*2: With heated steering wheel

Fail-safe

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:000000008132196

INFOID:000000008132195

DTC	Items (CONSULT screen terms)	Reference
U1000	CAN COMM CIRCUIT	HAC-69, "DTC Logic"
U1010	CONTROL UNIT(CAN)	HAC-70, "DTC Logic"
B2578	IN-VEHICLE SENSOR	HAC-71, "DTC Logic"
B2579	IN-VEHICLE SENSOR	HAC-71, "DTC Logic"
B257B	AMBIENT SENSOR	HAC-74, "DTC Logic"
B257C	AMBIENT SENSOR	HAC-74, "DTC Logic"
B2581	INTAKE SENSOR	HAC-77, "DTC Logic"
B2582	INTAKE SENSOR	HAC-77, "DTC Logic"

< ECU DIAGNOSIS INFORMATION >

[AUTOMATIC AIR CONDITIONING]

DTC	Items (CONSULT screen terms)	Reference
B262A ^{*1}	GAS SENSOR ^{*2}	HAC-80, "DTC Logic"
B262B ^{*1}	GAS SENSOR ^{*2}	HAC-80, "DTC Logic"
B2630 ^{*3}	SUNLOAD SENSOR	HAC-84, "DTC Logic"
B2631 ^{*3}	SUNLOAD SENSOR	HAC-84, "DTC Logic"
B2657 ^{*1}	GAS SENSOR CIRCUIT ^{*2}	HAC-80, "DTC Logic"
B2658 ^{*1}	GAS SENSOR CIRCUIT ^{*2}	HAC-80, "DTC Logic"
B2750	DR AIR MIX DOOR MOT	HAC-87, "DTC Logic"
B2751	DR AIR MIX DOOR MOT	HAC-87, "DTC Logic"
B2752	DR AIR MIX DOOR MOT	HAC-87, "DTC Logic"
B2753	PASS AIR MIX DOOR MOT	HAC-92, "DTC Logic"
B2754	PASS AIR MIX DOOR MOT	HAC-92, "DTC Logic"
B2755	PASS AIR MIX DOOR MOT	HAC-92, "DTC Logic"
B2756	DR MODE DOOR MOTOR	HAC-97, "DTC Logic"
B2757	DR MODE DOOR MOTOR	HAC-97, "DTC Logic"
B2758	DR MODE DOOR MOTOR	HAC-97, "DTC Logic"
B2759	PASS MODE DOOR MOT	HAC-102, "DTC Logic"
B275A	PASS MODE DOOR MOT	HAC-102, "DTC Logic"
B275B	PASS MODE DOOR MOT	HAC-102, "DTC Logic"
B275C	INTAKE DOOR MOTOR	HAC-107, "DTC Logic"
B275D	INTAKE DOOR MOTOR	HAC-107, "DTC Logic"
B275E	INTAKE DOOR MOTOR	HAC-107, "DTC Logic"
B275F	DR UP VENT DOOR MOT	HAC-112, "DTC Logic"
B2760	DR UP VENT DOOR MOT	HAC-112, "DTC Logic"
B2761	DR UP VENT DOOR MOT	HAC-112, "DTC Logic"
B2762	REAR MODE DOOR MOT	HAC-118, "DTC Logic"
B2763	REAR MODE DOOR MOT	HAC-118, "DTC Logic"
B2764	REAR MODE DOOR MOT	HAC-118, "DTC Logic"
B2768 ^{*1}	AROMA MOTOR	HAC-123, "DTC Logic"
B2769 ^{*1}	AROMA MOTOR	HAC-123, "DTC Logic"
B276A ^{*1}	AROMA MOTOR	HAC-123, "DTC Logic"
B276B ^{*1}	HUMIDITY SENSOR	HAC-128, "DTC Logic"
B276C ^{*1}	HUMIDITY SENSOR	HAC-128, "DTC Logic"
B276D ^{*1}	HUMIDITY SENSOR	HAC-128, "DTC Logic"

*1: With Forest Air

*2: This item indicates the exhaust gas/outside odor detecting sensor.

*3: 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 – B276A) are detected, check door motor PBR circuit (With Forest Air). Refer to <u>HAC-133, "DOOR MOTOR PBR (WITH FOREST AIR) : Diagnosis Procedure"</u>.

 If all of door motors DTC (B2750 – B2764) are detected, check door motor PBR circuit (Without Forest Air). Refer to <u>HAC-133</u>, "DOOR MOTOR PBR (WITH FOREST AIR) : Diagnosis Procedure".

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< ECU DIAGNOSIS INFORMATION >

ECM, IPDM E/R

List of ECU Reference

INFOID:000000008132197

EC	U	Reference
		EC-97, "Reference Value"
		EC-114, "Fail safe"
	VQ37VHR	EC-116, "DTC Inspection Priority Chart"
5014		EC-117, "DTC Index"
ECM	VK56VD	EC-1012, "Reference Value"
		EC-1035, "Fail-safe"
		EC-1038, "DTC Inspection Priority Chart"
		EC-1040, "DTC Index"
	1	PCS-16, "Reference Value"
IPDM E/R		PCS-23. "Fail-safe"
		PCS-24, "DTC Index"

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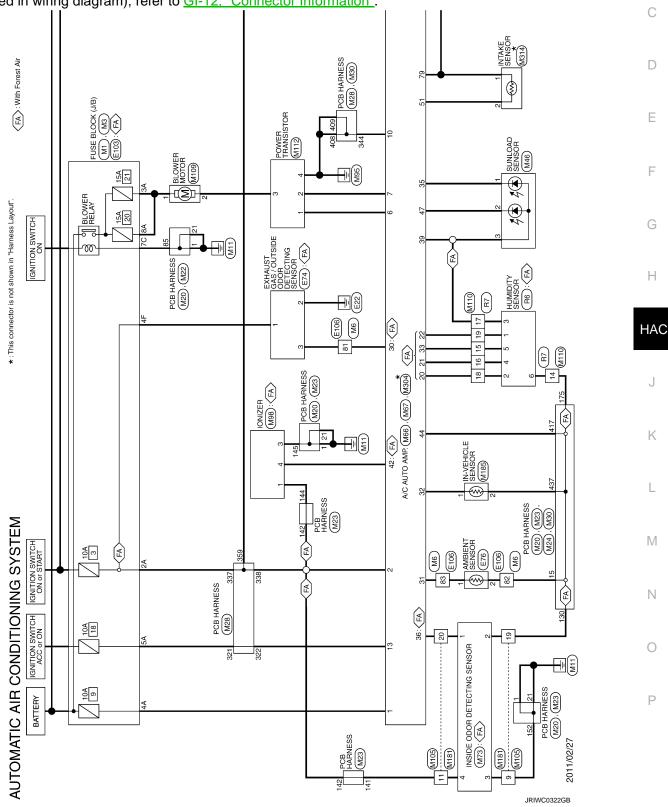
Ρ

INFOID:000000008132198

WIRING DIAGRAM AUTOMATIC AIR CONDITIONING SYSTEM

Wiring Diagram

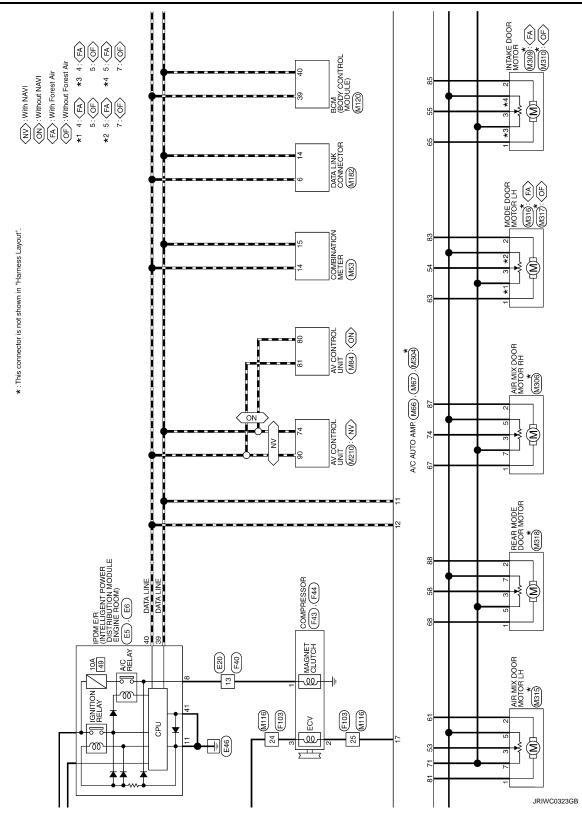
For connector terminal arrangements, harness layouts, and alphabets in a 🔿 (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

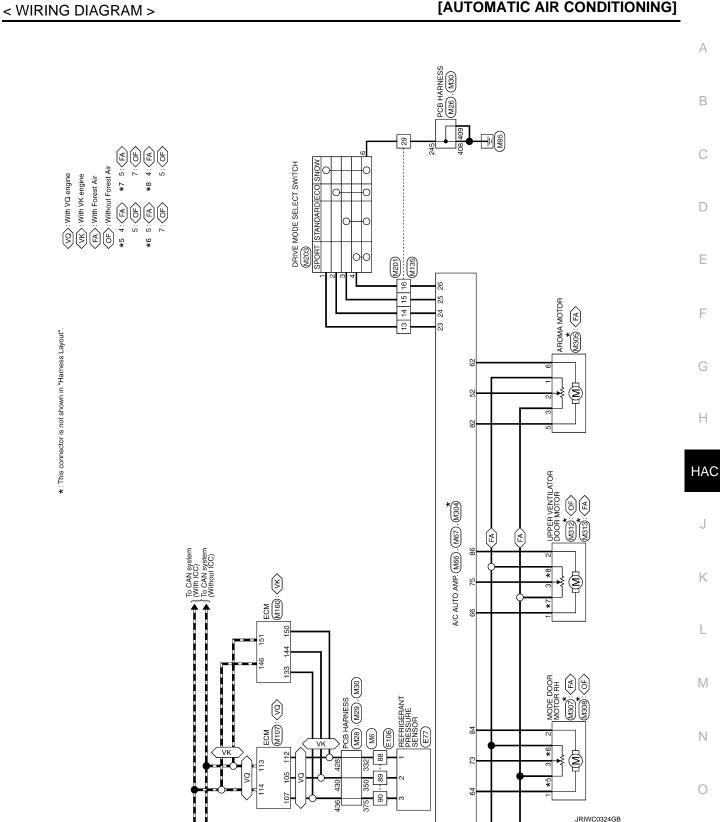


AUTOMATIC AIR CONDITIONING SYSTEM

< WIRING DIAGRAM >







AUTOMATIC AIR CONDITIONING SYSTEM [AUTOMATIC AIR CONDITIONING]

Revision: 2013 September

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< BASIC INSPECTION >

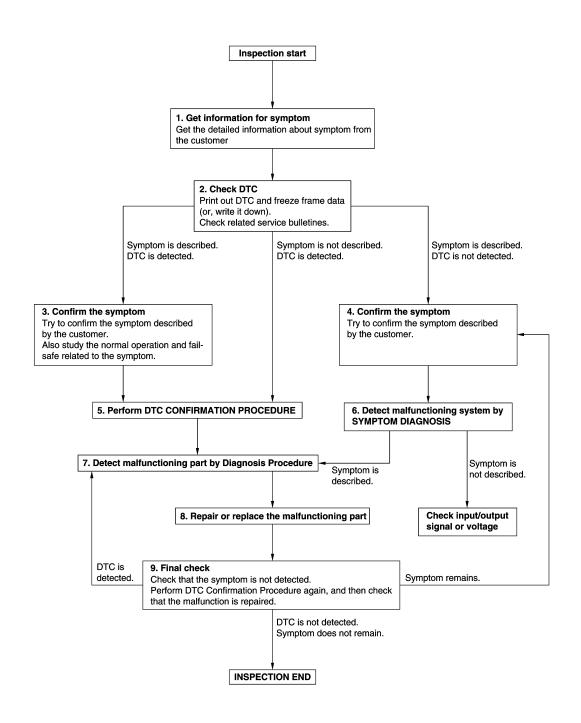
[AUTOMATIC AIR CONDITIONING]

BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000008132199

OVERALL SEQUENCE



DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[AUTOMATIC AIR CONDITIONING]

1. GET INFORMATION FOR SYMPTOM	А
1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).	A
2. Check operation condition of the function that is malfunctioning.	В
>> GO TO 2.	
2. CHECK DTC	С
1. Check DTC.	
 Perform the following procedure if DTC is detected. Record DTC and freeze frame data (Print them out using CONSULT.) 	D
 Erase DTC. Study the relationship between the cause detected by DTC and the symptom described by the customer. Check related service bulletins for information. 	Е
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.	F
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.	G
>> GO TO 5.	Η
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.	HAC
	J
>> GO TO 6. 5.PERFORM DTC CONFIRMATION PROCEDURE	
Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected	Κ
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 diag-	
nosis order. NOTE:	L
 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. 	M
If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIR- MATION PROCEDURE.	Ν
Is DTC detected?	
YES >> GO TO 7. NO >> Check according to <u>GI-43, "Intermittent Incident"</u> .	0
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.	Ρ
Is the symptom described?	
YES >> GO TO 7. NO >> Monitor input data from related sensors or check voltage of related module terminals using CON- SULT.	

1.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.

NO >> Check according to <u>GI-43, "Intermittent Incident"</u>.

 $\mathbf{8}$. Repair or Replace the Malfunctioning Part

- 1. Repair or replace the malfunctioning part.
- 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 CON	IDITIONING]
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< BASIC INSPECTION >	[AUTOMATIC AIR CONDITIONING]
OPERATION INSPECTION	
AUTOMATIC AIR CONDITIONING SYSTEM (WI	ITH FOREST AIR)
AUTOMATIC AIR CONDITIONING SYSTEM (WIT	H FOREST AIR) : Work Procedure
DESCRIPTION	
The purpose of the operational check is to check that the individu	al system operates normally. C
Check condition : Engine running at normal operation	
OPERATION INSPECTION	D
1.CHECK BLOWER MOTOR	
Operate the fan switch. Check that the fan speed changes. Chec <u>Is the inspection result normal?</u> YES >> GO TO 2.	k the operation for all fan speeds. \Box
NO >> Blower motor system malfunction. Refer to <u>HAC-138</u>	-
2.CHECK LH/RH INDEPENDENT AIR OUTLET ADJUSTMENT	FUNCTION
 Operate MODE switch (driver side) and the DEF switch. Ch each indicated air outlet by placing a hand in front of the or <u>Description</u>". 	
 Operate MODE switch (passenger side) and the DEF switch to each indicated air outlet by placing a hand in front of the ou tem Description". 	. Check that the air outlets change according H utlets (passenger side). Refer to <u>VTL-5, "Sys-</u>
 Press CLIMATE switch. The "Climate" menu screen is indicated. Touch "DUAL". Check that the air outlet setting (LH/RH) is un 	
<u>Is the inspection result normal?</u> YES >> GO TO 3.	
NO >> Refer to <u>HAC-153, "Symptom Table"</u> and perform the 3. CHECK DISCHARGE AIR ("UPPER VENT")	e appropriate diagnosis.
1. Press MODE switch to set the air outlet to other than D/F or I	DEF.
 Touch "Upper Vent". Check that air flow blows from upper ver Touch "Upper Vent" again. Check that air flow from upper ver 	ntilator.
Is the inspection result normal?	-
YES >> GO TO 4. NO >> Refer to HAC-153, "Symptom Table" and perform the	
NO >> Refer to <u>HAC-153</u> , "Symptom Table" and perform the 4. CHECK INTAKE AIR	
1. Press intake switch to set the air inlet to recirculation. The int	M
 Listen to intake sound and confirm air inlets change. Press intake switch again to set the air inlet to fresh air intake 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 <u>HAC-107.</u> "	Diagnosis Procedure".
5.check compressor	
 Touch "A/C". Check visually and by sound that the compress Touch "A/C" again. Check that the compressor stops. 	or operates.
Is the inspection result normal?	
YES >> GO TO 6.	Nagnaaia Draaadura"
NO >> Compressor does not operate. Refer to <u>HAC-156, "D</u> 6.CHECK LH/RH INDEPENDENT TEMPERATURE ADJUSTME	

OPERATION INSPECTION

< BASIC INSPECTION >

- 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 <u>HAC-153</u>, "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-158, "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 <u>HAC-159</u>, "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 <u>HAC-153</u>, "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 <u>HAC-163</u>, "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.

< BASIC INSPECTION >

Is the inspection result normal?	
YES >> INSPECTION END	А
NO >> Intelligent Key interlock function malfunctioning. Refer to <u>HAC-160, "Diagnosis Procedure"</u> .	
AUTOMATIC AIR CONDITIONING SYSTEM (WITHOUT FOREST AIR)	
AUTOMATIC AIR CONDITIONING SYSTEM (WITHOUT FOREST AIR) : Work Proce-	В
dure INFOID:000000008132201	0
DESCRIPTION	С
The purpose of the operational check is to check that the individual system operates normally.	
	D
Check condition : Engine running at normal operating temperature.	
OPERATION INSPECTION	
1. CHECK BLOWER MOTOR	Ε
Operate the fan switch. Check that the fan speed changes. Check the operation for all fan speeds.	_
Is the inspection result normal?	F
YES >> GO TO 2.	
NO >> Blower motor system malfunction. Refer to <u>HAC-138, "Diagnosis Procedure"</u> .	G
2. CHECK LH/RH INDEPENDENT AIR OUTLET ADJUSTMENT FUNCTION	G
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 <u>VTL-5, "System</u>	Н
Description".	
 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 <u>VTL-5</u>, "Sys- 	
tem Description".	HAC
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?	J
YES >> GO TO 3.	
NO >> Refer to <u>HAC-153, "Symptom Table"</u> and perform the appropriate diagnosis.	
3. CHECK DISCHARGE AIR ("UPPER VENT")	Κ
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.	L
Is the inspection result normal?	
YES >> GO TO 4.	M
NO >> Upper ventilator system malfunction. Refer to <u>HAC-112, "Diagnosis Procedure"</u> .	1 V I
4.CHECK INTAKE AIR	
1. Press REC switch to set the air inlet to recirculation. The REC switch indicator turns ON.	Ν
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.	0
Is the inspection result normal?	
YES >> GO TO 5. NO >> Intake door system malfunction. Refer to <u>HAC-107, "Diagnosis Procedure"</u> .	
	Ρ
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 <u>HAC-156, "Diagnosis Procedure"</u> .	

< BASIC INSPECTION >

OPERATION INSPECTION

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 <u>HAC-153</u>, "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 <u>HAC-158, "Diagnosis Procedure"</u>.

8.CHECK TEMPERATURE INCREASE

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

Is the inspection result normal?

- YES >> GO TO 9.
- NO >> Insufficient heating. Refer to <u>HAC-159</u>, "Diagnosis Procedure".

9.CHECK AUTO MODE

- 1. Press AUTO switch to confirm that "AUTO" is indicated on the display.
- 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 <u>HAC-153</u>, "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 <u>HAC-163</u>, "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.

OPERATION INSPECTION

< BASIC INSPECTI	ON >	[AUTOMATIC AIR CONDITIONING]
		indicated on display and that air conditioning sys- re to 32.0°C (90°F) and fan speed to 1st.
Is the inspection resil YES >> INSPEC NO >> Intelliger FOREST AIR S	TION END nt Key interlock function malfunctioning.	Refer to <u>HAC-160, "Diagnosis Procedure"</u> . B
FOREST AIR S	YSTEM : Work Procedure	INFOID:00000008132202
NOTE:	operational check is to check that the inc	
	c air conditioning system operates norm (WITH FOREST AIR) : Work Procedure	ally. Refer to <u>HAC-57, "AUTOMATIC AIR CONDI-</u> .
Check cond		turn it OFF once. Turn FOREST switch
OPERATION INSP	ECTION	
1.CHECK PLASMA	CLUSTER [™] CONTROL	G
(driver side) outlet w NOTE:	hile pressing fan switch and OFF switch	H
	n technology developed by Sharp Corpo	pration is installed in this item.
	a trademark of Sharp Corporation.	HA
Is the inspection result YES >> GO TO 2		
	system malfunction. Refer to <u>HAC-149, '</u>	Diagnosis Procedure".
2.CHECK PLASMA	CLUSTER [™] CONTROL OPERATION S	TATUS
Operate fan switch. table.	Visually check that status indicator in a	display changes in accordance with the following
Fan speed	Display (ion indicator)	
2nd	CLEAN	L
5th	QUICK CLEAN	
	n technology developed by Sharp Corpo a trademark of Sharp Corporation.	oration is installed in this item.
Is the inspection rest YES >> GO TO 3	ult normal?	N
3.CHECK BREEZY	•	0
Place a hand to air c		rates when air outlet is VENT or FOOT mode and an speed lowers to 3rd speed)
Breezy air control do	es not operate when air outlet is B/L.	
Is the inspection res		
YES >> GO TO NO >> Replace	4. A/C auto amp. Refer to <u>HAC-163, "Rer</u>	noval and Installation"
· '	AIR CONTROL OPERATION STATUS	<u></u> .

Revision: 2013 September

1. Press CLIMATE switch. The "Climate" menu screen is indicated on display.

< BASIC INSPECTION >

OPERATION INSPECTION

- 2. Touch "Forest Air Info". The "Forest Air Info" screen is indicated on display.
- 3. Check that breezy air animation that is imaged from breezy air is indicated on display while breezy air control is operated.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation".

5. CHECK AUTOMATIC INTAKE CONTROL (EXHAUST GAS/OUTSIDE ODOR DETECTING MECHANISM)

- 1. Check that the operation is in fresh air intake mode.
- 2. Apply cigarette smoke or similar substance to exhaust gas/outside odor detecting sensor portion.
- 3. Listen to intake sound and confirm air inlets change.
- Is the inspection result normal?

YES >> GO TO 6.

NO >> Exhaust gas/outside odor detecting sensor system malfunction. Refer to <u>HAC-80</u>, "Diagnosis Procedure".

6.CHECK AMBIENT AIR JUDGEMENT STATUS

- 1. Apply cigarette smoke or similar substance to exhaust gas/outside odor detecting sensor portion.
- 2. Visually check that indicator of ambient air status in display changes to orange.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace A/C auto amp. Refer to <u>HAC-163</u>, "Removal and Installation".

AIR FLOW CONTROL (INSIDE ODOR DETECTING MECHANISM)

1. Operate temperature control switch (driver side). Set temperature to 20°C (68°F).

2. Apply cigarette smoke or similar substance to air inlet while fan speed is in 5th or 6th speed status.

3. Place a hand to air outlet. Check that air flow increases.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Inside odor detecting sensor system malfunction. Refer to HAC-145, "Diagnosis Procedure".

8.CHECK INTERIOR AIR JUDGEMENT STATUS

1. Apply cigarette smoke or similar substance to air inlet.

2. Visually check that indicator of interior air status in display changes to orange.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation".

9.CHECK AUTOMATIC DEFOGGING CONTROL

- 1. Apply vapor to humidity sensor portion.
- 2. Check that the operation is in accordance with the following status.
- Air outlet: DEF
- Air inlet: Fresh air intake
- Compressor: ON

Is the inspection result normal?

YES >> GO TO 10.

NO >> Humidity sensor system malfunction. Refer to <u>HAC-128, "Diagnosis Procedure"</u>.

10.CHECK AUTOMATIC DEFOGGING CONTROL OPERATION STATUS

- 1. Apply vapor to humidity sensor portion.
- 2. Visually check that indicator of windshield in display is indicated in white.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Replace A/C auto amp. Refer to <u>HAC-163</u>, "Removal and Installation".

- **11.**CHECK AROMA DIFFUSER CONTROL (AROMA MOTOR OPERATION)
- 1. Operate FOREST switch and OFF switch alternately so that aroma diffuser control switches between ON and OFF.

< BASIC INSPECTION >

OPERATION INSPECTION

[AUTOMATIC AIR CONDITIONING]

< D		
2.	Perform this operation for 2 sets. Check by operation sound that aroma motor operates. NOTE:	A
	Operation of aroma diffuser control can be checked immediately after FOREST switch is turned OFF once, and then is turned ON again. Operation direction of motor is switched by turning it ON again after turning it OFF (I set executive add)	
le ti	turning it OFF. (Leaf scent ⇔ Fragrant wood) he inspection result normal?	В
	ES >> GO TO 12.	
N	O >> Aroma motor system malfunction. Refer to <u>HAC-123</u> , "Diagnosis Procedure".	С
12	CHECK AROMA DIFFUSER CONTROL (FRAGRANCE)	
1.	Operate FOREST switch and OFF switch alternately so that aroma diffuser control switches between ON and OFF.	D
2.	Perform this operation for 2 sets. Check by fragrance that 2 kinds of aroma are diffused alternately. NOTE:	
	Operation of aroma diffuser control can be checked immediately after FOREST switch is turned OFF once, and then is turned ON again. Operation direction of motor is switched by turning it ON again after turning it OFF. (Leaf scent ⇔ Fragrant wood)	E
	he inspection result normal?	F
YE	 ES >> GO TO 13. O >> Replace aroma cartridge. Refer to <u>HAC-176, "AROMA CARTRIDGE : Removal and Installation"</u>. 	
	B . CHECK AROMA DIFFUSER CONTROL OPERATION STATUS	0
1.	Operate FOREST switch and OFF switch alternately so that aroma diffuser control switches between ON	G
2.	and OFF.	
۷.	Perform this operation for 2 sets. Visually check that indication of fragrance (Leaf scent ⇔ Fragrant wood) in display switches alternately.	Н
	NOTE: Operation of aroma diffuser control can be checked immediately after FOREST switch is turned OFF	HA
	once, and then is turned ON again. Operation direction of motor is switched by turning it ON again after turning it OFF. (Leaf scent ⇔ Fragrant wood)	
<u>ls t</u>	he inspection result normal?	
	ES >> INSPECTION END	J
N	O >> Replace A/C auto amp. Refer to <u>HAC-163, "Removal and Installation"</u> .	
		Κ
		L
		M
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ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (A/C AUTO AMP.) < BASIC INSPECTION > [AUTOMATIC AIR CONDITIONING]

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

Description

INFOID:000000008132203

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

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:000000008132204

1.SAVING VEHICLE SPECIFICATION

CONSULT Configuration

Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>HAC-65</u>, "<u>Descrip-</u><u>tion</u>".

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-163, "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 <u>HAC-65, "Work Procedure"</u>.

>> WORK END

< BASIC INSPECTION >

CONFIGURATION (HVAC)

Description

INFOID:000000008132205 Vehicle specification needs to be written with CONSULT because it is not written after replacing A/C auto amp. В Configuration has three functions as follows Function Description · Reads the vehicle configuration of current A/C auto amp. **READ CONFIGURATION** Saves the read vehicle configuration. WRITE CONFIGURATION - Manual setting Writes the vehicle configuration with manual setting. D 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. Е Never perform "WRITE CONFIGURATION" except for new A/C auto amp. Work Procedure INFOID:000000008132206 F 1.WRITING MODE SELECTION CONSULT Configuration Select "CONFIGURATION" of A/C auto amp. When writing saved data>>GO TO 2. Н When writing manually>>GO TO 3. 2.PERFORM "WRITE CONFIGURATION - CONFIG FILE" HAC CONSULT Configuration Perform "WRITE CONFIGURATION - Config file". >> WORK END **3.** PERFORM "WRITE CONFIGURATION - MANUAL SETTING" Κ CONSULT Configuration Select "WRITE CONFIGURATION - Manual setting". Select "SETTING". L Select "OK". When "COMMAND FINISHED", select "END".

CONFIGURATION (HVAC)

>> GO TO 4.

4.OPERATION CHECK

1. 2.

3.

4

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

>> WORK END

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SYSTEM SETTING AUTOMATIC AIR CONDITIONING SYSTEM

AUTOMATIC AIR CONDITIONING SYSTEM : Temperature Setting Trimmer

INFOID:000000008132207

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)
	6	3.0
	5	2.5
	4	2.0
	3	1.5
	2	1.0
TEMP SET CORRECT	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 $-3.0^{\circ}C$ ($-6^{\circ}F$) is corrected on the temperature setting set as $25.0^{\circ}C$ ($77^{\circ}F$), the temperature controlled by A/C auto amp. is $25.0^{\circ}C$ ($77^{\circ}F$) – $3.0^{\circ}C$ ($-6^{\circ}F$) = $22.0^{\circ}C$ ($72^{\circ}F$) and the temperature becomes lower than the temperature setting.

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

INFOID:000000008132208

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)

SYSTEM SETTING

< BASIC INSPECTION >

[AUTOMATIC AIR CONDITIONING]

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

DESCRIPTION

- If the ignition switch is turned to the OFF position while the FRE indicator is set to ON (fresh air intake), "Per-В form 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	F
	WITH (initial status)	Do not perform the memory of manual FRE (auto control)	1

AUTOMATIC AIR CONDITIONING SYSTEM : Foot Position Setting Trimmer

INFOID:000000008132210

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.

Mark our of itoms	Display	Defroster door position	
Work support items	Display	Auto control	Manual control
	Mode 1 (initial status)	OPEN	CLOSE
BLOW SET	Mode 2	OPEN	OPEN
	Mode 3	CLOSE	OPEN
	Mode 4	CLOSE	CLOSE

FOREST AIR SYSTEM

FOREST AIR SYSTEM : Aroma Fragrance Intensity Setting

DESCRIPTION

Amount of fragrance that is supplied to passenger room can be adjusted by aroma diffuser control.

HOW TO SET

(P) With CONSULT

Perform "AROMA SETTING" or HVAC work support item.

Work support items	Display	Setting	1
AROMA SETTING	WEAK	Fragrance is decreased from the standard status.	D
	STRONG	Fragrance is increased from the standard status.	
	NORMAL (initial sta- tus)	Standard status.	-

FOREST AIR SYSTEM : Aroma Fragrance Type Setting

INFOID:000000008132212

DESCRIPTION

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SYSTEM SETTING

< BASIC INSPECTION >

Type of fragrance that is supplied to passenger room can be selected using aroma diffuser control.

HOW TO SET

(P) With CONSULT

Perform "FRAGRANCE SETTING" or HVAC work support item.

Work support items	Display	Setting
	A + B (initial status)	2 kinds of fragrance, fragrant wood and leaf scent, are used.
FRAGRANCE SETTING	A	Only fragrant wood is used.
	В	Only leaf scent is used.

FOREST AIR SYSTEM : Air Flow Control (Inside Odor Detecting Mechanism) Setting

INFOID:000000008132213

DESCRIPTION

Setting change of air flow control can be changed by inside odor detecting mechanism.

HOW TO SET

(P) With CONSULT

Perform "BLOWER MOTOR SETTING" or HVAC work support item.

Work support items	Display	Setting
	NORMAL	Air flow is not slightly increased when odor in passenger room is detected.
BLOWER MOTOR SETTING	INCREASE (initial status)	Air flow is slightly increased when odor in passenger room is detected.

FOREST AIR SYSTEM : Aroma Diffuser Presence Setting

INFOID:000000008132214

DESCRIPTION

Setting change of aroma diffuser presence setting can be performed.

HOW TO SET

(P) With CONSULT

Perform "AROMA DIFFUSER SETTING" or HVAC work support item.

Work support items	Display	Setting	
AROMA DIFFUSER SETTING	WITHOUT	Without aroma diffuser.	
	WITH	With aroma diffuser.	

DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

Description

INFOID:000000008132215

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CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-board multiplex communication line with high data communication speed and excellent error detection ability. A modern vehicle is equipped with many ECMs, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, 2 control units are connected with 2 communication lines (CAN-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 <u>LAN-37, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"</u> for details of the communication signal.

DTC Logic

INFOID:000000008132216

DTC DETECTION LOGIC

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause	G
U1000	CAN COMM CIR- CUIT	When A/C auto amp. is not transmitting or receiving CAN communication signal for 2 or more seconds.	CAN communication system	0
4	IRMATION PRO			Н
1. PERFOR	M DTC CONFIRM	ATION PROCEDURE		
With CON		d wait at least 2 seconds or more.		HAC
2. Select "	Self Diagnostic Res	sult" mode of "HVAC" using CONSULT.		
 Check I s DTC dete 	-			J
YES >>	Refer to HAC-69, "	Diagnosis Procedure".		
NO >>	Refer to GI-43, "Int	ermittent Incident".		K
Diagnosis	Procedure		INFOID:00000008132217	
1.CHECK CAN COMMUNICATION SYSTEM				
Check CAN	communication sys	stem. Refer to LAN-27, "Trouble Diagnosis Flow	Chart".	
>>	INSPECTION END			M
				Ν
				0
				0

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

Description

Initial diagnosis of A/C auto amp.

DTC Logic

INFOID:000000008132219

INFOID:000000008132220

INFOID:000000008132218

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 <u>HAC-70, "Diagnosis Procedure"</u>.
- NO >> INSPECTION END

Diagnosis Procedure

1.REPLACE A/C AUTO AMP.

Replace A/C auto amp. Refer to HAC-163, "Removal and Installation".

>> INSPECTION END

B2578, B2579 IN-VEHICLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

B2578, B2579 IN-VEHICLE SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69, "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70,</u> <u>"DTC Logic"</u>.

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause	D
B2578		The in-vehicle sensor recognition temperature is too high.	In-vehicle sensorA/C auto amp.	E
B2579	IN-VEHICLE SENSOR	The in-vehicle sensor recognition temperature is too low.	Harness or connectors (The sensor circuit is open or short- ed.)	F
				Г

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 <u>HAC-71, "Diagnosis Procedure"</u>. NO >> INSPECTION END

Diagnosis Procedure

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.

4				
In-vehicle sensor		_	Voltage (Approx.)	
Connector	Terminal			N
M185	1	Ground	5 V	

Is the inspection result normal?

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

 \sim >> GU 10 Z.

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	Continuity	
M185	1	M67	32	Existed	

Is the inspection result normal?

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B2578, B2579 IN-VEHICLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 3.

NO >> Repair harness or connector.

 $\mathbf{3}.$ 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		Continuity	
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.

+			
In-vehic	le sensor	_	Voltage (Approx.)
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	Continuity	
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 <u>HAC-72, "Component Inspection"</u>.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace in-vehicle sensor. Refer to <u>HAC-165, "Removal and Installation"</u>.

7.CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

Is the inspection result normal?

- YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation".
- NO >> Repair or replace malfunctioning parts.

Component Inspection

1.CHECK IN-VEHICLE SENSOR

1. Turn ignition switch OFF.

2. Disconnect in-vehicle sensor connector.

INFOID:000000008132223

B2578, B2579 IN-VEHICLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

3. Check resistance between in-vehicle sensor terminals.

Torr	inal	Condition	
Term	inai	Temperature: °C (°F)	Resistance: $k\Omega$
		-15 (5)	12.90
		-10 (14)	9.68
		-5 (23)	7.35
		0 (32)	5.63
		5 (41)	4.35
		10 (50)	3.40
	2	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 <u>HAC-165, "Removal and Installation"</u>.

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Revision: 2013 September

B257B, B257C AMBIENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

B257B, B257C AMBIENT SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69, "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70,</u> <u>"DTC Logic"</u>.

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

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 <u>HAC-74</u>, "Diagnosis Procedure".
- NO >> INSPECTION END

Diagnosis Procedure

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.

Ambien	+ t sensor	_	Voltage (Approx.)	
Connector	Terminal	Ť		
E76	1	Ground	5 V	

Is the inspection result normal?

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.

Ambier	t sensor	A/C au	ito amp.	Continuity
Connector	Connector Terminal		Terminal	Continuity
E76	1	M67	31	Existed

Is the inspection result normal?

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INFOID:000000008132225

B257B, B257C AMBIENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

CHECK AM		ient sensor harr	ness connector an	d around.	
	.,				
	it sensor	_	_	Continuity	
Connector	Terminal				
E76	1	Gro	und	Not existed	
•	n result normal?	-			
) TO 4. pair harness or	connector.			
	-			R BATTERY SHORT	
	n switch ON.				
		nbient sensor ha	arness connector a	and ground.	
	0			0	
	+				
Ambien	nt sensor	-	-	Voltage (Approx.)	
Connector	Terminal			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
E76	1	Gro	und	0 V	
s the inspectio	n result normal?	-			
) TO 7.				
_	pair harness or	connector.			
CHECK AM	BIENT SENSOF	R GROUND CIF	RCUIT		
. Turn ignitio	n switch OFF.		RCUIT		
. Turn ignitio	n switch OFF. A/C auto amp.o	connector.			
. Turn ignitio . Disconnect	n switch OFF. A/C auto amp.o	connector.		r and A/C auto amp. h	arness connector.
. Turn ignitio . Disconnect . Check cont	n switch OFF. t A/C auto amp. tinuity between a	connector. ambient sensor	harness connecto		arness connector.
 Turn ignitio Disconnect Check cont 	n switch OFF. A/C auto amp.o	connector.	harness connecto	r and A/C auto amp. h Continuity	arness connector.
. Turn ignitio . Disconnect . Check cont Ambien Connector	n switch OFF. t A/C auto amp. tinuity between a t sensor Terminal	connector. ambient sensor A/C aut Connector	harness connecto to amp. Terminal	Continuity	arness connector.
. Turn ignitio Disconnect Check cont Ambien Connector E76	n switch OFF. t A/C auto amp. tinuity between a nt sensor Terminal 2	connector. ambient sensor A/C aut Connector M67	harness connecto		arness connector.
. Turn ignitio . Disconnect . Check cont Ambien Connector E76 s the inspectio	n switch OFF. t A/C auto amp. tinuity between a t sensor Terminal 2 n result normal?	connector. ambient sensor A/C aut Connector M67	harness connecto to amp. Terminal	Continuity	arness connector.
. Turn ignitio . Disconnect . Check cont Ambien Connector E76 s the inspection YES >> GC	n switch OFF. t A/C auto amp. tinuity between a nt sensor Terminal 2	connector. ambient sensor A/C aut Connector M67	harness connecto to amp. Terminal	Continuity	arness connector.
. Turn ignitio Disconnect Check cont Ambien Connector E76 Sthe inspectio YES >> GC NO >> Re	n switch OFF. t A/C auto amp.o tinuity between a nt sensor Terminal 2 n result normal? 0 TO 6. pair harness or	connector. ambient sensor A/C aut Connector M67	harness connecto to amp. Terminal	Continuity	arness connector.
. Turn ignitio Disconnect Check cont Ambien Connector E76 Sthe inspection YES >> GC NO >> Re CHECK AMI	n switch OFF. A/C auto amp.o tinuity between a t sensor Terminal 2 n result normal? O TO 6. pair harness or BIENT SENSOF	connector. ambient sensor A/C aut Connector M67 2 connector.	harness connecto to amp. Terminal 44	Continuity	arness connector.
. Turn ignitio Disconnect Check cont Ambien Connector E76 Sthe inspection YES >> GC NO >> Re CHECK AMI Check ambient	n switch OFF. t A/C auto amp. tinuity between a t sensor Terminal 2 n result normal? 0 TO 6. pair harness or BIENT SENSOF sensor. Refer to	connector. ambient sensor A/C aut Connector M67 2 connector. R D <u>HAC-75. "Con</u>	harness connecto to amp. Terminal	Continuity	arness connector.
. Turn ignitio Disconnect Check cont Ambien Connector E76 Sthe inspectio YES >> GC NO >> Re CHECK AMI Check ambient s the inspectio	n switch OFF. A/C auto amp.o tinuity between a tsensor Terminal 2 n result normal? TO 6. pair harness or BIENT SENSOF sensor. Refer to n result normal?	connector. ambient sensor A/C aut Connector M67 2 connector. R D <u>HAC-75. "Con</u>	harness connecto to amp. Terminal 44	Continuity	arness connector.
. Turn ignitio Disconnect Check cont Ambien Connector E76 Sthe inspection YES >> GC NO >> Re CHECK AMI Check ambient Sthe inspection YES >> GC	n switch OFF. A/C auto amp.o tinuity between a treminal 2 n result normal? TO 6. pair harness or BIENT SENSOF sensor. Refer to n result normal?	connector. ambient sensor A/C aut Connector M67 Connector.	harness connecto	Continuity	arness connector.
. Turn ignitio Disconnect Check cont Ambien Connector E76 Sthe inspectio YES >> GC NO >> Re CHECK AMI Check ambient Sthe inspectio YES >> GC NO >> Re	n switch OFF. A/C auto amp.o tinuity between a treminal 2 n result normal? TO 6. pair harness or BIENT SENSOF sensor. Refer to n result normal?	connector. ambient sensor A/C aut Connector M67 - connector. R D <u>HAC-75, "Con</u> - ensor. Refer to	harness connecto	Continuity Existed	arness connector.
Turn ignitio	n switch OFF. A/C auto amp.o tinuity between a transor Terminal 2 n result normal? TO 6. pair harness or BIENT SENSOF sensor. Refer to n result normal? TO 7. place ambient s ERMITTENT IN	connector. ambient sensor A/C aut Connector M67 Connector. Connector. Connector. Connector.	harness connecto	Continuity Existed	arness connector.
Turn ignitio	n switch OFF. t A/C auto amp.o tinuity between a n result normal? Terminal 2 n result normal? TO 6. pair harness or BIENT SENSOF sensor. Refer to n result normal? TO 7. place ambient s ERMITTENT IN	connector. ambient sensor A/C aut Connector M67 2 connector. R D <u>HAC-75. "Con</u> 2 ensor. Refer to CIDENT cident".	harness connecto	Continuity Existed	arness connector.
Turn ignitio Disconnect Check cont Ambien Connector E76 Sthe inspection YES >> GC O.CHECK AMI Check ambient Sthe inspection YES >> GC NO >> Re CHECK INT Refer to GI-43, Sthe inspection YES >> Re	n switch OFF. A/C auto amp.o tinuity between a trainity between a at sensor Terminal 2 n result normal? 0 TO 6. pair harness or BIENT SENSOF sensor. Refer to n result normal? 0 TO 7. place ambient s ERMITTENT IN "Intermittent Incomal? place A/C auto a	connector. ambient sensor A/C aut Connector M67 Connector. Connect	harness connector to amp. Terminal 44 nponent Inspection HAC-164, "Remova	Continuity Existed	arness connector.
Turn ignitio Disconnect Check cont Ambien Connector E76 Sthe inspection YES >> GC O.CHECK AMI Check ambient Sthe inspection YES >> GC NO >> Re CHECK INT Refer to GI-43, Sthe inspection YES >> Re	n switch OFF. A/C auto amp.o tinuity between a at sensor Terminal 2 n result normal? 0 TO 6. pair harness or BIENT SENSOF sensor. Refer to n result normal? 0 TO 7. place ambient s ERMITTENT IN "Intermittent Incomal? place A/C auto a pair or replace r	connector. ambient sensor A/C aut Connector M67 Connector. Connect	harness connector to amp. Terminal 44 nponent Inspection HAC-164, "Remova	Continuity Existed	
Turn ignitio	n switch OFF. A/C auto amp.o tinuity between a at sensor Terminal 2 n result normal? 0 TO 6. pair harness or BIENT SENSOF sensor. Refer to n result normal? 0 TO 7. place ambient s ERMITTENT IN "Intermittent Incomal? place A/C auto a pair or replace r	connector. ambient sensor A/C aut Connector M67 Connector. Connect	harness connector to amp. Terminal 44 nponent Inspection HAC-164, "Remova	Continuity Existed	

B257B, B257C AMBIENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

3. Check resistance between the ambient sensor terminals.

Torres	nal	Condition	Desistance kO
Terminal		Temperature: °C (°F)	Resistance: kΩ
		-15 (5)	12.73
		-10 (14)	9.92
		-5 (23)	7.80
		0 (32)	6.19
		5 (41)	4.95
		10 (50)	3.99
1	2	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 <u>HAC-164, "Removal and Installation"</u>.

B2581, B2582 INTAKE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

B2581, B2582 INTAKE SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69, "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70,</u> <u>"DTC Logic"</u>.

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause	D
B2581		The intake sensor recognition temperature is too high.	Intake sensorA/C auto amp.	E
B2582	INTAKE SENSOR	The intake sensor recognition temperature is too low.	Harness or connectors (The sensor circuit is open or short- ed.)	F

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 <u>HAC-77</u>, "Diagnosis Procedure".
- NO >> INSPECTION END

Diagnosis Procedure

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.

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

Is the inspection result normal?

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	Intake sensor Connector Terminal		to amp.	Continuity
Connector			Terminal	Continuity
M314	2	M304	51	Existed

Is the inspection result normal?

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B2581, B2582 INTAKE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 3.

NO >> Repair harness or connector.

 ${\it 3.}$ CHECK INTAKE SENSOR POWER SUPPLY CIRCUIT FOR GROUND SHORT

Check continuity between intake sensor harness connector and ground.

Intake	sensor		Continuity	
Connector	Terminal		Continuity	
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	Intake sensor		ito amp.	Continuity
Connector	Terminal	Connector	Terminal	Continuity
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-78, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace intake sensor. Refer to <u>HAC-168</u>, "Removal and Installation".

7.CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

Is the inspection result normal?

- YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation".
- NO >> Repair or replace malfunctioning parts.

Component Inspection

1.CHECK INTAKE SENSOR

1. Turn ignition switch OFF.

2. Disconnect intake sensor connector.

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B2581, B2582 INTAKE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

3. Check resistance between intake sensor terminals.

Terminal		Condition	Resistance: $k\Omega$
		Temperature: °C (°F)	Resistance. K22
		-15 (5)	10.92
		-10 (14)	8.24
		-5 (23)	6.29
		0 (32)	4.85
		5 (41)	3.77
		10 (50)	2.96
1	2	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 <u>HAC-168</u>, "Removal and Installation".

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Revision: 2013 September

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

B262A, B262B, B2657, B2658 EXHAUST GAS/OUTSIDE ODOR DETECT-ING SENSOR

DTC Logic

INFOID:000000008132230

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69. "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70.</u> <u>"DTC Logic"</u>.

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause
B262A	GAS SENSOR	Exhaust gas/outside odor detecting sensor duty ratio 15% or less.	Exhaust gas/outside odor detecting
B262B	GAS SENSOR	Exhaust gas/outside odor detecting sensor duty ratio 85% or more.	 A/C auto amp.
B2657	GAS SENSOR CIRCUIT	Exhaust gas/outside odor detecting sensor duty ratio 0%.	Harness or connectors (The sensor circuit is open or short-
B2658	GAS SENSOR CIRCUIT	Exhaust gas/outside odor detecting sensor duty ratio 100%.	ed.)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

- Turn ignition switch ON.
- 2. Select "Self Diagnostic Result" mode of "HVAC" using CONSULT.
- 3. Check DTC.

Is DTC detected?

YES >> Refer to HAC-80, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008132231

1. CHECK EXHAUST GAS/OUTSIDE ODOR DETECTING SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect exhaust gas/outside odor detecting sensor connector.
- 3. Turn ignition switch ON.
- 4. Check voltage between exhaust gas/outside odor detecting sensor harness and ground.

+			
Exhaust gas/outside odor detecting sensor		_	Voltage (Approx.)
Connector Terminal		*	
E74	1	Ground	Battery voltage

Is the inspection result normal?

YES	>> GO TO	5.
		0

NO >> GO TO 2.

2.CHECK FUSE

- 1. Turn ignition switch OFF.
- Check 10A fuse [No. 3, located in fuse block (J/B)] NOTE: Refer to PG-38, "Fuse and Fusible Link Arrangement".

< DTC/CIRCUI	T DIAGNOSIS	>		[AUTOMATIC AIR CONDIT	'IONING]
Is the inspection	n result normal?	-			
YES >> GO					1
· ·				uit if a fuse is blown.	
3. CHECK EXH	IAUST GAS/OU	TSIDE ODOR	DETECTING SEI	ISOR POWER SUPPLY CIRCUIT F	
			tside odor detec	ing sensor harness connector and f	fuse block
Exhaust gas/outsi sen		Fuse blo	ock (J/B)	Continuity	
Connector	Terminal	Connector	Terminal	,	
E74	1	E103	4F	Existed	
Is the inspectior	n result normal?				E
YES >> GO					-
· ·				SENSOR POWER SUPPLY CIRC	
GROUND SHO		OTOIDE ODO			
		itside odor dete	octing sensor con	nector, ionizer connector, ECV conr	ector and
	np.connector.		setting sensor con		
2. Check cont	inuity between e	exhaust gas/ou	side odor detecti	ng sensor harness connector and gr	ound.
					ŀ
Exhaust gas/outsi					ſ
Sen		-	-	Continuity	_
Connector	Terminal	0.00	und	Net evicted	H
E74	1	Ground		Not existed	
	n result normal?	_			
YES >> Che PL\	• •	er supply circu	t. Refer to <u>PG-2</u>	7, "Wiring Diagram - IGNITION POW	<u>/ER SUP-</u>
	bair harness or	connector.			
_ '			DETECTING SE	NSOR GROUND CIRCUIT	
	n switch OFF. inuity between e	exhaust gas/ou	side odor detecti	ng sensor harness connector and gr	ound.
Exhaust gas/outsi	de odor detectina				
sen	•	-	_	Continuity	
Connector	Terminal			-	
E74	2	Gro	und	Existed	
Is the inspection	n result normal?	-			
YES >> GO		-			
	pair harness or	connector.			

6.CHECK EXHAUST GAS/OUTSIDE ODOR DETECTING SENSOR INPUT SIGNAL

1. Connect exhaust gas/outside odor detecting sensor connector.

 Turn ignition switch ON.
 Check signal between exhaust gas/outside odor detecting sensor harness connector and ground with Ρ oscilloscope.

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< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

+ Exhaust gas/outside odor detecting sensor		_	Signal (Reference value)
Connector	Terminal		
E74	3	Ground	(V) 6 4 2 0 4 4 ms 5 JIA1163J

NOTE:

Signal differs depending on measurement environment of the vehicle.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace exhaust gas/outside odor detecting sensor. Refer to <u>HAC-170. "Removal and Installa-</u> tion".

7.CHECK EXHAUST GAS/OUTSIDE ODOR DETECTING SENSOR INPUT SIGNAL CIRCUIT FOR OPEN

- 1. Turn ignition switch OFF.
- 2. Disconnect exhaust gas/outside odor detecting sensor connector and A/C auto amp.connector.
- 3. Check continuity between exhaust gas/outside odor detecting sensor harness connector and A/C auto amp. connector.

Exhaust gas/outside odor detecting sensor		A/C au	ito amp.	Continuity
Connector	Terminal	Connector	Terminal	*
E74	3	M67	30	Existed

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair harness or connector.

 $\mathbf{8}$.CHECK EXHAUST GAS/OUTSIDE ODOR DETECTING SENSOR INPUT SIGNAL CIRCUIT FOR GROUND SHORT

Check continuity between exhaust gas/outside odor detecting sensor harness connector and ground.

Exhaust gas/outside odor detecting sensor		_	Continuity	
Connector	Terminal	Ť		
E74	3	Ground	Not existed	

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair harness or connector.

9.CHECK EXHAUST GAS/OUTSIDE ODOR DETECTING SENSOR INPUT SIGNAL CIRCUIT FOR BATTERY SHORT

Check voltage between exhaust gas/outside odor detecting sensor harness and ground.

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

	+			
•	side odor detecting nsor	-	Voltage (Approx.)	
Connector	Terminal			
E74	3	Ground	0 V	
-	on result normal? O TO 10.			
0.снеск II	pair harness or on NTERMITTENT	INCIDENT		
<u>s the inspection</u> YES >> Re	on result normal? place A/C auto a		oval and Installation".	

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B2630, B2631 SUNLOAD SENSOR

< DTC/CIRCUIT DIAGNOSIS >

B2630, B2631 SUNLOAD SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69</u>, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70,</u> <u>"DTC Logic"</u>.
- 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
B2631		Detected calorie at sunload sensor 75.6 W/m ² (64.97 kcal/m ² ·h) or less.	(The sensor circuit is open or short- ed.)

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-84, "Diagnosis Procedure".
- NO >> INSPECTION END

Diagnosis Procedure

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.

+			Voltago	
Sunloa	d sensor	_	Voltage (Approx.)	
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 au	ito amp.	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
M46	3	M67	39	Existed	

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B2630, B2631 SUNLOAD SENSOR

< DTC/CIRCUI	T DIAGNOSIS	•	ST SUNLO		NG]
Is the inspection	n result normal?	2			
YES >> GO					A
-	pair harness or				
3. CHECK SUN	ILOAD SENSC	R POWER SU	PPLY CIRCUIT	FOR GROUND SHORT	В
Check continuity	y between sunl	oad sensor harı	ness connector	and ground.	D
Sunload	l sensor		_	Continuity	С
Connector	Terminal				
M46	3	Gro	und	Existed	D
	TO 4. Dair harness or	connector.	PPLY CIRCUIT	FOR BATTERY SHORT	E
	n switch ON. age between su	nload sensor ha	arness connect	or and ground.	F
+				Voltage	
Sunload		(Approx.)	0	G	
Connector	Terminal				
M46 Is the inspectior	3		und	0 V	Н
5.CHECK SUN 1. Turn ignition 2. Disconnect	n switch OFF. A/C auto amp.	R GROUND CI		ector and A/C auto amp. harness connector.	HH J
Sunload	l sensor	A/C au	to amp.		K
Connector	Terminal	Connector	Terminal	Continuity	
	1		47		
M46	2	M67	35	Existed	L
Is the inspection YES >> GO NO >> Rep 6.CHECK SUN	TO 6. Dair harness or	connector.			Μ
Check sunload	sensor. Refer to	o <u>HAC-86, "Con</u>	nponent Inspec	ction".	— N
Is the inspection	n result normal?	<u>?</u>	-		
YES >> GO	-			en en el la stalla de la della de la	0
NO >> Rep 7.CHECK INTE			<u>HAC-166, "Re</u>	moval and Installation".	
Refer to GI-43.	"Intermittent Ind	cident".			P
Is the inspection					
YES >> Rep	place A/C auto	- amp. Refer to <u>-</u>		oval and Installation".	
NO >> Rep	pair or replace r	malfunctioning p	oarts.		

NO >> Repair or replace malfunctioning parts.

B2630, B2631 SUNLOAD SENSOR

< DTC/CIRCUIT DIAGNOSIS >

Component Inspection

INFOID:000000008132234

[AUTOMATIC AIR CONDITIONING]

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	
Terminal		Sunload amount: kW/m ² kcal/m ² ·h)	Resistance. K2	
	0	More than 17000		
		0.233 (200)	59.9	
		0.465 (400)	49.9	
1 (Passenger side)	3	0.698 (600)	39.9	
2 (Driver side)	5	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/m² (662 kcal/m²·h).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace sunload sensor. Refer to <u>HAC-166, "Removal and Installation"</u>.

B2750, B2751, B2752 AIR MIX DOOR MOTOR (DRIVER SIDE) CUIT DIAGNOSIS > [AUTOMATIC AIR CONDITIONING]

< DTC/CIRCUIT DIAGNOSIS >

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

DTC Logic

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DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69, "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70,</u> <u>"DTC Logic"</u>.
- If all of door motors DTC (B2750 B276A) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-133</u>, "DOOR MOTOR PBR (WITH FOREST AIR) : Diagnosis Procedure" (With Forest Air).
- If all of door motors DTC (B2750 B2764) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-135</u>, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure" (Without Forest Air).

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause	F
B2750		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) con- 	0
B2751	DR AIR MIX DOOR MOT	Air mix door motor (driver side) PBR feedback signal voltage is too high.	 trol linkage installation condition A/C auto amp. Harness or connectors 	G
B2752		Stop position of air mix door motor (driver side) is malfunctioning.	(The motor circuit is open or short- ed.)	Н

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE	HAC
 With CONSULT 1. Turn ignition switch ON. 2. Select "Self Diagnostic Result" mode of "HVAC" using CONSULT. 3. Check DTC. 	J
<u>Is DTC detected?</u> YES >> Refer to <u>HAC-87, "Diagnosis Procedure"</u> . NO >> INSPECTION END	Κ
Diagnosis Procedure	L
 CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) OPERATION Turn ignition switch ON. Operate temperature control switch (driver side) and check by operation sound that air mix door motor 	Μ
(driver side) operates. <u>Is the inspection result normal?</u> YES >> GO TO 8. NO >> GO TO 2.	Ν
2. CHECK AIR MIX DOOR MOTOR (DRIVER SIDE) DRIVE SIGNAL	0
Check voltage between air mix door motor (LH) harness connector and ground.	Ρ

-	+						
Air mix doo	r motor (LH)	_	Condition		Condition Voltage		Voltage (Approx.)
Connector	Terminal				(/ (pp/07.)		
M315	1	Ground	Set temperature $18^{\circ}C (60^{\circ}F) \rightarrow 32^{\circ}C (90^{\circ}F)$		12 V		
101313	2	Ground	(driver side)	$32^{\circ}C (90^{\circ}F) \rightarrow 18^{\circ}C (60^{\circ}F)$	IZ V		

Is the inspection result normal?

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

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

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 do	Air mix door motor LH		A/C auto amp.	
Connector	Terminal	Connector	Terminal	Continuity
M315	1	M304	81	Existed
101313	2	101304	61	LAISIEU

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 doo	or motor LH		Continuity	
Connector	Terminal		Continuity	
M315	1	Ground	Not existed	
1015	2	Ground	Not existed	

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.

	+		N/ K	
Air mix doo	or motor LH	-	Voltage (Approx.)	
Connector	Terminal			
M315	1	Ground	0 V	
	2	Ground	0.1	

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 <u>HAC-90, "Component Inspection (Motor)"</u>.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace air mix door motor (driver side). Refer to <u>HAC-172, "AIR MIX DOOR MOTOR : Removal</u> and Installation".

I.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 <u>HAC-171, "Exploded</u> <u>View"</u>.

Is the inspection result normal?

YES >> GO TO 15.

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

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

А

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.

4						
A/C aut	o amp.	-	Cond	lition	Voltage (Approx.)	
Connector	Terminal		1890 (COSE)		())	
M304	53	Ground	Set temperature	18°C (60°F)	4 V	
			(driver side)	32°C (90°F)	1 V	
	n result normal	2				
YES >> GO NO >> GO	TO 15. TO 9.					
.CHECK AIR	MIX DOOR MO		R SIDE) PBR FE	EDBACK SIGN	IAL CIRCUIT FC	R OPEN
	n switch OFF.					
Disconnect	air mix door m		s connector and			
Check cont tor.	inuity between	air mix door m	otor LH harness	connector and	A/C auto amp. I	narness connec-
ισι.						
Air mix doo	r motor LH	A/C a	uto amp.	0		
Connector	Terminal	Connector	Terminal	Continuity		
M315	3	M304	53	Existed		
the inspectior	n result normal?	?				
		_				
YES >> GO	TO 10.					
	TO 10. Dair harness or	connector.				
NO >> Rep	pair harness or		ER SIDE) PBR F	FEEDBACK SIC	GNAL CIRCUIT I	FOR SHORT
NO >> Rep O.CHECK AI	oair harness or R MIX DOOR I	MOTOR (DRIV	ER SIDE) PBR F			FOR SHORT
NO >> Rep O.CHECK AI	oair harness or R MIX DOOR I	MOTOR (DRIV	ER SIDE) PBR F LH harness conr			FOR SHORT
NO >> Rep O.CHECK AI	oair harness or R MIX DOOR I y between air n	MOTOR (DRIV	LH harness conr			FOR SHORT
NO >> Rep 0.CHECK AI heck continuit	oair harness or R MIX DOOR I y between air n	MOTOR (DRIV				FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo	oair harness or R MIX DOOR I y between air n r motor LH	MOTOR (DRIV	LH harness conr			FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo Connector M315	oair harness or R MIX DOOR I y between air n r motor LH Terminal 3	MOTOR (DRIV nix door motor — Ground	LH harness conr			FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo Connector M315 the inspectior	pair harness or R MIX DOOR I y between air n r motor LH Terminal	MOTOR (DRIV nix door motor — Ground	LH harness conr			FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO	pair harness or R MIX DOOR I y between air n r motor LH Terminal 3 n result normal	MOTOR (DRIV nix door motor 	LH harness conr			FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO	oair harness or R MIX DOOR I y between air n r motor LH Terminal 3 n result normal TO 11. pair harness or	MOTOR (DRIV nix door motor 	LH harness conr Continuity Not existed	nector and grou	nd.	FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO NO >> Rep 1.CHECK AI	oair harness or R MIX DOOR I y between air n r motor LH Terminal 3 n result normal TO 11. pair harness or R MIX DOOR N	MOTOR (DRIV nix door motor — Ground ? connector. MOTOR (DRIV	LH harness conr Continuity Not existed ER SIDE) PBR F	nector and grou	nd.	FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO NO >> Rep 1.CHECK AI Reconnect Turn ignition	oair harness or R MIX DOOR I y between air n r motor LH Terminal 3 r result normal' TO 11. pair harness or R MIX DOOR N A/C auto amp. n switch ON.	MOTOR (DRIV nix door motor — Ground ? connector. MOTOR (DRIV harness conne	LH harness conr Continuity Not existed ER SIDE) PBR F	POWER SUPPL	nd. .Y	FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO NO >> Rep 1.CHECK AI Reconnect Turn ignition	oair harness or R MIX DOOR I y between air n r motor LH Terminal 3 r result normal' TO 11. pair harness or R MIX DOOR N A/C auto amp. n switch ON.	MOTOR (DRIV nix door motor — Ground ? connector. MOTOR (DRIV harness conne	LH harness conr Continuity Not existed ER SIDE) PBR F	POWER SUPPL	nd. .Y	FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO NO >> Rep 1.CHECK AI Reconnect Turn ignition	oair harness or R MIX DOOR I y between air n r motor LH Terminal 3 r result normal' TO 11. pair harness or R MIX DOOR N A/C auto amp. n switch ON.	MOTOR (DRIV nix door motor — Ground ? connector. MOTOR (DRIV harness conne	LH harness conr Continuity Not existed ER SIDE) PBR F	POWER SUPPL	nd. .Y	FOR SHORT
NO >> Rep 0. CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO NO >> Rep 1. CHECK AI Reconnect Turn ignition Check volta	oair harness or R MIX DOOR I y between air n r motor LH Terminal 3 n result normal TO 11. pair harness or R MIX DOOR N A/C auto amp. n switch ON. Ige between air	MOTOR (DRIV nix door motor — Ground ? connector. MOTOR (DRIV harness conne	LH harness conr Continuity Not existed ER SIDE) PBR F octor. or LH harness co	POWER SUPPL	nd. .Y	FOR SHORT
NO >> Rep 0. CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO NO >> Rep 1. CHECK AI Reconnect Turn ignition Check volta	pair harness or R MIX DOOR I y between air n r motor LH Terminal 3 n result normal TO 11. pair harness or R MIX DOOR N A/C auto amp. n switch ON. Ige between air	MOTOR (DRIV nix door motor — Ground ? connector. MOTOR (DRIV harness conne	LH harness conr Continuity Not existed ER SIDE) PBR F	POWER SUPPL	nd. .Y	FOR SHORT
NO >> Rep 0. CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO NO >> Rep 1. CHECK AI Reconnect Turn ignition Check volta	pair harness or R MIX DOOR I y between air n r motor LH Terminal 3 n result normal TO 11. pair harness or R MIX DOOR N A/C auto amp. n switch ON. Ige between air	MOTOR (DRIV nix door motor — Ground ? connector. MOTOR (DRIV harness conne	LH harness conr Continuity Not existed ER SIDE) PBR F octor. or LH harness co	POWER SUPPL	nd. .Y	FOR SHORT
NO >> Rep 0. CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO NO >> Rep 1. CHECK AI Reconnect Turn ignition Check volta	pair harness or R MIX DOOR I y between air n r motor LH Terminal 3 n result normal TO 11. pair harness or R MIX DOOR N A/C auto amp. n switch ON. age between air	MOTOR (DRIV nix door motor — Ground ? connector. MOTOR (DRIV harness conne	LH harness conr Continuity Not existed ER SIDE) PBR F octor. or LH harness co	POWER SUPPL	nd. .Y	FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO NO >> Rep 1.CHECK AI Reconnect Turn ignition Check volta	air harness or R MIX DOOR I y between air n r motor LH Terminal 3 n result normal TO 11. pair harness or R MIX DOOR N A/C auto amp. n switch ON. ge between air r motor LH Terminal	MOTOR (DRIV nix door motor — Ground ? connector. MOTOR (DRIV) harness conne mix door moto — Ground	LH harness conr Continuity Not existed ER SIDE) PBR F octor. or LH harness co Voltage (Approx.)	POWER SUPPL	nd. .Y	FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO NO >> Rep I.CHECK AI Reconnect Turn ignition Check volta Air mix doo Connector M315 the inspection	pair harness or R MIX DOOR I y between air n r motor LH Terminal 3 n result normal TO 11. pair harness or R MIX DOOR N A/C auto amp. n switch ON. age between air r motor LH Terminal 7	MOTOR (DRIV nix door motor — Ground ? connector. MOTOR (DRIV) harness conne mix door moto — Ground	LH harness conr Continuity Not existed ER SIDE) PBR F octor. or LH harness co Voltage (Approx.)	POWER SUPPL	nd. .Y	FOR SHORT
NO >> Rep O.CHECK AI heck continuity Air mix doo Connector M315 the inspection YES >> GO NO >> Rep 1.CHECK AI Reconnect Turn ignition Check volta Air mix doo Connector M315 the inspection YES >> GO NO >> GO	pair harness or R MIX DOOR I y between air n r motor LH Terminal 3 n result normal TO 11. pair harness or R MIX DOOR N A/C auto amp. n switch ON. ige between air r motor LH Terminal 7 n result normal TO 13. TO 12.	MOTOR (DRIV nix door motor 	LH harness conr Continuity Not existed ER SIDE) PBR F octor. or LH harness co Voltage (Approx.)	POWER SUPPL	nd. _Y bund.	

Revision: 2013 September

HAC-89

B2750, B2751, B2752 AIR MIX DOOR MOTOR (DRIVER SIDE) [AUTOMATIC AIR CONDITIONING]

< DTC/CIRCUIT DIAGNOSIS >

- 2. Disconnect A/C auto amp. harness connector.
- Check continuity between air mix door motor LH harness connector and A/C auto amp. harness connector.

Air mix do	or motor LH	A/C au	to amp.	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M315	7	M304	71	Existed

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair harness or connector.

$13. {\sf check air mix door motor (driver side) pbr ground circuit}$

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

Air mix doo	Air mix door motor LH		A/C auto amp.		
Connector	Terminal	Connector	Terminal	Continuity	
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-91, "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace air mix door motor (driver side). Refer to <u>HAC-172, "AIR MIX DOOR MOTOR : Removal</u> and Installation".

15. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to <u>HAC-163</u>, "Removal and Installation".

NO >> Repair or replace malfunctioning parts.

Component Inspection (Motor)

INFOID:000000008132237

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.

Terr	Terminal		
+	_	tion	
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 <u>HAC-172, "AIR MIX DOOR MOTOR : Removal</u> and Installation".

HAC-90

B2750, B2751, B2752 AIR MIX DOOR MOTOR (DRIVER SIDE) [AUTOMATIC AIR CONDITIONING]

< DTC/CIRCUIT DIAGNOSIS >

Component Inspection	າ (PBR)	INFOID:00000008132238
1 .CHECK AIR MIX DOOR	MOTOR (DRIVER SIDE) PBR	
Check resistance between a	ir mix door motor (driver side) PBR terminals.	
Terminal	Resistance (Ω)	
5 3	Except 0 or ∞	
s the inspection result norm	al?	

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B2753, B2754, B2755 AIR MIX DOOR MOTOR (PASSENGER SIDE) < DTC/CIRCUIT DIAGNOSIS > [AUTOMATIC AIR CONDITIONING]

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

DTC Logic

INFOID:000000008132239

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69</u>, "DTC Logic".
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70.</u> <u>"DTC Logic"</u>.
- If all of door motors DTC (B2750 B276A) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-133</u>, "DOOR MOTOR PBR (WITH FOREST AIR) : Diagnosis Procedure" (With Forest Air).
- If all of door motors DTC (B2750 B2764) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-135</u>, "<u>DOOR MOTOR PBR (WITHOUT FOREST AIR)</u> : <u>Diagnosis Procedure</u>" (Without Forest Air).

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

(D) With CONSULT

- Turn ignition switch ON.
- 2. Select "Self Diagnostic Result" mode of "HVAC" using CONSULT.
- 3. Check DTC.

Is DTC detected?

YES >> Refer to <u>HAC-92, "Diagnosis Procedure"</u>.

NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008132240

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		Condition Voltag		
Air mix doo	or motor RH	_					(Approx.)
Connector	Terminal						
M306	1	Ground	Set temperature	$18^{\circ}C (60^{\circ}F) \rightarrow 32^{\circ}C (90^{\circ}F)$	12 V		
101306	2	Giouna	(passenger side)	$32^{\circ}C (90^{\circ}F) \rightarrow 18^{\circ}C (60^{\circ}F)$	12 V		

Is the inspection result normal?

B2753, B2754, B2755 AIR MIX DOOR MOTOR (PASSENGER SIDE) [AUTOMATIC AIR CONDITIONING]

< DTC/CIRCUIT DIAGNOSIS >

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.

Check continuity between air mix door motor RH harness connector and A/C auto amp. harness connector.

Air mix doo	Air mix door motor RH		A/C auto amp.		
Connector	Terminal	Connector Terminal		Continuity	
M306	1	M304	67	Existed	
WIS00	2	101504	87	Existed	

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 doo	or motor RH		Continuity	
Connector	Terminal		Continuity	
M306	1	Ground	Not existed	
Mood	2	Ground	Not existed	

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		V 11 - 7
M315	1	Ground	0 V
101315	2	Ground	0 v

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-95, "Component Inspection (Motor)".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace air mix door motor (passenger side). Refer to <u>HAC-172, "AIR MIX DOOR MOTOR :</u> <u>Removal and Installation"</u>.

1.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 <u>HAC-171, "Exploded</u> <u>View"</u>.

Is the inspection result normal?

YES >> GO TO 15.

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

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

NO >> Repair or replace malfunctioning parts.

 $\mathbf{8}$.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.

A/C au	+ to amp.	_	Condition		Voltage (Approx.)
Connector	Terminal				··· /
M304	74	Ground	Set temperature	18°C (60°F)	4 V
101304	74	Giouna	d (passenger side)	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.

Check continuity between air mix door motor RH harness connector and A/C auto amp. harness connector.

Air mix doo	Air mix door motor RH		A/C auto amp.	
Connector	Terminal	Connector	Terminal	Continuity
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 doo	or motor RH		Continuity
Connector	Terminal		Continuity
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.

	+			
Air mix door motor RH		-	Voltage (Approx.)	
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.

HAC-94

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

[AUTOMATIC AIR CONDITIONING]

< DTC/CIRCUIT DIAGNOSIS >

- 2. Disconnect A/C auto amp. harness connector.
- 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. 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-162. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR ; Removal and Installation". NO >> Replace A/C	E
Connector Terminal Connector Terminal Finite M306 7 M304 71 Existed Is the inspection result normal? YES > S OT 0 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. 3. Check continuity between air mix door motor RH arress connector and A/C auto amp. harness connector. Air mix door motor RH A/C auto amp. Continuity Connector Terminal Continuity M306 5 M304 79 Existed State inspection result normal? YES 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-96. "Component Inspection (PBR)". Is the inspection result normal? YES > GO TO 15. NO > Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". NO > Replac	
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. 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. Connector Terminal M306 5 M304 79 Existed Is the inspection result normal? Continuity YES >> GO TO 14. NO 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-96. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43. "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163. "Removal and Installation".	
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. 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. Connector Terminal M306 5 M307 Existed Is the inspection result normal? YES > GO TO 14. NO >> Replace air mix door motor (passenger side) PBR. Check air mix door motor (passenger side) PBR. Refer to HAC-96. "Component Inspection (PBR)". Is the inspection result normal? <td< td=""><td></td></td<>	
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. Connector Terminal Made 5 M306 5 YES > G0 T0 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-96. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO T0 15. NO >> Replace air mix door motor (passenger side) PBR. Refer to HAC-96. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO T0 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR ; Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43. "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163. "Removal and Installation". NO	
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. 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-96, "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". 15.cHECK INTERMITTENT INCIDENT Refer to GI-43. "Intermittent Incident". Is the inspection result normal? <td< td=""><td></td></td<>	
 Turn ignition switch OFF. Disconnect A/C auto amp. harness connector. 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. Connector Terminal Connector Terminal Continuity M306 5 M304 79 Existed Is the inspection result normal? YES >> GO TO 14. NO >> Repair harness or connector. Check air mix door motor (passenger side) PBR. Refer to HAC-96. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR (PASSENGER SIDE) PBR Check INTERMITTENT INCIDENT Refer to GI-43. "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163. "Removal and Installation". NO >> Replace A/C auto amp. Refer to HAC-163. "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) Motococconcentration Check AIR MIX DOOR MOTOR (PASSENGER SIDE) Turn ignition switch OFF. 	
 Disconnect A/C auto amp. harness connector. 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. Connector Terminal Connector Terminal Continuity 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-96, "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172, "AIR MIX DOOR MOTOR : Removal and Installation". 15. CHECK INTERMITTENT INCIDENT Refer to GI-43, "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) Detects AIR MIX DOOR MOTOR (PASSENGER SIDE) Turn ignition switch OFF. 	
 3. Check continuity between air mix door motor RH harness connector and A/C auto amp. harness connector. <u>Air mix door motor RH</u> <u>A/C auto amp.</u> <u>Connector</u> <u>Terminal</u> <u>Connector</u> <u>Terminal</u> <u>M306 5 M304 79 Existed</u> <u>Is the inspection result normal?</u> YES >> GO TO 14. NO >> Repair harness or connector. <u>14.CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) PBR</u> Check air mix door motor (passenger side) PBR. Refer to <u>HAC-96. "Component Inspection (PBR)"</u>. <u>Is the inspection result normal?</u> YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to <u>HAC-172. "AIR MIX DOOR MOTOR :</u> <u>Removal and Installation"</u>. <u>15.CHECK INTERMITTENT INCIDENT</u> Refer to <u>GI-43. "Intermittent Incident"</u>. <u>Is the inspection result normal?</u> YES >> Replace A/C auto amp. Refer to <u>HAC-163. "Removal and Installation"</u>. NO >> Replace malfunctioning parts. Component Inspection (Motor) <i>NPOID_CONCOUNTER</i> SIDE) 1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF. 	
tor. 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-96. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43, "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) wromocommons. Monocommons. Monocommons. 1.CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF. Monocommons.	
Connector Terminal Connector Terminal Continuity 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-96. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43. "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163. "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) MF0ID:00000000000000000000000000000000000	
Connector Terminal Connector Terminal Continuity M306 5 M304 79 Existed 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-96. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43. "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163. "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) Information (Motor) Information (Motor) Information (Motor)	
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-96. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43. "Intermittent Incident". Is the inspection result normal? YES YES >> Replace A/C auto amp. Refer to HAC-163. "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) Information model installation". 1.CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
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-96. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43. "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163. "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) Wrotrococcentersult 1.CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
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-96. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43. "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163. "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) MFOLD.00000000112241 1.CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
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-96. "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43. "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163. "Removal and Installation". NO >> Replace malfunctioning parts. Component Inspection (Motor) MFOID.000000000000000000000000000000000000	
<pre>14.CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) PBR Check air mix door motor (passenger side) PBR. Refer to <u>HAC-96. "Component Inspection (PBR)"</u>. Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to <u>HAC-172. "AIR MIX DOOR MOTOR :</u> Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to <u>GI-43. "Intermittent Incident"</u>. Is the inspection result normal? YES >> Replace A/C auto amp. Refer to <u>HAC-163. "Removal and Installation"</u>. NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) 1.CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.</pre>	
Check air mix door motor (passenger side) PBR. Refer to <u>HAC-96. "Component Inspection (PBR)"</u> . Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to <u>HAC-172. "AIR MIX DOOR MOTOR :</u> <u>Removal and Installation"</u> . 15. CHECK INTERMITTENT INCIDENT Refer to <u>GI-43. "Intermittent Incident"</u> . Is the inspection result normal? YES >> Replace A/C auto amp. Refer to <u>HAC-163. "Removal and Installation"</u> . NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) 1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
Is the inspection result normal? YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43. "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163. "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) INFOID.00000008132241 1.CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
YES >> GO TO 15. NO >> Replace air mix door motor (passenger side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43, "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) INFOLE-0000008132241 1.CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	ŀ
NO >> Replace air mix door motor (passenger side). Refer to HAC-172, "AIR MIX DOOR MOTOR : Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43, "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) 1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
Removal and Installation". 15.CHECK INTERMITTENT INCIDENT Refer to GI-43, "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) INFOID:00000008132241 1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
Refer to GI-43, "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) INFOID:0000008132241 1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
Refer to GI-43, "Intermittent Incident". Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) INFOID:0000008132241 1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
Is the inspection result normal? YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) INFOID:0000008132241 1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation". NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) INFOID:0000008132241 1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
NO >> Repair or replace malfunctioning parts. Component Inspection (Motor) INFOID:00000008132241 1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) INFOID:00000008132241 1. Turn ignition switch OFF. Infoid: 000000000000000000000000000000000000	
1. CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) 1. Turn ignition switch OFF.	
 CHECK AIR MIX DOOR MOTOR (PASSENGER SIDE) Turn ignition switch OFF. 	
1. Turn ignition switch OFF.	
2 Disconnect air mix door motor RH harness connector	
Supply air mix door motor (passenger side) terminals with battery voltage and check by visually and oper- ation sound that air mix door motor (passenger side) operates.	
Terminal Operation direc-	
+ _ tion	
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 <u>HAC-172. "AIR MIX DOOR MOTOR :</u> <u>Removal and Installation"</u>.

HAC-95

B2753, B2754, B2755 AIR MIX DOOR MOTOR (PASSENGER SIDE) [AUTOMATIC AIR CONDITIONING]

< DTC/CIRCUIT DIAGNOSIS >

Component Inspection (PBR)

INFOID:000000008132242

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 ∞
5	7	

Is the inspection result normal?

>> INSPECTION END YES

NO >> Replace air mix door motor (passenger side). Refer to HAC-172, "AIR MIX DOOR MOTOR : Removal and Installation".

< DTC/CIRCUIT DIAGNOSIS >

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

DTC Logic

INFOID:000000008132243

А

В

Е

[AUTOMATIC AIR CONDITIONING]

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69, "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70.</u>
 <u>"DTC Logic"</u>.
- If all of door motors DTC (B2750 B276A) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-133</u>, "DOOR MOTOR PBR (WITH FOREST AIR) : Diagnosis Procedure" (With Forest Air).
- If all of door motors DTC (B2750 B2764) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-135</u>, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure" (Without Forest Air).

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause	F
B2756		Mode door motor (driver side) PBR feedback signal voltage is too low.	 Mode door motor (driver side) Mode door motor (driver side) con- 	0
B2757	DR MODE DOOR MOTOR	Mode door motor (driver side) PBR feedback signal voltage is too high.	 trol linkage installation condition A/C auto amp. Harness or connectors 	G
B2758		Stop position of mode door motor (driver side) is malfunctioning.	(The motor circuit is open or short- ed.)	Н

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE	HAC
 With CONSULT 1. Turn ignition switch ON. 2. Select "Self Diagnostic Result" mode of "HVAC" using CONSULT. 3. Check DTC. 	J
<u>Is DTC detected?</u> YES >> Refer to <u>HAC-97, "Diagnosis Procedure"</u> . NO >> INSPECTION END	K
Diagnosis Procedure	L
 CHECK MODE DOOR MOTOR (DRIVER SIDE) OPERATION Turn ignition switch ON. Operate MODE switch (driver side) and check by operation sound that mode door motor (driver side) operates. 	Μ
Is the inspection result normal? YES >> GO TO 8. NO >> GO TO 2.	Ν
2. CHECK MODE DOOR MOTOR (DRIVER SIDE) DRIVE SIGNAL	0
 Press MODE switch (driver side) and DEF switch. Check voltage between mode door motor LH harness connector and ground. 	Ρ

+ Mode door motor LH		_	- Condition		Voltage (Approx.)
Connector	Connector Terminal				(Approx.)
M316 (with Forest Air)	M316 (with Forest Air) 1		Air outlet	$DEF \to VENT$	12 V
M317 (without Forest Air)	2	Ground	An outlet	$VENT \to DEF$	12 V

< DTC/CIRCUIT DIAGNOSIS >

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 m	Continuity			
Connector	Terminal	Connector	Terminal	Continuity
M316 (with Forest Air)	1	M304	63	Existed
M317 (without Forest Air)	2	101304	83	Existed

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 m	otor LH		Continuity
Connector	Connector Terminal		Continuity
M316 (with Forest Air)	1	Ground	Not existed
M317 (without Forest Air)	2	Ground	NOT EXISTED

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.

+			
Mode door m	notor LH	-	Voltage (Approx.)
Connector	Terminal		
M316 (with Forest Air)	1		<u></u>
M317 (without Forest Air) 2		Ground	0 V

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-100. "Component Inspection (Motor)".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace mode door motor (driver side). Refer to <u>HAC-171. "MODE DOOR MOTOR : Removal</u> 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 <u>HAC-171, "Exploded View"</u>. <u>Is the inspection result normal?</u>

YES >> GO TO 15.

NO >> Repair or replace malfunctioning parts.

HAC-98

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

 Check voltage bet 	vitch (driver : ween A/C au				r and gr	ound.			
+ A/C auto amp.		_	Condition		Voltag (Appro				
Connector Terminal							(++)		
M304 5	M304 54 Ground		Air	outlet	VE		4 V 1 V		
the inspection result normal?						-			
YES >> GO TO 15 NO >> GO TO 9. CHECK MODE DO		(DRIVER \$	SIDE) P	BR FEE	DBACK	SIGNAL	. CIRCUIT	FOR OPEN	
. Turn ignition switcl 2. Disconnect mode 3. Check continuity b	h OFF. door motor L	H harness	connec	tor and <i>i</i>	A/C auto	o amp. ha	arness cor	inector.	nector.
Mode door mo	otor LH		A/C au	ito amp.		Quarta	<u>.</u>		
Connector	Terminal	Conn	ector	Term	ninal	Contin	uity		
M316 (with Forest Air) M317 (without Forest Air)	3	M3	304	54	4	Existe	ed		
10. CHECK MODE D	OOR MOTO	R (DRIVE						IT FOR SHOR	Г
10. CHECK MODE D	OOR MOTO	R (DRIVE		ess conn	ector an			IT FOR SHOR	Г
O.CHECK MODE D	OOR MOTO	R (DRIVE			ector an			IT FOR SHOR	Г
10.CHECK MODE D Check continuity betwee Mode door mo	OOR MOTO	R (DRIVE	H harne	ess conn	ector an			IT FOR SHOR	<u>г</u>
10.CHECK MODE D Check continuity betwee Mode door mo Connector M316 (with Forest Air)	DOOR MOTO een mode do tor LH Terminal 3 normal?	R (DRIVEF or motor LI Gro nector. R (DRIVEF ess connection	H harne	Conti Not ex PBR PC	ector an nuity kisted	d ground	1.	IT FOR SHOR	<u>г</u>
10.CHECK MODE D Check continuity betwee Mode door mo Connector M316 (with Forest Air) M317 (without Forest Air) S the inspection result YES >> GO TO 11 NO >> Repair har 11.CHECK MODE D Reconnect A/C au 2. Turn ignition switcl	DOOR MOTO een mode do tor LH Terminal 3 normal?	R (DRIVEF or motor LI Gro nector. R (DRIVEF ess connection	H harne	PBR PC	ector an nuity kisted	d ground	1.	IT FOR SHOR	<u>г</u>
IO.CHECK MODE D Check continuity betwee Mode door mo Connector M316 (with Forest Air) M317 (without Forest Air) S the inspection result YES >> GO TO 11 NO >> Repair har IO.CHECK MODE D Reconnect A/C au Turn ignition switcl Check voltage betw + Mode door mo	DOOR MOTO een mode do nor LH Terminal 3 normal?	R (DRIVEF or motor LI Gro nector. R (DRIVEF ess connection	H harne	Conti Not ex PBR PC	ector an nuity kisted	d ground	1.	IT FOR SHOR	<u>г</u>
10.CHECK MODE D Check continuity betwee Mode door mo Connector M316 (with Forest Air) M317 (without Forest Air) M317 (without Forest Air) S the inspection result YES >> GO TO 11 NO >> Repair har 11.CHECK MODE D Reconnect A/C au Check voltage betwee + Mode door mor Connector	DOOR MOTO een mode do nor LH Terminal 3 normal?	R (DRIVEF or motor LI Gro nector. R (DRIVEF ess connection	H harne	PBR PC	ector an nuity kisted	d ground	1.	IT FOR SHOR	<u>г</u>
10.CHECK MODE D Check continuity betwee Mode door mo Connector M316 (with Forest Air) M317 (without Forest Air) S the inspection result YES >> GO TO 11 NO >> Repair har 11.CHECK MODE D 1. Reconnect A/C au 2. Turn ignition switcl 3. Check voltage betwee + Mode door mo	DOOR MOTO een mode do nor LH Terminal 3 normal?	R (DRIVEF or motor LI Gro nector. R (DRIVEF ess connection	H harne 	PBR PC	ector an nuity kisted	d ground	1.	IT FOR SHOR	<u>г</u>

< DTC/CIRCUIT DIAGNOSIS >

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 mo	otor LH	A/C au	to amp.	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M316 (with Forest Air)	4			
M317 (without Forest Air)	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 mo	otor LH	A/C au	to amp.	Continuity
Connector Terminal		Connector	Terminal	Continuity
M316 (with Forest Air)	5			
M317 (without Forest Air)	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-101. "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace mode door motor (driver side). Refer to <u>HAC-171, "MODE DOOR MOTOR : Removal</u> and Installation".

15. CHECK INTERMITTENT INCIDENT

Refer to GI-43. "Intermittent Incident".

Is the inspection result normal?

- YES >> Replace A/C auto amp. Refer to <u>HAC-163</u>, "Removal and Installation".
- NO >> Repair or replace malfunctioning parts.

Component Inspection (Motor)

INFOID:000000008132245

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.

Terr	Operation direc-	
+	_	tion
1	2	VENT
2	1	DEF

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> INSPECTION END

NO >> Replace mode door motor (driver side). Refer to <u>HAC-171, "MODE DOOR MOTOR : Removal</u> and Installation".

Component Inspection (PBR) INFOID:000000008132246 В 1.CHECK MODE DOOR MOTOR (DRIVER SIDE) PBR Check resistance between mode door motor (driver side) PBR terminals. С Terminal Resistance (Ω) 3 D 5 (with Forest Air) 4 Except 0 or ∞ 3 7 (without Forest Air) Ε 5 Is the inspection result normal? YES >> INSPECTION END F NO >> Replace mode door motor (driver side). Refer to HAC-172. "AIR MIX DOOR MOTOR : Removal and Installation".

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B2759, B275A, B275B MODE DOOR MOTOR (PASSENGER SIDE) < DTC/CIRCUIT DIAGNOSIS > [AUTOMATIC AIR CONDITIONING]

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

DTC Logic

INFOID:000000008132247

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69, "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70.</u> <u>"DTC Logic"</u>.
- If all of door motors DTC (B2750 B276A) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-133</u>, "DOOR MOTOR PBR (WITH FOREST AIR) : Diagnosis Procedure" (With Forest Air).
- If all of door motors DTC (B2750 B2764) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-135</u>, "<u>DOOR MOTOR PBR (WITHOUT FOREST AIR)</u> : <u>Diagnosis Procedure</u>" (Without Forest Air).

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

(D) With CONSULT

- Turn ignition switch ON.
- 2. Select "Self Diagnostic Result" mode of "HVAC" using CONSULT.
- 3. Check DTC.

Is DTC detected?

YES >> Refer to <u>HAC-102</u>, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008132248

1.CHECK MODE DOOR MOTOR (PASSENGER SIDE) OPERATION

- 1. Turn ignition switch ON.
- 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

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

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

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

+		4			Voltage
Mode door mo			Co	ndition	(Approx.)
Connector	Terminal				
M307 (with Forest Air) M308 (without Forest Air)	2	Ground	Air outlet	$\frac{\text{DEF} \rightarrow \text{VENT}}{\text{VENT} \rightarrow \text{DEF}}$	12 V
s the inspection result	normar?				
YES >> GO TO 6. NO >> GO TO 3.					
CHECK MODE DO					
		SSENGER SIDE	DIVICE SIGNAL		
 Turn ignition switch Disconnect mode of 		arness connector	and A/C auto an	n harness connec	tor
				d A/C auto amp. ha	
Mode door mo	otor RH	A/C a	uto amp.	Continuity	
Connector	Terminal	Connector	Terminal	- Continuity	
M307 (with Forest Air)	1	Mood	64	Fuinte 1	
M308 (without Forest Air)	2	- M304	84	Existed	
s the inspection result	normal?				
YES >> GO TO 4.					
	ness or connecto	or.			
1. CHECK MODE DOO	OR MOTOR (PA	SSENGER SIDE	DRIVE SIGNAL	CIRCUIT FOR GR	OUND SHORT
Check continuity betwe					
Shook continuity betwee			connector and gr	ound.	
Mode door mo	otor RH				
Connector	Terminal		Continuity		
M307 (with Forest Air)	1				
M308 (without Forest Air)	2	Ground	Not existed		
s the inspection result	normal?				
YES >> GO TO 5.	<u>Horman.</u>				
	ness or connecto	or.			
5. CHECK MODE DOO	OR MOTOR (PA	SSENGER SIDE	DRIVE SIGNAL	CIRCUIT FOR BAT	TTERY SHORT
1. Turn ignition switch		,			
 Check voltage betv 		motor RH harnes	ss connector and	ground.	
+					
Mode door mo	tor RH	-	Voltage (Approx.)		
Connector	Terminal		(/ pp/0/.)		
M307 (with Forest Air)	1				
M308 (without Forest	2	Ground	0 V		
Air)					
s the inspection result					
YES >> GO TO 15. NO >> Repair har	ness or connecto)r			
^					
O. CHECK MODE DOO					
Check mode door moto		le). Refer to <u>HAC</u>	-106, "Componer	nt Inspection (Motor	<u>r)"</u> .
s the inspection result	normal?				
YES >> GO TO 7.					

HAC-103

B2759, B275A, B275B MODE DOOR MOTOR (PASSENGER SIDE) RCUIT DIAGNOSIS > [AUTOMATIC AIR CONDITIONING]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace mode door motor (passenger side). Refer to <u>HAC-171, "MODE DOOR MOTOR :</u> <u>Removal and Installation"</u>.

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

Check mode door motor (passenger side) control linkage is properly installed. Refer to <u>HAC-171, "Exploded</u> <u>View"</u>.

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair or replace malfunctioning parts.

 ${f S}$.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.

A/C au	+ to amp.	_	Condition		Voltage (Approx.)
Connector	Terminal				(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
M304	73	Ground	Air outlet	VENT	4 V
101304	73	Gibulia		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 mo	tor RH	A/C au	Continuity		
Connector	Terminal	Connector Terminal		Continuity	
M307 (with Forest Air) M308 (without Forest Air)	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 mot	tor RH		Continuity	
Connector	Terminal			
M307 (with Forest Air) M308 (without Forest Air)	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.

HAC-104

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

< DTC/CIRCUIT DIAGNOSIS >

				_		
+		_	Voltage	oltage pprox.)		А
Mode door mo	tor RH	_	(Approx.)			
Connector	Terminal			_		В
M307 (with Forest Air)	4	Ground	5 V			
M308 (without Forest Air)	5			_		
Is the inspection result						С
YES >> GO TO 13 NO >> GO TO 12	2					
12.CHECK MODE D	OOR MOTOR	(PASSENGER	SIDE) PBR PC	WER SUPPLY	CIRCUIT FOR OPEN	D
 Turn ignition switc Disconnect A/C at 	h OFF. uto amp. harne:	ss connector.			o amp. harness connector.	E
Mode door mo	tor RH	A/C au	ito amp.		•	_
Connector	Terminal	Connector	Terminal	Continuity		F
M307 (with Forest Air)	4				-	
M308 (without Forest Air)	5	M304	71	Existed		G
Is the inspection result YES >> GO TO 15 NO >> Repair has 13.CHECK MODE D	5. rness or conne		SIDE) PBR GF	ROUND CIRCU	т	Η
		(HAC
1 Turn ignition switc						TIAO
 Turn ignition switc Disconnect A/C at Check continuity b 	uto amp. harne:		harness connec	ctor and A/C aut	o amp. harness connector.	J
2. Disconnect A/C au	uto amp. harne: between mode o	door motor RH I	harness connec		o amp. harness connector.	J
 Disconnect A/C at Check continuity b 	uto amp. harne: between mode o	door motor RH I		ctor and A/C aut	o amp. harness connector.	J
 Disconnect A/C at 3. Check continuity b Mode door model 	uto amp. harne: between mode o	door motor RH I A/C au	ito amp.		o amp. harness connector.	J
2. Disconnect A/C at 3. Check continuity b Mode door more Connector M307 (with Forest Air) M308 (without Forest	uto amp. harne: between mode of tor RH Terminal	door motor RH I A/C au	ito amp.		o amp. harness connector.	J
2. Disconnect A/C at 3. Check continuity b Mode door mor Connector M307 (with Forest Air) M308 (without Forest Air)	uto amp. harnes between mode of tor RH Terminal 5 7	door motor RH I A/C au Connector	ito amp. Terminal	- Continuity	o amp. harness connector.	J
2. Disconnect A/C at 3. Check continuity b Mode door more Connector M307 (with Forest Air) M308 (without Forest	uto amp. harnes between mode of tor RH Terminal 5 7 7 t normal?	door motor RH I A/C au Connector	ito amp. Terminal	- Continuity	to amp. harness connector.	J
2. Disconnect A/C au 3. Check continuity b Mode door mode Connector M307 (with Forest Air) M308 (without Forest Air) Is the inspection result YES >> GO TO 14 NO >> Repair had	uto amp. harnes between mode of tor RH Terminal 5 7 7 <u>t normal?</u> I. rness or connes	door motor RH I A/C au Connector M304 ctor.	to amp. Terminal 79	- Continuity	o amp. harness connector.	J
2. Disconnect A/C at 3. Check continuity b Mode door mode Connector M307 (with Forest Air) M308 (without Forest Air) Is the inspection result YES >> GO TO 14	uto amp. harnes between mode of tor RH Terminal 5 7 7 <u>t normal?</u> I. rness or connes	door motor RH I A/C au Connector M304 ctor.	to amp. Terminal 79	- Continuity	o amp. harness connector.	J K L
2. Disconnect A/C au 3. Check continuity b Mode door mode Connector M307 (with Forest Air) M308 (without Forest Air) Is the inspection result YES >> GO TO 14 NO >> Repair had	to amp. harnes between mode of tor RH Terminal 5 7 3 a normal? 4. rness or connection 000R MOTOR	door motor RH h A/C au Connector M304 ctor. (PASSENGER	to amp. Terminal 79 SIDE) PBR	- Continuity Existed		J K L
2. Disconnect A/C au 3. Check continuity b Mode door mode Connector M307 (with Forest Air) M308 (without Forest Air) Is the inspection result YES >> GO TO 14 NO >> Repair hav 14.CHECK MODE D	uto amp. harnes between mode of tor RH Terminal 5 7 t normal? t. rness or connector OOR MOTOR or (passenger s	door motor RH h A/C au Connector M304 ctor. (PASSENGER	to amp. Terminal 79 SIDE) PBR	- Continuity Existed		J K L
2. Disconnect A/C au 3. Check continuity b Mode door mode Connector M307 (with Forest Air) M308 (without Forest Air) M308 (without Forest Air) Is the inspection result YES >> GO TO 14 NO >> Repair have 14.CHECK MODE D Check mode door mote Is the inspection result YES >> GO TO 15	uto amp. harnes between mode of tor RH Terminal 5 7 3 anormal? 4. crness or connes 000R MOTOR or (passenger s a normal? 5.	door motor RH h A/C au Connector M304 ctor. (PASSENGER side) PBR. Refe	to amp. Terminal 79 SIDE) PBR er to <u>HAC-106.</u>	Continuity Existed	spection (PBR)".	J K L
2. Disconnect A/C au 3. Check continuity b Mode door mor Connector M307 (with Forest Air) M308 (without Forest Air) Is the inspection result YES >> GO TO 14 NO >> Repair hau 14.CHECK MODE D Check mode door mot Is the inspection result YES >> GO TO 15 NO >> Replace r Removal a	uto amp. harnes between mode of tor RH Terminal 5 7 t normal? t. DOOR MOTOR or (passenger s t normal? 5 mode door mo and Installation	door motor RH I A/C au Connector M304 ctor. (PASSENGER side) PBR. Refe	to amp. Terminal 79 SIDE) PBR er to <u>HAC-106.</u>	Continuity Existed		J K L
2. Disconnect A/C au 3. Check continuity b Mode door mode Connector M307 (with Forest Air) M308 (without Forest Air) M308 (without Forest Air) Is the inspection result YES >> GO TO 14 NO >> Repair hav 14.CHECK MODE D Check mode door mote Is the inspection result YES >> GO TO 15 NO >> Replace r	uto amp. harnes between mode of tor RH Terminal 5 7 t normal? t. DOOR MOTOR or (passenger s t normal? 5 mode door mo and Installation	door motor RH I A/C au Connector M304 ctor. (PASSENGER side) PBR. Refe	to amp. Terminal 79 SIDE) PBR er to <u>HAC-106.</u>	Continuity Existed	spection (PBR)".	J K L
2. Disconnect A/C au 3. Check continuity b Mode door mor Connector M307 (with Forest Air) M308 (without Forest Air) Is the inspection result YES >> GO TO 14 NO >> Repair hau 14.CHECK MODE D Check mode door mot Is the inspection result YES >> GO TO 15 NO >> Replace r Removal a	uto amp. harnes between mode of tor RH Terminal 5 7 t normal? t. DOOR MOTOR or (passenger s t normal? 5 mode door model and Installation ITTENT INCID	door motor RH I A/C au Connector M304 ctor. (PASSENGER side) PBR. Refe	to amp. Terminal 79 SIDE) PBR er to <u>HAC-106.</u>	Continuity Existed	spection (PBR)".	J K L
2. Disconnect A/C au 3. Check continuity b Mode door mor Connector M307 (with Forest Air) M308 (without Forest Air) Is the inspection result YES >> GO TO 14 NO >> Repair hau 14.CHECK MODE D Check mode door mot Is the inspection result YES >> GO TO 15 NO >> Replace r Removal a 15.CHECK INTERM	to amp. harnes between mode of tor RH Terminal 5 7 3 anormal? 4. 000R MOTOR or (passenger s anormal? 5. mode door mo and Installation ITTENT INCID	door motor RH I A/C au Connector M304 ctor. (PASSENGER side) PBR. Refe	to amp. Terminal 79 SIDE) PBR er to <u>HAC-106.</u>	Continuity Existed	spection (PBR)".	J K L N O
2. Disconnect A/C au 3. Check continuity b Mode door mode Connector M307 (with Forest Air) M308 (without Forest Air) M308 (without Forest Air) M308 (without Forest Air) Is the inspection result YES >> GO TO 14 NO >> Repair hav 14.CHECK MODE D Check mode door mote Is the inspection result YES >> GO TO 15 NO >> Replace result YES >> GO TO 15 NO >> Replace result Refer to GI-43, "Intermals the inspection result YES >> Replace A	to amp. harnes between mode of tor RH Terminal 5 7 t normal? t. rness or conner OOR MOTOR or (passenger s t normal? 5 mode door mo and Installation ITTENT INCID hittent Incident" t normal?	door motor RH I A/C au Connector M304 ctor. (PASSENGER side) PBR. Refe side) PBR. Refe btor (passenger ENT Refer to <u>HAC-16</u>	to amp. Terminal 79 SIDE) PBR er to <u>HAC-106,</u> r side). Refer	Continuity Existed	spection (PBR)".	J K L N O

B2759, B275A, B275B MODE DOOR MOTOR (PASSENGER SIDE) [AUTOMATIC AIR CONDITIONING]

< DTC/CIRCUIT DIAGNOSIS >

Component Inspection (Motor)

INFOID:000000008132249

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.

Terr	Operation direc-	
+	_	tion
1	2	VENT
2	1	DEF

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mode door motor (passenger side). Refer to HAC-171, "MODE DOOR MOTOR : Removal and Installation".

Component Inspection (PBR)

INFOID:000000008132250

1.CHECK MODE DOOR MOTOR (PASSENGER SIDE) PBR

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

Termina	Resistance (Ω)	
5 (with Forest Air)	3	
5 (WITH FOIEST AIT)	4	Except 0 or ∞
7 (without Forest Air)	3	
7 (without Polest All)	5	

Is the inspection result normal?

YES >> INSPECTION END

>> Replace mode door motor (passenger side). Refer to HAC-172, "AIR MIX DOOR MOTOR : NO Removal and Installation".

B275C, B275D, B275E INTAKE DOOR MOTOR

< DTC/CIRCUIT DIAGNOSIS >

B275C, B275D, B275E INTAKE DOOR MOTOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69. "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70.</u>
 <u>"DTC Logic"</u>.
- If all of door motors DTC (B2750 B276A) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-133</u>, "DOOR MOTOR PBR (WITH FOREST AIR) : Diagnosis Procedure" (With Forest Air).
- If all of door motors DTC (B2750 B2764) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-135</u>, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure" (Without Forest Air).

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause	F
B275C		Intake door motor PBR feedback signal voltage is too low.	Intake door motorIntake door motor control linkage	
B275D	INTAKE DOOR MOTOR	Intake door motor PBR feedback signal voltage is too high.	installation condition A/C auto amp. Harness or connectors 	G
B275E		Stop position of intake door motor is malfunc- tioning.	(The motor circuit is open or short- ed.)	Н

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE		HAC
 With CONSULT 1. Turn ignition switch ON. 2. Select "Self Diagnostic Result" mode of "HVAC" using CONSULT. 3. Check DTC. 		J
<u>Is DTC detected?</u> YES >> Refer to <u>HAC-107, "Diagnosis Procedure"</u> . NO >> INSPECTION END		К
Diagnosis Procedure	INFOID:000000008132252	L
1. CHECK INTAKE DOOR MOTOR OPERATION		
 Turn ignition switch ON. Operate FRE switch and REC switch (with Forest Air) or intake switch (without Forest Air). Listen to intake sound and confirm air inlets change. 		Μ
Does it operate normally? YES >> GO TO 8. NO >> GO TO 2.		Ν
2. CHECK INTAKE DOOR MOTOR DRIVE SIGNAL		0
 Operate FRE switch and REC switch (with Forest Air) or intake switch (without Forest Air). Check voltage between intake door motor harness connector and ground. 		Р

INFOID:000000008132251

А

В

E

B275C, B275D, B275E INTAKE DOOR MOTOR

< DTC/CIRCUIT DIAGNOSIS >

+			Condition		Voltage (Approx.)
Intake door motor	Intake door motor				
Connector	Terminal	*			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
M310 (without Forest Air)	1	Ground		$REC\toFRE$	12 V
MSTO (WITHOUT FOREST AIT)	2			$FRE\toREC$	
M200 (with Forest Air)	1		Giouna iniei duci	Inlet duct	$REC\toFRE$
M309 (with Forest Air)	2			$FRE\toREC$	

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 3.

$\mathbf{3}$. 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	Continuity
M310 (without Forest Air)	1	M304	85	
MSTO (WITHOUT FOREST AIL)	2		65	Existed
M200 (with Forget Air)	1	101304	85	EXISIEU
M309 (with Forest Air)	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		Continuity	
M310 (without Forest Air)	1			
MSTO (WITHOUT FOREST AIT)	2	Ground	Not existed	
M200 (with Forget Air)	1	Giouna	NOT EXISTED	
M309 (with Forest Air)	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.

B275C, B275D, B275E INTAKE DOOR MOTOR

< DTC/CIRCUIT DIAGNOSIS >

	+		_	Voltag	Δ		
	Intake door motor		_	(Approx			
Cor	nector	Terminal			·		
M310 (without	out Forest Air)	1					
		2	Ground	ound 0.V	Ground 0 V		
M309 (wit	th Forest Air)	1	Cround	0.0			
		2					
the inspection	n result normal?						
) TO 15.						
	pair harness or c						
	AKE DOOR MO	-					
		to <u>HAC-111, "C</u>	Component Inspec	<u>ction (Motor)"</u> .			
•	n result normal?						
) TO 7.	r motor Dofor				aval and loaf	
NO >> Re tior			to <u>HAC-172, "INT</u>			iovai anu inst	
	_		MOTOR CONT		:		
						liow"	
neck intake do		i iinkage is prop	perly installed. Re	ier to <u>HAC-17</u>	I, Exploded	<u>/IEW</u> .	
the ineractio	n regult nermel?						
	n result normal?						
/ES >> GC) TO 15.	alfunctioning n	arts				
/ES >> GC NO >> Re) TO 15. pair or replace m	• ·					
ÝES >> GC NO >> Re .CHECK INΤ.) TO 15. pair or replace m AKE DOOR MO	TOR PBR FEE	DBACK SIGNAL				
′ES >> GC IO >> Re CHECK INT, Operate FF) TO 15. pair or replace m AKE DOOR MO RE switch and RI	TOR PBR FEE	DBACK SIGNAL Forest Air) or inta		thout Forest A	ir).	
ES >> GC IO >> Re CHECK INT. Operate FF) TO 15. pair or replace m AKE DOOR MO RE switch and RI	TOR PBR FEE	DBACK SIGNAL		thout Forest A	ir).	
/ES >> GC NO >> Re CHECK INT Operate FF Check volta) TO 15. pair or replace m AKE DOOR MO RE switch and RI	TOR PBR FEE	DBACK SIGNAL Forest Air) or inta		thout Forest A	ir).	
/ES >> GC NO >> Re .CHECK INT, Operate FF Check volta	D TO 15. pair or replace m AKE DOOR MO RE switch and Rl age between A/C	TOR PBR FEE	DBACK SIGNAL Forest Air) or inta ness connector a	nd ground.	Voltage	ir).	
/ES >> GC NO >> Re .CHECK INT. Operate FF Check volta A/C au	0 TO 15. pair or replace m AKE DOOR MO RE switch and RI age between A/C + to amp.	TOR PBR FEE	DBACK SIGNAL Forest Air) or inta	nd ground.		ir).	
/ES >> GC NO >> Re .CHECK INT, Operate FF Check volta	D TO 15. pair or replace m AKE DOOR MO RE switch and Rl age between A/C	TOR PBR FEE	DBACK SIGNAL Forest Air) or inta ness connector a	nd ground.	Voltage (Approx.)	ir).	
/ES >> GC NO >> Re .CHECK INT. Operate FF Check volta A/C au	0 TO 15. pair or replace m AKE DOOR MO RE switch and RI age between A/C + to amp.	TOR PBR FEE	DBACK SIGNAL Forest Air) or inta ness connector a	nd ground.	Voltage (Approx.) 4 V	ir).	
(ES >> GC NO >> Re .CHECK INT, Operate FF Check volta A/C au Connector M304	D TO 15. pair or replace m AKE DOOR MO RE switch and RI age between A/C + to amp. Terminal 55	TOR PBR FEE EC switch (with auto amp. har	DBACK SIGNAL Forest Air) or inta ness connector a Conditio	nd ground.	Voltage (Approx.)	ir).	
(ES >> GC NO >> Re .CHECK INT. Operate FF Check volta A/C au Connector M304 the inspectio	D TO 15. pair or replace m AKE DOOR MO RE switch and Rl age between A/C + to amp. Terminal 55 n result normal?	TOR PBR FEE EC switch (with auto amp. har	DBACK SIGNAL Forest Air) or inta ness connector a Conditio	nd ground.	Voltage (Approx.) 4 V	ir).	
(ES >> GC NO >> Re CHECK INT, Operate FF Check volta A/C au Connector M304 the inspection (ES >> GC	D TO 15. pair or replace m AKE DOOR MO RE switch and RI age between A/C + to amp. Terminal 55	TOR PBR FEE EC switch (with auto amp. har	DBACK SIGNAL Forest Air) or inta ness connector a Conditio	nd ground.	Voltage (Approx.) 4 V	ir).	
(ES >> GC NO >> Re .CHECK INT. Operate FF Check volta A/C au Connector M304 the inspection (ES >> GC NO >> GC	0 TO 15. pair or replace m AKE DOOR MO RE switch and R age between A/C + to amp. Terminal 55 n result normal? 0 TO 15. 0 TO 9.	TOR PBR FEE EC switch (with auto amp. har - Ground	DBACK SIGNAL Forest Air) or inta ness connector a Condition	nd ground.	Voltage (Approx.) 4 V 1 V	ir).	
(ES >> GC NO >> Re .CHECK INT. Operate FF Check volta A/C au Connector M304 the inspection (ES >> GC NO >> GC .CHECK INT.	0 TO 15. pair or replace m AKE DOOR MO RE switch and R age between A/C + to amp. Terminal 55 n result normal? 0 TO 15. 0 TO 9. AKE DOOR MO	TOR PBR FEE EC switch (with auto amp. har - Ground	DBACK SIGNAL Forest Air) or inta ness connector a Conditio	nd ground.	Voltage (Approx.) 4 V 1 V	ir).	
(ES >> GC NO >> Re .CHECK INT. Operate FF Check volta A/C au Connector M304 the inspection (ES >> GC NO >> GC .CHECK INT. Turn ignitio	D TO 15. pair or replace m AKE DOOR MO RE switch and R age between A/C + to amp. Terminal 55 n result normal? 0 TO 15. 0 TO 15. 0 TO 9. AKE DOOR MO n switch OFF.	TOR PBR FEE EC switch (with auto amp. har Ground	DBACK SIGNAL Forest Air) or inta ness connector a Condition	nd ground.	Voltage (Approx.) 4 V 1 V	ir).	
(ES >> GC NO >> Re .CHECK INT, Operate FF Check volta A/C au Connector M304 the inspection (ES >> GC NO >> GC .CHECK INT, Turn ignitio Disconnect	0 TO 15. pair or replace m AKE DOOR MO RE switch and R age between A/C + to amp. Terminal 55 n result normal? 0 TO 15. 0 TO 9. AKE DOOR MO	TOR PBR FEE EC switch (with auto amp. har Ground	DBACK SIGNAL Forest Air) or inta ness connector a Condition	nd ground.	Voltage (Approx.) 4 V 1 V	ir).	
(ES >> GC NO >> Re .CHECK INT, Operate FF Check volta A/C au Connector M304 the inspection (ES >> GC NO >> GC .CHECK INT, Turn ignitio Disconnect Disconnect	TO 15. pair or replace m AKE DOOR MO RE switch and RI age between A/C to amp. Terminal 55 n result normal? TO 15. TO 15. TO 9. AKE DOOR MO n switch OFF. A/C auto amp. intake door mot	TOR PBR FEE EC switch (with auto amp. har Ground	DBACK SIGNAL Forest Air) or inta ness connector a Condition	nd ground.	Voltage (Approx.) 4 V 1 V	· - -	
(ES >> GC NO >> Re .CHECK INT, Operate FF Check volta A/C au Connector M304 the inspection (ES >> GC NO >> GC .CHECK INT, Turn ignitio Disconnect Disconnect	TO 15. pair or replace m AKE DOOR MO RE switch and RI age between A/C to amp. Terminal 55 n result normal? TO 15. TO 15. TO 9. AKE DOOR MO n switch OFF. A/C auto amp. intake door mot	TOR PBR FEE EC switch (with auto amp. har Ground	DBACK SIGNAL Forest Air) or inta ness connector a Condition	nd ground.	Voltage (Approx.) 4 V 1 V	· - -	
(ES >> GC NO >> Re .CHECK INT, Operate FF Check volta A/C au Connector M304 the inspection (ES >> GC NO >> GC .CHECK INT, Turn ignitio Disconnect Disconnect	TO 15. pair or replace m AKE DOOR MO RE switch and RI age between A/C to amp. Terminal 55 n result normal? TO 15. TO 15. TO 9. AKE DOOR MO n switch OFF. A/C auto amp. intake door mot	TOR PBR FEE EC switch (with auto amp. har - Ground TOR PBR FEE connector. or connector. htake door mote	DBACK SIGNAL Forest Air) or inta ness connector a Condition	nd ground.	Voltage (Approx.) 4 V 1 V 2 OPEN	· - -	
(ES >> GC NO >> Re .CHECK INT. Operate FF Check volta A/C au Connector M304 the inspection (ES >> GC NO >> GC .CHECK INT. Turn ignitio Disconnect Check cont	0 TO 15. pair or replace m AKE DOOR MO RE switch and RI age between A/C + to amp. Terminal 55 n result normal? 0 TO 15. 0 TO 9. AKE DOOR MO n switch OFF. A/C auto amp. intake door mot tinuity between in	TOR PBR FEE EC switch (with auto amp. har - Ground TOR PBR FEE connector. or connector. htake door mote	DBACK SIGNAL Forest Air) or inta ness connector a Condition Inlet duct DBACK SIGNAL	nd ground.	Voltage (Approx.) 4 V 1 V	· - -	
(ES >> GC NO >> Re .CHECK INT. Operate FF Check volta A/C au Connector M304 the inspection (ES >> GC NO >> GC .CHECK INT. Turn ignitio Disconnect Disconnect Check cont	TO 15. pair or replace m AKE DOOR MO RE switch and R age between A/C + to amp. Terminal 55 n result normal? TO 15. TO 15. TO 15. TO 9. AKE DOOR MO n switch OFF. A/C auto amp. intake door motor Intake door motor	TOR PBR FEE EC switch (with auto amp. har - Ground TOR PBR FEE connector. or connector. ntake door moto	DBACK SIGNAL Forest Air) or inta ness connector a Condition Inlet duct DBACK SIGNAL or harness conne	nd ground.	Voltage (Approx.) 4 V 1 V 2 OPEN	· - -	

NO >> Repair harness or connector.

B275C, B275D, B275E INTAKE DOOR MOTOR

< DTC/CIRCUIT DIAGNOSIS >

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		Continuity
M310 (without Forest Air)	2	Ground	Not existed
M309 (with Forest Air)	- J	Giouna	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	Intake door motor			
Connector	Connector Terminal			
M310 (without Forest Air)	5	Ground	5 V	
M309 (with Forest Air)	4	Ground	5.0	

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	Intake door motor			Continuity
Connector	Terminal	Connector	Terminal	Continuity
M310 (without Forest Air)	5	M304	71	Existed
M309 (with Forest Air)	4	101304	, 1	LAIsted

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 au	Continuity		
Connector	Terminal	Connector	Terminal	Continuity
M310 (without Forest Air)	7	M304	79	Existed
M309 (with Forest Air)	5	101504	79	LASIEU

Is the inspection result normal?

YES >> GO TO14.

NO >> Repair harness or connector.

B275C, B275D, B275E INTAKE DOOR MOTOR

< DTC/CIRCU				[AUTOMATIC AIR CONDITIONING]
14.CHECK IN				
Check intake d	oor motor PBR.	Refer to HAC-1	11, "Component Ins	pection (PBR)".
Is the inspectio	n result normal	<u>?</u>	·	
NO >> Re	·	or motor. Refer	o <u>HAC-172, "INTA</u>	KE DOOR MOTOR : Removal and Installa-
15.снеск и	<u>T.</u> NTERMITTENT	INCIDENT		
Refer to <u>GI-43.</u>	"Intermittent In	<u>cident"</u> .		
•	<u>n result normal</u>			
		amp. Refer to <u>H</u> malfunctioning p	<u>AC-163, "Removal a</u>	and Installation".
-			ans.	
Component	Inspection ((Motor)		INFOID:00000008132253
1.CHECK INT	AKE DOOR MO	DTOR		
	n switch OFF.	-		
	t intake door mo	otor connector.		
			attery voltage and o	check by visually and operation sound that
intake dooi	motor operate	S.		
Тог	ninal	Operation l'aut		
+	_	Operation direc- tion		
1	2	FRE		
2	1	REC		
	n result normal			
	SPECTION EN			
NO >> Re	place intake do		to <u>HAC-172, "INTAk</u>	E DOOR MOTOR : Removal and Installa-
<u>tior</u>	<u>1"</u> .			
Component	Inspection ((PBR)		INFOID:00000008132254
	AKE DOOR MO			
			· ·	
Sheck resistan	ce between inta	ake door motor te	erminals.	
			Resistance	
	Terminal		(Approx.)	
7 /	forget A (C)	3		
7 (without	rorest A/C)	5	E	
E ()0 (3	Except 0 or ∞	
5 (with fo	rest A/C)	4		
s the inspectio	n result normal	?		
	SPECTION EN			
	•	or motor. Refer	to <u>HAC-172, "INTAK</u>	E DOOR MOTOR : Removal and Installa-
<u>tior</u>	<u>1"</u> .			

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

B275F, B2760, B2761 UPPER VENTILATOR DOOR MOTOR

DTC Logic

INFOID:000000008132255

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69, "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70.</u> <u>"DTC Logic"</u>.
- If all of door motors DTC (B2750 B276A) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-133</u>, "DOOR MOTOR PBR (WITH FOREST AIR) : Diagnosis Procedure" (With Forest Air).
- If all of door motors DTC (B2750 B2764) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-135</u>, "<u>DOOR MOTOR PBR (WITHOUT FOREST AIR)</u> : <u>Diagnosis Procedure</u>" (Without Forest Air).

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

- Turn ignition switch ON.
- 2. Select "Self Diagnostic Result" mode of "HVAC" using CONSULT.
- 3. Check DTC.

Is DTC detected?

YES >> Refer to <u>HAC-112</u>, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008132256

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.

With Forest Air

Upper ventila	+ Upper ventilator door motor		Condition		Voltage (Approx.)	
Connector	Terminal				()	
M313	1	Ground	$ON \rightarrow OFF$		12 V	
111313	2	Giouna	Upper Vent	$OFF\toON$	12 V	

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

Upper ventila	tor door motor	_	Con	dition	Voltage (Approx.)	
Connector	Terminal				(Approx.)	
M312	1 2	Ground	Upper Vent	$ON \rightarrow OFF$ $OFF \rightarrow ON$	12 V	
s the inspection	on result normal	?				
NO >> G(D TO 6. D TO 3.					
	PER VENTILAT	OR DOOR MO	TOR DRIVE SI	GNAL CIRCUIT	FOR OPEN	
 Disconnec Disconnec 	on switch OFF. t A/C auto amp. t upper ventilato tinuity between	or door motor co		ness connecto	r and A/C auto amp. harness cc	n-
With Forest A	ir					
Upper ventila	tor door motor	A/C au	ito amp.	Continuity		
Connector	Terminal	Connector	Terminal	Continuity		
M313	1 2	M304	66 86	Existed		
Without Fores	t Air					
Upper ventila	tor door motor	A/C au	ito amp.	Continuity		
Connector	Terminal	Connector	Terminal	Continuity		
			66			
M312	1	M304	66	Existed		
	2		86	Existed		
<u>s the inspection</u> YES >> GO NO >> Re 4. CHECK UP	2 D TO 4. Ppair harness or PER VENTILAT	? connector. OR DOOR MO	86 TOR DRIVE SI	GNAL CIRCUIT	FOR GROUND SHORT	
<u>s the inspection</u> YES >> GO NO >> Re 4. CHECK UP Check continu	2 on result normal O TO 4. opair harness or	? connector. OR DOOR MO	86 TOR DRIVE SI	GNAL CIRCUIT		
s the inspection YES >> GO NO >> Re 4. CHECK UP Check continue With Forest Air	2 D TO 4. epair harness or PER VENTILAT ty between upp	? connector. OR DOOR MO	86 TOR DRIVE SI	GNAL CIRCUIT		
s the inspection YES >> GO NO >> Re 4. CHECK UP Check continue With Forest Air	2 D TO 4. Ppair harness or PER VENTILAT	? connector. OR DOOR MO	86 TOR DRIVE SI	GNAL CIRCUIT		
S the inspection YES >> GO NO >> Re CHECK UP Check continue With Forest Air Upper ventile	2 D TO 4. Pair harness or PER VENTILAT ty between upp	? connector. OR DOOR MO	86 TOR DRIVE SI	GNAL CIRCUIT		
s the inspection YES >> GO NO >> Re 4.CHECK UP Check continue Vith Forest Air Upper ventile Connector	2 D TO 4. Ppair harness or PER VENTILAT ty between upp tor door motor Terminal 1	<u>?</u> connector. OR DOOR MO er ventilator doo 	86 TOR DRIVE SI or motor harnes Continuity	GNAL CIRCUIT		
s the inspection YES >> GO NO >> Re CHECK UP Check continue With Forest Air Upper ventile Connector M313	2 D TO 4. Ppair harness or PER VENTILAT ty between upp tor door motor Terminal 1	<u>?</u> connector. OR DOOR MO er ventilator doo 	86 TOR DRIVE SI or motor harnes Continuity Not existed	GNAL CIRCUIT		
s the inspection YES >> GO NO >> Re CHECK UP Check continue With Forest Air Upper ventile Connector M313	2 on result normal D TO 4. epair harness or PER VENTILAT ty between upp tor door motor Terminal 1 2	<u>?</u> connector. OR DOOR MO er ventilator doo 	86 TOR DRIVE SI or motor harnes Continuity	GNAL CIRCUIT		
S the inspection YES >> GO NO >> Re CHECK UP Check continue With Forest Air Upper ventile Connector M313 Without Forest Air Upper ventile	2 on result normal D TO 4. epair harness or PER VENTILAT ty between upp tor door motor Terminal 1 2 tor door motor	<u>?</u> connector. OR DOOR MO er ventilator doo 	86 TOR DRIVE SI or motor harnes Continuity Not existed	GNAL CIRCUIT		

HAC-113

< DTC/CIRCUIT DIAGNOSIS >

With Forest Air

[AUTOMATIC AIR CONDITIONING]

	÷			
Upper ventila	tor door motor	-	Voltage (Approx.)	
Connector	Terminal	Ť		
M313	1	Ground	0 V	
10010	2	Glouid	0 V	
Without Forest	Air			

Upper ventila	+ tor door motor	_	Voltage (Approx.)
Connector	Terminal		() I I - /
M312	1	Ground	0 V
101312	2	Gibund	

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-116, "Component Inspection (Motor)".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace upper ventilator door motor. Refer to <u>HAC-172, "UPPER VENTILATOR DOOR MOTOR :</u> <u>Removal and Installation"</u>.

7. CHECK INSTALLATION OF UPPER VENTILATOR DOOR MOTOR

Check upper ventilator door motor is properly installed. Refer to <u>HAC-171, "Exploded View"</u>.

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair or replace malfunctioning parts.

f 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.

+ A/C auto amp.		_	Con	dition	Voltage (Approx.)
Connector	Terminal				() I I - /
M304	75	Ground	Upper Vent	ON	4 V
	75	Ground	Opper vent	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.
- Check continuity between upper ventilator door motor harness connector and A/C auto amp. harness connector.

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR	CONDITIONING]

	door motor	A/C au	to amp.		
Connector	Terminal	Connector	Terminal	Continuity	
M313	3	M304	75	Existed	
hout Forest Ai	r				
Jpper ventilator	door motor	A/C au	to amp.	2	
Connector	Terminal	Connector	Terminal	Continuity	
M312	3	M304	75	Existed	
CHECK UPI	O 10. ir harness or PER VENTIL/	connector. ATOR DOOR M		EDBACK SIGN	
th Forest Air					0
Upper ventilator	door motor				
Connector	Terminal	_	Continuity		
M313	3	Ground	Not existed		
out Forest Air					
Upper ventilator	door motor				
Connector	Terminal	—	Continuity		
M312	3	Ground	Not existed		
Connect A/C Turn ignition	auto amp. co switch ON.	nnector.	OTOR PBR PO	WER SUPPLY	nd ground.
With Forest Air					
+		1			
	door motor	-	Voltage		
+	door motor Terminal	-	Voltage (Approx.)		
+ Upper ventilator		_ Ground	•		
+ Upper ventilator Connector	Terminal 5	- Ground	(Approx.)		
+ Upper ventilator Connector M313	Terminal 5	Ground	(Approx.) 5 V		
+ Upper ventilator Connector M313 Without Forest Ai	Terminal 5 r	– Ground	(Approx.) 5 V Voltage		
+ Upper ventilator Connector M313 Without Forest Ai	Terminal 5 r	_ Ground _	(Approx.) 5 V		
+ Upper ventilator Connector M313 Without Forest Ai + Upper ventilator	Terminal 5 r door motor	- Ground - Ground	(Approx.) 5 V Voltage		

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

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< DTC/CIRCUIT DIAGNOSIS >

With Forest Air

	UR
[AUTOMATIC AIR	CONDITIONING]

•••		1			
U	pper ventila	tor door motor	A/C au	Continuity	
Co	nnector	Terminal	Connector	Terminal	Continuity
ļ	M313	5	M304	71	Existed
W	ithout Fores	t Air			
U	pper ventila	tor door motor	A/C au	to amp.	Continuity
Co	nnector	Terminal	Connector	Terminal	Continuity
	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.

With Forest Air

Upper ventila	Upper ventilator door motor		to amp.	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M313	4	M304	79	Existed

Without Forest Air

Upper ventila	tor door motor	A/C au	to amp.	Continuity
Connector	Terminal	Connector	Terminal	Continuity
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-117, "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace upper ventilator door motor. Refer to <u>HAC-172, "UPPER VENTILATOR DOOR MOTOR :</u> <u>Removal and Installation"</u>.

15. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

Is the inspection result normal?

- YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation".
- NO >> Repair or replace malfunction parts.

Component Inspection (Motor)

INFOID:000000008132257

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.

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

Term	ninal	Operation direction	
+	_		
1	2	Close	
2	1	Open	
the inspectior	<u>n result normal</u>	<u>?</u>	
	PECTION END		
	place upper ver		er to <u>HAC-172, "UPPER VENTILATOR DOOR MOTOR :</u>
omponent	Inspection (PBR)	INF01D:00000008132258
.CHECK UPF	ER VENTILAT	OR DOOR MOTOR P	BR
		per ventilator door moto	
th Forest Air	e between upp		
	inal	Desistance (0)	
Term		Resistance (Ω)	
4	3	Other than 0 or ∞	
	5		
thout Forest Air			
Term		Resistance (Ω)	
5	3	Other than 0 or ∞	
	7		
	n result normal'		
			er to <u>HAC-172, "UPPER VENTILATOR DOOR MOTOR :</u>
Rer	noval and Insta	allation".	er to <u>mac-172, OFFER VENTILATOR DOOR MOTOR.</u>

< DTC/CIRCUIT DIAGNOSIS >

B2762, B2763, B2764 REAR MODE DOOR MOTOR

DTC Logic

INFOID:000000008132263

[AUTOMATIC AIR CONDITIONING]

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69, "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70.</u> <u>"DTC Logic"</u>.
- If all of door motors DTC (B2750 B276A) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-133, "DOOR MOTOR PBR (WITH FOREST AIR) : Diagnosis Procedure"</u> (With Forest Air).
- If all of door motors DTC (B2750 B2764) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-135, "DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure"</u> (Without Forest Air).

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

(D) 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 <u>HAC-118</u>, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008132264

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.

 $\mathbf{N} = \mathbf{N} =$

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

< DTC/CIRCUIT DIAGNOSIS >

	+				Voltaga	
Rear mode	e door motor	-	Cond	lition	Voltage (Approx.)	
Connector	Terminal		DEF → VENT			_
M318	1	Ground	Air outlet $DEF \rightarrow VENT$		12 V	
	2		V	$/ENT \rightarrow DEF$		-
	on result normal?	<u>-</u>				
	D TO 6. D TO 3.					
	AR MODE DOO					
			IVE SIGNAL (K OFEN	
Disconnec Disconnec	on switch OFF. t A/C auto amp. t rear mode doo tinuity between	r motor conned		ss connecto	r and A/C auto	amp. harness connec-
Rear mode	e door motor	A/C a	uto amp.			
Connector	Terminal	Connector	Terminal	Continui	ity	
	1		68			
M318	2	M304	88	Existed	t	
the inspection	on result normal?)				
	D TO 4.	-				
		connector.				
NO >> Re	pair harness or		UVE SIGNAL (HORT
NO >> Re CHECK RE	epair harness or AR MODE DOO	R MOTOR DR				HORT
NO >> Re CHECK RE	pair harness or	R MOTOR DR				HORT
NO >> Re CHECK RE	epair harness or AR MODE DOO ty between rear	R MOTOR DR				HORT
NO >> Re CHECK RE heck continui	epair harness or AR MODE DOO ty between rear e door motor	R MOTOR DR				HORT
NO >> Re CHECK RE	epair harness or AR MODE DOO ty between rear e door motor Terminal	R MOTOR DR	otor harness co			HORT
NO >> Re CHECK RE heck continui	epair harness or AR MODE DOO ty between rear e door motor Terminal 1	R MOTOR DR	otor harness co			HORT
NO >> Re CHECK RE heck continui Rear mode Connector M318	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2	R MOTOR DR mode door mo — Ground	otor harness co			HORT
NO >> Re CHECK RE heck continui Rear mode Connector M318 the inspectic	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal?	R MOTOR DR mode door mo — Ground	otor harness co			HORT
NO >> Re - CHECK RE heck continui Rear mode Connector M318 the inspection YES >> GO	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? D TO 5.	R MOTOR DR mode door mo — Ground	otor harness co			HORT
NO >> Re - CHECK RE heck continui Rear mode Connector M318 the inspection YES >> GO NO >> Re	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? O TO 5. epair harness or	R MOTOR DR mode door mo — Ground	otor harness co Continuity Not existed	onnector and	l ground.	
NO >> Re - CHECK RE heck continui Rear mode Connector M318 the inspection YES >> GO NO >> Re	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? D TO 5.	R MOTOR DR mode door mo — Ground	otor harness co Continuity Not existed	onnector and	l ground.	
NO >> Re -CHECK RE heck continui Rear mode Connector M318 the inspection YES >> GO YES >> GO NO >> Re -CHECK RE -CHECK RE	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? O TO 5. epair harness or AR MODE DOO on switch ON.	R MOTOR DR mode door mo — Ground 2 connector. R MOTOR DR	Continuity Not existed	onnector and	l ground.	
NO >> Re -CHECK RE heck continui Rear mode Connector M318 the inspection YES >> GO YES >> GO NO >> Re -CHECK RE -CHECK RE	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? O TO 5. epair harness or AR MODE DOO	R MOTOR DR mode door mo — Ground 2 connector. R MOTOR DR	Continuity Not existed	onnector and	l ground.	
NO >> Re -CHECK RE heck continui Rear mode Connector M318 the inspection YES >> GO YES >> GO NO >> Re -CHECK RE -CHECK RE	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? O TO 5. epair harness or AR MODE DOO on switch ON. e door motor har	R MOTOR DR mode door mo — Ground 2 connector. R MOTOR DR	Continuity Not existed	onnector and	l ground.	
NO >> Re CHECK RE heck continui Rear mode Connector M318 the inspectio YES >> GO YES >> GO NO >> Re CHECK RE Turn ignitio rear mode	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? O TO 5. epair harness or AR MODE DOO on switch ON. e door motor har	R MOTOR DR mode door mo — Ground 2 connector. R MOTOR DR	Continuity Not existed RIVE SIGNAL O r and ground.	onnector and	l ground.	
NO >> Re CHECK RE heck continui Rear mode Connector M318 the inspection YES >> GC NO >> Re CHECK RE Turn ignition rear mode Rear mode	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? O TO 5. epair harness or AR MODE DOO on switch ON. e door motor har	R MOTOR DR mode door mo — Ground 2 connector. R MOTOR DR	Continuity Not existed	onnector and	l ground.	
NO >> Re CHECK RE heck continui Rear mode Connector M318 the inspectio YES >> GO YES >> GO NO >> Re CHECK RE Turn ignitio rear mode	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? O TO 5. epair harness or AR MODE DOO on switch ON. e door motor har	R MOTOR DR mode door mo — Ground 2 connector. R MOTOR DR	Continuity Continuity Not existed RIVE SIGNAL O r and ground. Volta	onnector and	l ground.	
NO >> Re CHECK RE heck continui Rear mode Connector M318 the inspection YES >> GO NO >> Re CHECK RE Turn ignition rear mode Rear mode Connector	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? O TO 5. epair harness or AR MODE DOO on switch ON. e door motor har	R MOTOR DR mode door mo 	Continuity Not existed RIVE SIGNAL (r and ground.	Dinnector and	l ground.	
NO >> Re CHECK RE heck continui Rear mode Connector M318 the inspection YES >> GC NO >> Re CHECK RE Turn ignition rear mode Rear mode	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? D TO 5. epair harness or AR MODE DOO on switch ON. e door motor har + e door motor Terminal	R MOTOR DR mode door mo — Ground 2 connector. R MOTOR DR	Continuity Continuity Not existed RIVE SIGNAL O r and ground. Volta	Dinnector and	l ground.	
NO >> Re CHECK RE heck continui Rear mode Connector M318 the inspectio YES >> GO NO >> Re CHECK RE Turn ignitio rear mode Rear mode Connector M318	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? O TO 5. epair harness or AR MODE DOO on switch ON. e door motor har + e door motor Terminal 1	R MOTOR DR mode door mo 	Continuity Not existed RIVE SIGNAL (r and ground.	Dinnector and	l ground.	
NO >> Re CHECK RE heck continui Rear mode Connector M318 the inspectic YES >> GC CHECK RE Turn ignitic rear mode Rear mode Connector M318 the inspectic YES >> GC	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? D TO 5. epair harness or AR MODE DOO on switch ON. e door motor har + e door motor Terminal 1 2	R MOTOR DR mode door mo 	Continuity Not existed RIVE SIGNAL (r and ground.	Dinnector and	l ground.	
NO >> Re CHECK RE heck continui Rear mode Connector M318 the inspectic YES >> GC CHECK RE Turn ignitic rear mode Rear mode Connector M318 the inspectic YES >> GC	epair harness or AR MODE DOO ty between rear e door motor Terminal 1 2 on result normal? O TO 5. epair harness or AR MODE DOO on switch ON. e door motor har + e door motor Terminal 1 2 on result normal?	R MOTOR DR mode door mo Ground Connector. R MOTOR DR ness connecto Ground	Continuity Not existed RIVE SIGNAL (r and ground.	Dinnector and	l ground.	

Is the inspection result normal?

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< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

- YES >> GO TO 7.
- NO >> Replace rear mode door motor. Refer to <u>HAC-173</u>, "REAR MODE DOOR MOTOR : Removal and <u>Installation"</u>.

I.CHECK INSTALLATION OF REAR MODE DOOR MOTOR

Check rear mode door motor is properly installed. Refer to <u>HAC-171, "Exploded View"</u>.

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

A/C au	+ to amp.	_	Con	dition	Voltage (Approx.)
Connector	Terminal	*			(
M304	58	Ground	Air outlet	VENT	4 V
101304	58	Ground	All Outlet	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.

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

Rear mode	Rear mode door motor		A/C auto amp.		
Connector	Terminal	Connector	Terminal	Continuity	
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	Rear mode door motor		Continuity
Connector	Terminal		Continuity
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.

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< DTC/CIRCUIT DIAGNOSIS >

					А
+ Rear mode of	toor motor	_	Voltage		
Connector	Terminal		(Approx.)		
M318	5	Ground	5 V	-	В
Is the inspection	-		0.		
YES >> GO NO >> GO	TO 13. TO 12.				С
12.CHECK RE	AR MODE DO	OOR MOTOR P	BR POWER S	UPPLY CIRCUIT FOR OPEN	
2. Disconnect	switch OFF. A/C auto amp. nuity between		r motor harnes	s connector and A/C auto amp. harness connec-	E
Rear mode o	door motor	A/C au	ito amp.	Continuity	_
Connector	Terminal	Connector	Terminal		F
M318	5	M304	71	Existed	
ls the inspection YES >> GO		?		<u>.</u>	G
NO >> Rep 13.CHECK RE	air harness or AR MODE DO		BR GROUND	CIRCUIT	Н
Rear mode o	door motor	A/C au			
Connector		A/C au	ito amp.		J
	Terminal	Connector	ito amp. Terminal	Continuity	J
M318			-	- Continuity Existed	J
ls the inspection YES >> GO NO >> Rep	Terminal 7 result normal TO 14. air harness or	Connector M304 ? connector.	Terminal 79		J K L
s the inspection YES >> GO NO >> Rep 14.CHECK RE	Terminal 7 result normal TO 14. air harness or AR MODE DO	Connector M304 ? connector. DOR MOTOR P	Terminal 79 PBR	Existed	J K L
<u>s the inspection</u> YES >> GO NO >> Rep 14. CHECK RE Check rear mode	Terminal 7 result normal TO 14. air harness or AR MODE DO e door motor F result normal	Connector M304 <u>?</u> connector. DOR MOTOR P PBR.Refer to <u>H</u> /	Terminal 79 PBR		J K L M
s the inspection YES >> GO NO >> Rep 14.CHECK RE Check rear mode s the inspection YES >> GO NO >> Rep	Terminal 7 result normal TO 14. air harness or AR MODE DO e door motor F result normal TO 15. lace rear mode allation".	Connector M304 Connector. DOR MOTOR P PBR.Refer to H/ 2 e door motor. R	Terminal 79 PBR AC-122, "Comp	Existed	L
s the inspection YES >> GO NO >> Rep 14.CHECK RE Check rear mode s the inspection YES >> GO NO >> Rep	Terminal 7 result normal TO 14. air harness or AR MODE DO e door motor F result normal TO 15. lace rear mode allation".	Connector M304 Connector. DOR MOTOR P PBR.Refer to H/ 2 e door motor. R	Terminal 79 PBR AC-122, "Comp	Existed	L M
s the inspection YES >> GO NO >> Rep 14.CHECK RE Check rear mode s the inspection YES >> GO NO >> Rep Insta 15.CHECK IN Refer to <u>GI-43, "</u>	Terminal 7 result normal TO 14. air harness or AR MODE DO e door motor F result normal TO 15. lace rear mod allation". TERMITTENT Intermittent In	Connector M304 connector. DOR MOTOR P PBR.Refer to <u>H/</u> PBR.Refer to <u>H/</u> a door motor. R INCIDENT cident".	Terminal 79 PBR AC-122, "Comp	Existed	L M
Is the inspection YES >> GO NO >> Rep 14.CHECK RE Check rear mode Is the inspection YES >> GO NO >> Rep Insta 15.CHECK IN Refer to GI-43, " Is the inspection YES >> Rep	Terminal 7 result normal TO 14. air harness or AR MODE DO e door motor F result normal TO 15. lace rear mode allation". TERMITTENT Intermittent In- result normal lace A/C auto	Connector M304 2 connector. DOR MOTOR P PBR.Refer to <u>H</u> 2 e door motor. R INCIDENT <u>cident"</u> . 2	Terminal 79 PBR AC-122, "Comp efer to <u>HAC-17</u> HAC-163, "Rem	Existed	L M
Is the inspection YES >> GO NO >> Rep 14.CHECK RE Check rear mode Is the inspection YES >> GO NO >> Rep Insta 15.CHECK IN ⁻ Refer to GI-43. " Is the inspection YES >> Rep NO >> Rep	Terminal 7 result normal TO 14. air harness or AR MODE DO e door motor F result normal TO 15. lace rear mode allation". TERMITTENT Intermittent In result normal lace A/C auto air or replace	Connector <u>M</u> 304 <u>2</u> connector. DOR MOTOR P PBR.Refer to <u>H</u> <u>2</u> e door motor. R INCIDENT <u>cident"</u> . <u>2</u> amp. Refer to <u>H</u> malfunction par	Terminal 79 PBR AC-122, "Comp efer to <u>HAC-17</u> HAC-163, "Rem	Existed onent Inspection (PBR)". 3, "REAR MODE DOOR MOTOR : Removal and	L M N O
Is the inspection YES >> GO NO >> Rep 14.CHECK RE Check rear mode Is the inspection YES >> GO NO >> Rep Insta 15.CHECK IN Refer to GI-43, " Is the inspection YES >> Rep	Terminal 7 result normal TO 14. air harness or AR MODE DO e door motor F result normal TO 15. lace rear mode allation". TERMITTENT Intermittent In- result normal lace A/C auto air or replace nspection (Connector <u>M</u> 304 <u>2</u> connector. DOR MOTOR P PBR.Refer to <u>H</u> PBR.Refer to <u>H</u> 2 e door motor. R INCIDENT <u>cident"</u> . 2 amp. Refer to <u>H</u> malfunction par Motor)	Terminal 79 PBR AC-122, "Comp efer to <u>HAC-17</u> HAC-163, "Rem	Existed onent Inspection (PBR)". 3, "REAR MODE DOOR MOTOR : Removal and noval and Installation".	L M N O

2. Disconnect rear mode door motor connector.

B2762, B2763, B2764 REAR MODE DOOR MOTOR AGNOSIS > [AUTOMATIC AIR CONDITIONING]

< DTC/CIRCUIT DIAGNOSIS >

3. Supply rear mode door motor terminals with battery voltage and check by visually and operation sound that rear mode door motor operates.

Terr	minal	Operation direction
+	_	Operation direction
1	2	VENT
2	1	FOOT

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace rear mode door motor. Refer to<u>HAC-172, "UPPER VENTILATOR DOOR MOTOR :</u> <u>Removal and Installation"</u>.

Component Inspection (PBR)

INFOID:000000008132266

1.CHECK REAR MODE DOOR MOTOR PBR

Check resistance between rear mode door motor terminals.

7 <u>3</u> 5 Other than 0 or ∞	Terminal		Resistance (Ω)
5 Outer than 0 of ∞	7	3	Other than 0 or m
	1	5	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace rear mode door motor. Refer to<u>HAC-172, "UPPER VENTILATOR DOOR MOTOR :</u> <u>Removal and Installation"</u>.

< DTC/CIRCUIT DIAGNOSIS >

B2768, B2769, B276A AROMA MOTOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69. "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70</u>, <u>"DTC Logic"</u>.
- If all of door motors DTC (B2750 B276A) are detected, check door motor PBR power supply and ground circuit. Refer to <u>HAC-133</u>, "DOOR MOTOR PBR (WITH FOREST AIR) : Diagnosis Procedure".

DTC	Items (CONSULT screen terms)	DTC detection condition	Possible cause	E
B2768		Aroma motor PBR feedback signal voltage is too low.	 Aroma motor A/C auto amp. 	
B2769	AROMA MOTOR	Aroma motor PBR feedback signal voltage is too high.	Harness or connectors (The motor circuit is open or short-	F
B276A		Stop position of aroma motor is malfunctioning.	ed.)	

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-123, "Diagnosis Procedure".
- NO >> INSPECTION END

Diagnosis Procedure

1. CHECK AROMA MOTOR OPERATION

- 1. Turn ignition switch ON.
- 2. Operate temperature control switch and set the temperature setting to the same level as ambient temperature.
- Operate FOREST switch and OFF switch alternately so that aroma diffuser control switches between ON ⇔ OFF.
- 4. Perform this operation for 2 sets. Check by operation sound that aroma motor operates. **NOTE:**

Operation of aroma diffuser control can be checked immediately after FOREST switch is turned OFF once, and then is turned ON again. Operation direction of motor is switched by turning in ON again after turning it off. (Leaf scent \Leftrightarrow Fragrant wood)

Is the inspection result normal?

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

2. CHECK AROMA MOTOR DRIVE SIGNAL

- Operate FOREST switch and OFF switch alternately so that aroma diffuser control switches between ON ⇔ OFF.
- 2. Check voltage between aroma motor harness connector and ground, when this operation is performed for 2 sets.

NOTE:

Operation of aroma diffuser control can be checked immediately after FOREST switch is turned off once, and then is turned ON again. Operation direction of motor is switched by turning in ON again after turning it off. (Leaf scent ⇔ Fragrant wood)

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INFOID:000000008132272

INFOID:000000008132271

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< DTC/CIRCUIT DIAGNOSIS >

Aroma	+ Aroma motor		Condition		Voltage (Approx.)
Connector	Terminal				() [] · · · · · /
M305	5	Ground	Aroma diffuser	Fragrant wood	12 V
101305	6	Giouna	control	Leaf scent	12 V

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 3.

$\mathbf{3}$. Check aroma motor drive signal circuit for open

1. Turn ignition switch OFF.

2. Disconnect A/C auto amp. connector.

3. Disconnect aroma motor connector.

4. Check continuity between aroma motor harness connector and A/C auto amp. harness connector.

Aroma	a motor	A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M305	5	M304	82	Existed
101303	6	101304	62	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4.CHECK AROMA MOTOR DRIVE SIGNAL CIRCUIT FOR GROUND SHORT

Check continuity between aroma motor harness connector and ground.

Aroma	a motor		Continuity
Connector	Terminal		Continuity
M305	5	Ground	Not existed
101303	6	Giouna	NOT EXISTEN

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair harness or connector.

5.CHECK AROMA MOTOR DRIVE SIGNAL CIRCUIT FOR BATTERY SHORT

1. Turn ignition switch ON.

2. Check voltage between aroma motor harness connector and ground.

	+			
Aroma	a motor	_	Voltage (Approx.)	
Connector	Terminal	*	(/ pp/0x.)	
M305	5	Ground	0 V	
101000	6	Giodila	0 V	

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair harness or connector.

6.CHECK AROMA MOTOR

Check aroma motor. Refer to HAC-126, "Component Inspection (Motor)".

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

		>				-
	TO 14. place aroma m	otor. Refer to H	AC-176. "ARON	IA UNIT : Remo	val and Installation".	
		BR FEEDBACI				
⇔ OFF. Check volta NOTE: Operation of and then is	age between A/ of aroma diffuse	C auto amp. co er control can b ain. Operation d	nnector and gro e checked imme	und, when this o	ser control switches between ON operation is performed for 2 sets DREST switch is turned off once turning in ON again after turning	
	+					
A/C au			Cond	dition	Voltage	
Connector	Terminal	-			(Approx.)	
M304	52	Ground	Aroma diffuser control	Fragrant wood Leaf scent	4 V 1 V	
O >> GO	DMA MOTOR F	PBR FEEDBAC	K SIGNAL CIRC	UIT FOR OPEI	Ν	_
Disconnect Disconnect	n switch OFF. A/C auto amp. aroma motor c inuity between	connector.	arness connecto	or and A/C auto	amp. harness connector.	
Aroma	motor	A/C au	to amp.	Continuity		
Connector	Terminal	Connector	Terminal	-		
M305	2	M304	52	Existed		
YES >> GC NO >> Rej CHECK ARC	oair harness or DMA MOTOR F	connector. PBR FEEDBACI	K SIGNAL CIRC		RT	_
	-			0		
Aroma Connector	Terminal		Continuity			
M305	2	Ground	Not existed			
YES >> GC NO >> Rej O.CHECK A Connect A/ Turn ignitio	n result normal TO 10. Dair harness or ROMA MOTOF C auto amp. co	connector. R PBR POWER	SUPPLY			
	n switch ON.	oma motor harr	ness connector a	and ground.		_
	n switch ON. age between ar	oma motor harr	ness connector a	and ground.		-
-	n switch ON. age between ar	oma motor harr	ness connector a	and ground.		-
-	n switch ON. age between ar	oma motor harr		and ground.		_

3

Ground

M305

5 V

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 12.

NO >> GO TO 11.

11. CHECK AROMA MOTOR PBR POWER SUPPLY CIRCUIT FOR OPEN

1. Turn ignition switch OFF.

2. Disconnect A/C auto amp. connector.

3. Check continuity between aroma motor harness connector and A/C auto amp. harness connector.

Aroma motor		A/C auto amp.		Continuity	
Connector	Terminal	Connector Terminal		Continuity	
M305	3	M304	71	Existed	

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair harness or connector.

12. CHECK AROMA MOTOR PBR GROUND CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect A/C auto amp. connector.

3. Check continuity between aroma motor harness connector and A/C auto amp. harness connector.

Aroma motor		A/C auto amp.		Continuity	
Connector	Terminal	Connector Terminal		Continuity	
M305	1	M304	79	Existed	

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair harness or connector.

13. CHECK AROMA MOTOR PBR

Check aroma motor PBR. Refer to HAC-127, "Component Inspection (PBR)".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace aroma motor. Refer to <u>HAC-176, "AROMA UNIT : Removal and Installation"</u>.

14. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to <u>HAC-163, "Removal and Installation"</u>.

NO >> Repair or replace malfunction parts.

Component Inspection (Motor)

INFOID:000000008132273

1.CHECK AROMA MOTOR

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

Tern	ninals	Operation direction
+ –		
5	6	Fragrant wood
6	5	Leaf scent

Is the inspection result normal?

YES >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace aroma motor. Refer to <u>HAC-176, "AROMA UNIT : Removal and Installation"</u>.

Component Inspection (PBR)

1.CHECK AROMA MOTOR PBR

Check resistance between aroma motor terminals.

Ter	minals	Resistance (Ω)	
1	2	Other than 0 or ∞	
Is the inspection	3 on result norma	3	
YES >> IN	SPECTION EN		

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[AUTOMATIC AIR CONDITIONING]

INFOID:000000008132274

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< DTC/CIRCUIT DIAGNOSIS >

B276B, B276C, B276D HUMIDITY SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC is displayed along with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>HAC-69, "DTC Logic"</u>.
- If DTC is displayed along with DTC U1010, first perform the trouble diagnosis for DTC U1010. <u>HAC-70,</u> <u>"DTC Logic"</u>.

DTC	Items (CONSULT screen terms)		DTC detection condition	Possible cause
B276B		(A)	The humidity sensor (glass temperature sen- sor) recognition temperature is too high.	 Humidity sensor A/C auto amp.
B276C	HUMIDITY SENSOR	(7)	The humidity sensor (glass temperature sen- sor) recognition temperature is too low.	Harness or connectors (The sensor circuit is open or
B276D		(B)	Communication malfunction of humidity sensor	shorted.)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

- Turn ignition switch ON.
- 2. Select "Self Diagnostic Result" mode of "HVAC" using CONSULT.
- 3. Check DTC.

Is DTC detected?

YES >> Refer to <u>HAC-128, "Diagnosis Procedure"</u>.

NO >> INSPECTION END

Diagnosis Procedure

1.INSPECTION START

Confirm detected malfunction (A or B). Refer to <u>HAC-128, "DTC Logic"</u>.

Which malfunction is detected?

A >> GO TO 2.

B >> GO TO 8.

2.CHECK HUMIDITY SENSOR (GLASS TEMPERATURE SENSOR) POWER SUPPLY

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

+			Voltage	
Humidity sensor		_	Voltage (Approx.)	
Connector	Terminal			
R6	5	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 3.

3. check humidity sensor (glass temperature sensor) power supply circuit for open

1. Turn ignition switch OFF.

- 2. Disconnect A/C auto amp. connector.
- 3. Check continuity between humidity sensor harness connector and A/C auto amp. harness connector.

HAC-128

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< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

Humidity	sensor	A/C aut	o amp.		
Connector	Terminal	Connector	Terminal	Continuity	
R6	5	M67	33	Existed	
YES >> GO NO >> Rep	oair harness or MIDITY SENS	connector.	EMPERATURE	SENSOR) POWER SUPPLY	CIRCUIT FOR
		idity sensor har	ness connector	and ground.	
Humidity	sensor				
Connector	Terminal	_	-	Continuity	
R6	5	Grou	und	Not existed	
	TO 5. Dair harness or	connector.	IPERATURE S	ENSOR) POWER SUPPLY CIRC	UIT FOR BAT-
	n switch ON. ge between hu	midity sensor ha	arness connect	or and ground.	
+				Voltage	
Humidity		-		(Approx.)	
Connector	Terminal	0			
R6 s the inspection	5	Grou	una	0 V	
YES >> GO NO >> Rep CHECK HUM	TO 15. Dair harness or	_	RCUIT		
2. Disconnect	A/C auto amp. nuity between			ector and A/C auto amp. harness	connector.
Connector	Terminal	Connector	Terminal	Continuity	
R6	6	M67	44	Existed	
YES >> GO NO >> Rep CHECK HUM check humidity the inspection YES >> GO	oair harness or AIDITY SENSC sensor. Refer t result normal? TO 15.	connector. PR (GLASS TEM o <u>HAC-131, "Co</u> 2	omponent Inspe		
· ·	•	R POWER SUF			
	n switch OFF. humidity senso	or connector.			

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

3. Turn ignition switch ON.

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

+			No line of	
Humidity sensor		_	Voltage (Approx.)	
Connector	Terminal			
R6	3	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 12.

NO >> GO TO 9.

9.CHECK HUMIDITY SENSOR POWER SUPPLY CIRCUIT FOR OPEN

1. Turn ignition switch OFF.

- 2. Disconnect A/C auto amp. connector.
- 3. Check continuity between humidity sensor harness connector and A/C auto amp. harness connector.

Humidit	Humidity sensor		ito amp.	Continuity
Connector	Terminal	Connector	Terminal	Continuity
R6	3	M67	39	Existed

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair harness or connector.

10. Check humidity sensor power supply circuit for ground short

Check continuity between humidity sensor harness connector and ground.

Humidit	y sensor		Continuity	
Connector	Terminal		Continuity	
R6	3	Ground	Not existed	

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair harness or connector.

11. CHECK HUMIDITY SENSOR POWER SUPPLY CIRCUIT FOR BATTERY SHORT

1. Turn ignition switch ON.

2. Check voltage between humidity sensor harness connector and ground.

+ Humidity sensor			Voltogo
		_	Voltage (Approx.)
Connector	Terminal		
R6	3	Ground	0 V

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair harness or connector.

12. CHECK HUMIDITY SENSOR GROUND CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect A/C auto amp. connector.

3. Check continuity between humidity sensor harness connector and A/C auto amp. harness connector.

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

Humidity	y sensor	A/C au	ito amp.		А
Connector	Terminal	Connector	Terminal	Continuity	
R6	1	M66	22	Existed	В
ls the inspection YES >> GO	n result normal ⁽ TO 13.	?			D
NO >> Rep 13.снеск н	pair harness or UMIDITY SENS	SOR COMMUN		AL CIRCUIT FOR OPEN and A/C auto amp. harness connector.	С
	-			and A/C auto amp. namess connector.	D
Humidity	y sensor	A/C au	to amp.	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	Е
R6	2 4	M66	20 21	Existed	
l <u>s the inspection</u> YES >> GO	n result normal ⁽ TO 14.	?			F
	pair harness or				G
<u>s the inspection</u> YES >> INS	n result normal SPECTION ENI TO 15.	<u>?</u> D	Removal and In	<u>stallation"</u> .	H
Refer to <u>GI-43,</u>					
	place A/C auto			oval and Installation".	J
Component	Inspection			INF0/D:00000008132277	K
1.снеск ним	MIDITY SENSC	OR (GLASS TEN	MPERATURE SI	ENSOR)	
	n switch OFF. humidity senso	or connector.			L
			or terminals. Ref	er to applicable table for normal value.	Μ
					Ν
					0
					Ρ

< DTC/CIRCUIT DIAGNOSIS >

Tor	minal	Condition	Resistance: $k\Omega$						
Iei	IIIIIdi	Temperature: °C (°F)	Resistance. Ksz						
		-15	59.61						
		-10	46.29						
		-5	36.29						
		0	28.70						
				5	22.20				
						10	18.41		
5	6	15	14.92						
								20	12.17
					25	10.00			
		30	8.27						
		35	6.88						
		40	5.76						
		45	4.85						

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace humidity sensor. Refer to <u>HAC-167. "Removal and Installation"</u>.

< DTC/CIRCUI		WER SUPP	LY AND G			CONDITIONING]		
POWER S A/C AUTO		D GROUN	ID CIRCU	IT			А	
A/C AUTO AMP. : Diagnosis Procedure							В	
1.CHECK FUS	1.CHECK FUSE							
NOTE:	Check 10 A fuses [Nos. 3, 9 and 18, located in the fuse block (J/B)] NOTE:							
Refer to PG-37			al Arrangemer	<u>nt"</u> .				
Is the inspection YES >> GC		<u>?</u>					D	
	place the blown	fuse after repla	acing the appli	cable circuit.				
2. CHECK A/C	AUTO AMP. PO	OWER SUPPL	Y CIRCUIT				Е	
2. Disconnect	n switch OFF. the A/C auto a age between A/		rness connect	or and ground			F	
	+			Voltage				
A/C au	to amp.	_	lg	nition switch posit	ion		G	
Connector	Terminal		OFF	ACC	ON			
	1		Battery voltage	Battery voltage	Battery voltage		Н	
M66	2	Ground	Approx. 0 V	Approx. 0 V	Battery voltage		11	
	13		Approx. 0 V	Battery voltage	Battery voltage			
Is the inspection YES >> GC NO >> Rep 3. CHECK A/C) TO 3. pair harness or	connector.	JIT				HAC J	
	n switch OFF. inuity between	A/C auto amp.	harness conne	ector and grou	nd.		K	
A/C au	to amp.		0					
Connector	Terminal	_	Cont	nuity			L	
M66	10	Ground	Exis	sted				
	SPECTION ENE pair harness or	- D connector.	EST AIR)				Μ	
DOOR MOT	OR PBR (W	/ITH FORE	ST AIR) : D	iagnosis Pr	ocedure	INFOID:000000008132279	Ν	
NOTE: Check this circu 1. CHECK EAC		•	•	3276A) are de	tected.		0	
 Turn ignitio Disconnect 	n switch OFF. mode door mo						Ρ	
	n switch ON. age between me	ode door motor	LH harness co	onnector and g	ground.			

< DTC/CIRCUIT DIAGNOSIS >

+			
Mode door motor	_	Voltage (Approx.)	
Connector	Terminal		())
M316	4	Ground	5 V

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

$2. {\sf check \ each \ door \ motor \ pbr \ power \ supply \ circuit \ for \ open}$

- 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	Continuity
M316	4	M304	71	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

 $\mathbf{3}.$ 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
- Aroma motor
- 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		Continuity	
M316	4	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.

+			
Mode door motor LH		-	Voltage (Approx.)
Connector	Terminal		(++)
M316	4	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.

< DTC/CIRCUIT DIAGNOSIS >

- 2. Disconnect A/C auto amp. connector. Check continuity between mode door motor LH harness connector and A/C auto amp. harness connector. 3. А Mode door motor LH A/C auto amp. Continuity В Connector Terminal Connector Terminal M316 5 M304 79 Existed Is the inspection result normal? YES >> GO TO 6. NO >> Repair harness or connector. **6.**CHECK COMPONENT PARTS D Check following parts: Air mix door motor (driver side): Refer to <u>HAC-91</u>, "Component Inspection (PBR)". Air mix door motor (passenger side): Refer to <u>HAC-96</u>, "Component Inspection (PBR)". Aroma motor: Refer to <u>HAC-127</u>, "<u>Component Inspection (PBR)</u>".
 Intake door motor: Refer to <u>HAC-111</u>, "<u>Component Inspection (PBR)</u>". Mode door motor (driver side): Refer to HAC-101, "Component Inspection (PBR)". Mode door motor (passenger side): Refer to HAC-106, "Component Inspection (PBR)". Rear mode door motor: Refer to <u>HAC-122</u>, "Component Inspection (PBR)". Upper ventilator door motor: Refer to HAC-117, "Component Inspection (PBR)". Is the inspection result normal? YES >> GO TO 7. NO >> Replace malfunctioning parts. Н I.CHECK INTERMITTENT INCIDENT Refer to GI-43, "Intermittent Incident". Is the inspection result normal? HAC YES >> Replace A/C auto amp. Refer to HAC-163, "Removal and Installation". NO >> Repair or replace malfunctioning parts. DOOR MOTOR PBR (WITHOUT FOREST AIR) DOOR MOTOR PBR (WITHOUT FOREST AIR) : Diagnosis Procedure INFOID:00000008132280 Κ 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. M 4 Check voltage between mode door motor LH harness connector and ground. + Ν Voltage Mode door motor LH (Approx.) 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.
- Disconnect A/C auto amp. connector.

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

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< DTC/CIRCUIT DIAGNOSIS >

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

${f 3.}$ 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		Continuity
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.

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

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair harness or connector.

${f 5.}$ 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 doo	Mode door motor LH		A/C auto amp.		
Connector	Terminal	Connector	Terminal	Continuity	
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-91, "Component Inspection (PBR)".
- Air mix door motor (passenger side): Refer to <u>HAC-96, "Component Inspection (PBR)"</u>.
- Intake door motor: Refer to HAC-111, "Component Inspection (PBR)".

< DTC/CIRCUIT DIAGNOSIS >	[AUTOMATIC AIR CONDITIONING]
Is the inspection result normal?	E
YES >> GO TO 7. NO >> Replace malfunctioning parts.	
7. CHECK INTERMITTENT INCIDENT	(
Refer to GI-43, "Intermittent Incident".	
Is the inspection result normal?	r
YES >> Replace A/C auto amp. Refer NO >> Repair or replace malfunction	r to <u>HAC-163, "Removal and Installation"</u> . ing parts.
	E
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< DTC/CIRCUIT DIAGNOSIS >

BLOWER MOTOR

Diagnosis Procedure

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.

+			
Blower motor		-	Voltage
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.
- Check 15 A fuses [Nos. 20 and 21, located in fuse block (J/B)]. NOTE:

Refer to PG-37, "Fuse, Connector and Terminal Arrangement".

Is the inspection result normal?

YES >> GO TO 3.

NG >> Replace the fuse after repairing the applicable circuit.

 $\mathbf{3}.$ 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	Continuity
M109	1	N44	3A	Existed
101109	I	M1	8A	Existed

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.

Blowe	r motor		Continuity
Connector	Terminal		Continuity
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.

HAC-138

INFOID:000000008132281

< DTC/CIRCUIT DIAGNOSIS >

<u> </u>	ck (J/B)				
Connector	Terminal	_	Continuity		
M3	7C	Ground	Existed		
s the inspection	result normal?	?			
YES >> GO					
	air harness or	connector.			
CHECK BLO					
	-		oonent Inspection (E	<u>lower Relay)"</u> .	
s the inspection					
YES >> Che PLY		ver supply circu	lit. Refer to $PG-27$,	Wiring Diagram - IGNITION POWER S	<u>50P-</u>
	lace blower rel	lay.			
CHECK POV	VER TRANSIS	TOR POWER S	SUPPLY		
. Turn ignitior	n switch OFF.				
	wer motor con				
 Disconnect Turn ignition 	power transisto switch ON	or connector.			
		wer transistor h	narness connector a	nd ground.	
+		ļ			
Power tra	ansistor	_	Voltage		
Connector	Terminal				
M112	3	Ground	Battery voltage		ŀ
YES >> GO NO >> GO	TO 8.		SUPPLY CIRCUIT F		
				OR OPEN	
. Turn ignition	n switch OFF.				
	DIOWER MOTOR C	connector.			
. Disconnect			or harness connecto	and blower motor harness connector.	
. Disconnect			or harness connecto	and blower motor harness connector.	
. Disconnect	nuity between	power transisto	r motor		
. Disconnect . Check conti	nuity between	power transisto		continuity	
Disconnect Check conti Power tra	nuity between	power transisto	r motor		
2. Disconnect 5. Check conti Power tra Connector M112 5 the inspection	nuity between ansistor Terminal 3 result normal?	power transisto Blowe Connector M109	r motor Terminal	Continuity	
2. Disconnect 3. Check conti Power tra Connector M112 5 the inspection YES >> GO	nuity between ansistor Terminal 3 result normal? TO 9.	power transisto Blowe Connector M109 2	r motor Terminal	Continuity	
. Disconnect Check conti Power tra Connector M112 Sthe inspection YES >> GO NO >> Rep	nuity between ansistor Terminal 3 result normal? TO 9. pair harness or	power transisto Blowe Connector M109 2 connector.	r motor Terminal 2	Continuity Existed	
. Disconnect Check conti Power tra Connector M112 Sthe inspection YES >> GO NO >> Rep CHECK POW	nuity between ansistor Terminal 3 result normal? TO 9. pair harness or VER TRANSIS	power transisto Blowe Connector M109 2 connector. TOR POWER \$	r motor Terminal 2 SUPPLY CIRCUIT F	Continuity Existed OR SHORT	
Disconnect Check conti Power tra Connector M112 sthe inspection YES >> GO NO >> Rep CHECK POW	nuity between ansistor Terminal 3 result normal? TO 9. pair harness or VER TRANSIS	power transisto Blowe Connector M109 2 connector. TOR POWER \$	r motor Terminal 2	Continuity Existed OR SHORT	
Disconnect Check conti Power tra Connector M112 sthe inspection YES >> GO NO >> Rep CHECK POW Check continuity	nuity between ansistor Terminal 3 result normal? TO 9. pair harness or VER TRANSIS / between powe	power transisto Blowe Connector M109 2 connector. TOR POWER \$	r motor Terminal 2 SUPPLY CIRCUIT F	Continuity Existed OR SHORT	
2. Disconnect 3. Check conti Power tra Connector M112 s the inspection YES >> GO NO >> Rep D.CHECK POW Check continuity Power tra	nuity between ansistor Terminal 3 result normal? TO 9. pair harness or VER TRANSIS v between powe	power transisto Blowe Connector M109 2 connector. TOR POWER \$	r motor Terminal 2 SUPPLY CIRCUIT F	Continuity Existed OR SHORT I ground.	
2. Disconnect 3. Check conti Power tra Connector M112 s the inspection YES >> GO NO >> Rep D.CHECK POW Check continuity Power tra Connector	nuity between ansistor Terminal 3 result normal? TO 9. pair harness or VER TRANSIS VER TRANSIS between powe ansistor Terminal	power transisto Blowe Connector M109 Connector. TOR POWER S er transistor ha	r motor Terminal 2 SUPPLY CIRCUIT F rness connector and Continuity	Continuity Existed OR SHORT I ground.	
2. Disconnect B. Check conti Power tra Connector M112 S the inspection YES >> GO NO >> Rep D.CHECK POW Check continuity Power tra Connector M112	nuity between ansistor Terminal 3 result normal? TO 9. pair harness or VER TRANSIS V between powe ansistor Terminal 3	power transisto Blowe Connector M109 2 connector. TOR POWER \$ er transistor ha Ground	r motor Terminal 2 SUPPLY CIRCUIT F rness connector and	Continuity Existed OR SHORT I ground.	
Disconnect Check conti Power tra Connector M112 sthe inspection YES >> GO NO >> Rep CHECK POW Check continuity Power tra Connector M112 sthe inspection	nuity between ansistor Terminal 3 result normal? TO 9. pair harness or VER TRANSIS VER TRANSIS VER TRANSIS between powe ansistor Terminal 3 result normal?	power transisto Blowe Connector M109 2 connector. TOR POWER \$ er transistor ha Ground	r motor Terminal 2 SUPPLY CIRCUIT F rness connector and Continuity	Continuity Existed OR SHORT I ground.	
Disconnect Check conti Power tra Connector M112 the inspection YES >> GO NO >> Rep CHECK POW Check continuity Power tra Connector M112 sthe inspection YES >> GO	nuity between ansistor Terminal 3 result normal? TO 9. pair harness or VER TRANSIS VER TRANSIS VER TRANSIS between powe ansistor Terminal 3 result normal?	power transisto Blowe Connector M109 Connector. TOR POWER S er transistor ha Ground	r motor Terminal 2 SUPPLY CIRCUIT F rness connector and Continuity	Continuity Existed OR SHORT I ground.	

< DTC/CIRCUIT DIAGNOSIS >

Replace blower motor. Refer to <u>VTL-17, "BLOWER MOTOR : Removal and Installation"</u>.

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		Continuity
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.

+ Power transistor			Condition	Voltage (Approx.)			
] – [Fan speed (manual)				
Connector	Terminal		VENT mode				
			OFF	0 V			
		1st		3.5 V			
			2nd				
M112	2	Ground	3rd	6.5 V			
IVI I I Z	2	Ground	4th	3.5 V 5.2 V			
			5th				
			6th	6.5 V 7.8 V 9.2 V 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 t	Power transistor		A/C auto amp.		
Connector	Terminal	Connector	Terminal	Continuity	
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

HAC-140

< DTC/CIRCUIT DIAGNOSIS >

Check continuity between power transistor harness connector and ground.

	Power transistor			Continuity
-	Connector	Terminal		Continuity
	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		[
A/C auto amp.			Fan speed (manual)	Voltage (Approx.)		
Connector	Terminal		VENT mode	(+ +)		
			OFF	Battery voltage		
		1st	10.0 V			
					2nd	8.3 V
Mag	0	Consume d	3rd	7.0 V	(
M66	6 Ground	Ground	4th	5.7 V		
			5th	4.3 V	ł	
		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 au	to amp.	Power t	ransistor	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M66	6	M112	1	Existed
Is the inspection	n result normal?	<u>?</u>		
) TO 17.	aannaatar		
· '	pair harness or			
17.снеск в	LOWER MOTO	R FEEDBACK	SIGNAL CIRC	UIT FOR SHOP
Check continuit	y between A/C	auto amp. harn	ess connector	and ground.
A/C au	to amp.		Contir	nuity
Connector	Terminal		Contin	ionty

M66	6	Ground	Not existed
Mcc	C	Cround	Not evicted
Connector	Terminal		

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair harness or connector.

18.REPLACE POWER TRANSISTOR

А

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D

Κ

[AUTOMATIC AIR CONDITIONING]

Replace power transistor. Refer to HAC-174, "Removal and Installation".

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> INSPECTION END

NO >> GO TO 19.

19. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to <u>HAC-163</u>, "Removal and Installation".

NO >> Repair or replace malfunctioning parts.

Component Inspection (Blower Motor)

INFOID:000000008132282

1.CHECK BLOWER MOTOR-I

- 1. Remove blower motor. Refer to VTL-17, "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 <u>VTL-17, "BLOWER MOTOR : Removal and Installation"</u>.

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-17, "BLOWER MOTOR : Removal and Installation".

Component Inspection (Blower Relay)

INFOID:000000008132283

1.CHECK BLOWER RELAY

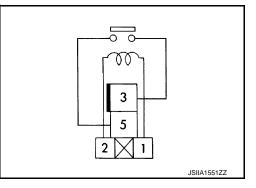
- 1. Remove blower relay.
- 2. Check continuity between blower relay terminals 3 and 5 when the voltage is supplied between terminals 1 and 2.

Tern	ninals	Voltage	Continuity
3	5	ON	Existed
5	5	OFF	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace blower relay.



		-			IR CONDITIONING]
<pre>< DTC/CIRCUI ECV (ELE()</pre>		CONTROL V	VALVE)		
Diagnosis P			,		INFOID:000000008132284
1.CHECK ECV	√ (ELECTRICAI	L CONTROL VA	LVE) POWER SUI	PPLY	
 Turn ignitio Disconnect Turn ignitio 	n switch OFF. t compressor co n switch ON.	onnector.	ss connector and g		
	+				
Comp	pressor	-	Voltage		
Connector	Terminal				
F43	3	Ground	Battery volta	age	
2.CHECK FUS 1. Turn ignitio 2. Check 10 A NOTE:	n switch OFF. A fuse [No. 3, lo	cated in fuse blo	ock (J/B)]. minal Arrangemen	1 11	
3.CHECK ECV 1. Disconnect	V POWER SUP	PLY CIRCUIT F		d fuse block (J/B) harr	ess connector.
Comp	pressor	Fuse blo	ck (J/B)	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
F43	3	M1			
المعامر أتحج		IVII	2A	Existed	
YES >> GC NO >> Re 4.CHECK ECV 1. Disconnect connector (t A/C auto amp. (with Forest Air)	connector. PLY CIRCUIT F connector, ioniz	OR SHORT	Forest Air) and inside	odor detecting sensor
YES >> GC NO >> Re 4.CHECK ECV 1. Disconnector (2. Check cont Comp) TO 4. pair harness or / POWER SUP t A/C auto amp. (with Forest Air)	connector. PLY CIRCUIT F connector, ioniz	OR SHORT er connector (with ness connector an	Forest Air) and inside d ground.	odor detecting sensor
YES >> GC NO >> Re 4.CHECK ECV 1. Disconnector 2. Check cont Connector	D TO 4. pair harness or V POWER SUP t A/C auto amp. (with Forest Air) tinuity between pressor Terminal	2 connector. PLY CIRCUIT F connector, ioniz compressor har	OR SHORT er connector (with ness connector an Continuity	Forest Air) and inside d ground.	odor detecting sensor
YES >> GC NO >> Re 4.CHECK ECV 1. Disconnector (2. Check cont Connector F43	D TO 4. pair harness or V POWER SUP t A/C auto amp. (with Forest Air) tinuity between	2 connector. PLY CIRCUIT F connector, ioniz compressor hari	OR SHORT er connector (with ness connector an	Forest Air) and inside d ground.	odor detecting sensor

1.

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

ECV (ELECTRICAL CONTROL VALVE)

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

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

Comp	Compressor A/C auto amp.		Continuity	
Connector	Terminal	Connector	Terminal	Continuity
F43	2	M66	17	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair harness or connector.

O.CHECK ECV CONTROL SIGNAL CIRCUIT FOR SHORT

Check continuity between compressor harness connector and ground.

•	Compressor			Continuity
	Connector	Terminal		Continuity
	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-144, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace compressor. Refer to HA-31, "COMPRESSOR : Removal and Installation".

8.CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to <u>HAC-163</u>, "Removal and Installation".

NO >> Repair or replace malfunctioning parts.

Component Inspection

INFOID:000000008132285

1.CHECK ECV (ELECTRICAL CONTROL VALVE)

- 1. Turn ignition switch OFF.
- 2. Disconnect compressor connector.

3. Check continuity between compressor connector terminals.

Terminals		ninale	Condition	Resistance (k Ω)
		linais	Temperature: °C (°F)	
	2	3	20 (68)	10.1 – 11.1

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace compressor. Refer to <u>HA-31, "COMPRESSOR : Removal and Installation"</u>.

[AUTOMATIC AIR CONDITIONING] < DTC/CIRCUIT DIAGNOSIS > INSIDE ODOR DETECTING SENSOR А Component Function Check INFOID:00000008132286 1. CHECK INSIDE ODOR DETECTING SENSOR FUNCTION В 1. Operate fan switch. Set fan speed to 7th speed. Check that voltage between A/C auto amp. vehicle side harness connector and body ground changes 2. when cigarette smoke or similar substance is applied to air inlet. + Voltage D A/C auto amp. (Approx.) Connector Terminal 0-4.8 V E M67 36 Ground Output voltage differs depending on measurement environment of the vehicle. Is the inspection result normal? YES >> INSPECTION END NO >> Refer to HAC-145, "Diagnosis Procedure". Diagnosis Procedure INFOID:000000008132287 1. CHECK INSIDE ODOR DETECTING SENSOR IGNITION POWER SUPPLY 1. Turn ignition switch OFF. Н 2. Disconnect inside odor detecting sensor connector. 3. Turn ignition switch ON. 4. Check voltage between inside odor detecting sensor harness connector and ground. HAC + Inside odor detecting sensor Voltage Connector Terminal M73 4 Ground Battery voltage Κ Is the inspection result normal? YES >> GO TO 5. NO >> GO TO 2. 2.CHECK FUSE Turn ignition switch OFF. 1. 10 A fuse [No. 3, located in fuse block (J/B)]. 2. M NOTE: Refer to PG-37, "Fuse, Connector and Terminal Arrangement". Is the inspection result normal? Ν YES >> GO TO 3. NO >> Replace the fuse after replacing the applicable circuit. ${f 3.}$ CHECK INSIDE ODOR DETECTING SENSOR IGNITION POWER SUPPLY CIRCUIT FOR OPEN Disconnect fuse block (J/B) connector. 1. 2. Check continuity between inside odor detecting sensor harness connector and fuse block (J/B) harness Ρ connector.

INSIDE ODOR DETECTING SENSOR

Inside odor de	Inside odor detecting sensor		ock (J/B)	Continuity
Connector	Terminal	Connector Terminal		Continuity
M73	4	M1	2A	Existed

Is the inspection result normal?

INSIDE ODOR DETECTING SENSOR

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 4.

NO >> Repair harness or connector.

 ${f 4.}$ CHECK INSIDE ODOR DETECTING SENSOR IGNITION POWER SUPPLY CIRCUIT FOR SHORT

1. Disconnect compressor connector, A/C auto amp. connector and ionizer connector.

2. Check continuity between inside odor detecting sensor harness connector and ground.

Inside odor detecting sensor			Continuity
Connector	Terminal		Continuity
M73	4	Ground	Not existed

Is the inspection result normal?

YES >> Check ignition power supply circuit. Refer to <u>PG-27, "Wiring Diagram - IGNITION POWER SUP-</u> <u>PLY -"</u>.

NO >> Repair harness or connector.

5.check inside odor detecting sensor ground circuit

1. Turn ignition switch OFF.

2. Check continuity between inside odor detecting sensor harness connector and ground.

Inside odor de	Inside odor detecting sensor		Continuity
Connector	Terminal		Continuity
M73	3	Ground	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair harness or connector.

6.CHECK INSIDE ODOR DETECTING SENSOR POWER SUPPLY

1. Turn ignition switch ON.

2. Check voltage between inside odor detecting sensor harness connector and ground.

-	+		
Inside odor de	Inside odor detecting sensor		Voltage (Approx.)
Connector	Terminal		
E73	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 7.

I.CHECK INSIDE ODOR DETECTING SENSOR POWER SUPPLY CIRCUIT FOR OPEN

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

Inside odor de	etecting sensor	A/C auto amp.		Continuity
Connector	Terminal	Connector Terminal		Continuity
E73	1	M67	36	Existed

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair harness or connector.

old B. CHECK INSIDE ODOR DETECTING SENSOR POWER SUPPLY CIRCUIT FOR GROUND SHORT

Check continuity between inside odor detecting sensor harness connector and ground.

INSIDE ODOR DETECTING SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

	ecting sensor				
Connector	Terminal	—	Continui	ty	
E73	1	Ground	Not exist	ed	
Is the inspection	result normal?				
YES >> GO					
• '	air harness or				
9. CHECK INSI	DE ODOR DET	FECTING SENS		PPLY CIRCUIT FOR BAT	TERY SHORT
1. Turn ignition					
2. Check volta	ge between ins	side odor detect	ing sensor narnes	s connector and ground.	
+					
Inside odor det	ecting sensor	_	Voltage		
Connector	Terminal		(Approx	.)	
E73	1	Ground	0 V		
Is the inspection	result normal?	<u>></u>			
YES >> GO	TO 12.	-			
	air harness or				
IU. CHECK IN	SIDE ODOR D	ETECTING SEI	NSOR GROUND	CIRCUIT	
	nully between	inside odor det	tecting sensor ha	rness connector and A/C	auto amp. harness
connector.				rness connector and A/C	auto amp. harness
		Inside odor det A/C aut Connector		rness connector and A/C	auto amp. harness
connector.	ecting sensor	A/C aut	o amp.		auto amp. harness
Connector. Inside odor det Connector E73	ecting sensor Terminal 2	A/C aut Connector M67	o amp. Terminal	Continuity	auto amp. harness
Connector. Inside odor det Connector	ecting sensor Terminal 2 result normal?	A/C aut Connector M67	o amp. Terminal	Continuity	auto amp. harness
connector. Inside odor det Connector E73 Is the inspection YES >> GO NO >> Rep	ecting sensor Terminal 2 result normal? TO 11. air harness or	A/C aut Connector M67	o amp. Terminal 44	Continuity	auto amp. harness
connector. Inside odor det Connector E73 Is the inspection YES >> GO NO >> Rep	ecting sensor Terminal 2 result normal? TO 11. air harness or	A/C aut Connector M67	o amp. Terminal 44	Continuity	auto amp. harness
connector. Inside odor det Connector E73 Is the inspection YES >> GO NO >> Rep 11.CHECK INS	ecting sensor Terminal 2 result normal? TO 11. air harness or SIDE ODOR D	A/C aut Connector M67 Connector. ETECTING SEN	o amp. Terminal 44	Continuity Existed	auto amp. harness
connector. Inside odor det Connector E73 Is the inspection YES >> GO NO >> Rep 11.CHECK INS Check inside od Is the inspection	ecting sensor Terminal 2 result normal? TO 11. air harness or SIDE ODOR D or detecting se result normal?	A/C aut Connector M67 Connector. ETECTING SEN	o amp. Terminal 44	Continuity Existed	auto amp. harness
connector. Inside odor det Connector E73 Is the inspection YES >> GO NO >> Rep 11.CHECK INS Check inside od Is the inspection YES >> GO	ecting sensor Terminal 2 result normal? TO 11. air harness or SIDE ODOR D or detecting se result normal? TO 12.	A/C aut Connector M67 Connector. ETECTING SEN nsor. Refer to <u>H</u>	o amp. Terminal 44 NSOR IAC-147, "Compo	Continuity Existed	
connector. Inside odor det Connector E73 Is the inspection YES >> GO NO >> Rep 11.CHECK INS Check inside od Is the inspection YES >> GO NO >> Rep	ecting sensor Terminal 2 result normal? TO 11. air harness or SIDE ODOR D or detecting se result normal? TO 12. lace inside odd	A/C aut Connector M67 - connector. ETECTING SEN nsor. Refer to <u>H</u> -	o amp. Terminal 44 NSOR IAC-147, "Compo	Continuity Existed	
connector. Inside odor det Connector E73 Is the inspection YES >> GO NO >> Rep 11.CHECK INS Check inside od Is the inspection YES >> GO NO >> Rep 12.CHECK INS	ecting sensor Terminal 2 result normal? TO 11. air harness or SIDE ODOR D or detecting se result normal? TO 12. lace inside odo TERMITTENT	A/C aut Connector M67 Connector. ETECTING SEN nsor. Refer to E Sor detecting sen INCIDENT	o amp. Terminal 44 NSOR IAC-147, "Compo	Continuity Existed	
connector. Inside odor det Connector E73 Is the inspection YES >> GO NO >> Rep 11.CHECK INS Check inside od Is the inspection YES >> GO NO >> Rep 12.CHECK INS Refer to <u>GI-43.</u>	ecting sensor Terminal 2 result normal? TO 11. air harness or SIDE ODOR D or detecting se result normal? TO 12. lace inside odo TERMITTENT	A/C aut Connector M67 Connector. ETECTING SEN nsor. Refer to H Condetecting sen INCIDENT Cident".	o amp. Terminal 44 NSOR IAC-147, "Compo	Continuity Existed	
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connector. Inside odor det Connector E73 Is the inspection YES >> GO NO >> Rep 11.CHECK INS Check inside od Is the inspection YES >> GO NO >> Rep 12.CHECK INS Refer to GI-43. Is the inspection YES >> Rep NO >> Rep	ecting sensor Terminal 2 Tesult normal? TO 11. air harness or SIDE ODOR D or detecting se result normal? TO 12. lace inside odo TERMITTENT Intermittent Inc result normal? lace A/C auto a air or replace r	A/C aut Connector M67 Connector. ETECTING SEN nsor. Refer to H or detecting sen INCIDENT Cident". Camp. Refer to H	o amp. Terminal 44 NSOR IAC-147, "Composition sor. Refer to <u>HAC</u> AC-163, "Remova	Continuity Existed	
connector. Inside odor det Connector E73 Is the inspection YES >> GO NO >> Rep 11.CHECK INS Check inside od Is the inspection YES >> GO NO >> Rep 12.CHECK INS Refer to GI-43." Is the inspection YES >> Rep	ecting sensor Terminal 2 result normal? TO 11. air harness or SIDE ODOR D or detecting se result normal? TO 12. lace inside odo TERMITTENT Intermittent Inc result normal? lace A/C auto a air or replace r nspection	A/C aut Connector M67 Connector. ETECTING SEN nsor. Refer to H or detecting sen INCIDENT Cident". Camp. Refer to H nalfunctioning p	o amp. Terminal 44 NSOR IAC-147, "Composite sor. Refer to <u>HAC</u> AC-163, "Remova parts.	Continuity Existed	

1. Turn ignition switch OFF.

2. Disconnect inside odor detecting sensor connector.

3. Apply voltage between inside odor detecting sensor terminals 4 and 3, and wait for 3 minutes.

4. Check resistance between inside odor detecting sensor terminals while applying voltage.

INSIDE ODOR DETECTING SENSOR

< DTC/CIRCUIT DIAGNOSIS >

Terr	ninal	Condition	Resistance (k Ω)
1	2	Air is clean	2 – 670

NOTE:

Resistance value differs depending on measurement environment of the vehicle.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the inside odor detecting sensor. Refer to <u>HAC-169</u>, "Removal and Installation".

2. CHECK INSIDE ODOR DETECTING SENSOR-II

Blow sensor portion of inside odor detecting sensor. Check that resistance value between inside odor detecting sensor terminals decreases.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the inside odor detecting sensor. Refer to HAC-169, "Removal and Installation".

[AUTOMATIC AIR CONDITIONING]

IONIZER			
Component Funct	ion Check		INFOID:000000008132289
1. CHECK IONIZER O	PERATION SOUND		
side) outlet while p Is the inspection result YES >> INSPECTION	ation sound (whirring so ressing fan switch and (<u>normal?</u>	OFF switch alternately.	an ear to the side ventilator grille (driver
Diagnosis Procedu	-		INFOID:000000008132290
1.CHECK IONIZER P			
 Turn ignition switch Disconnect ionizer Turn ignition switch Check voltage betw 	connector.	onnector and ground.	
+			
Ionizer Connector Tern		Voltage	
M98		Battery voltage	
NOTE:	lo. 3, located in fuse blo use, Connector and Ter		
YES >> GO TO 3. NO >> Replace th 3. CHECK IONIZER Po 1. Disconnect fuse blo	e fuse after repairing the OWER SUPPLY CIRCL ock (J/B) connector.	JIT FOR OPEN	ock (J/B) harness connector.
lonizer Connector Tern	Fuse blo	ock (J/B) Terminal	Continuity
M98		2A	Existed
Is the inspection result YES >> GO TO 4. NO >> Repair har	normal? ness or connector. OWER SUPPLY CIRCL		

< DTC/CIRCUIT DIAGNOSIS >

IONIZER

< DTC/CIRCUIT DIAGNOSIS >

lonizer			Continuity
Connector	Terminal		Continuity
M98	1	Ground	Not existed

Is the inspection result normal?

YES >> Check ignition power supply circuit. Refer to <u>PG-27</u>, "Wiring Diagram - IGNITION POWER SUP-<u>PLY -"</u>.

NO >> Repair harness or connector.

5. CHECK IONIZER GROUND CIRCUIT

1. Turn ignition switch OFF.

2. Check continuity between ionizer harness connector and ground.

lon	lonizer		Continuity
Connector	Terminal		Continuity
M98	3	Ground	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair harness or connector.

6.CHECK IONIZER (ON/OFF) CONTROL SIGNAL

1. Connect ionizer connector.

- 2. Disconnect A/C auto amp. connector.
- 3. Turn ignition switch ON.

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

	+		
A/C au	to amp.	_	Voltage
Connector	Terminal		
M67	42	Ground	Battery voltage
	72		Dattery voltage

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 7.

7.CHECK IONIZER (ON/OFF) CONTROL SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.

2. Disconnect ionizer connector.

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

A/C auto amp.		lonizer		Continuity
Connector	Terminal	Connector Terminal		Continuity
M67	42	M98	4	Existed

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair harness or connector.

${f 8}$.CHECK IONIZER (ON/OFF) CONTROL SIGNAL CIRCUIT FOR SHORT

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

A/C auto amp.			Continuity
Connector	Terminal		Continuity
M67	42	Ground	Not existed

< DTC/CIRCUIT DIAGNOSIS > [AUTOMATIC AIR CONDITIONING]	
Is the inspection result normal?	
YES >> GO TO 9.	А
NO >> Repair harness or connector.	
9. REPLACE IONIZER	D
Replace ionizer. Refer to HAC-175, "Removal and Installation".	В
Is the inspection result normal?	
YES >> INSPECTION END	С
NO >> GO TO 10.	-
10. CHECK INTERMITTENT INCIDENT	
Refer to GI-43, "Intermittent Incident".	D
Is the inspection result normal?	
 YES >> Replace A/C auto amp. Refer to <u>HAC-163, "Removal and Installation"</u>. NO >> Repair or replace malfunctioning parts. 	Е

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< DTC/CIRCUIT DIAGNOSIS >

MAGNET CLUTCH

Component Function Check

INFOID:000000008132291

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 <u>HAC-152</u>, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:000000008132292

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 <u>HA-32</u>, "<u>MAGNET CLUTCH</u> : <u>Removal and Installation of Compressor Clutch</u>".

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		IPDI	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
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			Continuity
Connector	Terminal	Ground	Continuity
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-39, "Fuse, Connector and Terminal Arrangement".

Is the inspection result normal?

- YES >> Replace IPDM E/R. Refer to <u>PCS-32, "Removal and Installation"</u>.
- NO >> Replace the fuse after repairing the applicable circuit.

AUTOMATIC AIR CONDITIONING SYSTEM

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS AUTOMATIC AIR CONDITIONING SYSTEM

Symptom Table

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INFOID:00000008132293

NOTE:

Perform the self-diagnoses with CONSULT before performing the symptom diagnosis. If DTC is detected, perform the corresponding diagnosis.

Sympt	om	Corresponding malfunction part	Reference
 Air conditioning system does not activate. Air conditioning system cannot be controlled 	Fail-safe activates	Multi AV system	 <u>AV-98, "Symptom Table"</u> (Base audio without navigation) <u>AV-254, "Symptom Table"</u> (BOSE audio with navigation)
(Multifunction switch).Operation status of air conditioning system is not indicated on display.	Fail-safe does not acti- vate	 Ignition power supply and ground circuit of A/C auto amp. A/C auto amp. 	HAC-133, "A/C AUTO AMP. : Diag- nosis Procedure"
Discharge air temperature o change.	f driver side does not	Air mix door motor (driver side) system installation condition	Check air mix door motor (driver side) system is properly installed. Refer to <u>HAC-171, "Exploded</u> <u>View"</u> .
Discharge air temperature o not change.	f passenger side does	Air mix door motor (passenger side) system installation condition	Check air mix door motor (passen- ger side) system is properly in- stalled. Refer to <u>HAC-171,</u> <u>"Exploded View"</u> .
Air outlet of driver side does per ventilation).	not change (Except up-	Mode door motor (driver side) system installation condition	Check mode door motor (driver side) system is properly installed. Refer to <u>HAC-171, "Exploded</u> <u>View"</u> .
Air outlet of passenger side outper ventilation).	does not change (Except	Mode door motor (passenger side) system installation condition	Check mode door motor (passen- ger side) system is properly in- stalled. Refer to <u>HAC-171.</u> <u>"Exploded View"</u> .
Air outlet of rear side does r	not change.	Rear mode door motor system instal- lation condition	Check rear mode door motor sys- tem is properly installed. Refer to <u>HAC-171, "Exploded View"</u> .
Air outlet of upper ventilator	does not change.	Upper ventilator door motor system in- stallation condition	Check upper ventilator door motor system is properly installed. Refer to <u>HAC-171</u> , "Exploded View".
Air inlet does not change.		Intake door motor system installation condition	Check intake door motor system is properly installed. Refer to <u>HAC-</u> <u>171, "Exploded View"</u> .
Blower motor operation is m	alfunctioning.	 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-138, "Diagnosis Procedure"
Compressor does not opera	ite.	 The circuit between magnet clutch and IPDM E/R Magnet clutch IPDM E/R (A/C relay) The circuit between ECM and refrig- erant pressure sensor Refrigerant pressure sensor CAN communication circuit A/C auto amp. 	HAC-156, "Diagnosis Procedure"

AUTOMATIC AIR CONDITIONING SYSTEM

< SYMPTOM DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

Sympto	om	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-158, "Diagnosis Procedure"
 Insufficient heating. No warm air comes out. (/ mal.) 	Air flow volume is nor-	 Engine cooling system Heater hose Heater core Air leakage from each duct Temperature setting trimmer 	HAC-159, "Diagnosis Procedure"
	During compressor operation	Cooler cycle	HA-27, "Symptom Table"
Noise is heard when the A/ C system operates.	During blower motor operation	 Mixing any foreign object in blower motor Blower motor fan breakage Blower motor rotation inferiority 	HAC-142, "Component Inspection (Blower Motor)"
 Memory function does not The setting is not maintain tial condition) 		 Battery power supply and ground circuit of A/C auto amp. A/C auto amp. 	HAC-133, "A/C AUTO AMP. : Diag- nosis Procedure"
Intelligent Key interlock func	tion does not operate.	 Door lock system CAN communication circuit A/C auto amp. 	HAC-160, "Diagnosis Procedure"

FOREST AIR SYSTEM

Symptom Table

NOTE:

- Perform the self-diagnoses with CONSULT before performing the symptom diagnosis. If DTC is detected, perform the corresponding diagnosis.
- The following table is based on the condition that automatic air conditioning system operates normally.

Symptom	Corresponding malfunction part	Reference
Forest Air system cannot be controlled.	Multi AV system	AV-254, "Symptom Table"
Plasmacluster [™] control does not operate.	 Power supply system of ionizer The circuit between ionizer and A/C auto amp. Ionizer A/C auto amp. 	HAC-175, "Removal and Installa- tion"
Operation status of Plasmacluster [™] control does not switch according to air flow.	A/C auto amp.	Replace A/C auto amp. Refer to HAC-163, "Removal and Installa- tion".
Breezy air control does not operate normally.		Replace A/C auto amp. Refer to
Operation status of breezy air control is not indicated on display. (Breezy air control is normal)	A/C auto amp.	HAC-163, "Removal and Installa- tion".
Automatic intake control (exhaust gas/outside odor detecting mechanism) does not operate normally.	 Power supply system of exhaust gas/outside odor detecting sensor The circuit between exhaust gas/ outside odor detecting sensor and A/C auto amp. Exhaust gas/outside odor detecting sensor A/C auto amp. 	HAC-80, "Diagnosis Procedure"
Ambient air status indicator in display does not change from clean status or dirty status. (Exhaust gas/outside odor detecting sensor system is normal)	A/C auto amp.	Replace A/C auto amp. Refer to HAC-163. "Removal and Installa- tion".
Air flow control (inside odor detecting mechanism) does not operate normally.	 Power supply system of inside odor detecting sensor The circuit between inside odor de- tecting sensor and A/C auto amp. Inside odor detecting sensor A/C auto amp. 	HAC-145. "Diagnosis Procedure"
Interior air status indicator in display does not change from clean status or dirty status. (Inside odor detect- ing sensor system is normal)	A/C auto amp.	Replace A/C auto amp. Refer to HAC-163. "Removal and Installa- tion".
Automatic defogging control does not operate nor- mally.	 The circuit between humidity sensor and A/C auto amp. Humidity sensor A/C auto amp. 	HAC-128, "Diagnosis Procedure"
Operation status of automatic defogging control is not indicated on display. (Humidity sensor system is normal)	A/C auto amp.	Replace A/C auto amp. Refer to <u>HAC-163, "Removal and Installa-</u> <u>tion"</u> .
Aroma diffuser control does not operate normally. (Aroma motor does not operate normally)	 The circuit between aroma motor and A/C auto amp. Aroma motor A/C auto amp. 	HAC-123, "Diagnosis Procedure"
Aroma diffuser control does not operate normally. (Aroma motor is normal, but fragrance is not dif- fused.)	Aroma cartridge	Replace aroma cartridge. Refer to HAC-176, "AROMA CARTRIDGE : Removal and Installation".
Operation status of aroma diffuser control is not indi- cated on display.	A/C auto amp.	Replace A/C auto amp. Refer to HAC-163, "Removal and Installa- tion".

INFOID:000000008132295

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< SYMPTOM DIAGNOSIS >

COMPRESSOR DOES NOT OPERATE

Description

Symptom: Compressor does not operate.

Diagnosis Procedure

INFOID:000000008132297

INFOID:00000008132296

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-152, "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 <u>EC-526</u>, "Component Function Check" (VQ37VHR) or <u>EC-1494</u>, "Component Function Check" (VK56VD).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

 ${f 3.}$ 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	On
COMP ILEQ SIG	OFF		Off
FAN REQ SIG	Blower motor	ON On	On
TANKEQ 010	Diower motor	OFF	Off

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace A/C auto amp. Refer to <u>HAC-163</u>, "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	
COMP ILEQ SIG	Climate menu	OFF	Off
HEATER FAN SW	Blower motor	ON	On
	Blower motor	OFF	Off

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check CAN communication system. Refer to LAN-27, "Trouble Diagnosis Flow Chart".

5.CHECK IPDM E/R INPUT SIGNAL

With CONSULT

COMPRESSOR DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

[AUTOMATIC AIR CONDITIONING]

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
	Climate menu	OFF	Off

Is the inspection result normal?

YES >> INSPECTION END

NO >> Check CAN communication system. Refer to LAN-27, "Trouble Diagnosis Flow Chart".

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INSUFFICIENT COOLING

Description

INFOID:000000008132298

[AUTOMATIC AIR CONDITIONING]

Symptom

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

Diagnosis Procedure

INFOID:000000008132299

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 <u>HAC-156, "Diagnosis Procedure"</u>.

2. CHECK DRIVE BELT

Check tension of drive belt. Refer to <u>EM-22. "Checking"</u> (VQ37VHR) or <u>EM-175. "Checking"</u> (VK56VD). <u>Is the inspection result normal?</u>

- 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 <u>HA-27, "Trouble Diagnosis For Unusual Pressure"</u>.

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 <u>HAC-66, "AUTOMATIC AIR CONDITIONING</u> <u>SYSTEM : Temperature Setting Trimmer"</u>.
- 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.

8. 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 <u>HAC-163</u>, "Removal and Installation".

INSUFFICIENT HEATING

INSUFFICIENT HEATING А Description INFOID:000000008132300 В Symptom Insufficient heating No warm air comes out. (Air flow volume is normal.) Diagnosis Procedure INFOID-00000000813230 NOTE: Perform self-diagnoses with CONSULT before performing symptom diagnosis. If any DTC is detected, per-D form the corresponding diagnosis. 1.CHECK COOLING SYSTEM Ε 1. Check engine coolant level and check for leakage. Refer to CO-8, "Inspection" (VQ37VHR) or CO-34, "Inspection" (VK56VD). Check reservoir tank cap. Refer to CO-8, "Inspection" (VQ37VHR) or CO-34, "Inspection" (VK56VD). 2. Check water flow sounds of the engine coolant. Refer to CO-9, "Refilling" (VQ37VHR) or CO-35, "Refill-F 3 ing" (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 Н Check installation of heater hose by visually or touching. Is the inspection result normal? YES >> GO TO 3. HAC 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:** Κ Always perform the temperature inspection in a short period of time because the engine coolant temperature is very hot. Is the inspection result normal? L >> GO TO 4. YES NO >> Replace heater core. Refer to HA-45, "HEATER CORE : Removal and Installation". 4.CHECK AIR LEAKAGE FROM EACH DUCT M Check duct and nozzle, etc. of air conditioning system for air leakage. Is the inspection result normal? Ν YES >> GO TO 5. NO >> Repair or replace parts depending on the inspection results. 5.CHECK SETTING OF TEMPERATURE SETTING TRIMMER Check setting value of temperature setting trimmer. Refer to HAC-66, "AUTOMATIC AIR CONDITIONING 1. SYSTEM : Temperature Setting Trimmer". Check that temperature setting trimmer is set to "- direction". 2. Ρ 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-163, "Removal and Installation".

< SYMPTOM DIAGNOSIS >

HAC-159

INTELLIGENT KEY INTERLOCK FUNCTION DOES NOT OPERATE < SYMPTOM DIAGNOSIS > [AUTOMATIC AIR CONDITIONING]

INTELLIGENT KEY INTERLOCK FUNCTION DOES NOT OPERATE

Description

Symptom: Intelligent Key interlock function does not operate.

Diagnosis Procedure

1.CHECK DOOR LOCK SYSTEM

Check door lock system Refer to <u>DLK-45, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

2. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to <u>HAC-163, "Removal and Installation"</u>.

NO >> Repair or replace malfunctioning parts.

INFOID:000000008132303

INFOID:000000008132302

NORMAL OPERATING CONDITION [AUTOMATIC AIR CONDITIONING]

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

FOREST AIR SYSTEM

Each control of Forest Air system turns OFF automatically, when A/C auto amp. recognizes that ambient temperature is -2°C (28°F) or less.

Control	Symptom
Automatic intake control (exhaust gas/outside odor detecting mechanism)	When Forest Air system is ONFOREST switch indicator lamp turns OFF and control turns OFF.
Air flow control (inside odor detecting mechanism)	When Forest Air system is OFFControl does not turn ON when FOREST switch is pressed.
	 When Forest Air system is ON FOREST switch indicator lamp and "AUTO DEF" on display turn OFF and control turns OFF. NOTE:
Automatic defogging control	 AUTO switch indicator lamp and "AUTO" on display do not turn OFF. When Forest Air system is OFF Control does not turn ON when FOREST switch or AUTO switch is pressed. NOTE:
	AUTO indicator lamp and "AUTO" on display turn ON.

Each control of Forest Air system reactivates according to the following procedures, when A/C auto amp. recognizes that ambient temperature is 0°C (32°F) or more.

Control that reactivates automatically

Control	Reactivation procedure
Automatic defogging control	When ambient temperature is 0°C (32°F) or more, FOREST switch indicator lamp does not turn ON again, but AUTO DEF on display turns ON again auto- matically and control reactivates automatically.

Control that does not reactivate automatically

-		J
Control	Reactivation procedure	
Automatic intake control (exhaust gas/outside odor detecting mechanism)	When ambient temperature is 0°C (32°F) or more, FOREST switch indicator lamp does not turn ON again and control does not reactivate. It is necessary to	K
Air flow control (inside odor detecting mechanism)	turn FOREST switch ON again for reactivating control.	

NOTE:

Automatic control of conventional automatic air conditioning system has priority for preventing fogging of window, when ambient temperature is low.

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REMOVAL AND INSTALLATION MULTIFUNCTION SWITCH

Removal and Installation

INFOID:000000008132305

REMOVAL

Remove multifunction switch. Refer to the following.

- Refer to AV-116, "Removal and Installation". (BASE AUDIO WITHOUT NAVIGATION)
- Refer to AV-280, "Removal and Installation". (BOSE AUDIO WITH NAVIGATION)

INSTALLATION

Install in the reverse order of removal.

A/C AUTO AMP.	_
Exploded View	06
Refer to <u>VTL-15, "Exploded View"</u> . Removal and Installation	B 07
REMOVAL CAUTION:	С
 Before replacing A/C auto amp., perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>HAC-64</u>, "<u>Description</u>". 1. Remove glove box. Refer to <u>IP-13</u>, "<u>Removal and Installation</u>". 2. Remove fixing screws, and then remove A/C auto amp 	D D
INSTALLATION Note the following item, and then install in the reverse order of removal. CAUTION:	E
Be sure to perform "WRITE CONFIGRATION" when replacing A/C auto amp Refer to <u>HAC-64, "Wor</u> <u>Procedure"</u> .	K F
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Revision: 2013 September

HAC-163

AMBIENT SENSOR

Removal and Installation

REMOVAL

- 1. Remove air duct. Refer to the following.
 - Refer to <u>EM-29, "Removal and Installation"</u>. (VQ37VHR engine models)
 Refer to <u>EM-184, "Removal and Installation"</u>. (VK50VD engine models)
- 2. Disconnect harness connector, and then remove ambient sensor.

INSTALLATION

Install in the reverse order of removal.

INFOID:000000008132308

[AUTOMATIC AIR CONDITIONING]

IN-VEHICLE SENSOR

< REMOVAL AND INSTALLATION >

Removal and Installation INFOLD:00000008132309 REMOVAL 1. Remove instrument lower panel LH. Refer to <u>IP-13, "Removal and Installation"</u>. 2. Remove fixing screws, and then remove in-vehicle sensor. INSTALLATION Install in the reverse order of removal.

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SUNLOAD SENSOR

Removal and Installation

INFOID:000000008132310

[AUTOMATIC AIR CONDITIONING]

REMOVAL

- 1. Remove front defroster grille. Refer to <u>VTL-9</u>, "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.

HUMIDITY SENSOR

< REMOVAL AND INSTALLATION > HUMIDITY SENSOR

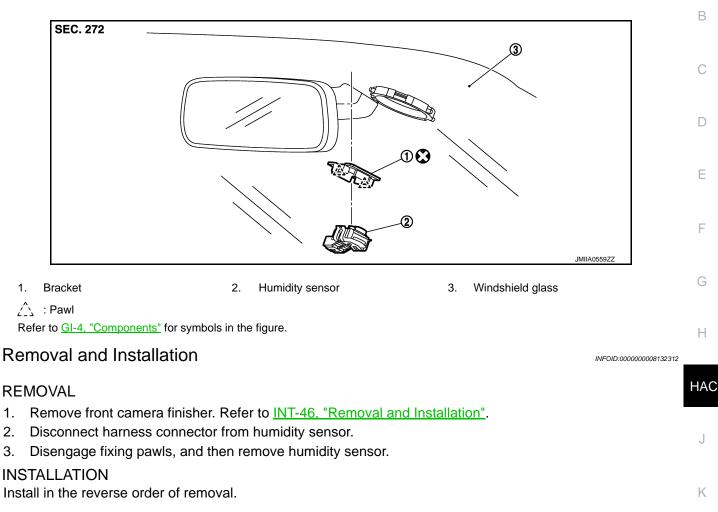
[AUTOMATIC AIR CONDITIONING]

Exploded View

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INTAKE SENSOR

Exploded View

Refer to HA-42, "Exploded View".

Removal and Installation

REMOVAL

- 1. Remove evaporator assembly. Refer to <u>HA-44</u>, "<u>HEATER & COOLING UNIT ASSEMBLY</u> : <u>Removal and</u> <u>Installation</u>".
- 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 <u>HA-18, "Leak Test"</u>.

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[AUTOMATIC AIR CONDITIONING]

INFOID:000000008132314

< REMOVAL AND INSTALLATION >	[AUTOMATIC AIR CONDITIONING]
INSIDE ODOR DETECTING SENSOR	A
Exploded View	INFOID:00000008132315
Refer to <u>HA-42, "Exploded View"</u> .	В
Removal and Installation	INFOID:000000008132316
REMOVAL	C
 Remove instrument lower panel LH. Refer to <u>IP-13</u>, <u>"Removal a</u> Remove aspirator duct, and then disconnect harness connector Remove fixing clip, and then remove inside odor detecting sense 	from inside odor detecting sensor.
INSTALLATION Install in the reverse order of removal.	E
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EXHAUST GAS/OUTSIDE ODOR SENSOR

Removal and Installation

REMOVAL

- 1. Remove air duct. Refer to the following.
 - Refer to <u>EM-29, "Removal and Installation"</u>. (VQ37VHR engine models)
 Refer to <u>EM-184, "Removal and Installation"</u>. (VK56VD engine models)
- 2. Remove mounting nuts, and then remove exhaust gas/outside odor sensor.

INSTALLATION

Install in the reverse order of removal.

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DOOR MOTOR

Exploded View

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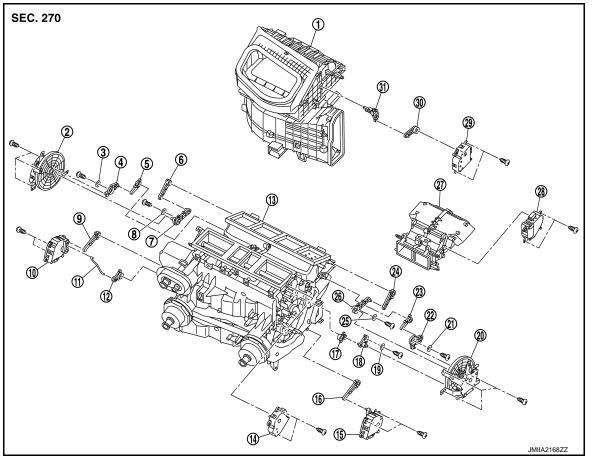
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- 1. Blower unit
- 4. Mode door link RH
- 7. Ventilator door link
- 10. Air mix door motor
- 13. Heater & cooling unit assembly
- 16. Heater door lever LH
- 19. Plate
- 22. Mode door link LH
- 25. Plate
- 28. Rear mode door motor
- 31. Intake door link

- Mode door motor RH
 Foot door lever RH
- 8. Plate
- 11. Rod
- 14. Upper ventilator door motor
- 17. Defroster door lever
- 20. Mode door motor LH
- 23. Foot door lever LH
- 26. Ventilator door link LH
- 29. Intake door motor

- 3. Plate
 - 6. Ventilator door lever RH
 - 9. Heater door lever
 - 12. Air mix door lever
 - 15. Air mix door motor LH
 - 18. Defroster door link
 - 21. Plate
 - 24. Ventilator door lever LH
 - 27. Rear mode door case assembly
 - 30. Intake door lever

MODE DOOR MOTOR

MODE DOOR MOTOR : Removal and Installation

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REMOVAL

Driver Side

- 1. Remove A/C unit assembly. Refer to <u>HA-44</u>, "<u>HEATER & COOLING UNIT ASSEMBLY</u> : <u>Removal and</u> <u>Installation</u>".
- 2. Disconnect mode door motor connector.
- 3. Remove fixing screws, and then remove mode door motor LH.
- Revision: 2013 September

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Passenger Side

- 1. Remove A/C unit assembly. Refer to <u>HA-44</u>, "<u>HEATER & COOLING UNIT ASSEMBLY</u> : <u>Removal and</u> <u>Installation</u>".
- 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:000000008132320

REMOVAL

Driver Side

- 1. Remove A/C unit assembly. Refer to <u>HA-44</u>. "<u>HEATER & COOLING UNIT ASSEMBLY</u> : <u>Removal and</u> <u>Installation</u>".
- 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 <u>HA-44</u>, "<u>HEATER & COOLING UNIT ASSEMBLY</u> : <u>Removal and</u> <u>Installation</u>".
- 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

REMOVAL

- 1. Remove A/C unit assembly. Refer to <u>HA-44</u>, "<u>HEATER & COOLING UNIT ASSEMBLY</u> : <u>Removal and</u> <u>Installation</u>".
- 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:000000008132322

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REMOVAL

- 1. Remove A/C unit assembly. Refer to <u>HA-44</u>. "<u>HEATER & COOLING UNIT ASSEMBLY</u> : <u>Removal and</u> <u>Installation</u>".
- 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

DOOR MOTOR

< REMOVAL AND INSTALLATION >

[AUTOMATIC AIR CONDITIONING]

RE	EAR MODE DOOR MOTOR : Removal and Installation	INFOID:000000008132323	Δ
RE	MOVAL		\cap
2.	Remove instrument panel assembly. Refer to <u>IP-13. "Removal and Installation"</u> . Disconnect rear mode door motor connector. Remove fixing screws, and then remove rear mode door motor.		В
INSTALLATION Install in the reverse order of removal.		С	
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POWER TRANSISTOR

Exploded View

Refer to VTL-15, "Exploded View".

Removal and Installation

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.

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IO	DNIZER		А
Ex	xploded View	000008132326	A
Re	fer to <u>VTL-7, "Exploded View"</u> .		В
Re	emoval and Installation	000008132327	
Re	moval		С
1.	Remove instrument panel assembly. Refer to IP-13, "Removal and Installation".		
2.	Disconnect ionizer harness connector.		D
3.	CAUTION:		D
	Never tough the surface (ceramic part) of the ionizer. It is the discharge electrode.		Е
No CA	STALLATION te the following item, and then install in the reverse order of removal. UTION:		F
lt t	here is dirt, use a clean cloth and clean the discharge electrode (ceramic part) of the ionizer.		G
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AROMA UNIT ASSY

Exploded View

Refer to <u>VTL-15, "Exploded View"</u>. AROMA UNIT

AROMA UNIT : Removal and Installation

REMOVAL

- 1. Remove instrument lower panel RH. Refer to IP-13, "Removal and Installation".
- 2. Disconnect aroma tube and harness connector.
- 3. Remove fixing screws, and then remove aroma unit.

INSTALLATION

Note the following items, and then install in the reverse order of removal. **CAUTION:**

- Install aroma tube so that it is free of kinks.
- Operate aroma unit after installation. Check that aroma is supplied from air outlet or passenger side ventilator.

AROMA CARTRIDGE

AROMA CARTRIDGE : Removal and Installation

REMOVAL

- 1. Remove instrument lower panel RH. Refer to IP-13, "Removal and Installation".
- 2. Remove fixing screw, and then remove aroma cartridge.

INSTALLATION

Note the following item, install in the reverse order of removal.

CAUTION:

Peel off the tape from cartridge.

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