

SERVICE MANUAL

HEATER

MODEL S30 SERIES



NISSAN MOTOR CO., LTD.

TOKYO, JAPAN

FOREWORD

This **SERVICE MANUAL** includes complete information on operation, adjustment, removal and installation of the Heater used in the Model S30 series car.

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Heater

HEATER CONTROL

The heater control is operated by a switch and three levers (AIR VENT, TEMP and DEF-FLOOR) located on the center console. These levers operate the heater control cock and the three doors built into the heater unit to regulate air discharge.

- The blower has three speed positions which can be selected by the fan control switch for the register installed on the top of the blower housing.
- The air intake door is controlled by the AIR VENT lever.

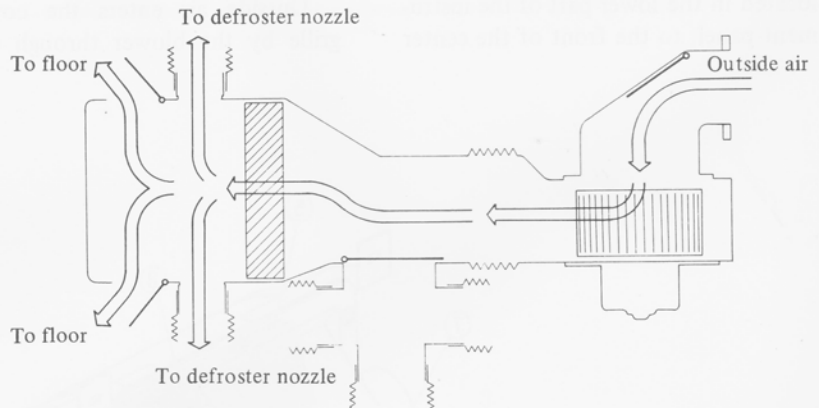
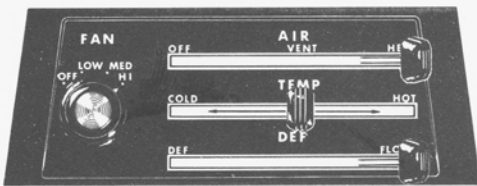
When the AIR VENT lever is moved to either VENT or HEAT position, the air intake door is opened allowing the outside air to flow into the cowl top grille and air intake case.

- The MODE door is controlled by the AIR VENT lever for ventilating or heating. When the AIR VENT lever is moved to the VENT position, all the air from the blower is discharged to the center and side vents. With the AIR VENT lever in the HEAT position, all the air is discharged to the heater core and flows into the DEF nozzle and floor area.

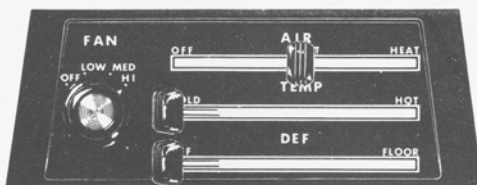
- The FLOOR door is controlled by the DEF-FLOOR lever to regulate the air flow from the heater unit. When the door is wide open, most of the air is discharged in the compartment (floor area), and a small amount is discharged to the DEF nozzle. When the door is closed, all the air is discharged to the DEF nozzle.
- The heater cock is controlled by the TEMP lever to regulate the flow of hot water discharged to the heater core. This heater cock is a flow control type and adequately controls the temperature of the discharged air according to the position of the TEMP lever.

AIR FLOW

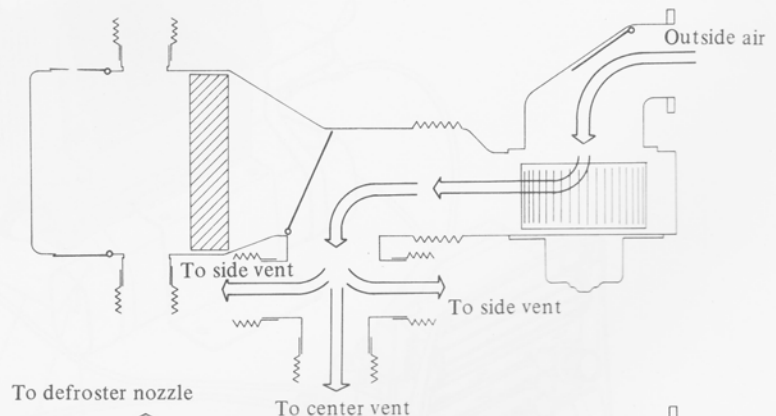
Heating



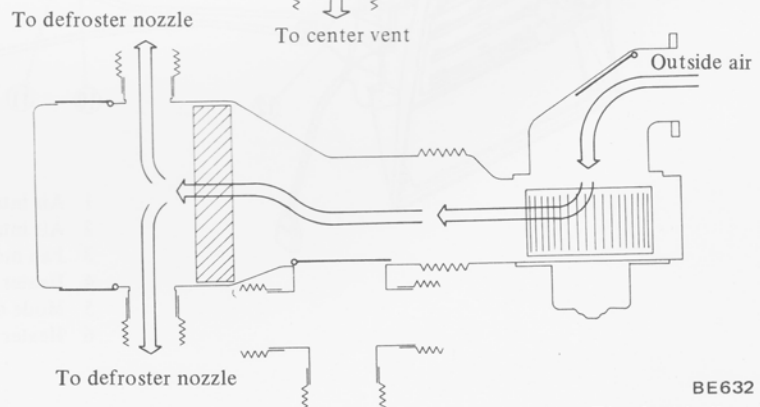
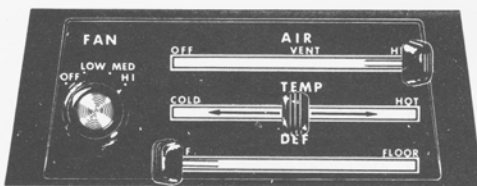
Air ventilating



Free
Free



Defrosting

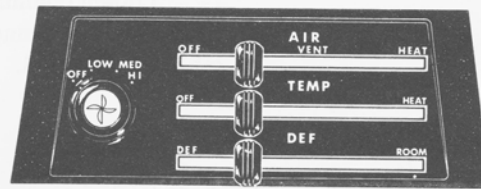


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Fig. 2 Air flow

Heater

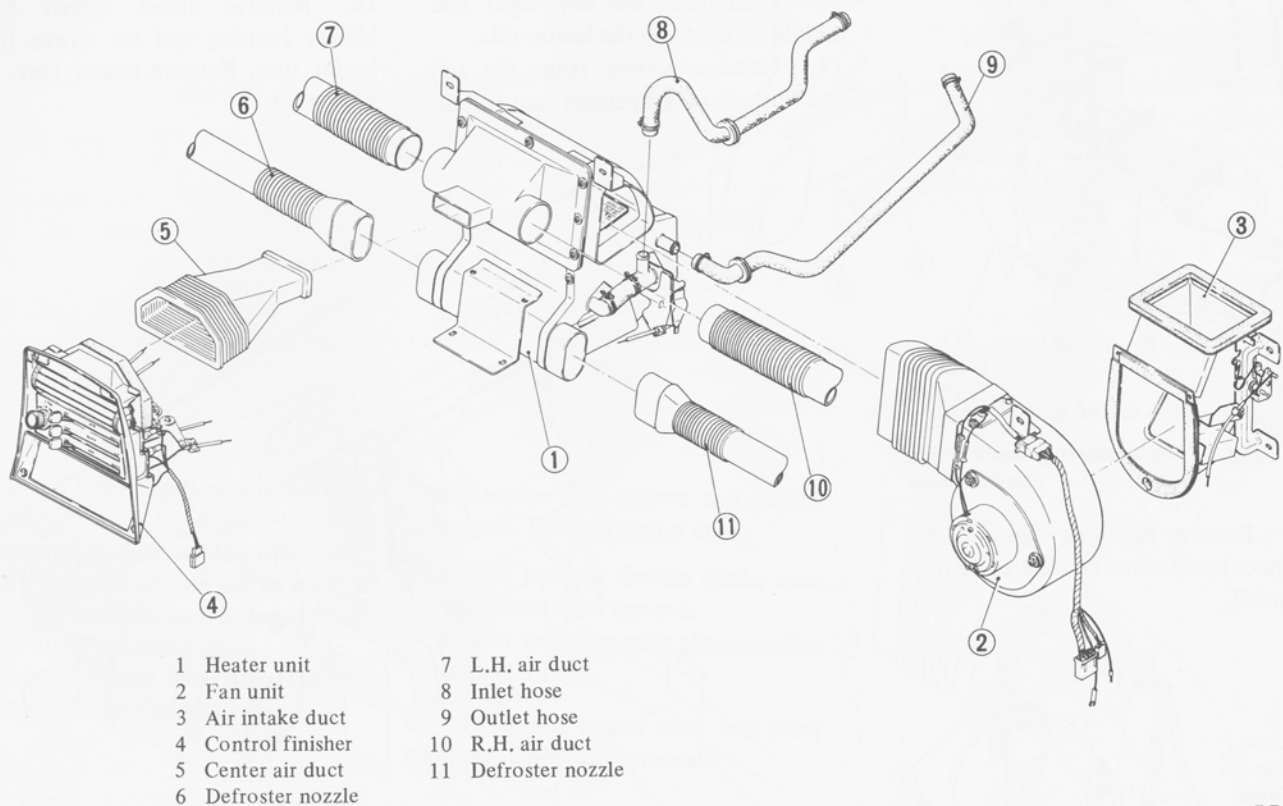
Note: The description and adjustments contained in this Service Manual are based on the heater used in the S30 cars destined for U.S.A. and Canada. The heater destined for other countries differs in the control finisher only, as shown in the following sketch.



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Fig. 3 Control finisher (Except U.S.A. and Canada)

REMOVAL AND INSTALLATION



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Fig. 4 Exploded view of heater unit

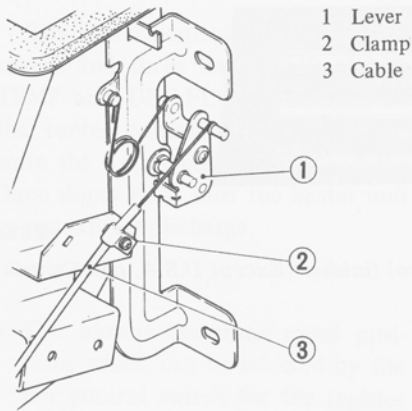
HEATER UNIT

1. Disconnect battery ground cable.
2. Drain engine coolant.
3. Disconnect instrument harness from engine compartment harness.
4. Disconnect instrument harness from turn signal switch.
5. Disconnect instrument harness

- from door switch, stop lamp switch, alarm buzzer, flasher unit, hazard flasher unit, horn relay, fuse block and cigarette lighter.
6. Disconnect cable from speedometer.
7. Remove steering wheel shell cover.

8. Remove instrument garnish with a cross-head screwdriver.
9. Remove floor console.
10. Disconnect resistor wires at connector.
11. Unfasten clamp and disconnect intake door control cable. See Figure 5.

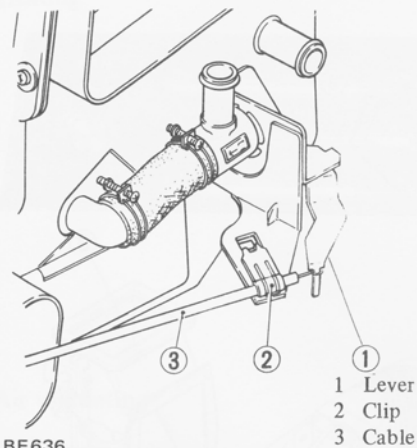
Heater



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Fig. 5 Disconnecting intake door control cable

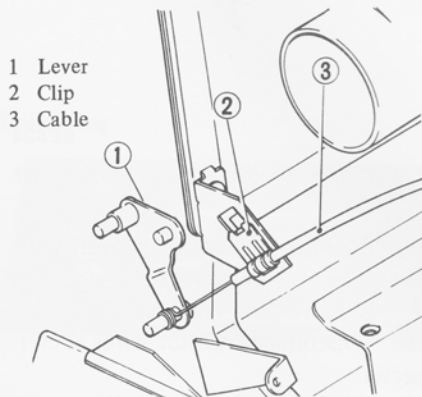
12. Remove retaining clip and disconnect heater cock control cable. See Figure 6.



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Fig. 6 Disconnecting heater cock control cable

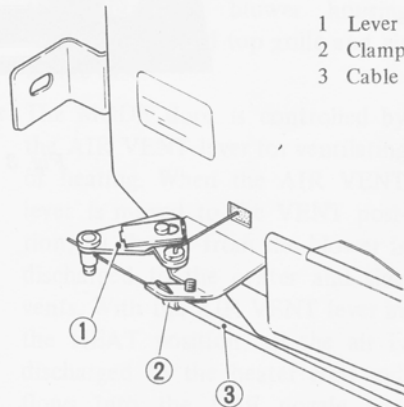
13. Remove retaining clip and disconnect mode door control cable. See Figure 7.



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Fig. 7 Disconnecting mode door control cable

14. Loosen retaining screw, unfasten clamp and disconnect floor control cable. See Figure 8.



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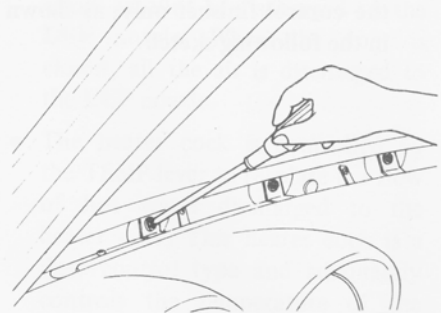
Fig. 8 Disconnecting floor door control cable

15. Disconnect defroster air ducts on nozzle side.

16. Disconnect the left, right and middle air ducts on the heater side.

17. Remove screws from the top and bottom of instrument panel. Also

remove screws on the bottom and both sides of console unit. Lift instrument panel slightly, and remove it toward the rear. See Figure 9.

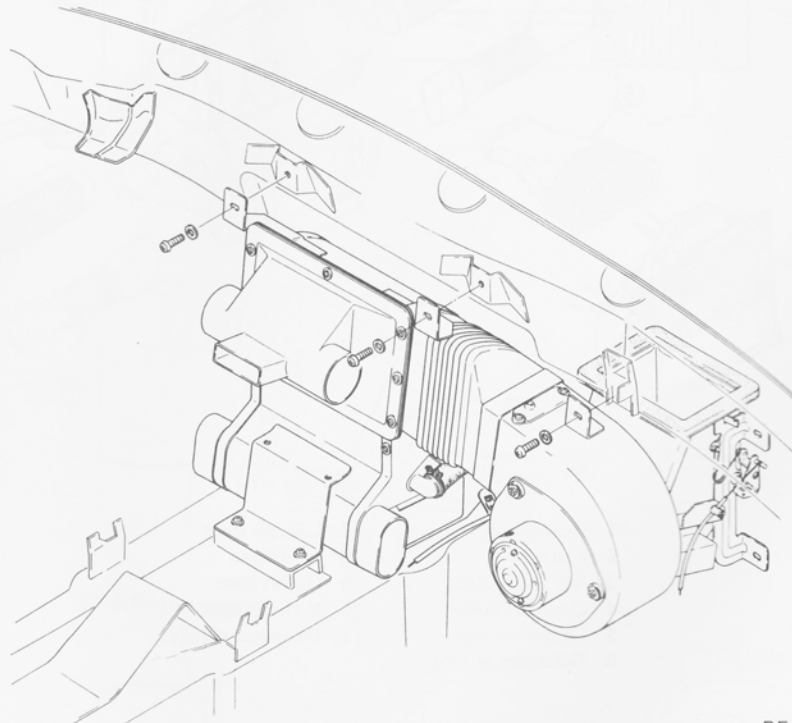


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Fig. 9 Removing instrument panel

18. Loosen hose clamps and disconnect inlet and outlet hoses.

19. Remove three screws from blower housing and six screws from heater unit. Remove heater unit. See Figure 10.



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Fig. 10 Removing heater unit

HEATER COCK AND CORE

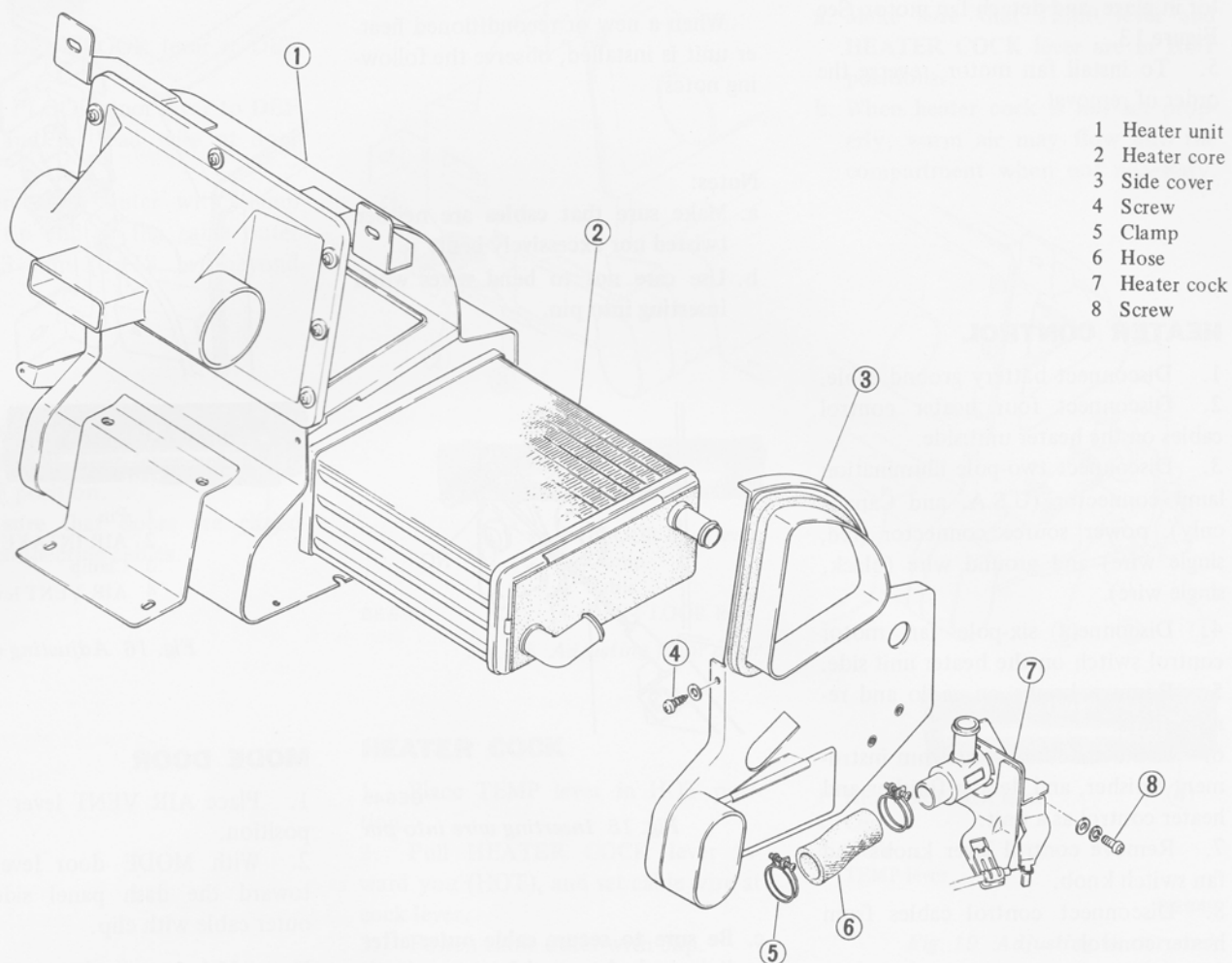
Disconnect heater unit from car as outlined in "HEATER UNIT".

Remove heater cock and core from heater unit.

20. Remove screws and disconnect defroster air ducts from heater unit.

21. To install heater unit, reverse the order of removal.

Heater



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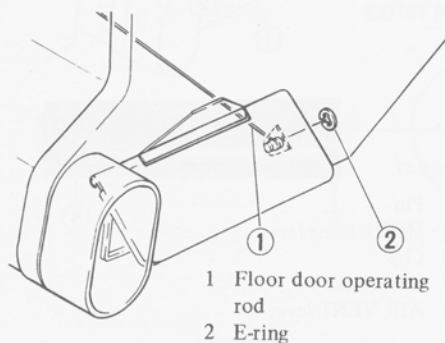
Fig. 11 Removing heater cock and core

1. Loosen hose clamp on the heater cock side.
2. Remove screws retaining heater cock in place, and remove heater cock.
3. Loosen hose clamp on the heater core side and disconnect hose.
4. Remove E-ring from floor door operating rod. See Figure 12.

5. Remove five screws and detach side cover. Pull out heater core.

Note: Be sure to detach heater core with floor door opened.
Failure to do so may give scratches to heater core.

6. To install heater cock and core, reverse the order of removal.

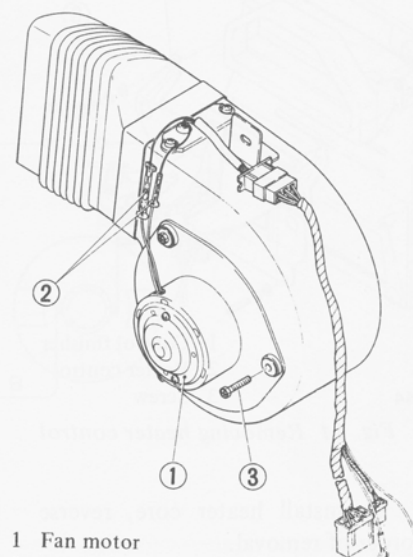


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Fig. 12 Removing E-ring

FAN MOTOR

1. Disconnect battery ground cable.
2. Remove six screws and detach glove box from instrument panel.
3. Disconnect fan motor lead wires at connector plugs. See Figure 13.



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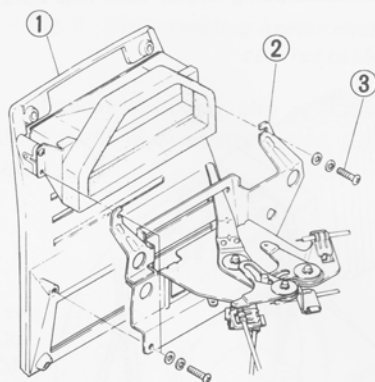
Fig. 13 Removing fan motor

Heater

4. Remove screws securing fan motor in place, and detach fan motor. See Figure 13.
5. To install fan motor, reverse the order of removal.

HEATER CONTROL

1. Disconnect battery ground cable.
2. Disconnect four heater control cables on the heater unit side.
3. Disconnect two-pole illumination lamp connector (U.S.A. and Canada only), power source connector (red, single wire) and ground wire (black, single wire).
4. Disconnect six-pole fan motor control switch on the heater unit side.
5. Remove knobs on radio and remove nuts.
6. Remove four screws from instrument finisher, and detach finisher and heater control as a unit.
7. Remove control lever knobs and fan switch knob.
8. Disconnect control cables from heater control.
9. Remove four screws and detach heater control from finisher. See Figure 14.



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- 1 Control finisher
- 2 Heater control
- 3 Screw

Fig. 14 Removing heater control

10. To install heater core, reverse the order of removal.

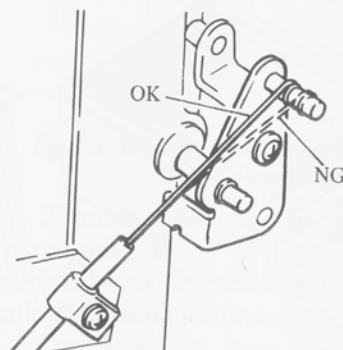
Note: When installing control assembly, use care not to twist or bent control cables.

ADJUSTMENT

When a new or reconditioned heater unit is installed, observe the following notes.

Notes:

- a. Make sure that cables are neither twisted nor excessively bent.
- b. Use care not to bend wires when inserting into pin.



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Fig. 15 Inserting wire into pin

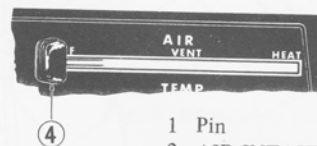
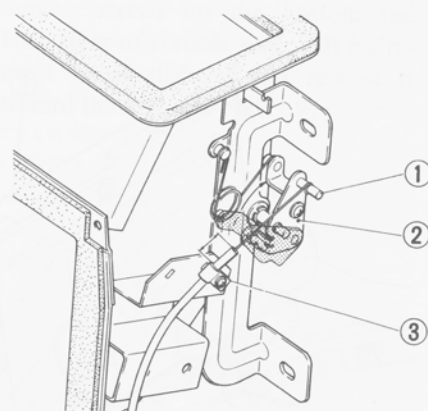
- c. Be sure to secure cable outer after it is pushed toward heater control.
- d. Tighten clamps and clips securely and make sure that control lever functions properly.

AIR INTAKE DOOR

1. Place AIR VENT lever in OFF position.
2. With AIR INTAKE door lever moved toward the dash panel side, fasten cable outer with clamp securely.

Notes:

- a. Make sure that AIR VENT lever and AIR INTAKE door lever are in OFF position.
- b. Make sure that the tip end of cable outer is not exposed beyond 10 mm (0.394 in) at clamp location.



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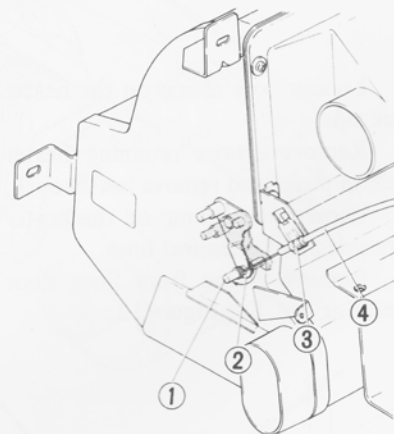
- 1 Pin
- 2 AIR INTAKE door lever
- 3 Clamp
- 4 AIR VENT lever

Fig. 16 Adjusting air intake door

MODE DOOR

1. Place AIR VENT lever in HEAT position.
2. With MODE door lever moved toward the dash panel side, fasten outer cable with clip.

Note: Make sure that AIR VENT lever and MODE door lever are in HEAT positions.



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- 1 Pin
- 2 MODE door lever
- 3 Clip
- 4 Cable
- 5 AIR VENT lever

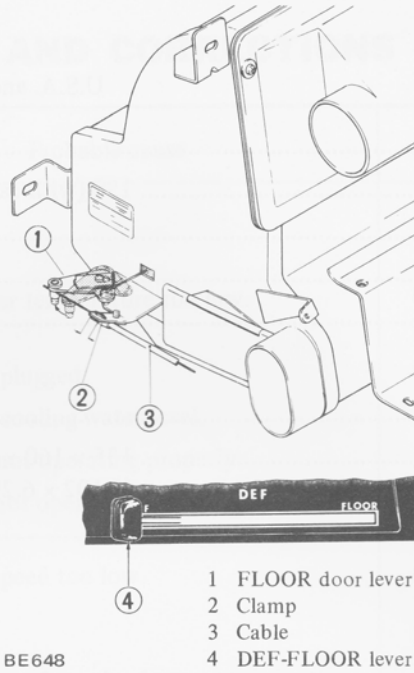
Fig. 17 Adjusting mode door

FLOOR DOOR

1. Place DEF-FLOOR lever in DEF position.
2. Move FLOOR door lever to DEF position, and set lead wire at door lever.
3. Fasten cable outer with clamp with the tip end of the cable outer exposed 3 mm (0.118 in) beyond clamp.

Notes:

- a. Make sure that DEF-FLOOR lever and FLOOR door lever are moved to DEF position.
- b. Make sure that doors are closed when connecting cables.

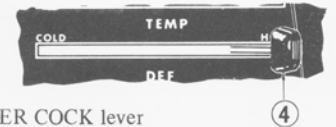
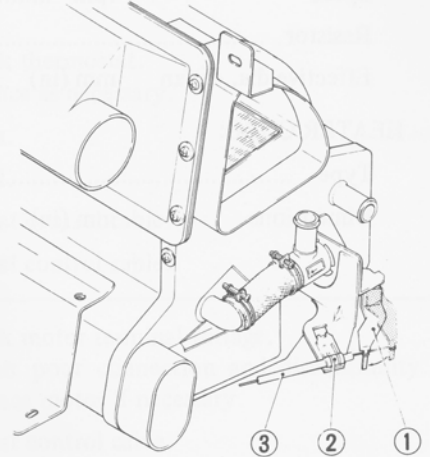


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Fig. 18 Adjusting floor door

Notes:

- a. Make sure that TEMP lever and HEATER COCK lever are in HOT positions.
- b. When heater cock is not set properly, warm air may flow into the compartment when not necessary.



- 1 HEATER COCK lever
- 2 Clip
- 3 Cable
- 4 TEMP lever

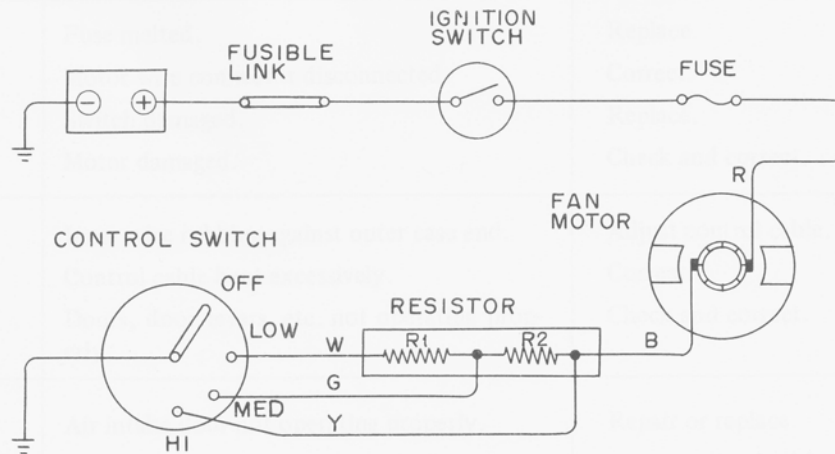
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Fig. 19 Adjusting heater cock

HEATER COCK

1. Place TEMP lever in HOT position.
2. Pull HEATER COCK lever toward you (HOT), and set cable wire at cock lever.
3. Fasten cable outer with clip.

HEATER CIRCUIT



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Fig. 20 Heater circuit

SPECIFICATIONS

		U.S.A. and Canada	Except U.S.A. and Canada
BLOWER:			
Air flow	m ³ (cu ft)	6 (212)/min. d-c 12V	
Input	W	150 (with case built in)	80 (with case built in)
Speed	rpm	3,000	
Resistor		Nichrome-plated, spiral, 3-stage	
Effective dia. of fan	mm (in)	73.2 × 140 (2.882 × 5.512)	

HEATER CORE:			
Type		Corrugate, fin type	
Dimensions	mm (in)	155 × 160 × 66	155 × 132 × 64
		(6.102 × 6.299 × 2.598)	(6.102 × 5.197 × 2.520)

TROUBLE DIAGNOSES AND CORRECTIONS

Condition	Probable cause	Corrective action
Insufficient heating performance. No heated air discharged.	Cooling water temperature too low. Heater core plugged. Insufficient cooling water level. Water cock not operating properly. Mode door not operating properly.	Check thermostat. Replace as necessary. Clean. Refill. Adjust control cable. Adjust control cable.
Insufficient air flow to floor.	Fan motor speed too low. Floor door and mode door not operating properly.	Check motor terminal voltage. Repair poor connection and discontinuity. Replace motor if necessary. Adjust control cable.
Insufficient defrosting performance. Cold air discharged.	Refer to "No heated air discharged".	
Insufficient air flow to defroster.	Floor door and mode door not operating properly (or seal damaged). Defroster nozzle plugged. Leak at defroster duct-to-nozzle connection.	Adjust control cable. Clean. Correct.
Heated air discharged with lever in VENT.	Water cock not operating properly. Mode door not operating properly (or seal damaged).	Adjust control cable. Adjust control cable.
Failure of fan to run.	Fuse melted. Motor wire connector disconnected. Switch damaged. Motor damaged.	Replace. Correct. Replace. Check and correct.
Control lever drags.	Inner wire rubbing against outer case end. Control cable bent excessively. Doors, door levers, etc. not operating properly.	Adjust control cable. Correct. Check and correct.
Outside air comes in with fan in OFF.	Air intake door not operating properly. Control cable out of adjustment.	Repair or replace. Adjust control cable.
Noise from fan motor.	Unusual noise from fan motor.	Check and tighten loose bolts.



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