

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

# SECTION **VTL**

## VENTILATION SYSTEM

### CONTENTS

<p><b>PRECAUTION</b> ..... 2</p> <p><b>PRECAUTIONS</b> ..... 2</p> <p style="padding-left: 20px;">Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" .....2</p> <p style="padding-left: 20px;">Precaution for Working with HFC-134a (R-134a).....2</p> <p style="padding-left: 20px;">Precaution Necessary for Steering Wheel Rotation After Battery Disconnect .....2</p> <p style="padding-left: 20px;">Precaution for Procedure without Cowl Top Cover.....3</p> <p><b>PREPARATION</b> ..... 4</p> <p><b>PREPARATION</b> ..... 4</p> <p style="padding-left: 20px;">Commercial Service Tool .....4</p> <p><b>FUNCTION DIAGNOSIS</b> ..... 5</p> <p><b>IN-CABIN MICROFILTER</b> ..... 5</p> <p style="padding-left: 20px;">Description .....5</p> <p><b>ON-VEHICLE MAINTENANCE</b> ..... 6</p> <p><b>IN-CABIN MICROFILTER</b> ..... 6</p> <p style="padding-left: 20px;">Removal and Installation .....6</p> <p><b>ON-VEHICLE REPAIR</b> ..... 7</p> <p><b>CONTROL UNIT</b> ..... 7</p> <p style="padding-left: 20px;">Removal and Installation .....7</p> <p><b>IN-VEHICLE SENSOR</b> ..... 9</p> <p style="padding-left: 20px;">Removal and Installation .....9</p> <p><b>OPTICAL SENSOR</b> .....10</p> <p style="padding-left: 20px;">Removal and Installation ..... 10</p> <p><b>INTAKE SENSOR</b> .....11</p> <p style="padding-left: 20px;">Removal and Installation ..... 11</p>	<p><b>BLOWER MOTOR</b> .....12</p> <p style="padding-left: 20px;">Component .....12</p> <p style="padding-left: 20px;">Removal and Installation .....12</p> <p><b>VARIABLE BLOWER CONTROL</b> .....14</p> <p style="padding-left: 20px;">Component .....14</p> <p style="padding-left: 20px;">Removal and Installation .....14</p> <p><b>FRONT BLOWER MOTOR RESISTOR</b> .....16</p> <p style="padding-left: 20px;">Removal and Installation .....16</p> <p><b>HEATER &amp; COOLING UNIT ASSEMBLY</b> .....17</p> <p style="padding-left: 20px;">Component .....17</p> <p style="padding-left: 20px;">Removal and Installation .....18</p> <p><b>EVAPORATOR</b> .....21</p> <p style="padding-left: 20px;">Removal and Installation for Front Evaporator .....21</p> <p style="padding-left: 20px;">Removal and Installation for Rear Evaporator .....22</p> <p><b>EXPANSION VALVE</b> .....24</p> <p style="padding-left: 20px;">Removal and Installation for Rear Expansion Valve .....24</p> <p><b>HEATER CORE</b> .....25</p> <p style="padding-left: 20px;">Component .....25</p> <p style="padding-left: 20px;">Removal and Installation .....26</p> <p><b>INTAKE DOOR MOTOR</b> .....27</p> <p style="padding-left: 20px;">Removal and Installation .....27</p> <p><b>MODE DOOR MOTOR</b> .....28</p> <p style="padding-left: 20px;">Removal and Installation .....28</p> <p><b>AIR MIX DOOR MOTOR</b> .....29</p> <p style="padding-left: 20px;">Component .....29</p> <p style="padding-left: 20px;">Removal and Installation .....30</p> <p><b>DUCTS AND GRILLES</b> .....32</p> <p style="padding-left: 20px;">Component .....32</p> <p style="padding-left: 20px;">Removal and Installation .....34</p>
--	---

VTL

# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

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

INFOID:000000003938893

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

#### **WARNING:**

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which 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 the SR section.
- Do not 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.

#### Precaution for Working with HFC-134a (R-134a)

INFOID:000000003938894

#### **WARNING:**

- CFC-12 (R-12) refrigerant and HFC-134a (R-134a) refrigerant are not compatible. If the refrigerants are mixed compressor failure is likely to occur. Refer to [HA-4, "Contaminated Refrigerant"](#). To determine the purity of HFC-134a (R-134a) in the vehicle and recovery tank, use refrigerant recovery/recycling equipment and refrigerant identifier.
- Use only specified oil for the HFC-134a (R-134a) A/C system and HFC-134a (R-134a) components. If oil other than that specified is used, compressor failure is likely to occur.
- The specified HFC-134a (R-134a) oil rapidly absorbs moisture from the atmosphere. The following handling precautions must be observed:
  - When removing refrigerant components from a vehicle, immediately cap (seal) the component to minimize the entry of moisture from the atmosphere.
  - When installing refrigerant components to a vehicle, do not remove the caps (unseal) until just before connecting the components. Connect all refrigerant loop components as quickly as possible to minimize the entry of moisture into system.
  - Only use the specified oil from a sealed container. Immediately reseal containers of oil. Without proper sealing, oil will become moisture saturated and should not be used.
  - Avoid breathing A/C refrigerant and oil vapor or mist. Exposure may irritate eyes, nose and throat. Remove HFC-134a (R-134a) from the A/C system using certified service equipment meeting requirements of SAE J2210 [HFC-134a (R-134a) recycling equipment], or SAE J2209 [HFC-134a (R-134a) recovery equipment]. If accidental system discharge occurs, ventilate work area before resuming service. Additional health and safety information may be obtained from refrigerant and oil manufacturers.
  - Do not allow the refrigerant oil to come in contact with styrofoam parts. Damage may result.

#### Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:00000000448864

#### **NOTE:**

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

# PRECAUTIONS

## < PRECAUTION >

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

### OPERATION PROCEDURE

1. Connect both battery cables.

**NOTE:**

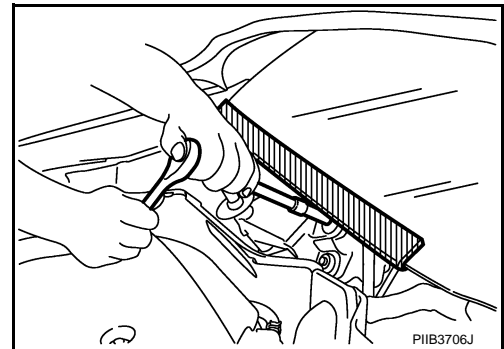
Supply power using jumper cables if battery is discharged.

2. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.
5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

### Precaution for Procedure without Cowl Top Cover

INFOID:000000003938895

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



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

# PREPARATION


< PREPARATION >

## PREPARATION

### PREPARATION

Commercial Service Tool

INFOID:000000003938896

Tool name	Description
<p data-bbox="159 415 269 441">Power tool</p>  <p data-bbox="873 632 938 651">PIIB1407E</p>	<p data-bbox="1084 415 1338 441">Loosening bolts and nuts</p>

# IN-CABIN MICROFILTER

< FUNCTION DIAGNOSIS >

## FUNCTION DIAGNOSIS

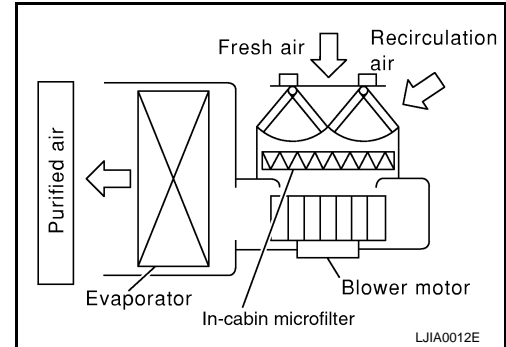
### IN-CABIN MICROFILTER

#### Description

INFOID:000000003938897

#### FUNCTION

The air inside the passenger compartment is filtered by the in-cabin microfilters when the heater or A/C controls are set on either the recirculation or fresh mode. The two in-cabin microfilters are located in the front heater and cooling unit assembly. The rear heater and cooling unit assembly only draws in air from the passenger compartment to recirculate into the passenger compartment, so the rear heater and cooling unit assembly is not equipped with in-cabin microfilters.



#### REPLACEMENT TIMING

Replacement of the two in-cabin microfilters is recommended on a regular interval depending on the driving conditions. Refer to [MA-7. "Introduction of Periodic Maintenance"](#). It may also be necessary to replace the two in-cabin microfilters as part of a component replacement if the in-cabin microfilters are damaged.

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

VTL

# IN-CABIN MICROFILTER

< ON-VEHICLE MAINTENANCE >

## ON-VEHICLE MAINTENANCE

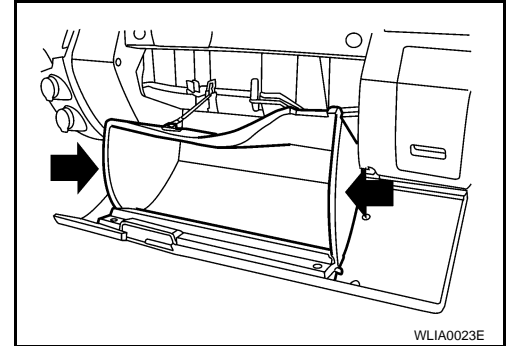
### IN-CABIN MICROFILTER

#### Removal and Installation

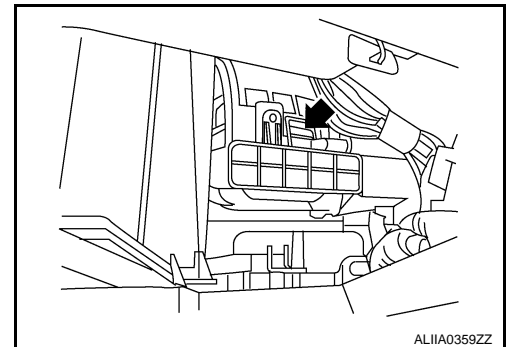
INFOID:000000003938898

#### REPLACEMENT PROCEDURE

1. Open the lower glove box and press in on the sides as shown so that it will open completely, allowing it to hang by the cord.



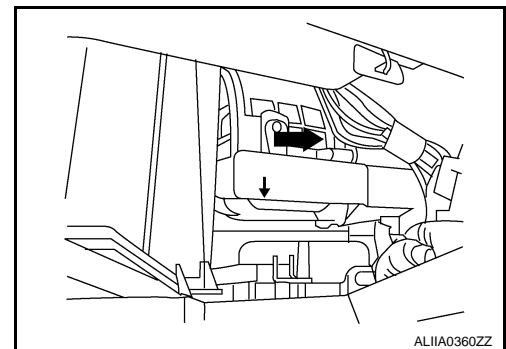
2. Push down on the lock tab and remove the in-cabin microfilter cover as shown.



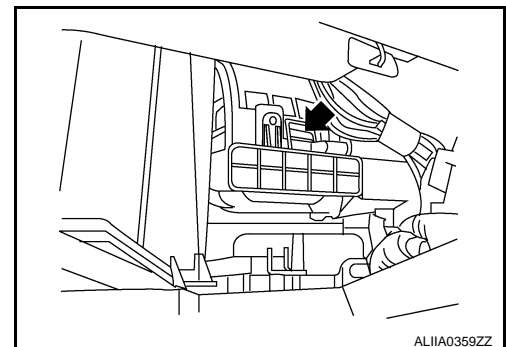
3. Remove the in-cabin microfilters from the front heater and cooling unit housing.
4. Insert the first new in-cabin microfilter into the front heater and cooling unit housing and slide it over to the right. Insert the second new in-cabin microfilter into the front heater and cooling unit housing as shown.

**NOTE:**

The in-cabin microfilters are marked with air flow arrows. The end of the microfilter with the arrow should face the rear of the vehicle. The arrows should point downward.



5. Install the in-cabin microfilter cover making sure the lock tab is securely locked in place as shown.



6. Close the lower glove box completely.

# CONTROL UNIT

< ON-VEHICLE REPAIR >

## ON-VEHICLE REPAIR

### CONTROL UNIT

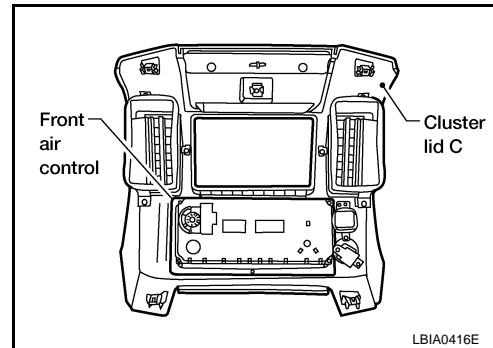
#### Removal and Installation

INFOID:000000003938899

#### FRONT AIR CONTROL (MANUAL A/C)

##### Removal

1. Remove cluster lid C. Refer to [IP-10, "Exploded View"](#).
2. Remove the four screws securing the front air control to cluster lid C.
3. Remove the front air control.



##### Installation

Installation is in the reverse order of removal.

#### A/C AND AV SWITCH ASSEMBLY (AUTOMATIC A/C)

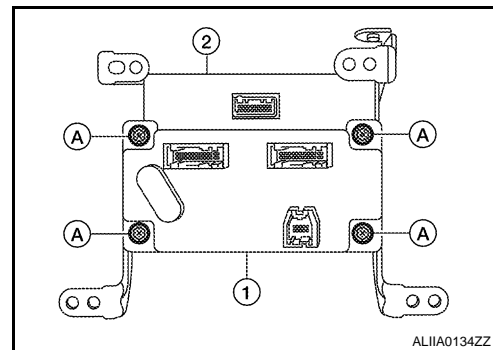
##### Removal and Installation

The front A/C switch is integrated into the A/C and AV switch assembly in cluster lid C in the instrument panel. Refer to [IP-10, "Exploded View"](#).

#### A/C AUTO AMP. (AUTOMATIC A/C)

##### Removal

1. Remove the display unit. Refer to [AV-144, "Removal and Installation"](#).
2. Remove the four A/C auto amp. screws (A) and remove the A/C auto amp. (1) from the back of the display unit (2).



##### Installation

Installation is in the reverse order of removal.

#### REAR AIR CONTROL (FRONT)

##### Removal

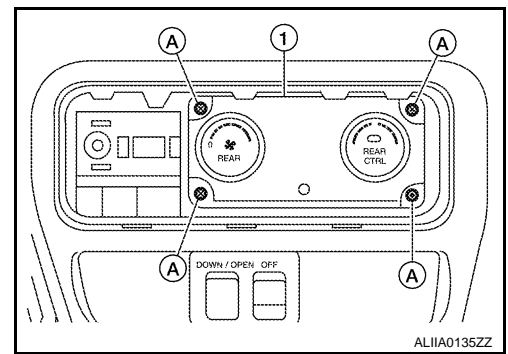
1. Remove the front roof console finisher from the front roof console. Refer to [INT-20, "Removal and Installation"](#).

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

## CONTROL UNIT

### < ON-VEHICLE REPAIR >

2. Remove the four rear air control (front) screws (A), disconnect the rear air control (front) connector and remove the rear air control (front) (1) from the front roof console.



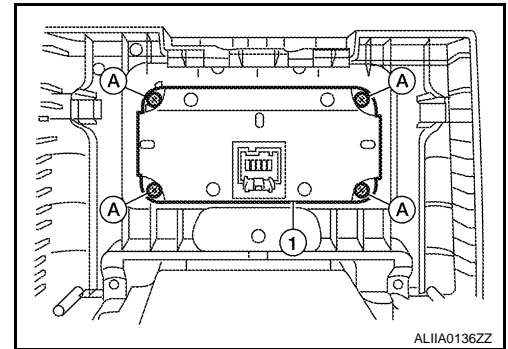
#### Installation

Installation is in the reverse order of removal.

### REAR AIR CONTROL (REAR)

#### Removal

1. Remove the rear finisher assembly from the center console. Refer to [IP-10. "Exploded View"](#).
2. Remove the four rear air control (rear) screws (A) and remove the rear air control (rear) (1) from the rear finisher assembly.



#### Installation

Installation is in the reverse order of removal.



# IN-VEHICLE SENSOR

< ON-VEHICLE REPAIR >

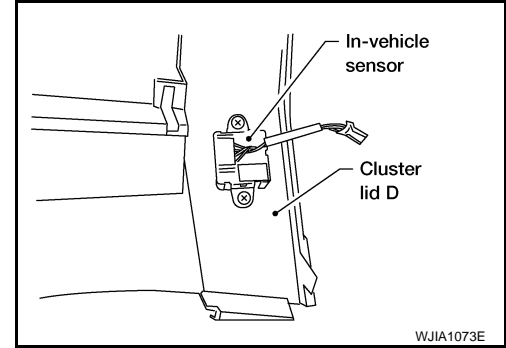
## IN-VEHICLE SENSOR

### Removal and Installation

INFOID:000000003938900

#### REMOVAL

1. Remove the cluster lid D. Refer to [IP-11. "Removal and Installation"](#).
2. Remove the two screws and remove the in-vehicle sensor.



#### INSTALLATION

Installation is in the reverse order of removal.

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

VTL

# OPTICAL SENSOR

< ON-VEHICLE REPAIR >

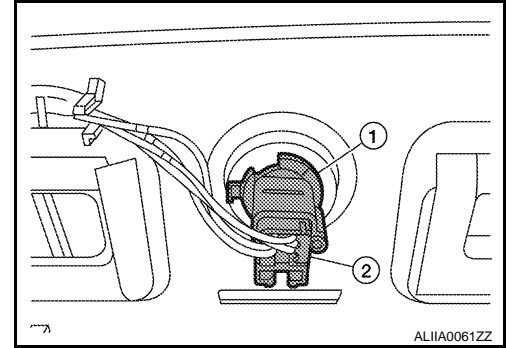
## OPTICAL SENSOR

### Removal and Installation

INFOID:000000003938901

#### REMOVAL

1. Remove the defroster grille from the instrument panel. Refer to [IP-10. "Exploded View"](#).
2. Disconnect the optical sensor connector (2).
3. Twist the optical sensor (1) counter clockwise to remove it from the defroster grille.



#### INSTALLATION

Installation is in the reverse order of removal.

# INTAKE SENSOR

< ON-VEHICLE REPAIR >

## INTAKE SENSOR

### Removal and Installation

INFOID:000000003938902

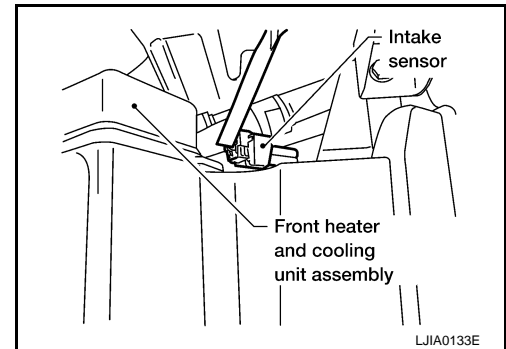
#### REMOVAL

1. Remove the front kick plate. Refer to [INT-16, "Component"](#).
2. Remove the lower dash side finisher. Refer to [IP-10, "Exploded View"](#).
3. Remove the front pillar lower finisher. Refer to [INT-16, "Component"](#).
4. Remove the assist grip handle.
5. Remove the front pillar upper finisher. Refer to [INT-16, "Component"](#).
6. Remove the lower glove box. Refer to [IP-10, "Exploded View"](#).
7. Remove the upper glove box (cluster lid E). Refer to [IP-10, "Exploded View"](#).
8. Disconnect the intake sensor electrical connector.

**NOTE:**

The intake sensor is located on the top of the front heater and cooling unit assembly next to the A/C evaporator cover.

9. Twist the intake sensor to remove the intake sensor from the front heater and cooling unit assembly.



#### INSTALLATION

Installation is in the reverse order of removal.

A

B

C

D

E

F

G

H

VTL

J

K

L

M

N

O

P

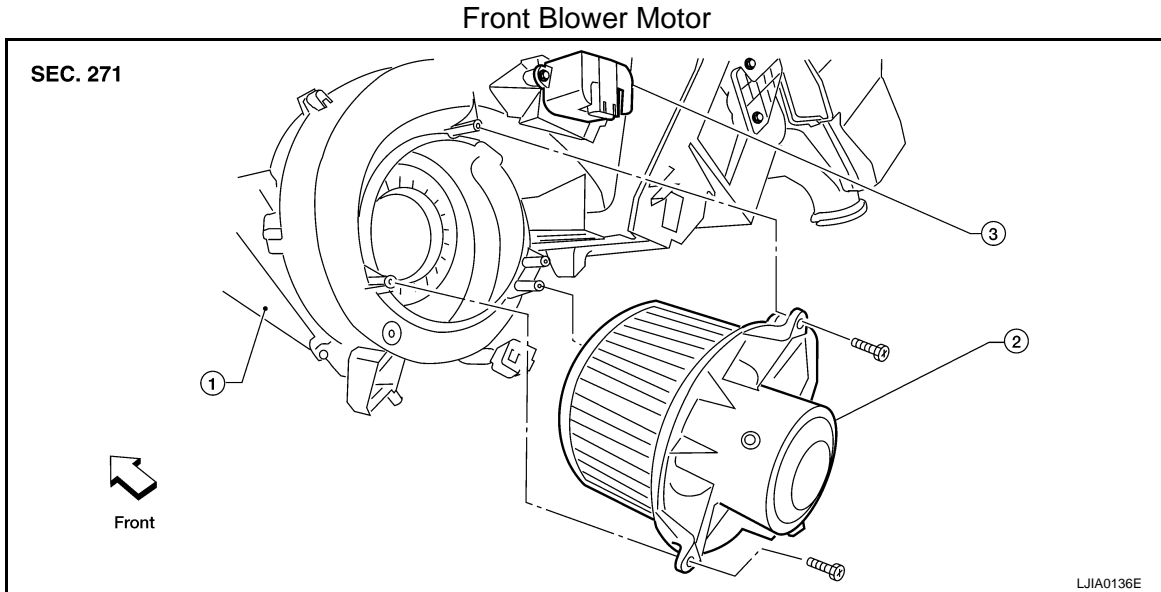
# BLOWER MOTOR

< ON-VEHICLE REPAIR >

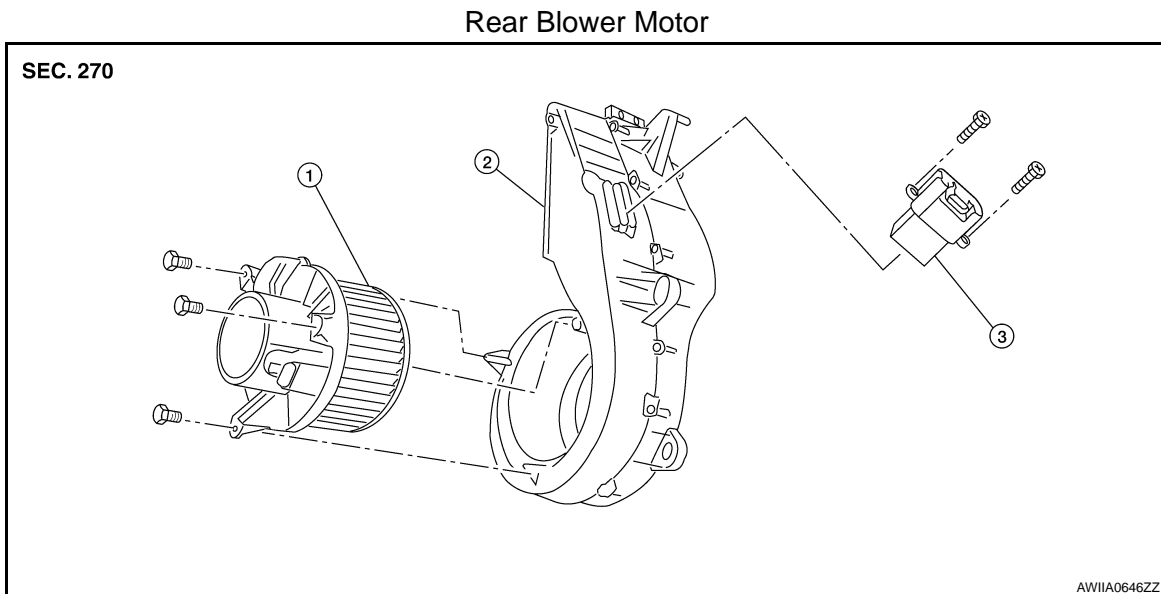
## BLOWER MOTOR

### Component

INFOID:000000003938903



1. Front heater and cooling unit assembly
2. Front blower motor
3. Variable blower control (front)



1. Rear blower motor
2. Rear blower motor case
3. Variable blower control (rear)

### Removal and Installation

INFOID:000000003938904

#### FRONT BLOWER MOTOR

##### Removal

1. Remove the lower glove box assembly. Refer to [IP-10, "Exploded View"](#).
2. Disconnect the front blower motor electrical connector.
3. Remove the three screws and remove the front blower motor.

##### Installation

Installation is in the reverse order of removal.

# BLOWER MOTOR

< ON-VEHICLE REPAIR >

## REAR BLOWER MOTOR

---

### Removal

1. Remove the rear heater and cooling unit assembly. Refer to [VTL-18. "Removal and Installation"](#).
2. Disconnect the rear blower motor electrical connector.
3. Remove the three screws and remove the rear blower motor.

### Installation

Installation is in the reverse order of removal.

A

B

C

D

E

F

G

H

VTL

J

K

L

M

N

O

P

# VARIABLE BLOWER CONTROL

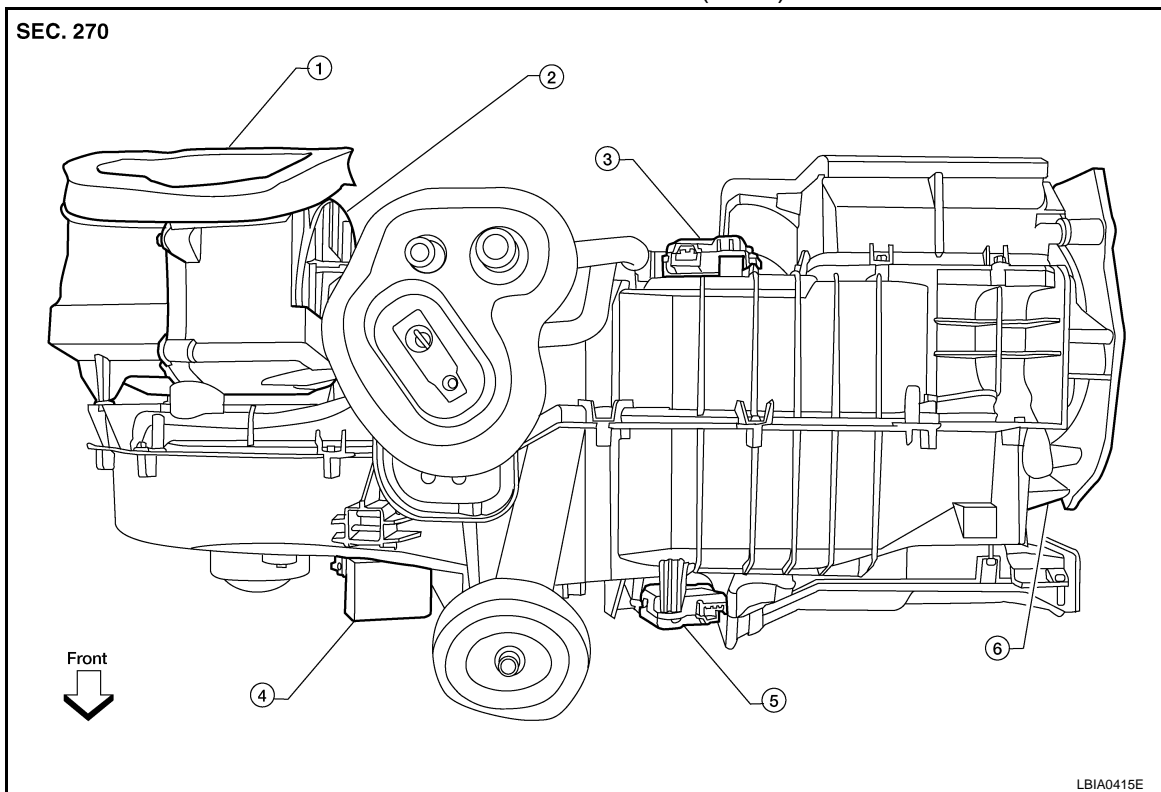
< ON-VEHICLE REPAIR >

## VARIABLE BLOWER CONTROL

Component

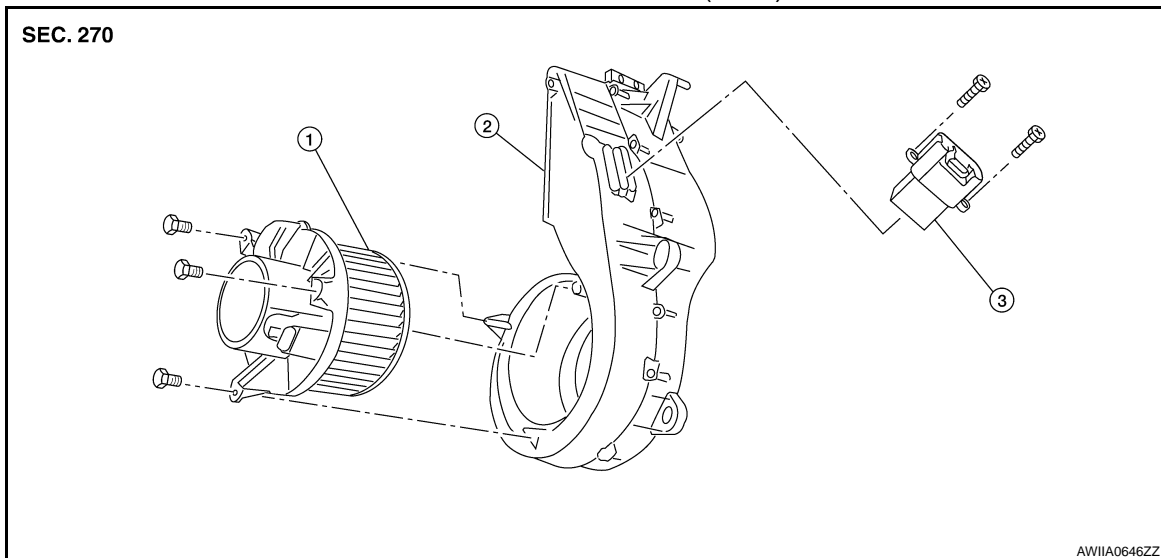
INFOID:000000003938905

### Variable Blower Control (Front)



- |   |                                |                                   |
|---|--------------------------------|-----------------------------------|
| 1. Front heater and cooling unit assembly | 2. Intake door motor           | 3. Air mix door motor (passenger) |
| 4. Variable blower control (front)        | 5. Air mix door motor (driver) | 6. Mode door motor                |

### Variable Blower Control (Rear)



- |                      |                           |                                   |
|----------------------|---------------------------|-----------------------------------|
| 1. Rear blower motor | 2. Rear blower motor case | 3. Variable blower control (rear) |
|----------------------|---------------------------|-----------------------------------|

## Removal and Installation

INFOID:000000003938906

### FRONT VARIABLE BLOWER CONTROL

# VARIABLE BLOWER CONTROL

## < ON-VEHICLE REPAIR >

---

### Removal

1. Disconnect the variable blower control (front) electrical connector. A
2. Remove the two screws and remove the variable blower control (front). B

### Installation

Installation is in the reverse order of removal.

## REAR VARIABLE BLOWER CONTROL

### Removal

1. Remove the luggage side lower finisher RH. Refer to [INT-16. "Component"](#). C
2. Disconnect the variable blower control (rear) electrical connector. D
3. Remove the two screws and remove the variable blower control (rear). E

### Installation

Installation is in the reverse order of removal. F

G

H

H

VTL

J

K

L

M

N

O

P

# FRONT BLOWER MOTOR RESISTOR

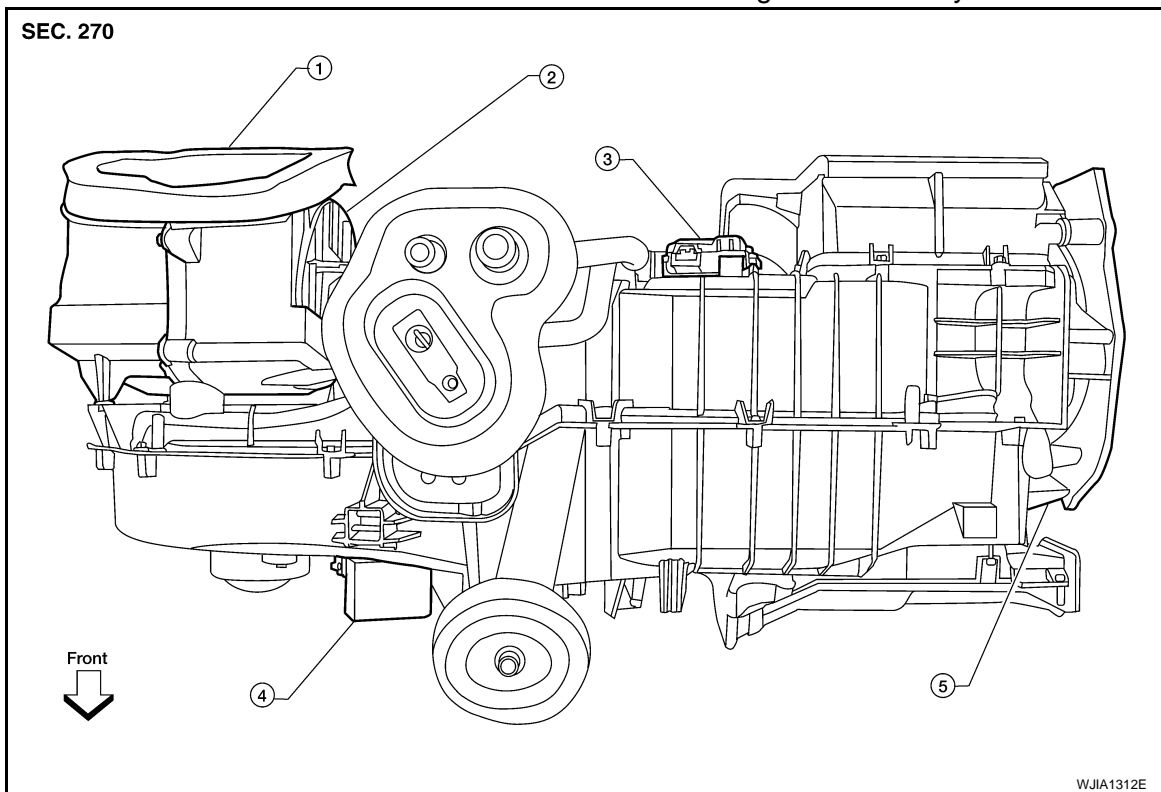
< ON-VEHICLE REPAIR >

## FRONT BLOWER MOTOR RESISTOR

### Removal and Installation

INFOID:000000003938907

#### Blower Motor Resistor - Heater and Cooling Unit Assembly



- |                                     |                      |                       |
|-------------------------------------|----------------------|-----------------------|
| 1. Heater and cooling unit assembly | 2. Intake door motor | 3. Air mix door motor |
| 4. Blower motor resistor            | 5. Mode door motor   |                       |

#### REMOVAL

1. Disconnect the blower motor resistor electrical connector.
2. Remove the two screws and remove the blower motor resistor.

#### INSTALLATION

Installation is in the reverse order of removal.



# HEATER & COOLING UNIT ASSEMBLY

< ON-VEHICLE REPAIR >

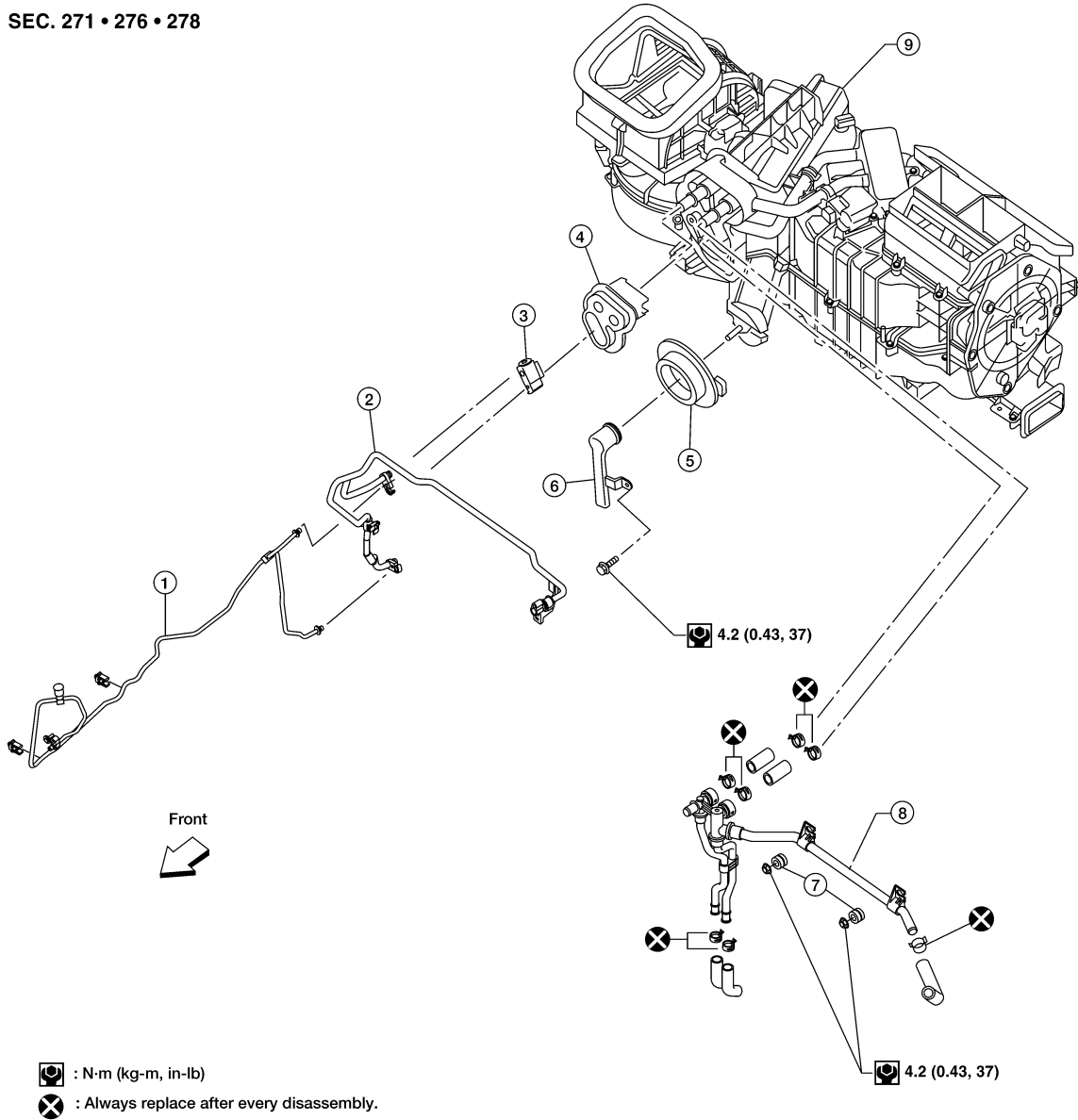
## HEATER & COOLING UNIT ASSEMBLY

Component

INFOID:000000003938908

### Front Heater and Cooling Unit Assembly

SEC. 271 • 276 • 278



- |   |                                 |   |
|---|---------------------------------|---|
| 1. Front high-pressure A/C pipe                   | 2. Front low-pressure A/C pipe  | 3. Front expansion valve                  |
| 4. Front heater core and evaporator pipes grommet | 5. Front A/C drain hose grommet | 6. Front A/C drain hose                   |
| 7. Front heater core pipe mounts                  | 8. Front heater core pipes      | 9. Front heater and cooling unit assembly |

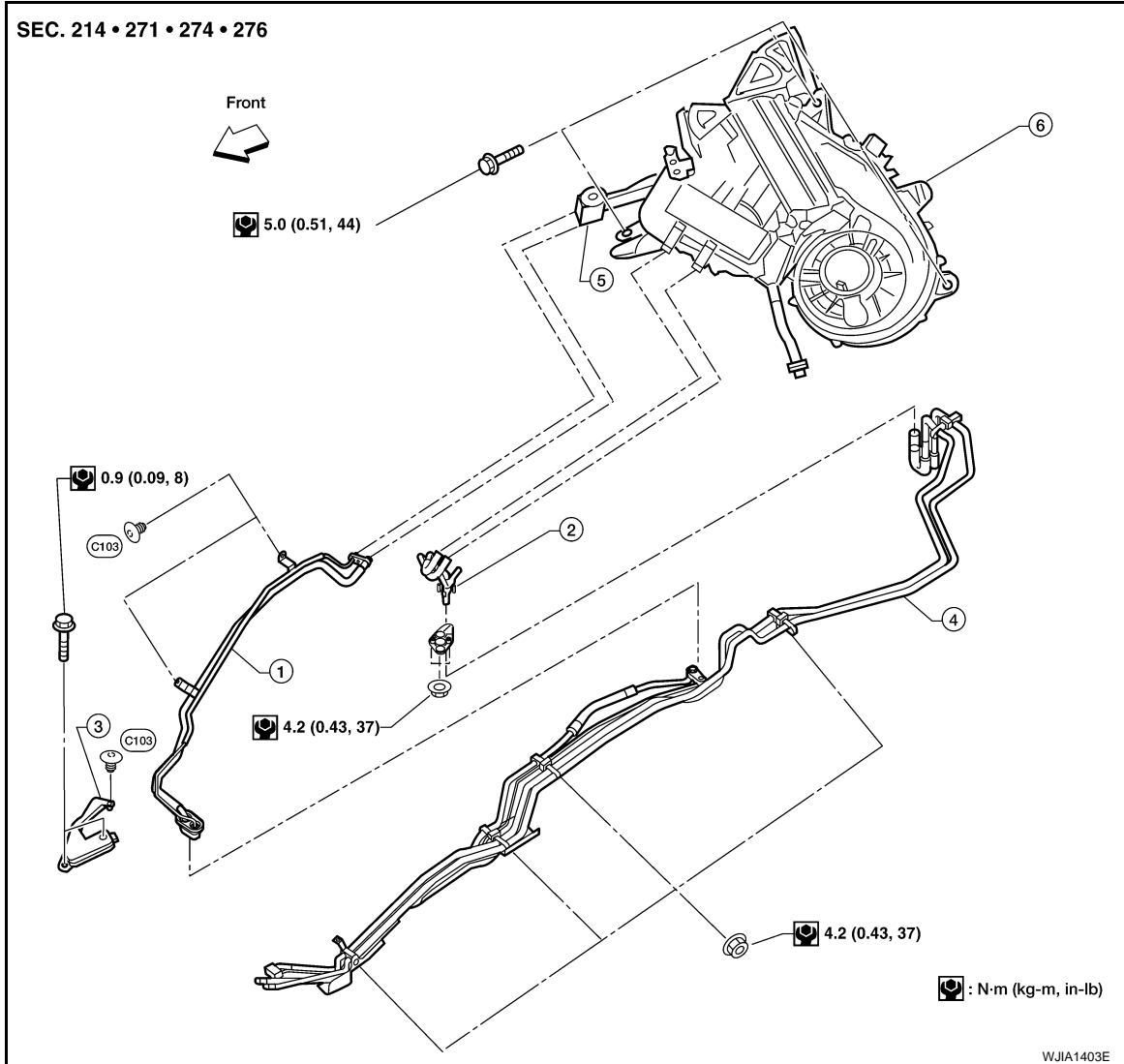
WJIA1402E

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

# HEATER & COOLING UNIT ASSEMBLY

< ON-VEHICLE REPAIR >

## Rear Heater and Cooling Unit Assembly



- |   |                           |  |
|---|---------------------------|--|
| 1. Rear high- and low-pressure A/C pipes                            | 2. Rear heater core hoses | 3. Rear high- and low-pressure A/C pipes cover |
| 4. Underfloor rear high- and low-pressure A/C and heater core pipes | 5. Rear expansion valve   | 6. Rear heater and cooling unit assembly       |

## Removal and Installation

INFOID:000000003938909

### FRONT HEATER AND COOLING UNIT ASSEMBLY

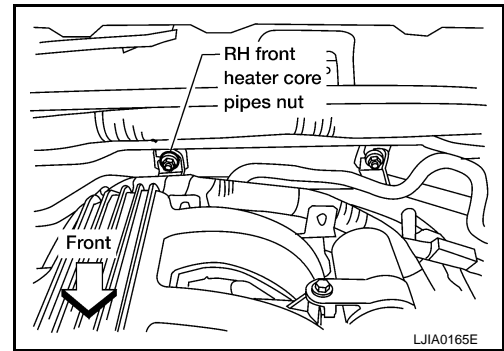
#### Removal

1. Discharge the refrigerant from the A/C system. Refer to [HA-37, "HFC-134a \(R-134a\) Service Procedure"](#).
2. Drain the coolant from the engine cooling system. Refer to [CO-12, "Changing Engine Coolant"](#) (VQ40DE), [CO-41, "Changing Engine Coolant"](#) (VK56DE).

# HEATER & COOLING UNIT ASSEMBLY

## < ON-VEHICLE REPAIR >

3. Remove the front heater core pipes RH nut.
  4. Disconnect the front heater core hoses from the front heater core.
  5. Disconnect the high- and low-pressure A/C pipes from the front expansion valve.
  6. Move the two front seats to the rearmost position on the seat track.
  7. Remove the instrument panel and console panel. Refer to [IP-11, "Removal and Installation"](#).
  8. Remove the two front floor ducts.
  9. Remove the steering column. Refer to [ST-16, "Removal and Installation"](#).
  10. Disconnect the instrument panel wire harness at the RH and LH in-line connector brackets, and the fuse block (SMJ) electrical connectors. Refer to [PG-38, "Harness Layout"](#).
  11. Remove the covers then remove the three steering member bolts from each side to disconnect the steering member from the vehicle body.
  12. Remove the front heater and cooling unit assembly with it attached to the steering member, from the vehicle.
- CAUTION:**
- Use care not to damage the seats and interior trim panels when removing the front heater and cooling unit assembly with it attached to the steering member.
  - Use suitable plugs on the heater core pipes to prevent coolant leakage.
13. Remove the front heater and cooling unit assembly from the steering member.



### Installation

Installation is in the reverse order of removal.

### CAUTION:

- Replace the O-ring of the low-pressure A/C pipe and high-pressure A/C pipe with a new one, and apply compressor oil to the O-ring for installation. Refer to [HA-34, "Component"](#).
- After charging the refrigerant, check for leaks. Refer to [HA-29, "Checking of Refrigerant Leaks"](#).

### NOTE:

- Fill the engine cooling system with the specified coolant mixture. Refer to [CO-12, "Changing Engine Coolant"](#) (VQ40DE), [CO-41, "Changing Engine Coolant"](#) (VK56DE).
- Recharge the A/C system. Refer to [HA-37, "HFC-134a \(R-134a\) Service Procedure"](#).

## REAR HEATER AND COOLING UNIT ASSEMBLY

### Removal

1. Discharge the refrigerant from the A/C system. Refer to [HA-37, "HFC-134a \(R-134a\) Service Procedure"](#).
2. Drain the coolant from the engine cooling system. Refer to [CO-12, "Changing Engine Coolant"](#) (VQ40DE), [CO-41, "Changing Engine Coolant"](#) (VK56DE).
3. Remove the luggage side lower finisher RH. Refer to [INT-23, "Removal and Installation"](#).
4. Disconnect the rear heater core hoses from the rear heater core.
5. Disconnect the rear A/C high- and low-pressure A/C pipes from the rear expansion valve.
6. Disconnect the following electrical connectors:
  - Rear blower motor
  - Rear variable blower control (rear)
  - Rear air mix door motor
7. Disconnect the ducts from the rear heater and cooling unit assembly.
8. Remove the three bolts to remove the rear heater and cooling unit assembly.

### Installation

Installation is in the reverse order of removal.

### CAUTION:

- Replace the O-ring of the low-pressure A/C pipe and high-pressure A/C pipe with a new one, and apply compressor oil to the O-ring for installation. Refer to [HA-34, "Component"](#).
- After charging the refrigerant, check for leaks. Refer to [HA-29, "Checking of Refrigerant Leaks"](#).

### NOTE:

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

VTL

## HEATER & COOLING UNIT ASSEMBLY

### < ON-VEHICLE REPAIR >

---

- Fill the engine cooling system with the specified coolant mixture. Refer to [CO-12. "Changing Engine Coolant"](#) (VQ40DE), [CO-41. "Changing Engine Coolant"](#) (VK56DE).
- Recharge the A/C system. Refer to [HA-37. "HFC-134a \(R-134a\) Service Procedure"](#).

# EVAPORATOR

< ON-VEHICLE REPAIR >

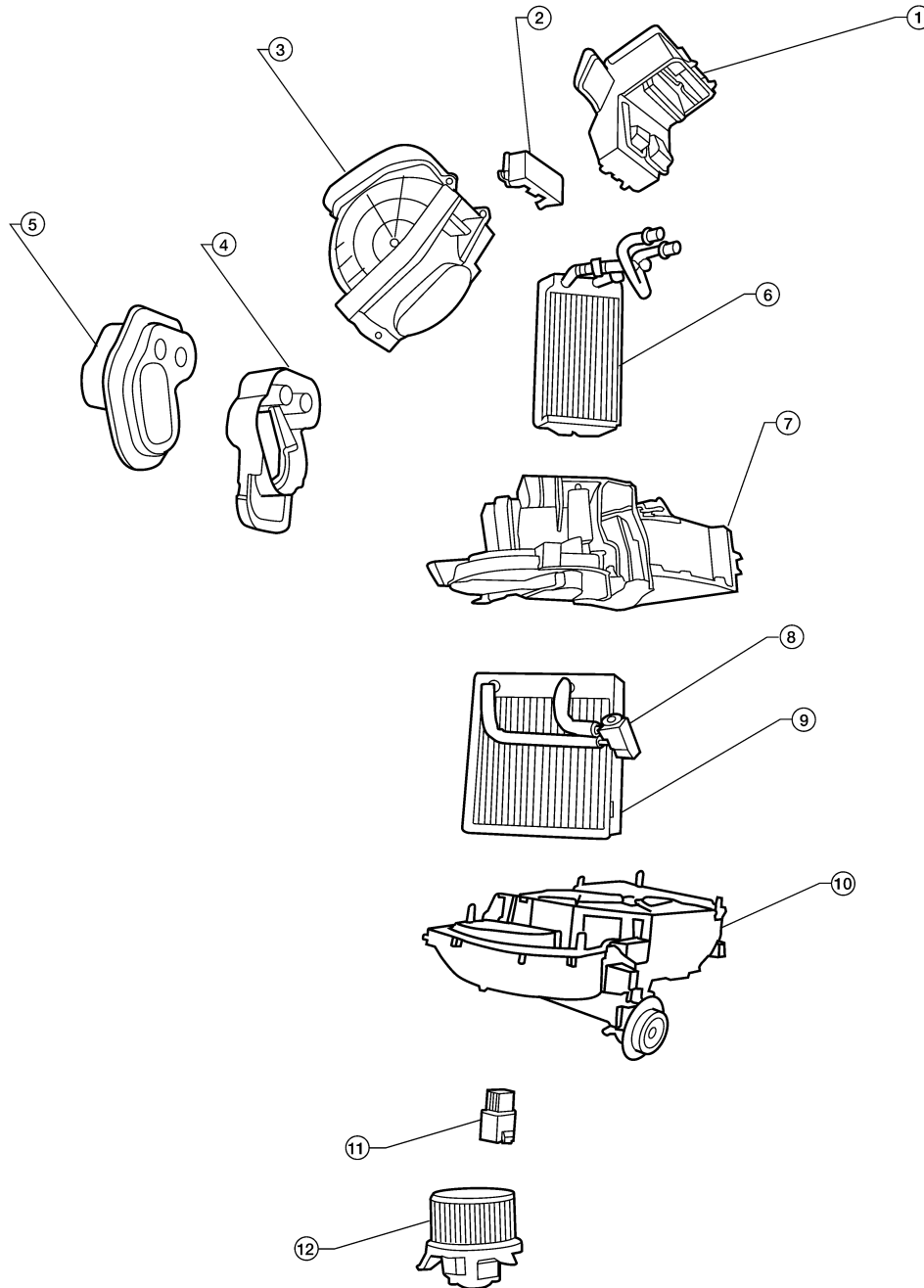
## EVAPORATOR

### Removal and Installation for Front Evaporator

INFOID:000000003938910

#### Front Heater and Cooling Unit Assembly

SEC. 270 • 271 • 272



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

- |   |   |                      |
|---|---|----------------------|
| 1. Center ventilator connector duct               | 2. Front heater core cover                        | 3. Intake air case   |
| 4. Front heater core and evaporator pipes bracket | 5. Front heater core and evaporator pipes grommet | 6. Front heater core |
| 7. Upper heater and cooling unit case             | 8. Front expansion valve                          | 9. Front evaporator  |
| 10. Lower heater and cooling unit case            | 11. Variable blower control (front)               | 12. Blower motor     |

LJJA0178E

### REMOVAL

# EVAPORATOR

## < ON-VEHICLE REPAIR >

1. Remove the front heater core. Refer to [VTL-26. "Removal and Installation"](#).
2. Separate the heater and cooling unit case.
3. Remove the front evaporator.

## INSTALLATION

Installation is in the reverse order of removal.

### CAUTION:

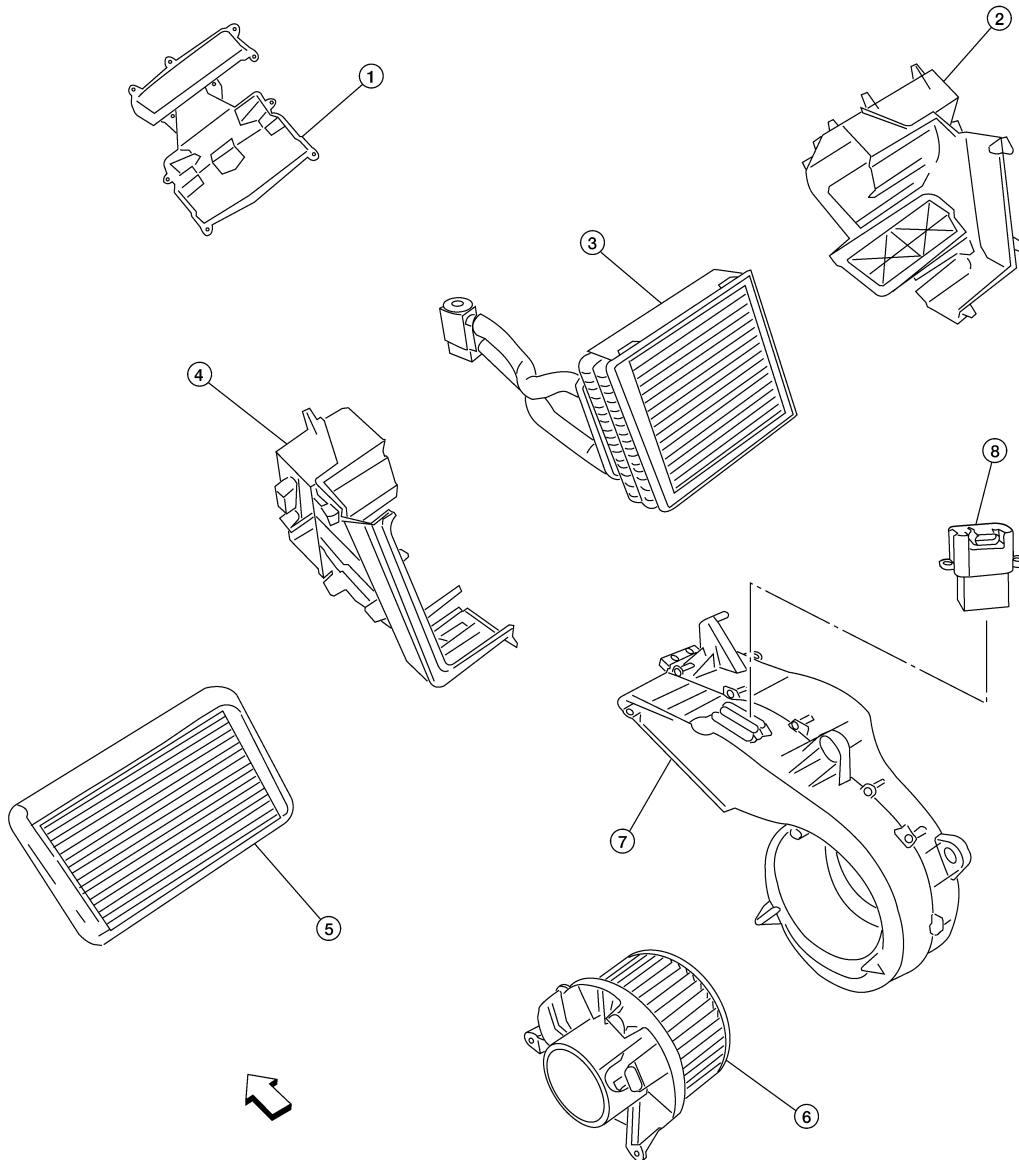
Replace the O-rings on the front A/C low-pressure flexible A/C hose and the front high-pressure A/C pipe with new ones. Apply compressor oil to the O-rings for installation.

## Removal and Installation for Rear Evaporator

INFOID:000000003938911

### Rear Heater and Cooling Unit Assembly

SEC. 274



AWIIA0647ZZ

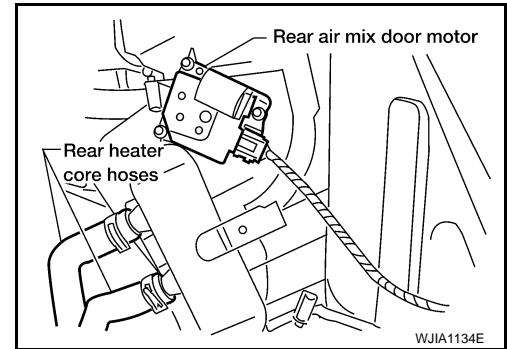
- |                      |   |                      |
|----------------------|---|----------------------|
| 1. Front cover       | 2. Rear evaporator and heater core case | 3. Rear evaporator   |
| 4. Side cover        | 5. Rear heater core                     | 6. Rear blower motor |
| 7. Blower motor case | 8. Variable blower control (rear)       | ↔ Front              |

## REMOVAL

# EVAPORATOR

## < ON-VEHICLE REPAIR >

1. Remove the rear heater and cooling unit assembly from the vehicle. Refer to [VTL-18. "Removal and Installation"](#).
2. Remove the rear blower motor.
3. Remove the variable blower control (rear).
4. Remove the rear air mix door motor.
5. Remove the rear duct and blend door assembly. Refer to [VTL-34. "Removal and Installation"](#).
6. Disassemble the rear heater and cooling unit assembly to remove the rear evaporator.



## INSTALLATION

Installation is in the reverse order of removal.

### **CAUTION:**

- Replace the O-rings on the rear high- and low-pressure A/C pipes with new ones. Apply compressor oil to the O-rings for installation.
- After charging refrigerant, check for leaks.

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

VTL

# EXPANSION VALVE

< ON-VEHICLE REPAIR >

## EXPANSION VALVE

---

### Removal and Installation for Rear Expansion Valve

INFOID:000000003938912

#### REMOVAL

1. Discharge the refrigerant. Refer to [HA-37, "HFC-134a \(R-134a\) Service Procedure"](#).
2. Remove the luggage side lower finisher RH access door.
3. Disconnect the rear high- and low-pressure A/C pipes from the rear expansion valve.

**CAUTION:**

**Cap or wrap the A/C refrigerant pipe ends with a suitable material such as vinyl tape to avoid the entry of air and contaminants.**

4. Remove the expansion valve.

#### INSTALLATION

Installation is in the reverse order of removal.

**Expansion valve bolts** : Refer to [HA-34, "Component"](#).

**A/C refrigerant pipe to expansion valve bolt** : Refer to [HA-34, "Component"](#).

**CAUTION:**

- Replace the O-rings on the rear expansion valve and the rear high- and low-pressure A/C pipes with new ones, then apply compressor oil to them for installation.
- After charging refrigerant, check for leaks.



# HEATER CORE

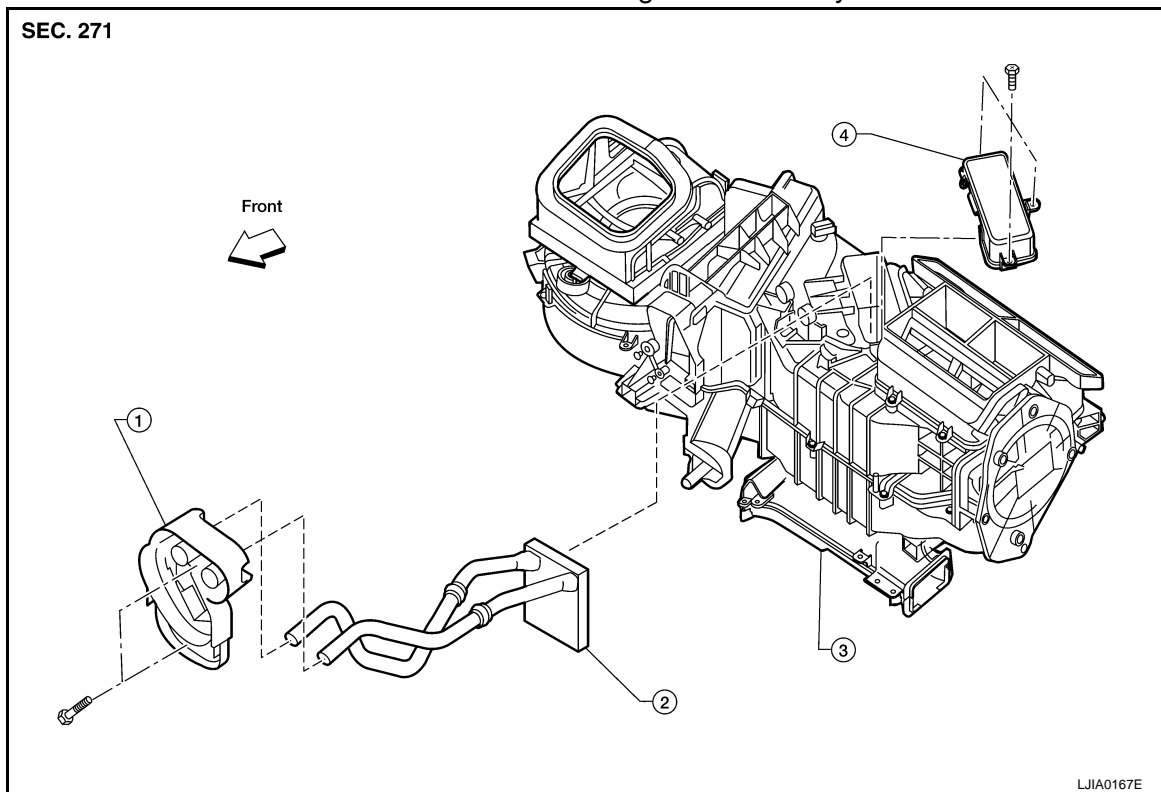
< ON-VEHICLE REPAIR >

## HEATER CORE

Component

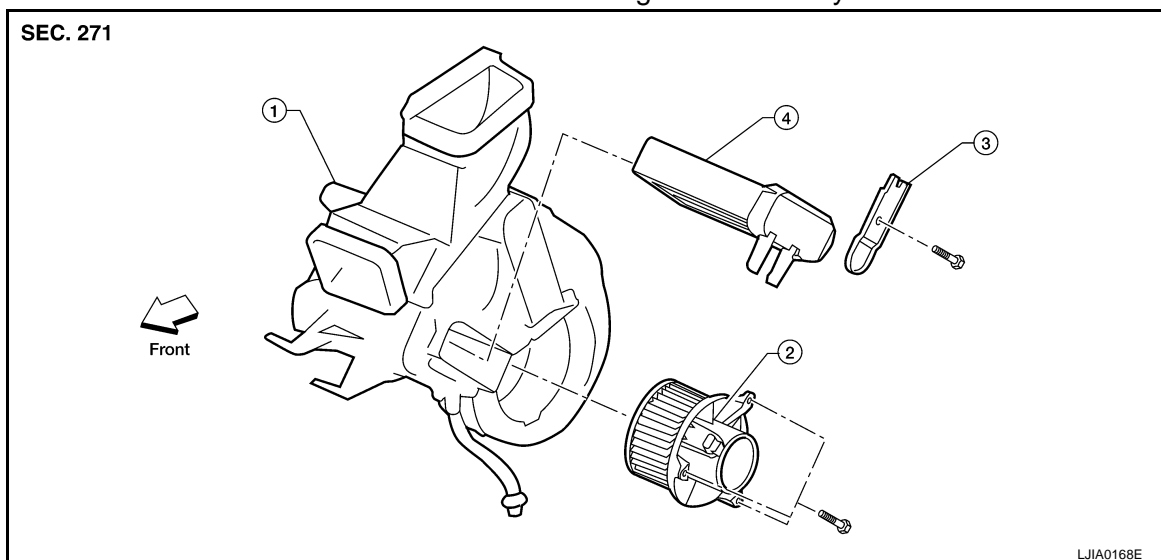
INFOID:000000003938913

### Front Heater and Cooling Unit Assembly



1. Front heater core and evaporator pipe
2. Front heater core bracket
3. Front heater and cooling unit assembly
4. Front heater core cover

### Rear Heater and Cooling Unit Assembly



1. Rear heater and cooling unit assembly
2. Rear blower motor
3. Rear heater core bracket
4. Rear heater core

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

# HEATER CORE

< ON-VEHICLE REPAIR >

---

## Removal and Installation

INFOID:000000003938914

### FRONT HEATER CORE

#### Removal

1. Remove the front heater and cooling unit assembly. Refer to [VTL-18, "Removal and Installation"](#).
2. Remove the three screws and remove the front heater core cover.
3. Remove the front heater core and evaporator pipe bracket.
4. Remove the front heater core.

**NOTE:**

If the in-cabin microfilters are contaminated from coolant leaking from the front heater core, replace the in-cabin microfilters with new ones before installing the new front heater core.

#### Installation

Installation is in the reverse order of removal.

### REAR HEATER CORE

#### Removal

1. Partially drain the engine cooling system. Refer to [CO-12, "Changing Engine Coolant"](#) (VQ40DE), [CO-41, "Changing Engine Coolant"](#) (VK56DE).
2. Remove the rear heater and cooling unit assembly. Refer to [VTL-18, "Removal and Installation"](#).
3. Remove the rear heater core bracket.
4. Remove the heater core.

#### Installation

Installation is in the reverse order of removal.

# INTAKE DOOR MOTOR

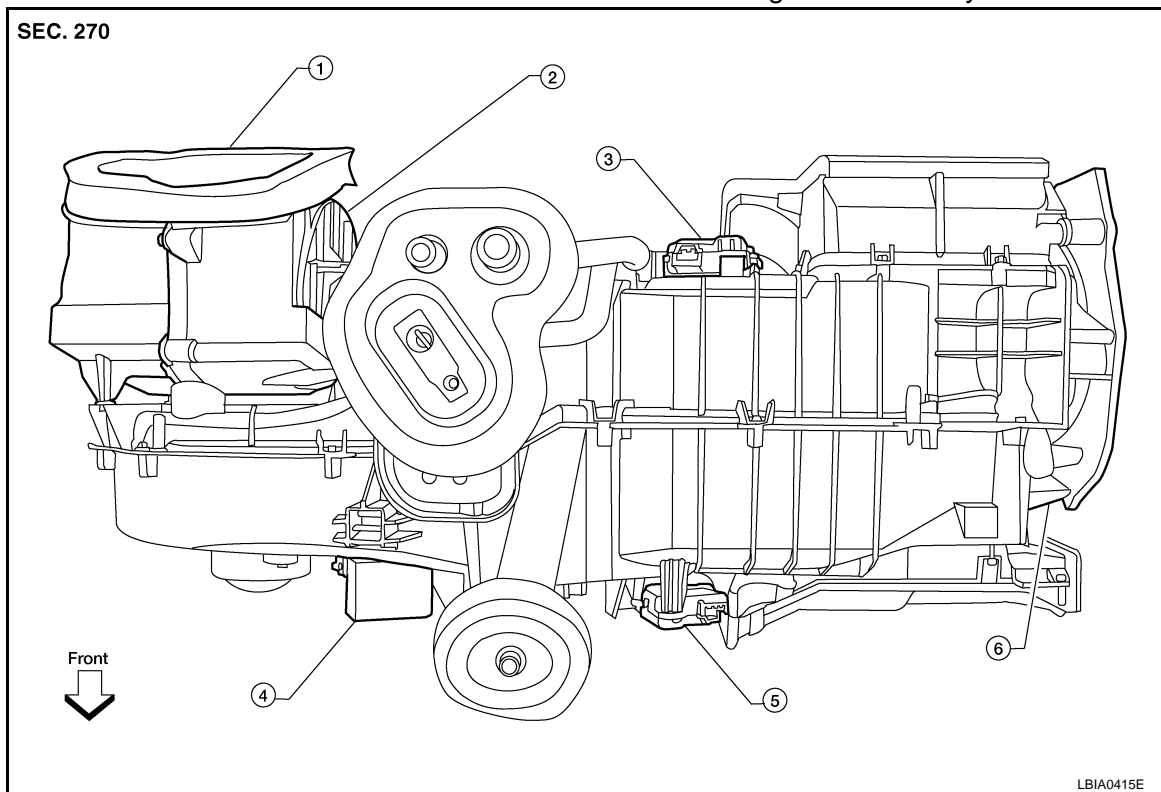
< ON-VEHICLE REPAIR >

## INTAKE DOOR MOTOR

### Removal and Installation

INFOID:000000003938915

#### Intake Door Motor - Front Heater and Cooling Unit Assembly



- |   |                                |                                   |
|---|--------------------------------|-----------------------------------|
| 1. Front heater and cooling unit assembly | 2. Intake door motor           | 3. Air mix door motor (passenger) |
| 4. Variable blower control (front)        | 5. Air mix door motor (driver) | 6. Mode door motor                |

### REMOVAL

1. Remove the front heater and cooling unit assembly. Refer to [VTL-18. "Removal and Installation"](#).
2. Remove the steering member from the front heater and cooling unit assembly.
3. Disconnect the intake door motor electrical connector.
4. Remove the three screws and remove the intake door motor.

### INSTALLATION

Installation is in the reverse order of removal.

# MODE DOOR MOTOR

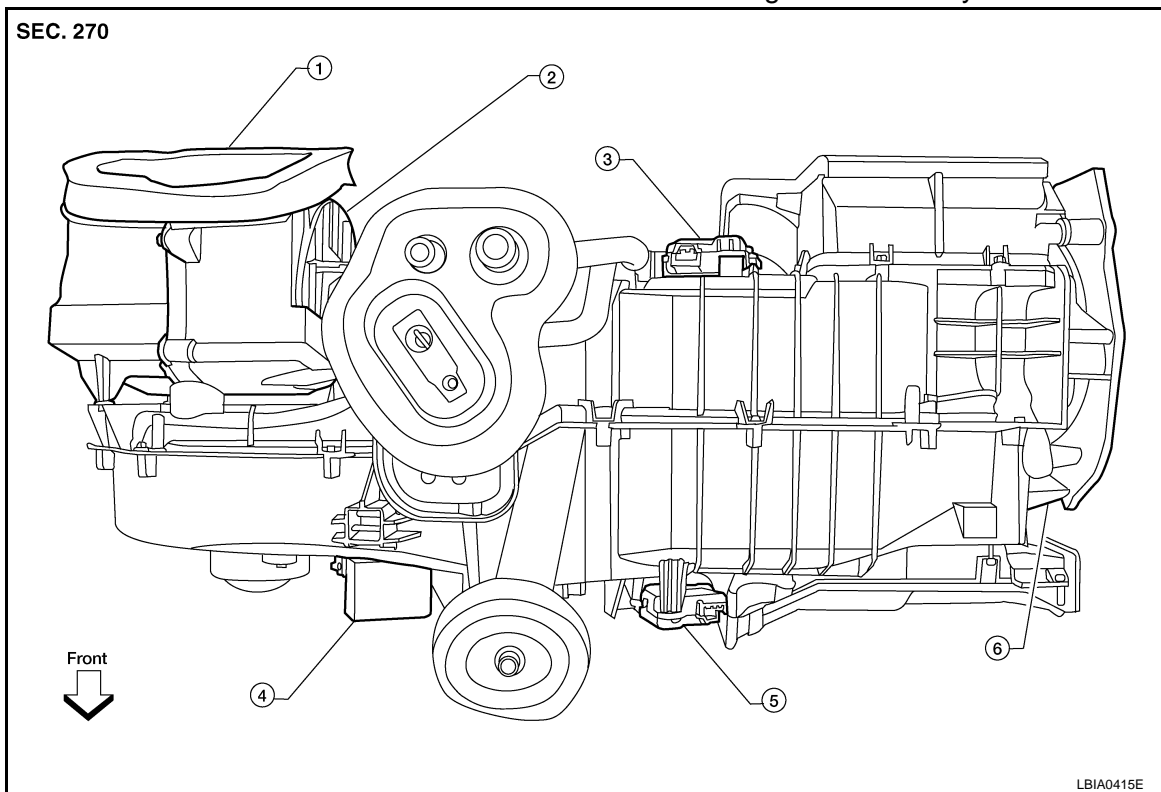
< ON-VEHICLE REPAIR >

## MODE DOOR MOTOR

### Removal and Installation

INFOID:000000003938916

#### Mode Door Motor - Front Heater and Cooling Unit Assembly



- |   |                                |                                   |
|---|--------------------------------|-----------------------------------|
| 1. Front heater and cooling unit assembly | 2. Intake door motor           | 3. Air mix door motor (passenger) |
| 4. Variable blower control (front)        | 5. Air mix door motor (driver) | 6. Mode door motor                |

#### REMOVAL

1. Remove the instrument panel side finisher. Refer to [IP-10, "Exploded View"](#).
2. Remove the lower instrument cover. Refer to [IP-10, "Exploded View"](#).
3. Disconnect the mode door motor electrical connector.
4. Remove the three screws and remove the mode door motor.

#### INSTALLATION

Installation is in the reverse order of removal.

# AIR MIX DOOR MOTOR

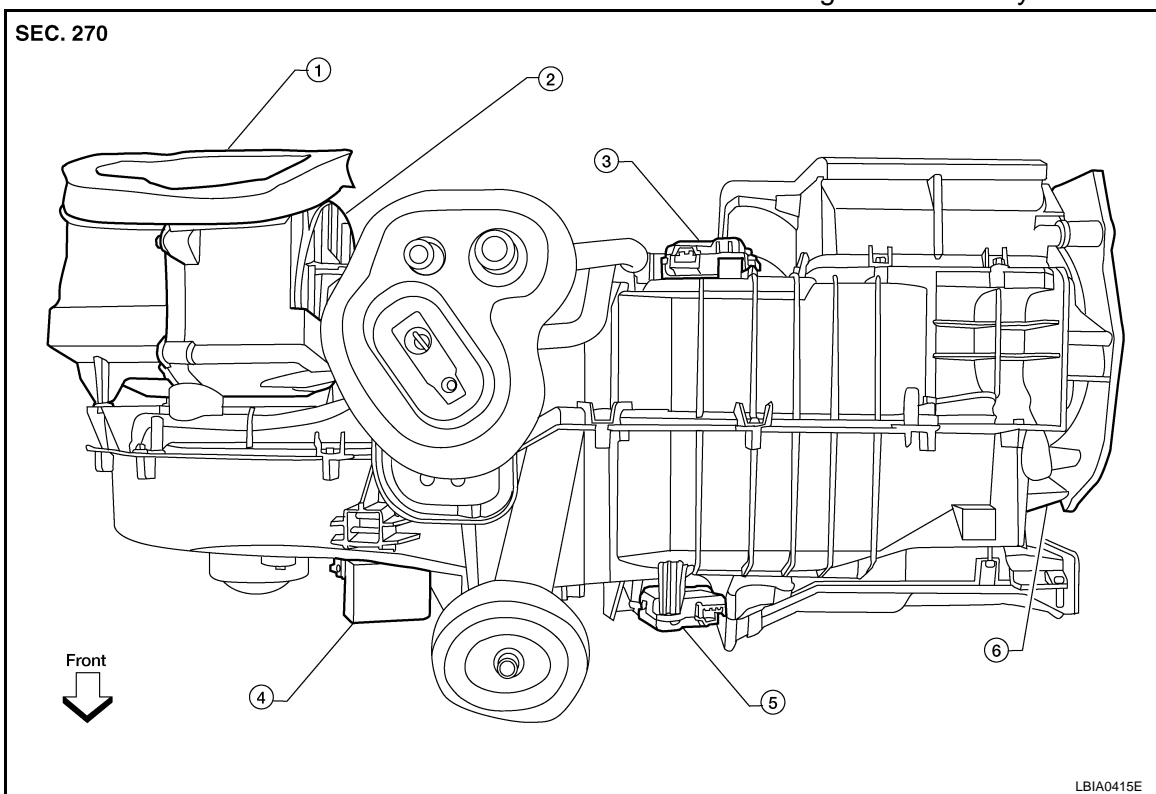
< ON-VEHICLE REPAIR >

## AIR MIX DOOR MOTOR

Component

INFOID:000000003938917

Air Mix Door Motors - ATC - Front Heater and Cooling Unit Assembly



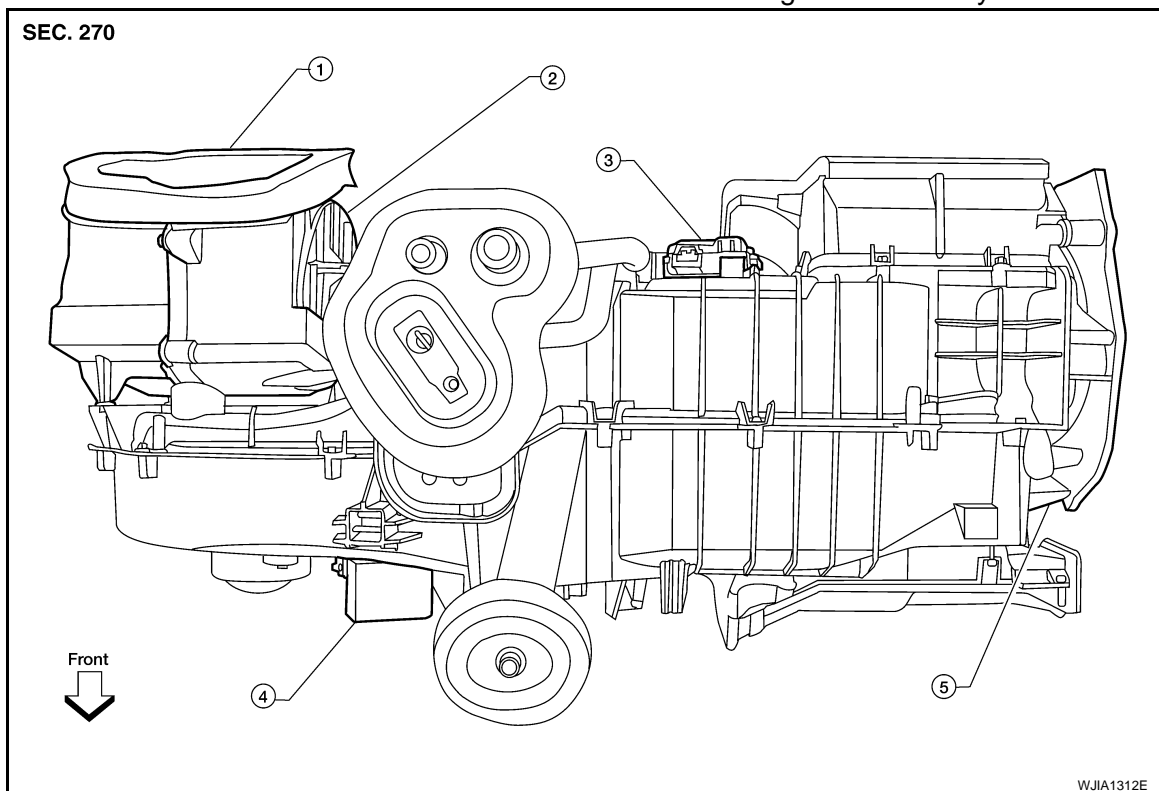
- |   |                                |                                   |
|---|--------------------------------|-----------------------------------|
| 1. Front heater and cooling unit assembly | 2. Intake door motor           | 3. Air mix door motor (passenger) |
| 4. Variable blower control (front)        | 5. Air mix door motor (driver) | 6. Mode door motor                |

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

# AIR MIX DOOR MOTOR

< ON-VEHICLE REPAIR >

## Air Mix Door Motor - MTC - Heater and Cooling Unit Assembly



- |                                     |                      |                       |
|-------------------------------------|----------------------|-----------------------|
| 1. Heater and cooling unit assembly | 2. Intake door motor | 3. Air mix door motor |
| 4. Blower motor resistor            | 5. Mode door motor   |                       |

## Removal and Installation

INFOID:000000003938918

### FRONT AIR MIX DOOR MOTOR - DRIVER - ATC

#### Removal

1. Remove the instrument panel side finisher. Refer to [IP-10, "Exploded View"](#).
2. Remove the lower instrument panel RH. Refer to [IP-10, "Exploded View"](#).
3. Disconnect the air mix door motor electrical connector.
4. Remove the three screws and remove the air mix door motor.

#### Installation

Installation is in the reverse order of removal.

### FRONT AIR MIX DOOR MOTOR - PASSENGER - ATC

#### Removal

1. Remove the front heater and cooling unit assembly. Refer to [VTL-18, "Removal and Installation"](#).
2. Remove the steering member from the front heater and cooling unit assembly.
3. Disconnect the air mix door motor electrical connector.
4. Remove the three screws and remove the air mix door motor.

#### Installation

Installation is in the reverse order of removal.

### FRONT AIR MIX DOOR MOTOR - MTC

#### Removal

1. Remove the front heater and cooling unit assembly. Refer to [VTL-18, "Removal and Installation"](#).
2. Remove the steering member from the front heater and cooling unit assembly.
3. Disconnect the air mix door motor electrical connector.

# AIR MIX DOOR MOTOR

## < ON-VEHICLE REPAIR >

4. Remove the three screws and remove the air mix door motor.

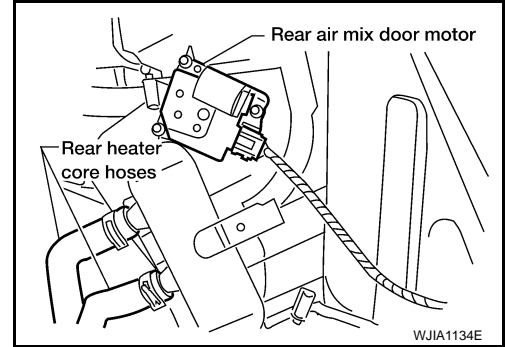
### Installation

Installation is in the reverse order of removal.

## REAR AIR MIX DOOR MOTOR

### Removal

1. Remove the luggage side lower finisher RH. Refer to [INT-22, "Component"](#).
2. Disconnect the rear air mix door motor electrical connector.
3. Remove the three screws and remove the rear air mix door motor.



### Installation

Installation is in the reverse order of removal.

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

VTL

# DUCTS AND GRILLES

< ON-VEHICLE REPAIR >

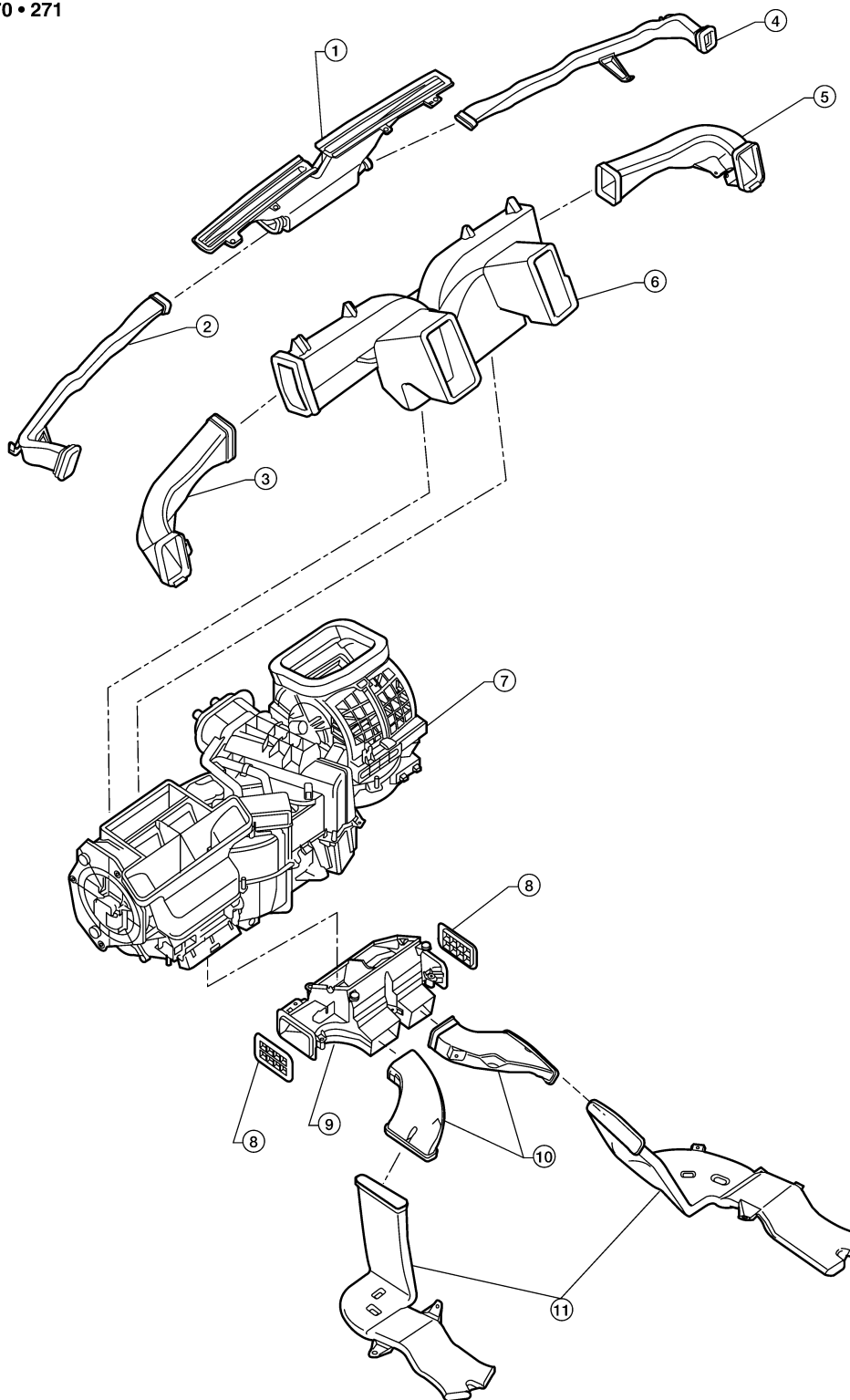
## DUCTS AND GRILLES

Component

INFOID:000000003938919

### Ducts - Front Heater and Cooling Unit Assembly

SEC. 270 • 271



- 1. Defroster nozzle
- 4. RH side demister duct

- 2. LH side demister duct
- 5. RH ventilator duct

- 3. LH ventilator duct
- 6. Center ventilator duct

WJIA1260E

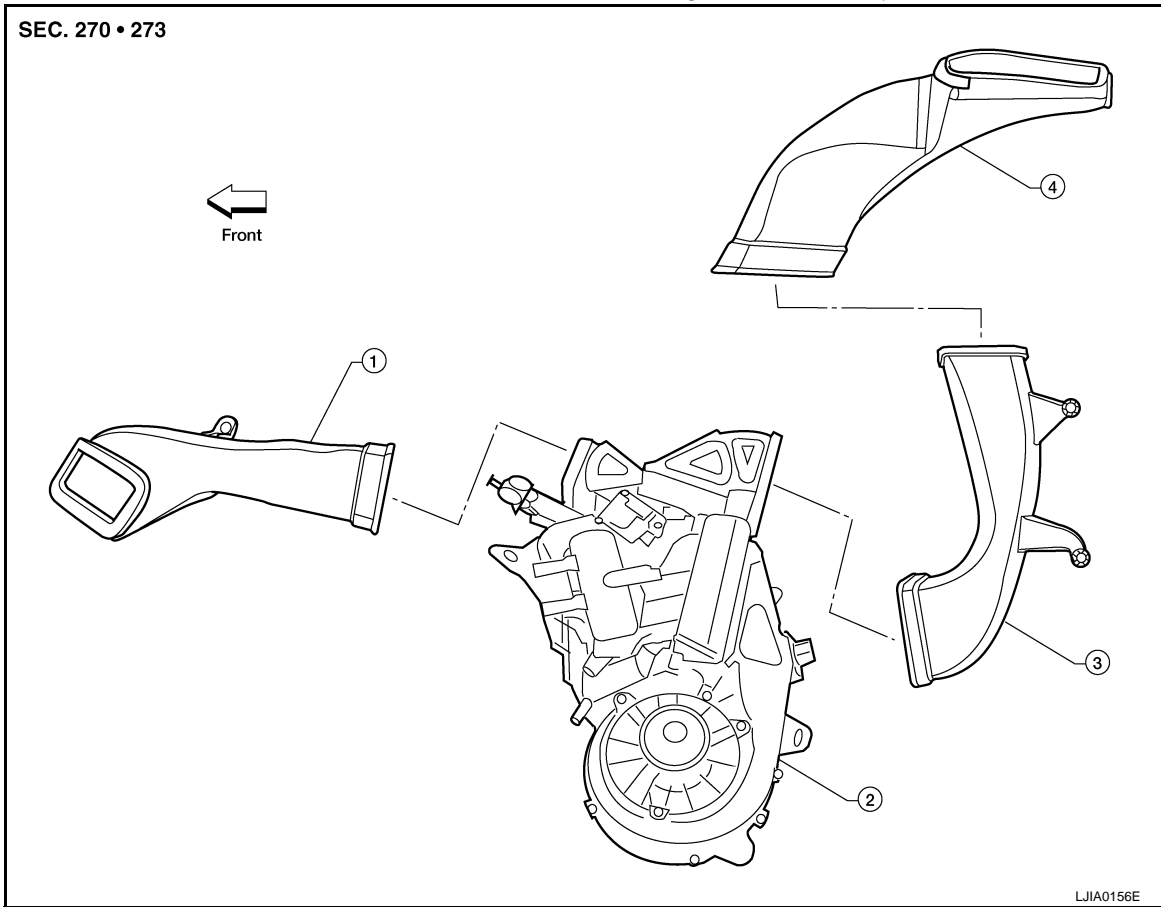


# DUCTS AND GRILLES

## < ON-VEHICLE REPAIR >

- 7. Front heater and cooling unit assembly
- 8. Floor connector duct grilles
- 9. Floor connector duct
- 10. Front floor ducts
- 11. Rear floor ducts

### Ducts - Rear Heater and Cooling Unit Assembly



- 1. Side rear floor duct
- 2. Rear heater and cooling unit assembly
- 3. Rear lower overhead duct
- 4. Rear upper overhead duct

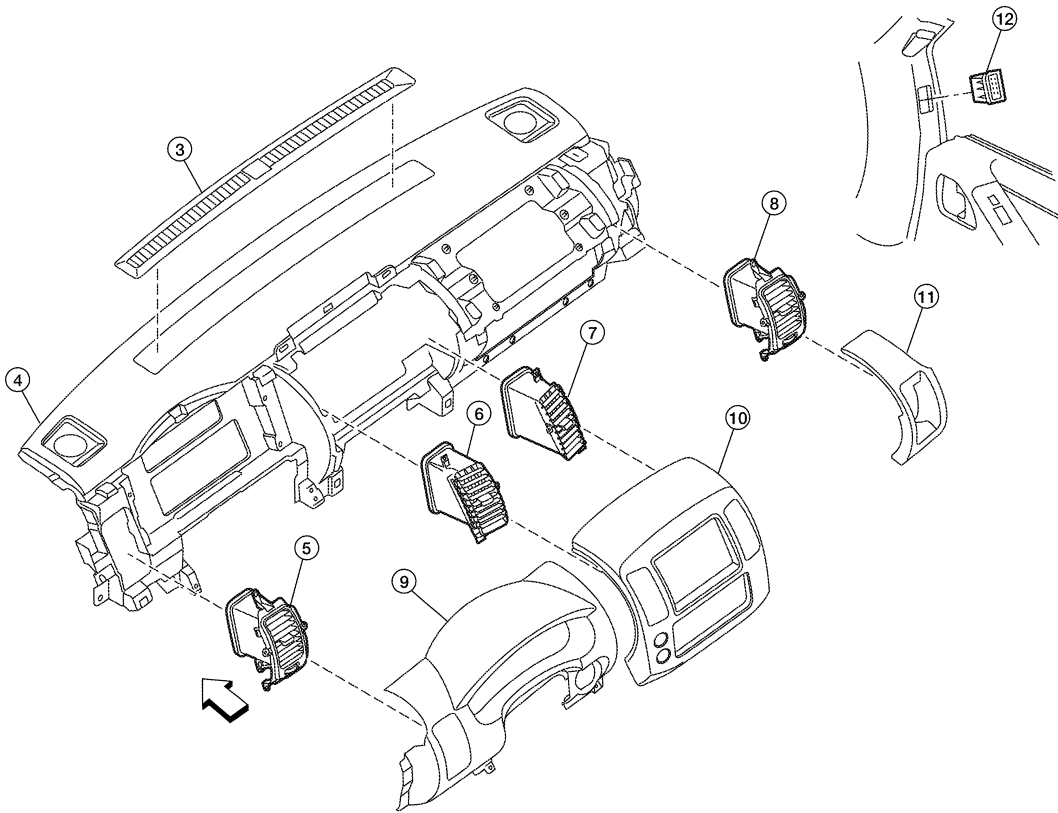
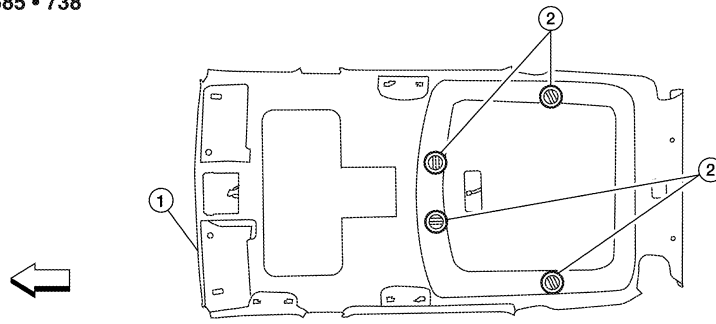
A  
B  
C  
D  
E  
F  
G  
H  
VTL  
J  
K  
L  
M  
N  
O  
P

# DUCTS AND GRILLES

< ON-VEHICLE REPAIR >

## Grilles

SEC. 280 • 685 • 738



AWIIA0569ZZ

- |                                      |                              |                             |
|--------------------------------------|------------------------------|-----------------------------|
| 1. Headliner                         | 2. Overhead grilles          | 3. Defroster grille         |
| 4. Instrument panel and pad assembly | 5. LH side ventilator grille | 6. LH ventilator grille     |
| 7. RH ventilator grille              | 8. RH side ventilator grille | 9. Cluster lid A            |
| 10. Cluster lid C                    | 11. Instrument side finisher | 12. RH side demister grille |
- ↔ Front

## Removal and Installation

INFOID:000000003938920

### DEFROSTER NOZZLE

Removal

# DUCTS AND GRILLES

## < ON-VEHICLE REPAIR >

---

1. Remove the front heater and cooling unit assembly. Refer to [VTL-18, "Removal and Installation"](#).
2. Remove the defroster nozzle.

### Installation

Installation is in the reverse order of removal.

## RH AND LH SIDE DEMISTER DUCT

### Removal

1. Remove the front heater and cooling unit assembly. Refer to [VTL-18, "Removal and Installation"](#).
2. Remove the center console. Refer to [IP-16, "Exploded View"](#).
3. Remove the RH or LH side demister duct.

### Installation

Installation is in the reverse order of removal.

## RH AND LH VENTILATOR DUCT

### Removal

1. Remove the front heater and cooling unit assembly. Refer to [VTL-18, "Removal and Installation"](#).
2. Remove the center console. Refer to [IP-16, "Exploded View"](#).
3. Remove the RH or LH ventilator duct.

### Installation

Installation is in the reverse order of removal.

## CENTER VENTILATOR DUCT

### Removal

1. Remove the front heater and cooling unit assembly. Refer to [VTL-18, "Removal and Installation"](#).
2. Remove the center console. Refer to [IP-16, "Exploded View"](#).
3. Remove the defroster nozzle.
4. Remove the RH and LH ventilator ducts.
5. Remove the RH and LH side demister ducts.
6. Remove the center ventilator duct.

### Installation

Installation is in the reverse order of removal.

## FLOOR CONNECTOR DUCT

### Removal

1. Remove the front heater and cooling unit assembly. Refer to [VTL-18, "Removal and Installation"](#).
2. Remove the center console. Refer to [IP-16, "Exploded View"](#).
3. Remove the floor connector duct.

### Installation

Installation is in the reverse order of removal.

## FRONT AND REAR FLOOR DUCTS

### Removal

1. Remove the center console. Refer to [IP-16, "Exploded View"](#).
2. Remove the floor carpet. Refer to [INT-19, "Removal and Installation"](#).
3. Remove the clips and remove the front and rear floor ducts.

### Installation

Installation is in the reverse order of removal.

## REAR OVERHEAD DUCTS

### Removal

1. Remove the luggage side lower finisher RH. Refer to [INT-22, "Component"](#).

A

B

C

D

E

F

G

H

VTL

J

K

L

M

N

O

P

## DUCTS AND GRILLES

### < ON-VEHICLE REPAIR >

---

2. Remove the headliner. Refer to [INT-20, "Removal and Installation"](#).

**NOTE:**

The rear headliner duct (connected to the rear upper overhead duct) is part of the headliner and is replaced as an assembly.

3. Remove the clips and remove the rear upper and lower overhead ducts.

#### Installation

Installation is in the reverse order of removal.

### SIDE REAR FLOOR DUCT

#### Removal

1. Remove the luggage side lower finisher RH. Refer to [INT-22, "Component"](#).
2. Reposition the floor carpet out of the way.
3. Remove the clips and remove the side rear floor duct.

#### Installation

Installation is in the reverse order of removal.

### GRILLES

#### Removal

1. Remove the necessary interior trim panel(s) to access the grille. Refer to [INT-16, "Component"](#).

**NOTE:**

The overhead grilles are part of the headliner. To replace the overhead grilles the headliner must be replaced. Refer to [VTL-34, "Removal and Installation"](#).

2. Remove the grille from the interior trim panel.

#### Installation

Installation is in the reverse order of removal.