SECTION MTC
MANUAL AIR CONDITIONER

CONTENTS

PRECAUTIONS

PFP:00001

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EJS0028D

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. Information necessary to service the system safely is included in the SRS 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 SRS 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 harness connectors.**

Wiring Diagrams and Trouble Diagnosis

EJS000WA

When you read wiring diagrams, refer to the following:

- GI-13, "How to Read Wiring Diagrams" in GI section.
- PG-3, "Wiring Diagram — POWER —" in EL section.

When you perform trouble diagnosis, refer to the following:

- GI-9, "How to Follow Trouble Diagnoses" in GI section.
- GI-23, "How to Perform Efficient Diagnosis for an Electrical Incident" in GI section.

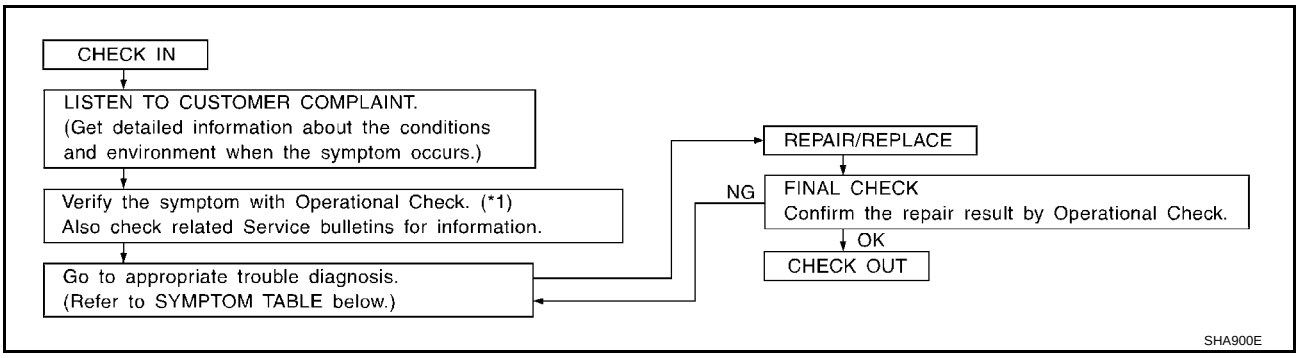
TROUBLE DIAGNOSIS

PFP:00004

How to Perform Trouble Diagnoses for Quick and Accurate Repair

EJS001FB

WORK FLOW



*1 MTC-7, "Operational Check".

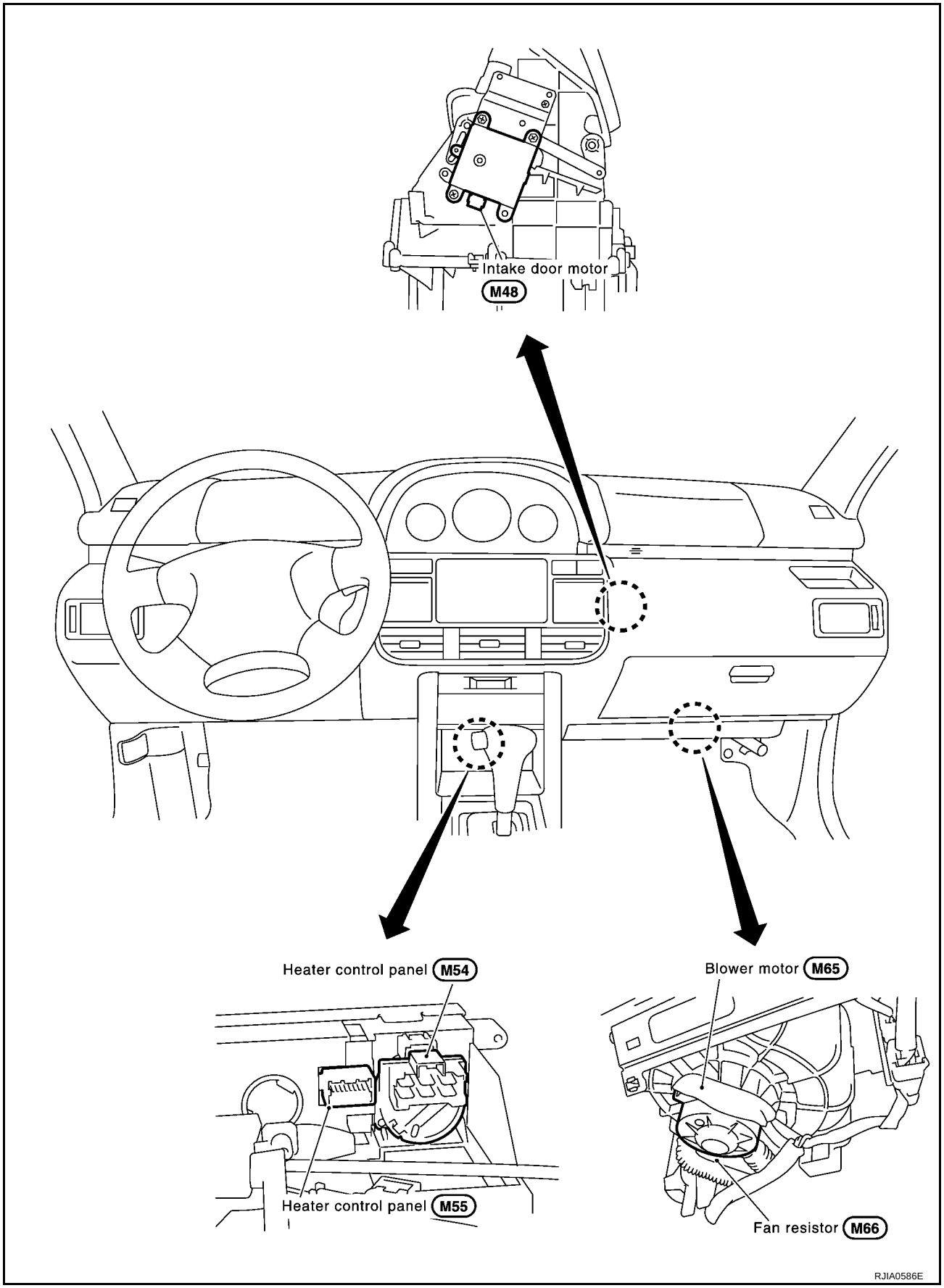
SYMPTOM TABLE

Symptom	Reference Page	
Air outlet does not change.	Go to Trouble Diagnosis Procedure for Mode Door.	MTC-27
Discharge air temperature does not change.	Go to Trouble Diagnosis Procedure Air Mix Door.	MTC-28
Intake door does not change.	Go to Trouble Diagnosis Procedure for Intake Door Motor.	MTC-11
Intake door motor does not operate normally.		
Blower motor operation is malfunctioning.	Go to Trouble Diagnosis Procedure for Blower Motor.	MTC-14
Insufficient heating.	Go to Trouble Diagnosis Procedure for Insufficient Heating.	MTC-18

Component Parts and Harness Connector Location

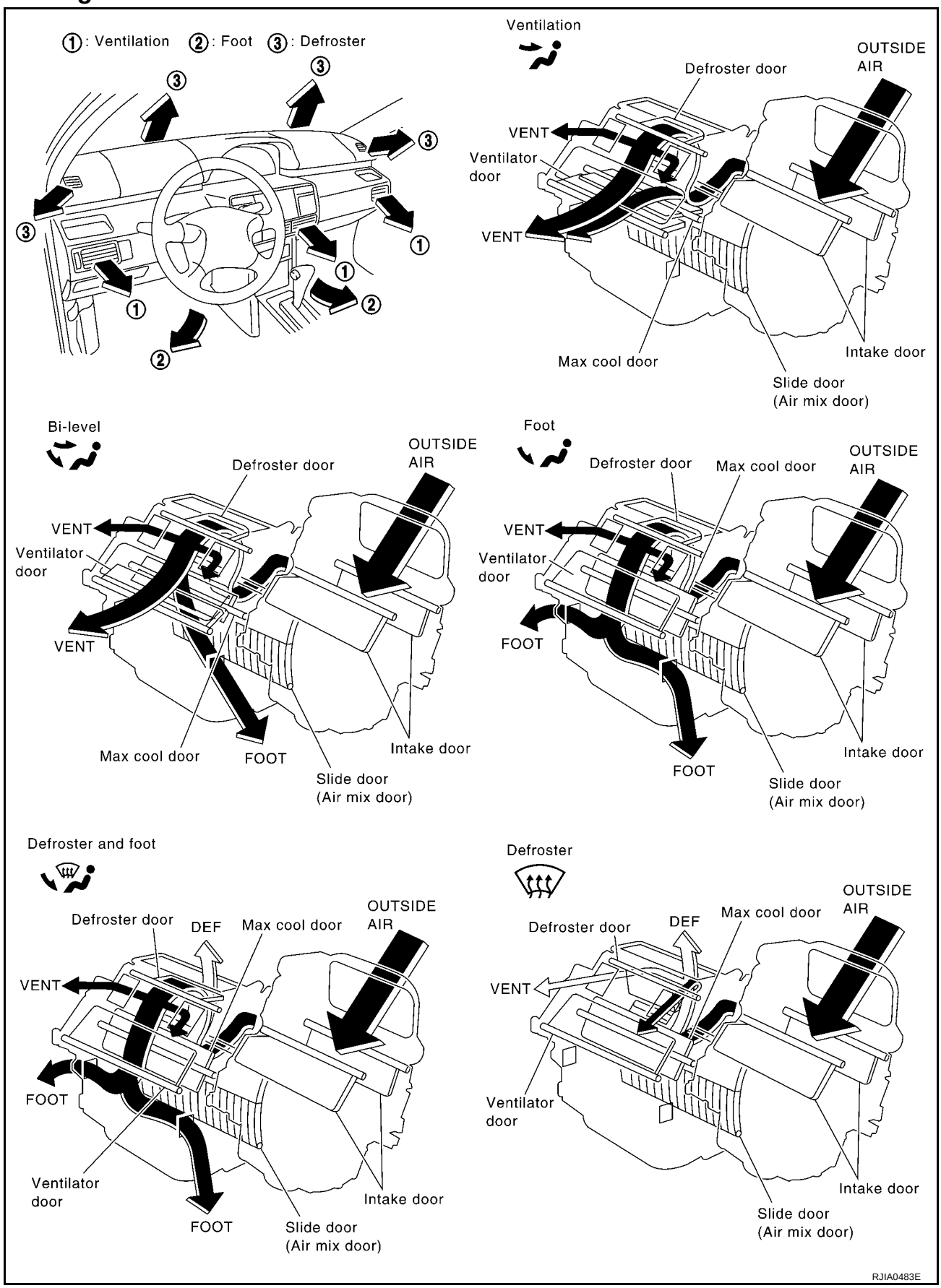
EJS001FC

PASSENGER COMPARTMENT



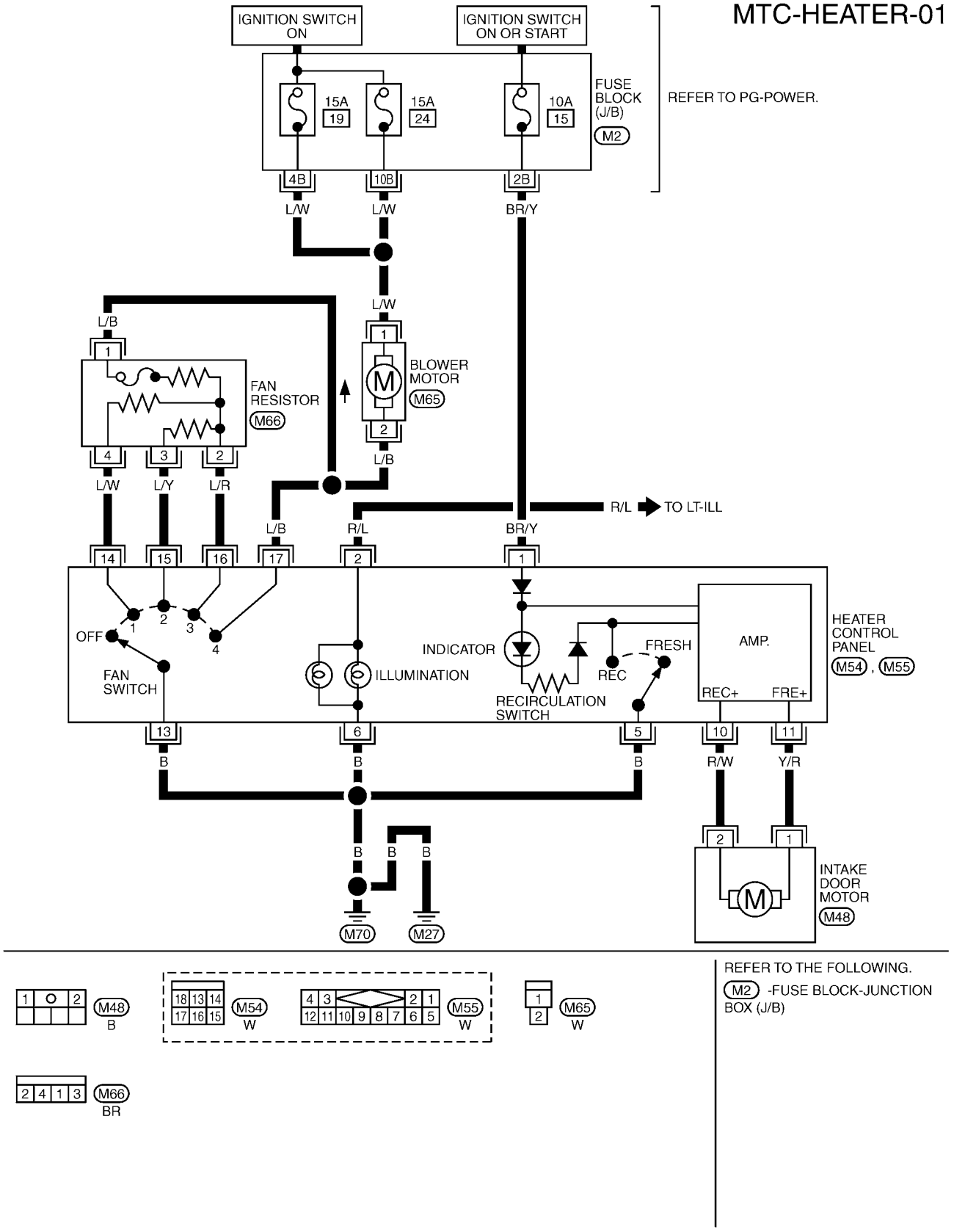
Discharge Air Flow

EJS001HF



Wiring Diagram-HEATER

EJS001FD



TJWA0009E

Operational Check

EJS001FE

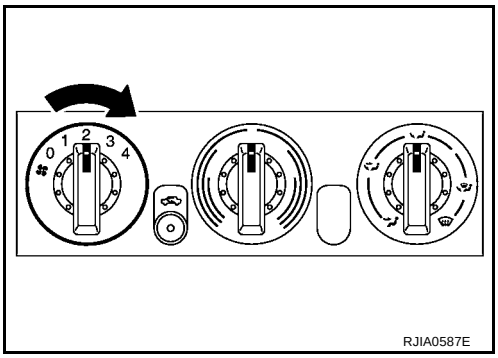
The purpose of the operational check is to confirm that the system operates properly.

Conditions :Engine running and at normal operating temperature

CHECKING BLOWER

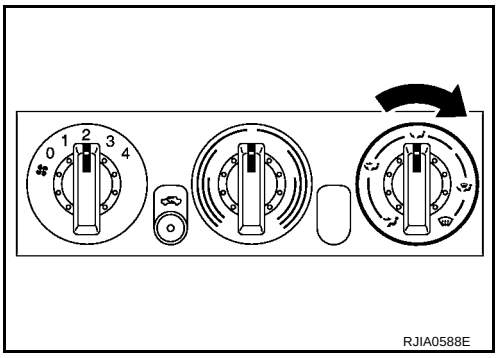
1. Turn fan switch to 1-speed. Blower should operate on low speed.
2. Then turn fan switch to 2-speed, and continue checking blower speed until all speeds are checked.
3. Leave blower on 4-speed.

If NG, go to trouble diagnosis procedure for MTC-14, "Blower Motor Circuit" .
If OK, continue with next check.



CHECKING DISCHARGE AIR

1. Set the mode control dial to each position.



2. Confirm that discharge air comes out according to the air distribution table.Refer to MTC-5, "Discharge Air Flow" .

Intake door position is checked in the next step.
If NG, go to trouble diagnosis procedure for mode door motor.
If OK, continue with next check.

Discharge air flow

Mode door position	Air outlet/distribution		
	Face	Foot	Defroster
	100%	–	–
	60%	40%	–
	24%	76%	–
	18%	54%	28%
	20%	–	80%

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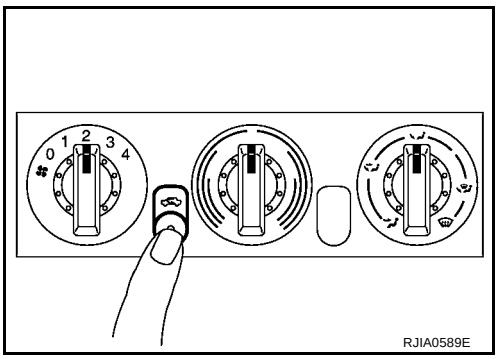
CHECKING RECIRCULATION

1. Press REC switch one time. Recirculation indicator should illuminate.
2. Listen for intake door position change (you should hear blower sound change slightly).

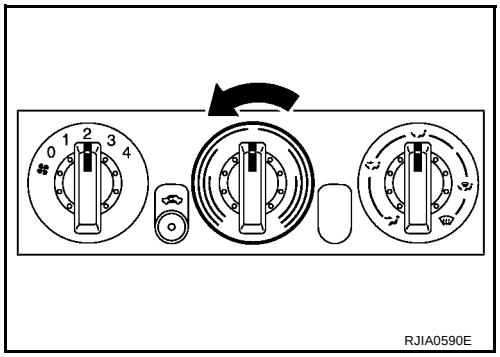
If NG, go to trouble diagnosis procedure for MTC-11, "Intake Door Motor Circuit" .
If OK, continue with next check.



CHECKING TEMPERATURE DECREASE

1. Turn the temperature dial to full cold position.
2. Check for cold air at discharge air outlets.

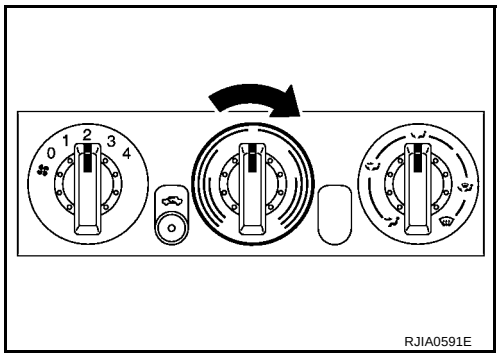
If NG, go to trouble diagnosis procedure for air mix door.
If OK, continue with next check.



CHECKING TEMPERATURE INCREASE

1. Turn the temperature dial to full hot position.
2. Check for hot air at discharge air outlets.

If NG, go to trouble diagnosis procedure for MTC-18, "Insufficient Heating" .
If all operational check are OK (symptom can not be duplicated), go to Incident Simulation Tests in GI-23, "How to Perform Efficient Diagnosis for an Electrical Incident" and perform tests as outlined to simulate driving conditions environment. If symptom appears, refer to MTC-3, "SYMPTOM TABLE" and perform applicable trouble diagnosis procedures.



Mode Door

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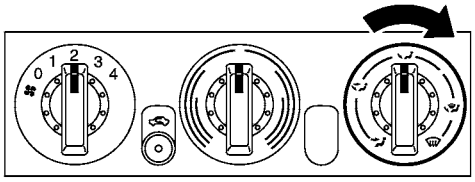
SYMPTOM: Air outlet does not change.

1. Confirm symptom by performing the following operation.



Discharge air flow

Mode door position	Air outlet/distribution		
	Face	Foot	Defroster
	100%	–	–
	60%	40%	–
	24%	76%	–
	18%	54%	28%
	20%	–	80%

OPERATIONAL CHECK – Mode door

a. Turn the mode control knob to each position.
b. Confirm that discharge air comes out according to the distribution table at left.
Refer to “Discharge Air Flow”, (*1).

2. Check for any service bulletins.

3. Check mode door control cable. (*3)

OK

4. If the symptom still exists, perform a complete operational check (*2) and check for other symptoms. [Refer to symptom table, (*4).] Does another symptom exist?

Yes → Go to Trouble Diagnosis for related symptom.

[Another symptom exists.]

No

INSPECTION END

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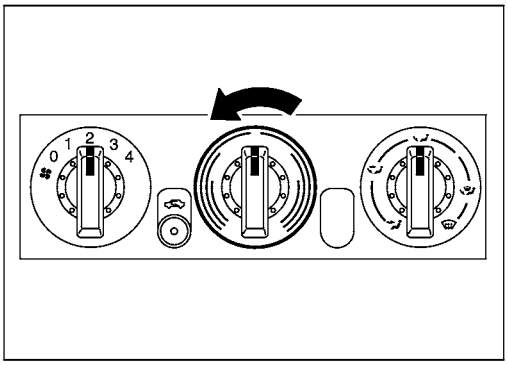
*1 MTC-5, "Discharge Air Flow". *2 MTC-7, "Operational Check". *3 MTC-27, "MODE DOOR".
*4 MTC-3, "SYMPTOM TABLE".

Air Mix Door

EJS001FG

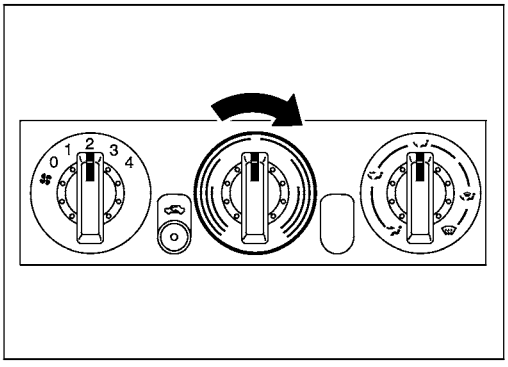
SYMPTOM: Air mix door does not change.

1. Confirm symptom by performing the following operational check.



OPERATIONAL CHECK – Temperature decrease and increase

1. Check Temperature Decrease
1) Turn temperature control dial to full cold.
2) Check for cold air at discharge air outlets.



2. Check Temperature Increase
1) Turn temperature control dial to full hot.
2) Check for hot air at discharge air outlets.

If OK (symptom cannot be duplicated). Perform complete operational check. (*3)
If NG (symptom is confirmed), continue with STEP-2 following.

2. Check for any service bulletins.

3. Check air mix door. (*1)

OK

If the symptom still exist, perform a complete operational check (*3) and check for other symptoms.
[Refer to symptom table, (*2).]
Does another symptom exist?

Yes → Go to Trouble Diagnosis for related symptom.

[Another symptom exists.]

No → INSPECTION END

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*1 MTC-28, "AIR MIX DOOR".
*2 MTC-3, "SYMPTOM TABLE".
*3 MTC-7, "Operational Check".

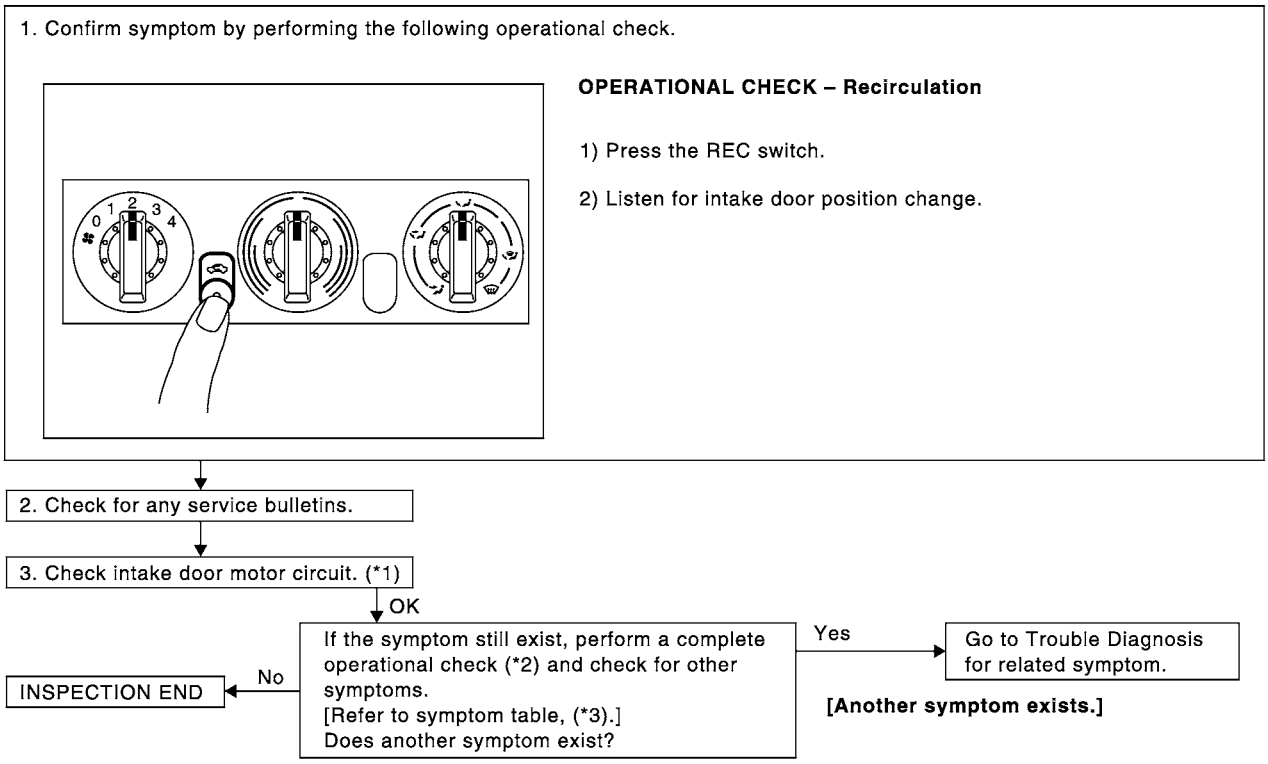
Intake Door Motor Circuit

EJS001FH

SYMPTOM:

- Intake door does not change.
- Intake door motor does not operate normally.

INSPECTION FLOW

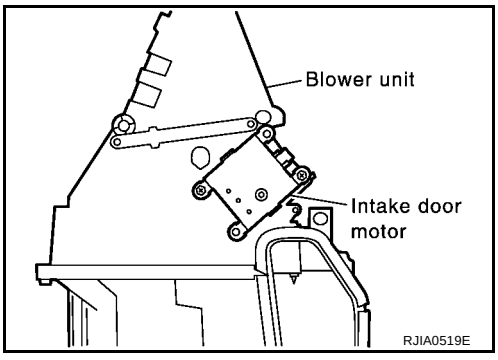


*1 MTC-11, "Intake Door Motor Circuit". *2 MTC-7, "Operational Check" . *3 MTC-3, "SYMPTOM TABLE".

COMPONENT DESCRIPTION

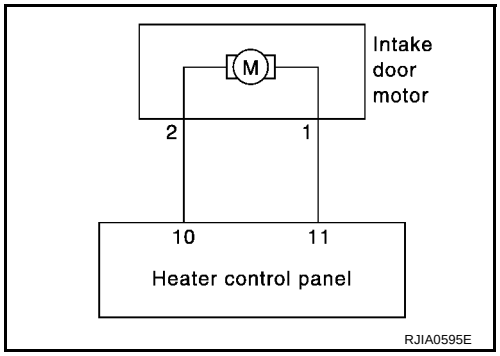
Intake door motor

The intake door motor is attached to the intake unit. It rotates so that air is drawn from inlets set by the auto amplifier. Motor rotation is conveyed to a lever which activates the intake door.



DIAGNOSTIC PROCEDURE

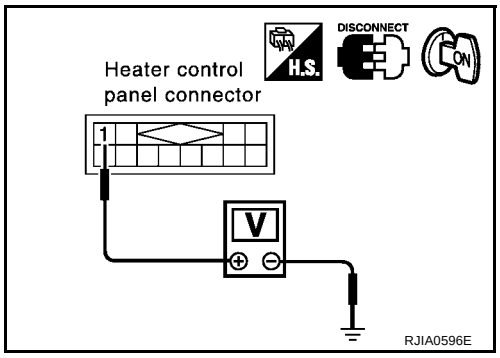
SYMPTOM: Intake door does not change.



1. CHECK POWER SUPPLY FOR HEATER CONTROL PANEL

Disconnect heater control panel harness connector.

Terminals			Voltage
(+)		(-)	
Connector	Terminal (Wire color)		
M55	1 (BR/Y)	Ground	Approx. 12V



OK or NG

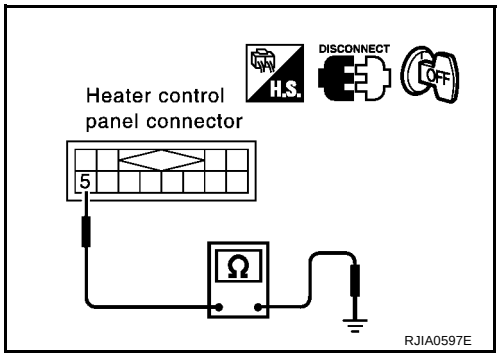
OK >> GO TO 2.

NG >> Check power supply circuit and 10 A fuse [No. 15, located in the fuse block (J/B)]. Refer to PG-3, "BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION" .

- If OK, check for open circuit in wiring harness. Repair or replace as necessary.
- If NG, replace fuse and check wiring harness for short circuit. Repair or replace as necessary.

2. CHECK BODY GROUND CIRCUIT FOR HEATER CONTROL PANEL

Terminals			Continuity
Connector	Terminal (Wire color)	-	
M55	5 (B)	Ground	Yes



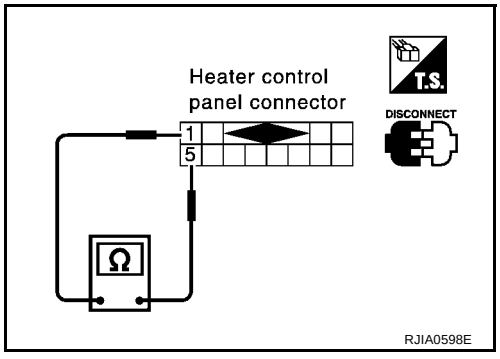
OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK RECIRCULATION SWITCH CIRCUIT

Terminals				Continuity
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M55	1 (BR/Y)	M55	5 (B)	Yes



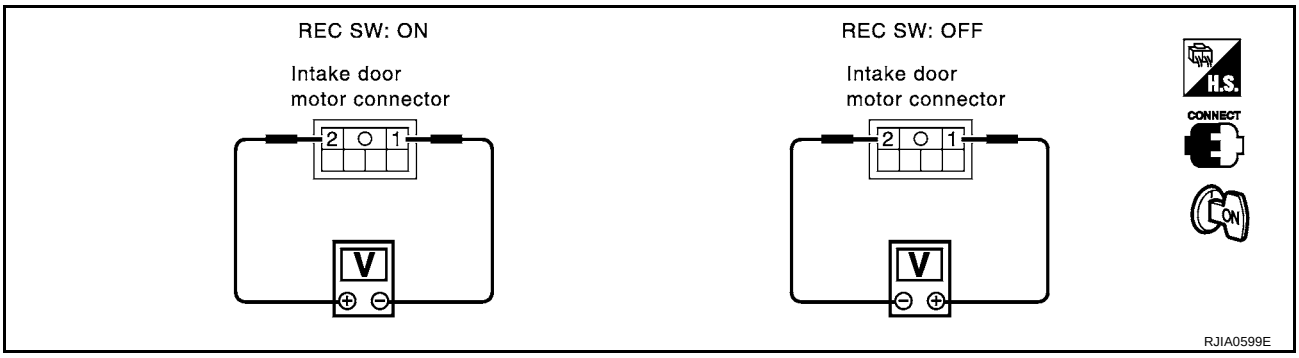
OK or NG

OK >> GO TO 4.

NG >> Replace heater control panel.

4. CHECK POWER SUPPLY FOR INTAKE DOOR MOTOR

Reconnect heater control panel connector.



Terminals				Condition	Voltage
(+)		(-)			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
M48	2 (R/W)	M48	1 (Y/R)	REC SW: ON	Approx. 12V
M48	1 (Y/R)	M48	2 (R/W)	REC SW: OFF	

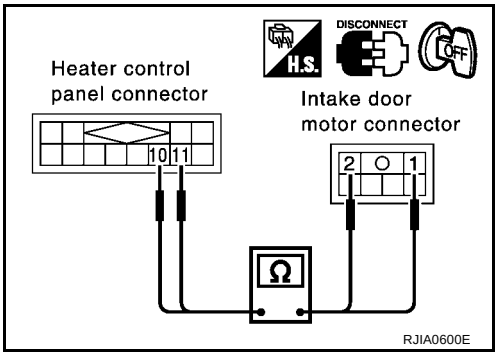
OK or NG

OK >> Replace intake door motor.
NG >> GO TO 5.

5. CHECK CIRCUIT CONTINUITY BETWEEN HEATER CONTROL PANEL AND INTAKE DOOR MOTOR

Disconnect the heater control panel connector and intake door motor connector.

Terminals				Continuity
Heater control panel connector		Intake door motor connector		
Connector	Terminal (Wire color)	Connector	Terminal (Wirecolor)	
M55	10 (R/W)	M48	2 (R/W)	Yes
M55	11 (Y/R)	M48	1 (Y/R)	



OK or NG

OK >> Replace heater control panel.
NG >> Repair harness or connector.

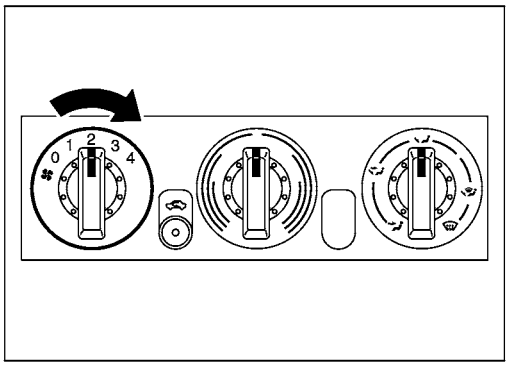
Blower Motor Circuit

EJS001FI

SYMPTOM: Blower motor operation is malfunctioning.

INSPECTION FLOW

1. Confirm symptom by performing the following operational check.



OPERATIONAL CHECK – Blower motor

1) Turn fan switch to 1-speed.
   Blower should operate on 1-speed.
2) Then turn tan switch to 2-speed.
3) Continue checking blower speed until all four speeds are checked.
4) Leave blower on 4-speed.

If OK (symptom cannot be duplicated), perform complete operational check (*4).
If NG (symptom is confirmed), continue with STEP-2 following.

2. Check for any service bulletins.

3. Check blower motor circuit. (*1)

OK

If the symptom still exist, perform a complete operational check (*2) and check for other symptoms.
[Refer to symptom table, (*3).]
Does another symptom exist?

Yes → Go to Trouble Diagnosis for related symptom.

[Another symptom exists.]

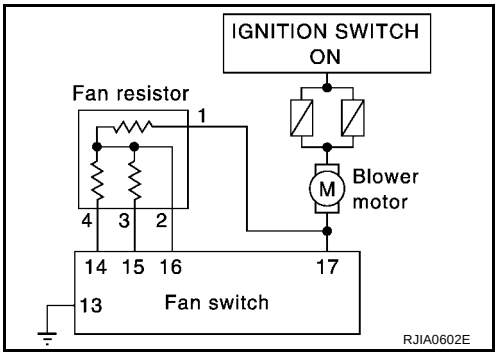
No → INSPECTION END

RJIA0601E

*1 MTC-14, "Blower Motor Circuit". *2 MTC-7, "Operational Check". *3 MTC-3, "SYMPTOM TABLE".
*4 MTC-7, "Operational Check".

DIAGNOSTIC PROCEDURE

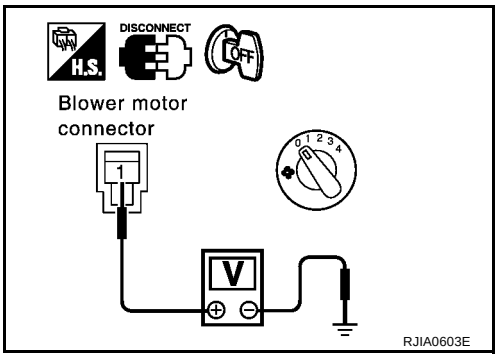
SYMPTOM: Blower motor operation is malfunctioning.



1. CHECK POWER SUPPLY FOR BLOWER MOTOR

Disconnect blower motor harness connector.

Terminals			Voltage
(+)		(-)	
Connector	Terminal (Wire color)		
M65	1 (L/W)	Ground	Approx. 12V



OK or NG

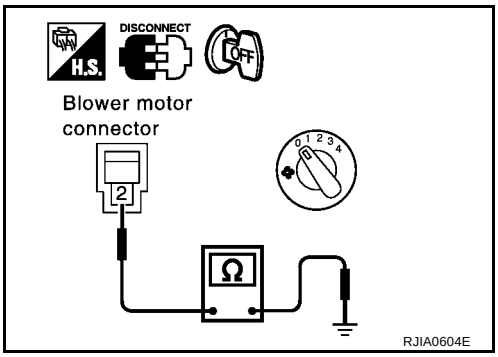
OK >> GO TO 2.

NG >> Check power supply circuit and 15A fuses [Nos. 19 and 24, located in the fuse block (J/B)]. Refer toPG-3, "BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION" .

- If OK, check for open circuit in wiring harness. Repair or replace as necessary.
- If NG, replace fuse and check wiring harness for short circuit. Repair or replace as necessary.

2. CHECK BODY GROUND CIRCUIT FOR BLOWER MOTOR

Terminals			Condition	Continuity
Connector	Terminal (Wire color)	Ground	FAN SW: ON	Yes
M65	2 (B)			



OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK BLOWER MOTOR

Refer to MTC-14, "Blower Motor Circuit" .

OK or NG

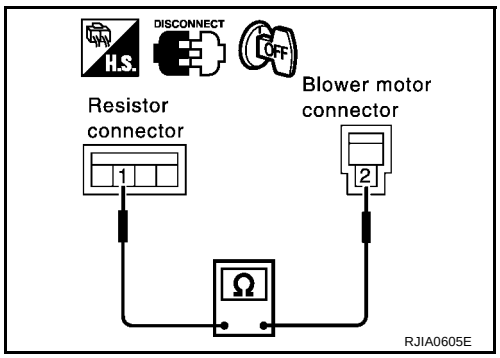
OK >> INSPECTION END

NG >> Replace blower motor.

4. CHECK CIRCUIT CONTINUITY BETWEEN BLOWER MOTOR AND FAN RESISTOR

Disconnect fan resistor connector.

Terminals				Continuity
Fan resistor connector		Blower motor connector		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M66	1 (L/B)	M65	2 (L/B)	Yes



OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector.

5. CHECK FAN RESISTOR

Refer to MTC-17, "Blower Fan Resistor" .

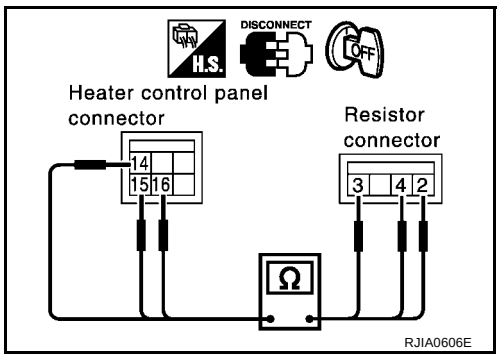
OK or NG

OK >> GO TO 6.
NG >> Replace fan resistor.

6. CHECK CIRCUIT CONTINUITY BETWEEN FAN RESISTOR AND HEATER CONTROL PANEL

Disconnect heater control panel connector.

Terminals				Continuity
Fan resistor connector		Heater control panel connector		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M66	2 (L/R)	M54	16 (L/R)	Yes
M66	3 (L/Y)	M54	15 (L/Y)	
M66	4 (L/W)	M54	14 (L/W)	

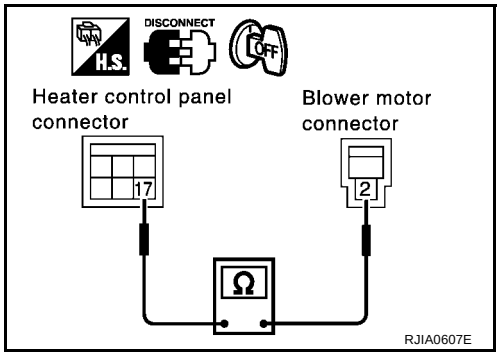


OK or NG

OK >> GO TO 7.
NG >> Repair harness or connector.

7. CHECK CIRCUIT CONTINUITY BETWEEN BLOWER MOTOR AND HEATER CONTROL PANEL

Terminals				Continuity
Blower motor connector		Heater control panel connector		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M65	2 (L/B)	M54	17 (L/B)	Yes



OK or NG

OK >> GO TO 8.
NG >> Repair harness or connector.

8. CHECK FAN SWITCH

Refer to MTC-17, "Fan Switch" .

OK or NG

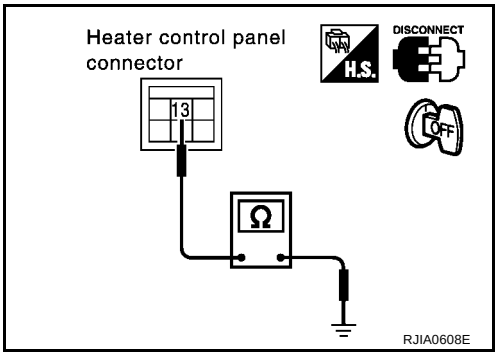
OK >> GO TO 9.
NG >> Replace fan switch.

9. CHECK GROUND CIRCUIT

Terminals			Continuity
Connector	Terminal (Wire color)	Ground	Yes
M54	13 (B)		

OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

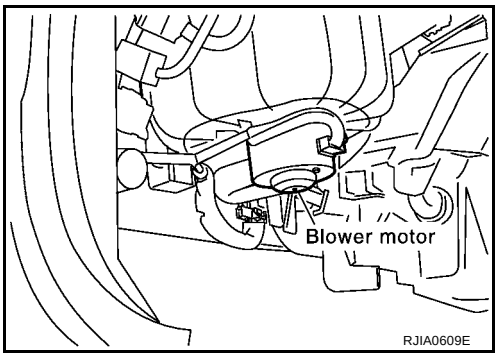


COMPONENT INSPECTION

Blower Motor

Confirm smooth rotation of the blower motor.

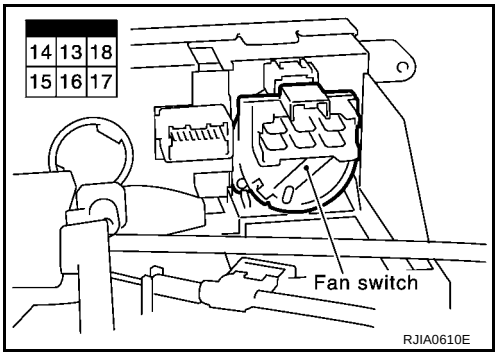
- Ensure that there are no foreign particles inside the intake unit.



Fan Switch

Check continuity between terminals at each switch position.

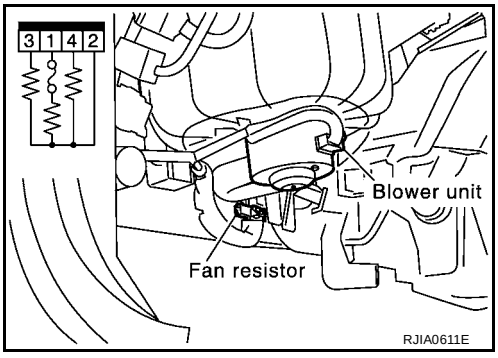
Switch position	Connector	Terminals	Continuity
OFF	M54	13 - 14, 15, 16, 17	No
1		13 - 14	Yes
2		13 - 15	
3		13 - 16	
4		13 - 17	



Blower Fan Resistor

Check continuity between terminals.

Terminals		Continuity
M66 - 1	M66 - 2	Yes
	M66 - 3	
	M66 - 4	



Insufficient Heating

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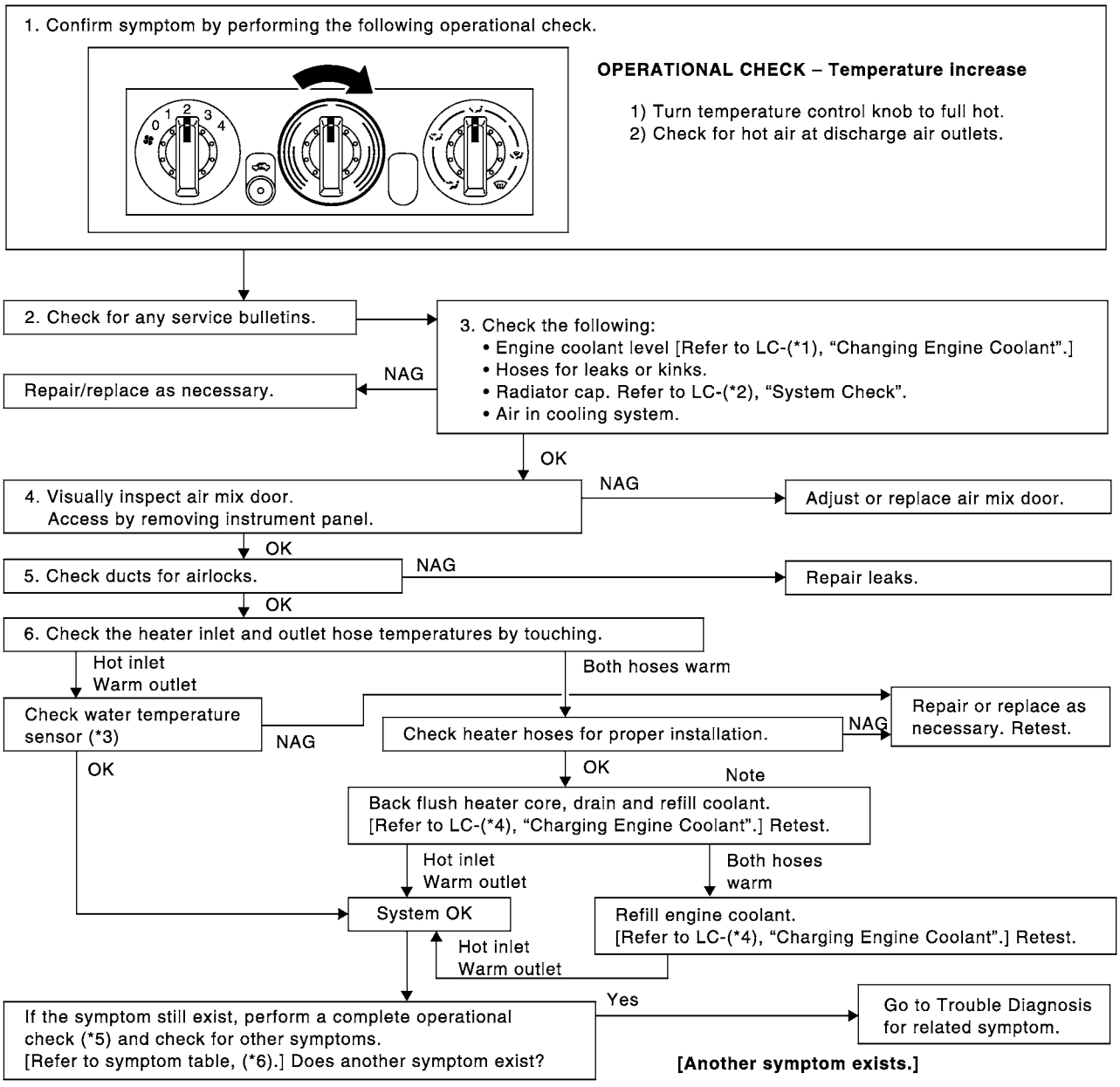
SYMPTOM: Insufficient heating

INSPECTION FLOW



RJIA0612E

*1	QR engine; CO-9, "Changing Engine Coolant" . YD engine; CO-29, "Changing Engine Coolant" .	*2	QR engine; CO-12, "Checking Radiator Cap" YD engine; CO-33, "Checking Radiator Cap" .	*3	QR25 engine; (WITH EURO-OBD) EC-153, "ENGINE COOLANT TEMPERATURE SENSOR" . QR25 engine; (WITHOOUT EUR-OBD)EC-527, "ENGINE COOLANT TEMPERATURE SENSOR" . QR20 engine; (WITH EURO-OBD) EC-885, "ENGINE COOLANT TEMPERATURE SENSOR" . QR20 engine; (WITHOUT EURO-OBD)EC-1213, "ENGINE COOLANT TEMPERATURE SENSOR" . YD engine; EC-1508, "SYSTEM DESCRIPTION" .
*4	QR engine; CO-9, "Changing Engine Coolant" . YD engine; CO-29, "Changing Engine Coolant" .	*5	MTC-7, "Operational Check"	*6	MTC-3, "SYMPTOM TABLE"

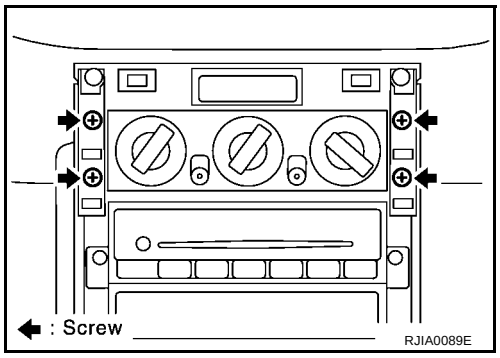
CONTROLLER

PFP:27500

Removal and Installation

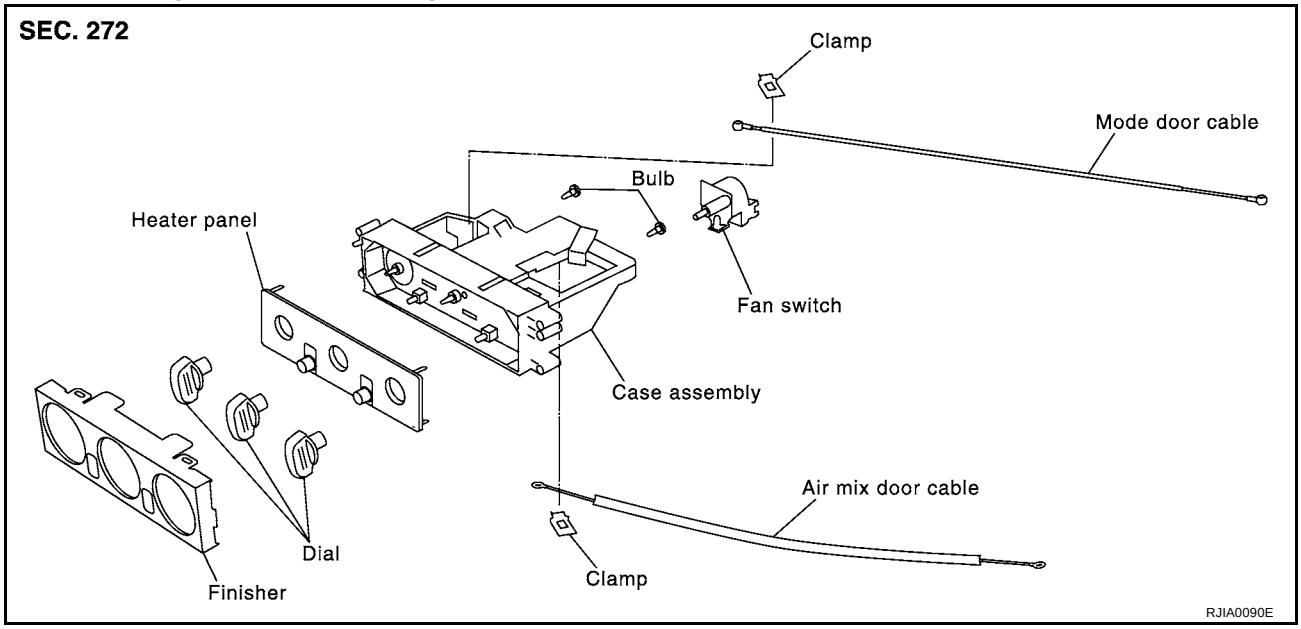
EJS001F7

1. Remove the mode control cable and air mix control cable from heater unit.
2. Remove the cluster lid finisher.
3. Remove the fixing screw from heater control panel.
4. Remove the heater control panel, then remove the heater control panel connector.



Disassembly and Assembly

EJS001F8



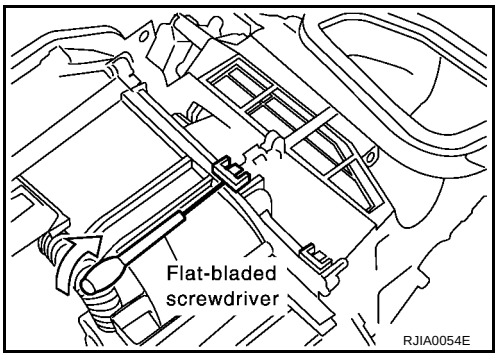
BLOWER MOTOR

PFP:27226

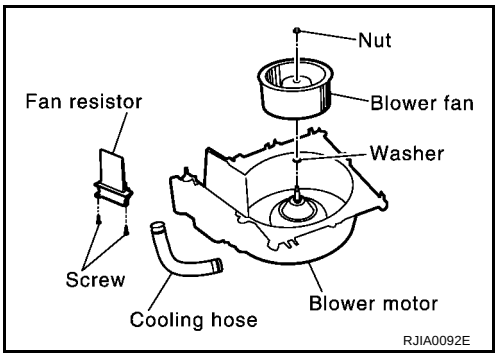
Removal and Installation

EJS000XK

1. Remove the blower unit.
2. Separate the blower unit.



3. Remove the cooling hose, blower fan resistor and blower fan.



BLOWER FAN RESISTOR

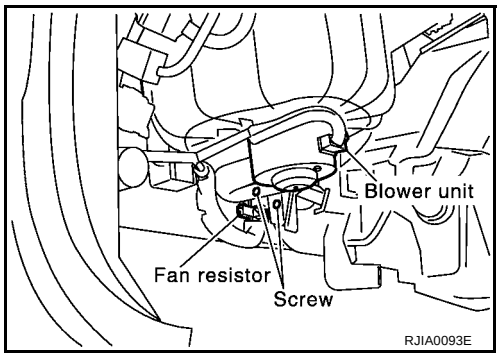
PFP:27150

Removal and Installation

EJS000XL

1. Remove the glove box cover.
2. Remove the blower fan resistor.

CAUTION:
Do not repair the thermal fuse of the fan resistor.



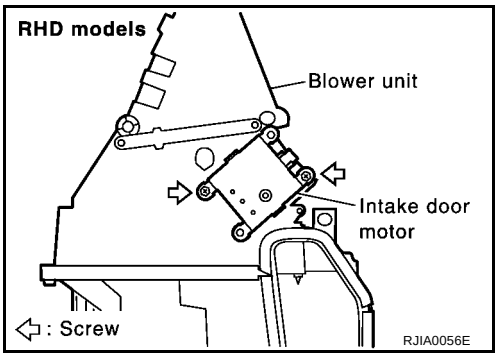
INTAKE DOOR MOTOR

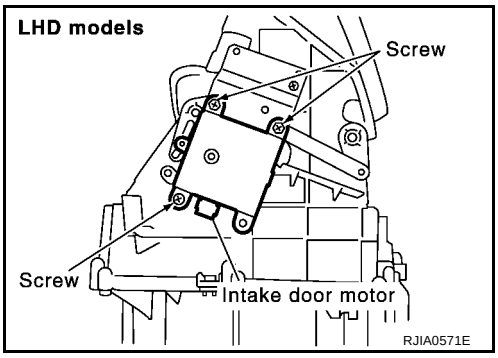
PFP:27730

Removal and Installation

EJS000XM

1. Remove the blower unit.
2. Remove the intake door motor from blower unit.





HEATER UNIT

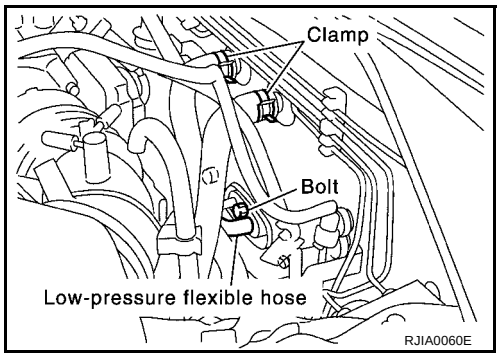
PFP:27100

Removal and Installation

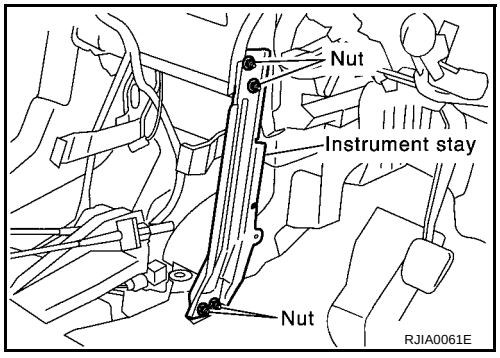
EJS001F9

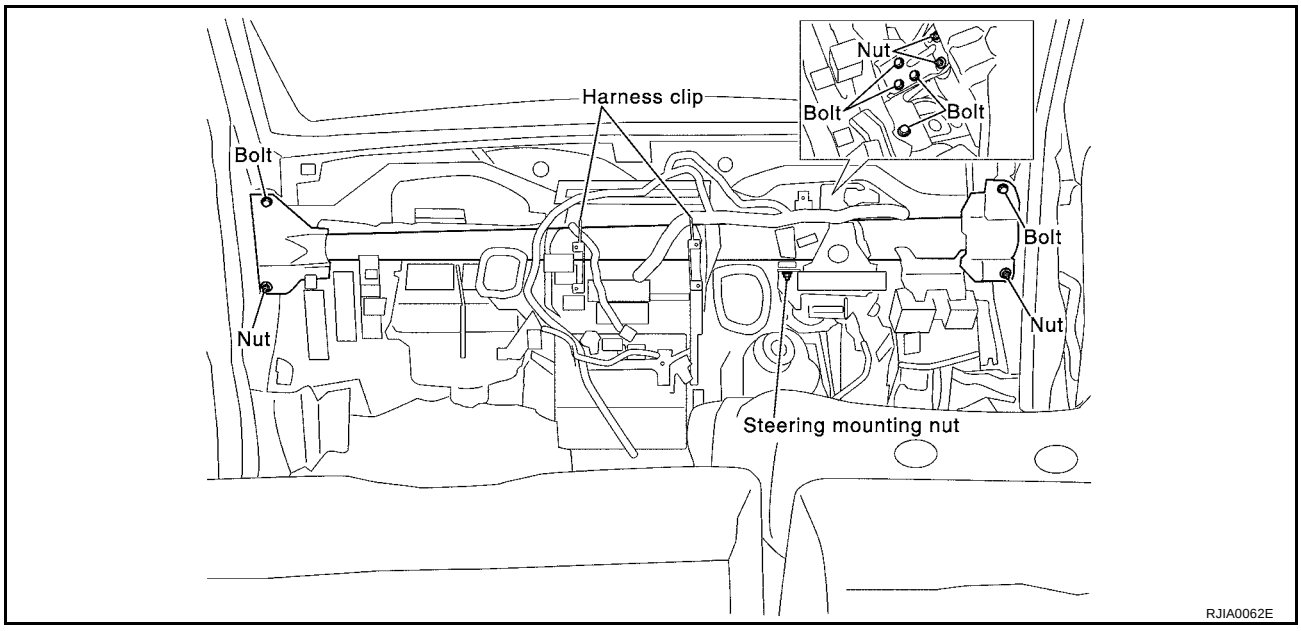
REMOVAL

1. Drain coolant from cooling system.
2. Disconnect two heater hoses from heater core pipe.
3. Remove the instrument panel.
4. Remove the blower unit.
5. Remove the clips of vehicle harness from steering member.



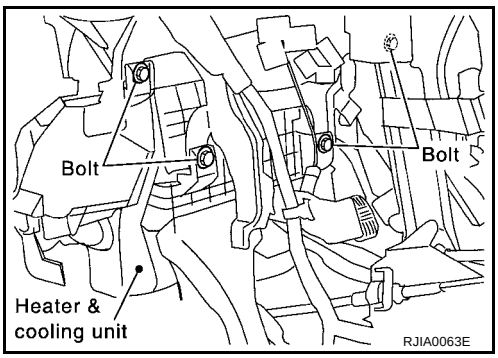
6. Remove the instrument stay.





NOTE:
This illustration is for RHD models. The layout for LHD models is symmetrically opposite.

7. Remove the mounting bolts from heater unit.
8. Remove the steering member.
9. Remove the heater unit.



INSTALLATION

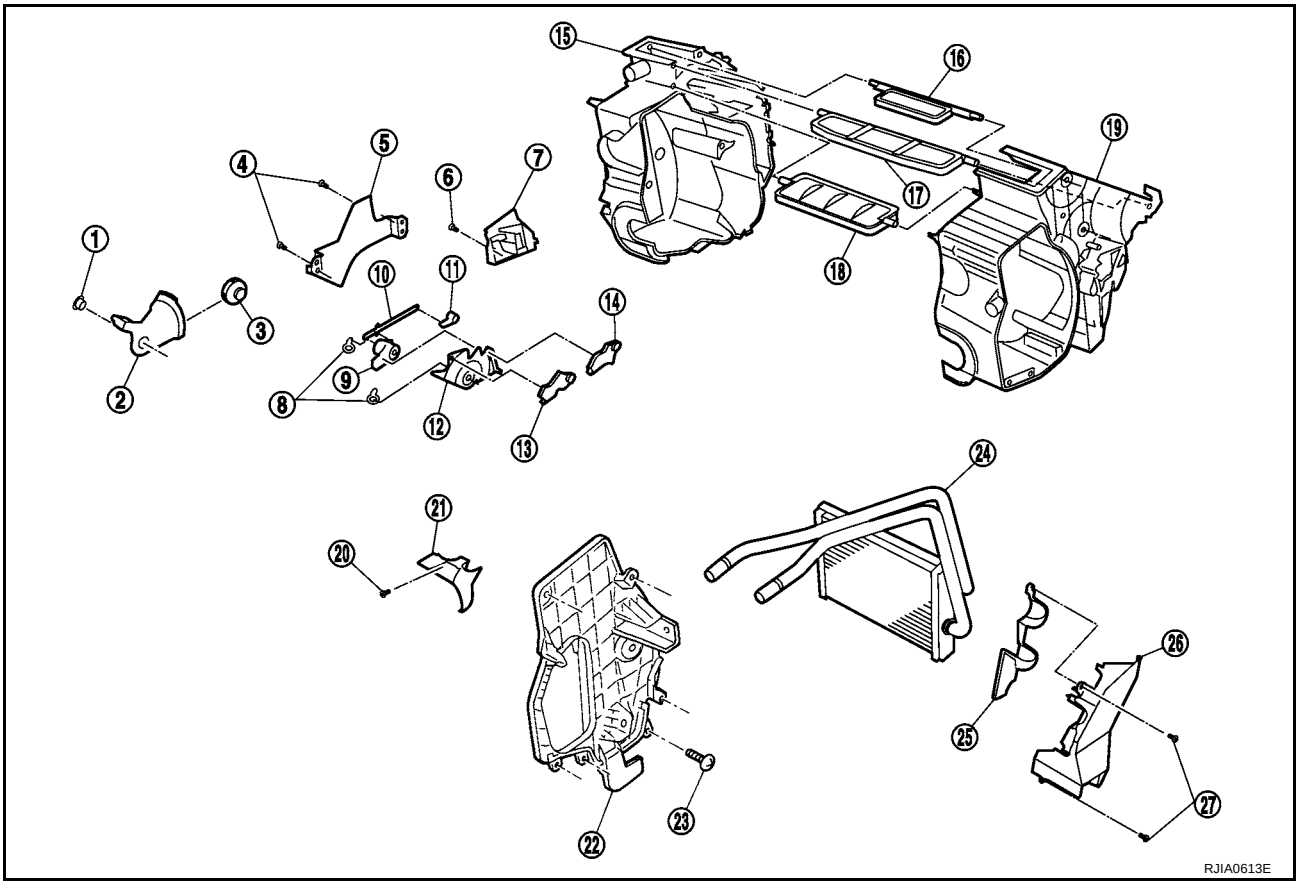
1. Installation is basically the reverse order of removal.

NOTE:
When filling radiator with coolant, refer to QR engine CO-9, "Changing Engine Coolant" , YD engine CO-29, "Changing Engine Coolant" .

Disassembly and Assembly

EJS001FA

NOTE:
This illustration is for RHD models. The layout for LHD models is symmetrically opposite.



1. Screw	2. Air mix door link	3. Air mix door gear
4. Screw	5. Cable bracket	6. Screw
7. Foot duct (right)	8. Screw	9. Ventilator door link 2
10. Ventilator door link 2	11. Ventilator door lever	12. Main link
13. Max cool door lever	14. Defroster door lever	15. Heater case (right)
16. Defroster door	17. Ventilator door	18. Max cool door
19. Heater case (left)	20. Screw	21. Heater pipe support
22. Evaporator cover	23. Screw	24. Heater core
25. Heater core cover	26. Foot duct (left)	27. Screw

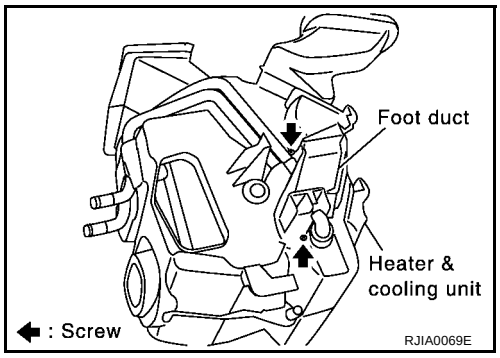
HEATER CORE

PFP:27140

Removal and Installation

EJS000XV

1. Remove the heater unit.
2. Remove the heater pipe support.
3. Remove the foot duct and heater core cover.
4. Remove the heater core from the heater unit.



MODE DOOR

PFP:27181

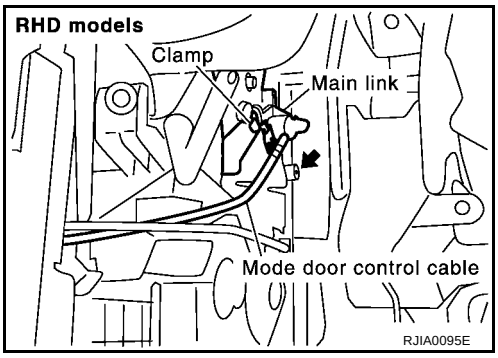
Control Linkage adjustment

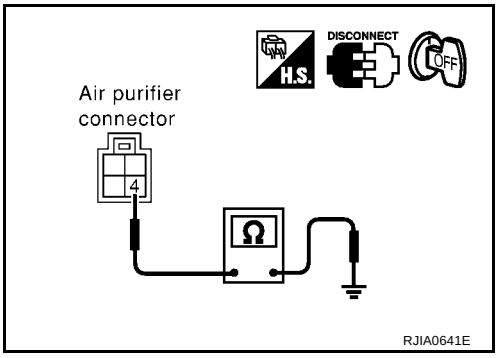
EJS001DA

MODE DOOR CONTROL CABLE

1. Turn the mode control dial to VENT position.
2. Move side link by hand and hold mode door in VENT position.
3. Pull on the cable cover in the direction of the arrow, then clamp it.

NOTE:
After positioning control cable, check that it operates properly.





AIR MIX DOOR

PFP:27180

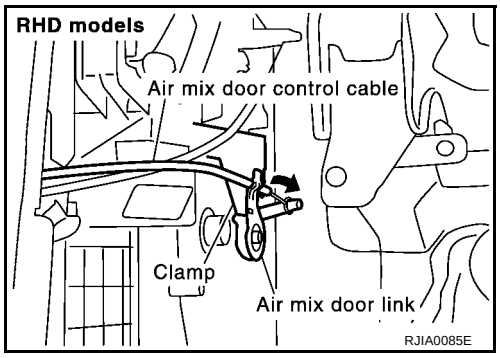
Control Linkage Adjustment

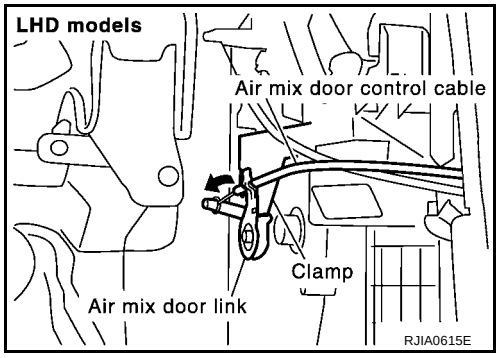
EJS001DB

AIR MIX DOOR CONTROL CABLE

1. Turn the temperature control dial to full cold position.
2. Move air mix door lever by hand and hold it at the full cold position.
3. Pull on the cable cover in the direction of the arrow, then clamp it.

NOTE:
After positioning control cable, check that it operates properly.





DUCTS AND GRILLES

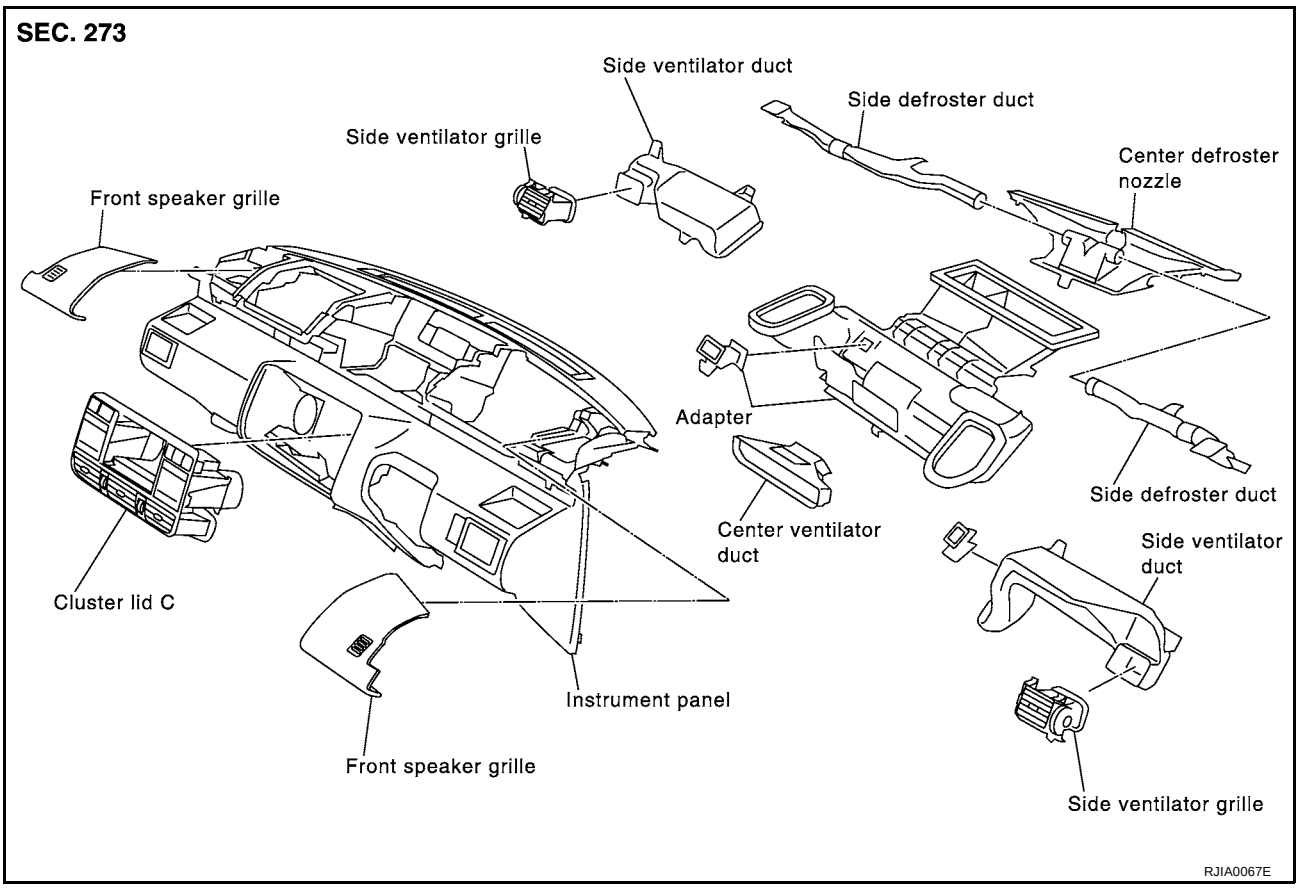
PFP:27860

Removal and Installation

EJS000XW

VENTILATOR DUCT, DEFROSTER NOZZLE AND DEFROSTER DUCTS

1. Remove the instrument panel.

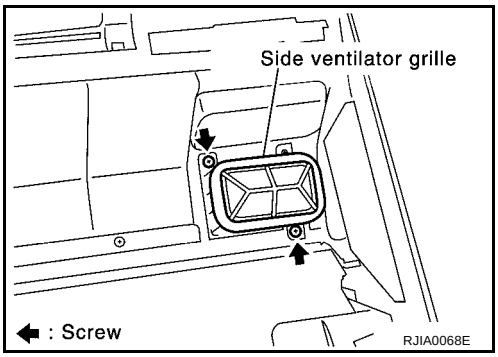


CENTER VENTILATOR GRILLE

1. Remove the cluster lid C. Refer to IP-5, "Removal and Installation" .

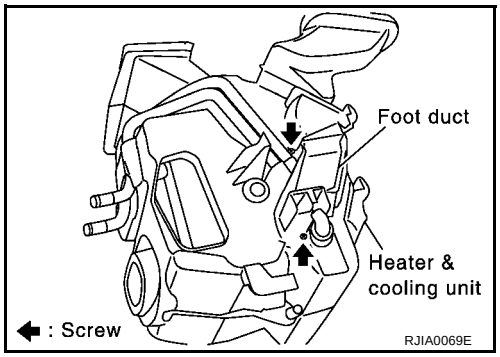
SIDE VENTILATOR GRILLE

1. Remove the instrument panel. Refer to IP-5, "Removal and Installation" .
2. Remove the side ventilator grille.



FOOT DUCT

1. Remove the heater unit. Refer to MTC-24, "HEATER UNIT" .
2. Remove the foot duct.



FLOOR DUCT

1. Remove the front seats. Refer to SE-7, "FRONT SEAT" .
2. Remove the instrument lower center panel. Refer to IP-5, "Removal and Installation" .
3. Remove the front floor duct.
4. Peel back the floor trim to a point where the floor duct is visible.
5. Remove the mounting screw and clip from the rear floor duct.
6. Remove the rear floor duct.