SECTION 1A

HEATER AND VENTILATION

CAUTION: This vehicle is equipped with Supplemental Inflatable Restraint (SIR). Refer to CAUTIONS in Section 9J under "ON-VEHICLE SERVICE" and the SIR Component and Wiring Location view in Section 9J before performing service on or around SIR components or wiring. Failure to follow CAUTIONS could result in possible air bag deployment, personal injury, or otherwise unneeded SIR system repairs.

NOTICE: Always use the correct fastener in the proper location. When you replace a fastener, use ONLY the exact part number for that application. General Motors will call out those fasteners that require a replacement after removal. General Motors will also call out the fasteners that require thread lockers or thread sealant. UNLESS OTHERWISE SPECIFIED, do not use supplemental coatings (paints, greases, or other corrosion inhibitors) on threaded fasteners or fastener joint interfaces. Generally, such coatings adversely affect the fastener torque and joint clamping force, and may damage the fastener. When you install fasteners, use the correct sequence and tightening specifications. Following these instructions can help you avoid damage to parts and systems.

CONTENTS

GENERAL DESCRIPTION

HEATER SYSTEM

The heater system delivers warm air to the passenger compartment once the engine reaches normal operating temperature. Outside air and air from the passenger compartment are passed through the heater core. Hot engine coolant heats this air, which travels to the passenger compartment via the heater system vents.

The temperature of the air delivered to the passenger compartment is regulated by the temperature control lever. This lever opens and closes the air mix door, controlling the amount of air which passes through and around the heater core.

CONTROLS

Temperature Control Lever

Figure 1

This lever controls the amount of air flow through and/or around the heater core, regulating the temperature of the air entering the vehicle.

Mode Control Lever

Figures 1 and 2

The air selector or mode control lever routes air through the various ducts in the passenger compartment. The air selector lever operates as follows:

1. Ventilation—In this position, air is discharged from the upper air outlets.

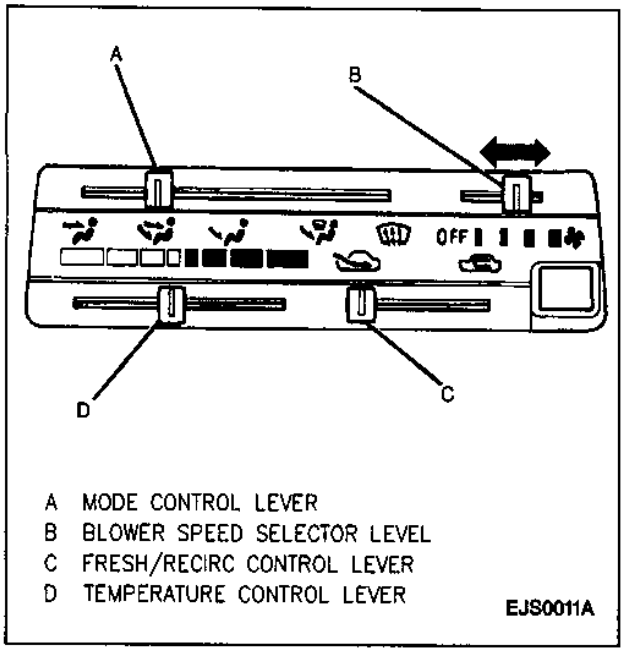


Figure 1—Heater Control Unit

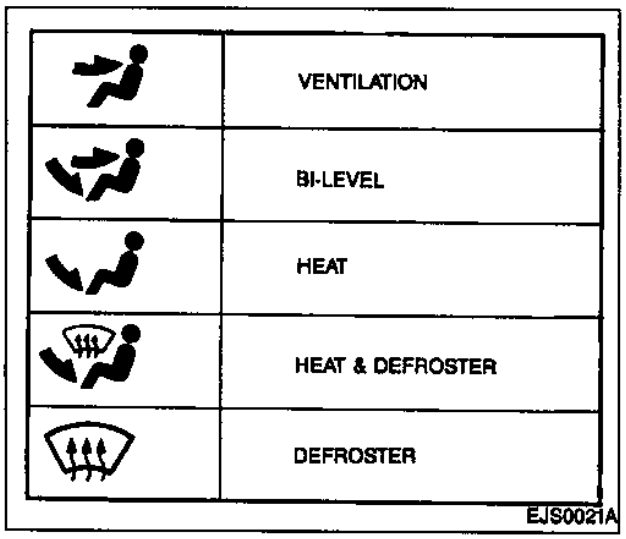


Figure 2—Heater/Ventilation System Air Flow Modes

2. Bi-level—The air flow is divided between the upper instrument panel outlets and the floor.
3. Heat—In this position, air is directed toward the floor outlet, along with a small amount to the windshield.
4. Defrost—With the air selector lever in the "Defrost" position, most of the air is directed to the front windshield, with a small amount delivered to the side windows and to the floor.

Blower Motor Lever

Figure 1

This lever operates the four-speed blower fan, controlling the volume of air reaching the passenger compartment.

Fresh/Recirc Control Lever

Figure 1

This lever is used to dictate whether fresh and/or recirculated air is admitted to the heater system.

AIR DISTRIBUTION SYSTEM

Refer to Figures 3 through 6 for details on the operation of the air distribution system.

DUCTS AND OUTLETS

Figure 7

Air flow control doors, operated by the mode control lever, route the air (either heated or unheated, fresh or outside) through the various ducts and to various outlets. Ducts include right, center and left instrument panel ducts, right and left side window defroster ducts, windshield defroster duct, a center floor duct, and rear seating area floor ducts located under the front seats. Outlets include right, center and left instrument panel outlets, right and left side window outlets, right and left windshield defroster outlets, and right and left rear seating area floor outlets.

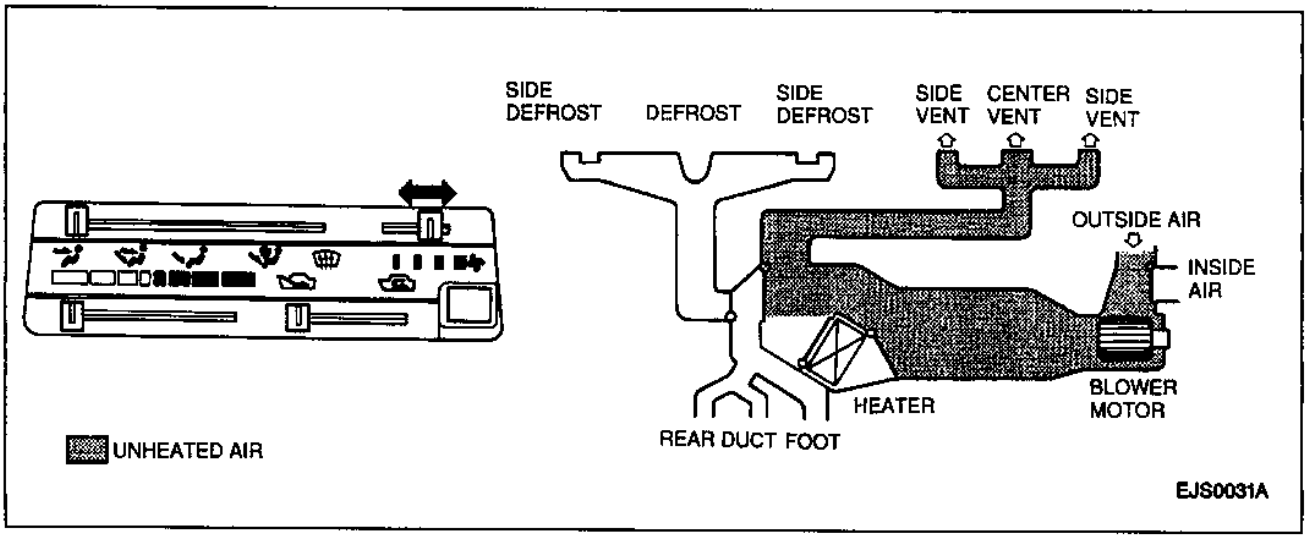


Figure 3—Forced Ventilation Operation

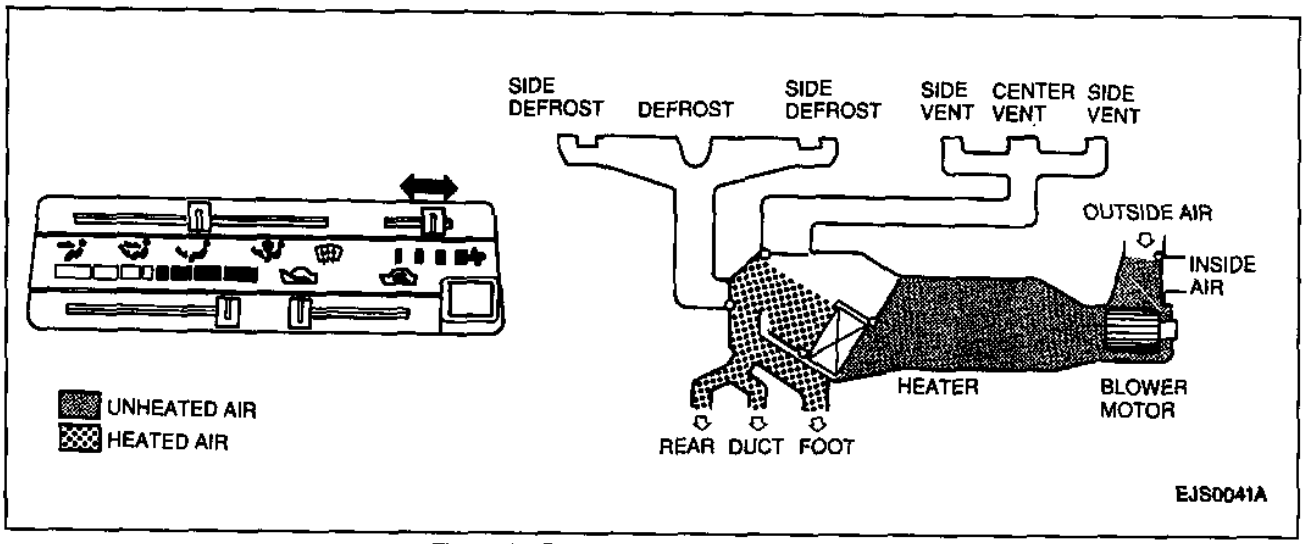


Figure 4—Outside Air (Introduced Heating)

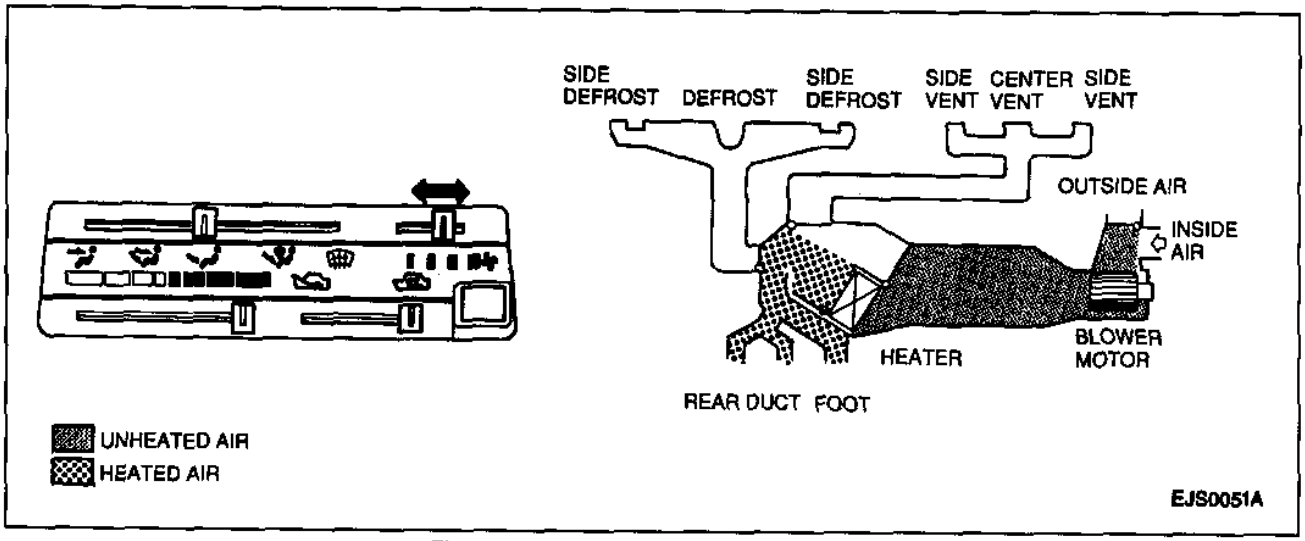


Figure 5—Inside Air (Recirculated Heating)

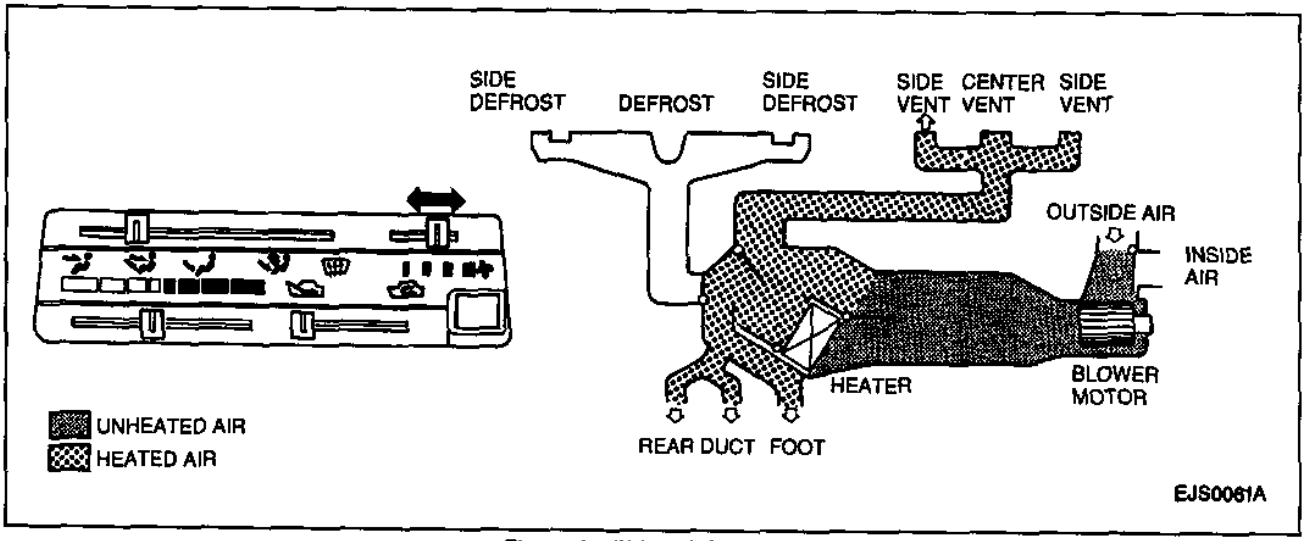
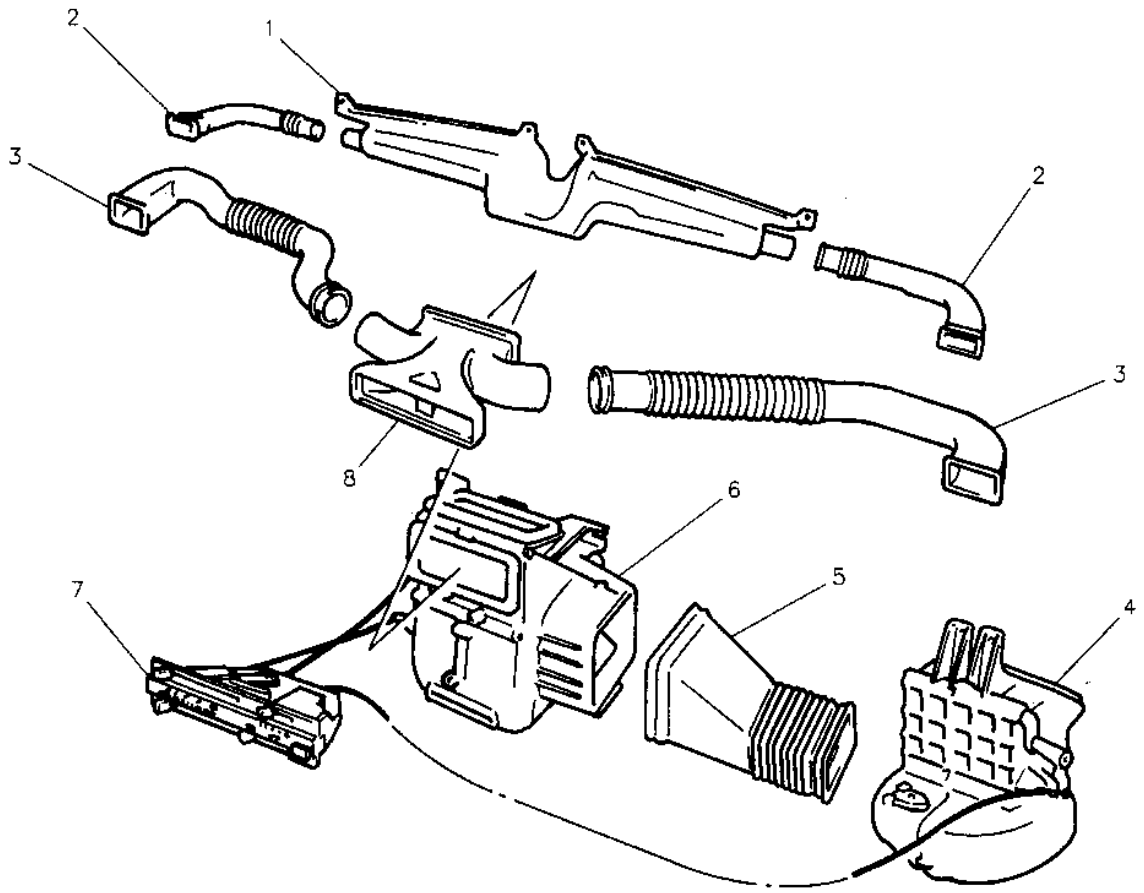


Figure 6—Bi-Level Operation



1 WINDSHIELD DEFROSTER DUCT
2 SIDE WINDOW DEMISTER DUCTS
3 LEFT/RIGHT INSTRUMENT PANEL DUCTS
4 BLOWER MOTOR CASE
5 BLOWER MOTOR CASE-TO-HEATER CASE DUCT
6 HEATER CASE
7 HEATER CONTROL UNIT
8 CENTER INSTRUMENT PANEL DUCT

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Figure 7—Heater and Ventilation System

VENTILATION

Figure 8

The body ventilation system provides the passenger compartment with fresh, outside air which is routed through the same vents as the heated air. The primary fresh air intake is located within the cowl panel. Air is drawn into the interior of the vehicle from the intake grille and is drawn out from the ventilator outlets in the rear body sides.

DIAGNOSIS

FUNCTIONAL TEST

Before beginning service of the heater/ventilation system, perform this functional test. To obtain accurate test results, the engine must be idling and should be at normal operating temperature with the thermostat fully open. The upper radiator hose should feel hot to the touch when the thermostat is open.

1. Set the fresh/recirc control lever for outside air. Set the temperature lever all the way to cool (left). Set the blower motor switch to its highest speed.
2. Systematically move the mode control lever through its various positions, noting what vents the air is being expelled from at each setting. In the bi-level mode the air should come from the instrument panel vents and from the floor; in the defroster mode most of the air should be directed at the windshield, with some air directed at the floor vent, and so on.
3. Make sure that the points where the air is being directed correspond with the symbols above each mode control lever position. In addition, the air coming into the passenger compartment should be approximately the same temperature as the temperature outside the vehicle.
4. Set the temperature control lever all the way to hot (right). The temperature of the air entering the passenger compartment should now be much warmer than the air outside the vehicle.
5. Repeat steps 1 through 3 in this "heater" mode, noting what vents the air is being expelled from at each setting.
6. Move the blower motor lever from its highest setting gradually down to its lowest. There should be a noticeable decrease in the forcefulness with which air is being expelled from the vents, and a decrease in blower noise at each successive setting.

If the functional test indicates improper air delivery or a failure to shift modes when the shift lever is moved, refer to the diagnostic charts 1 through 5.

Diagnostic procedures for the blower motor resistor and blower motor switch can be found in SECTION 8A.

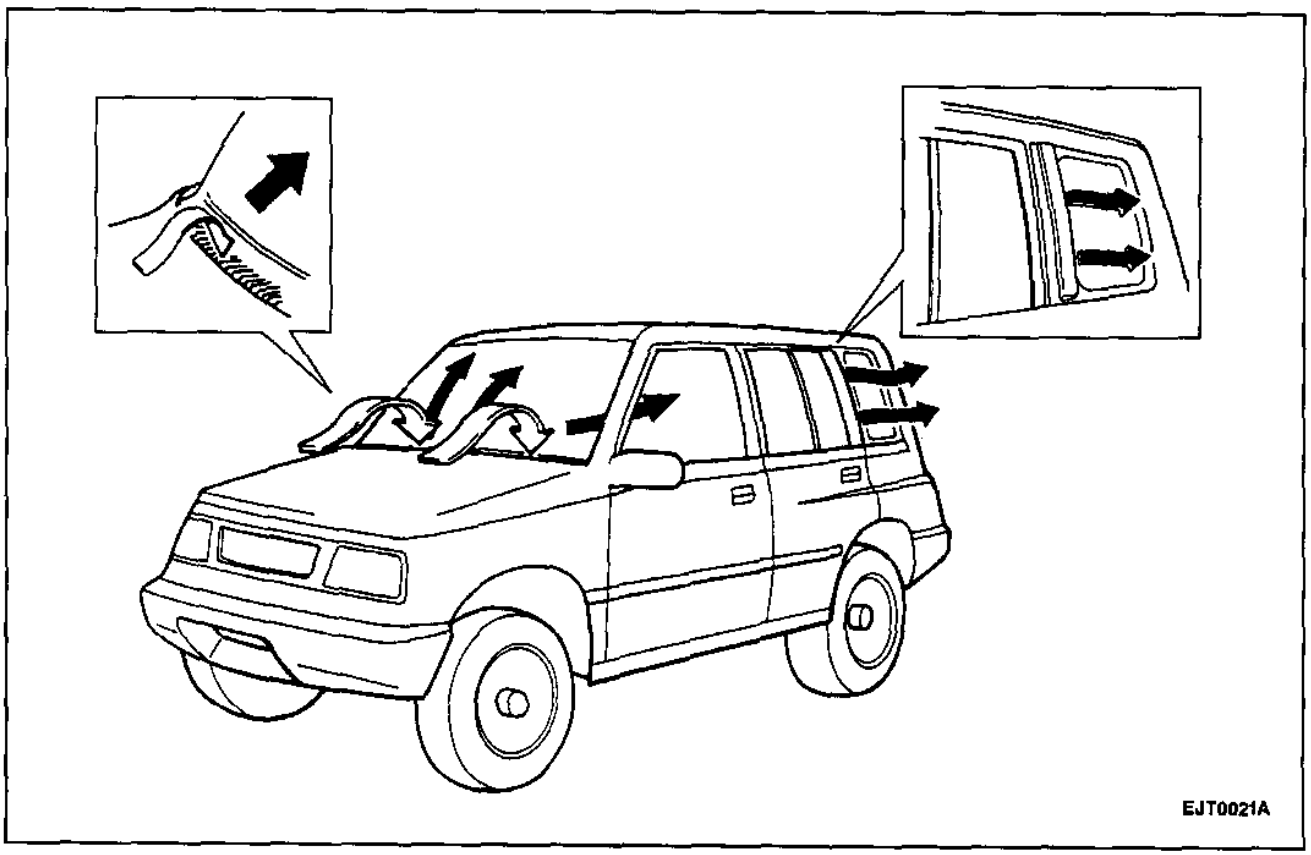
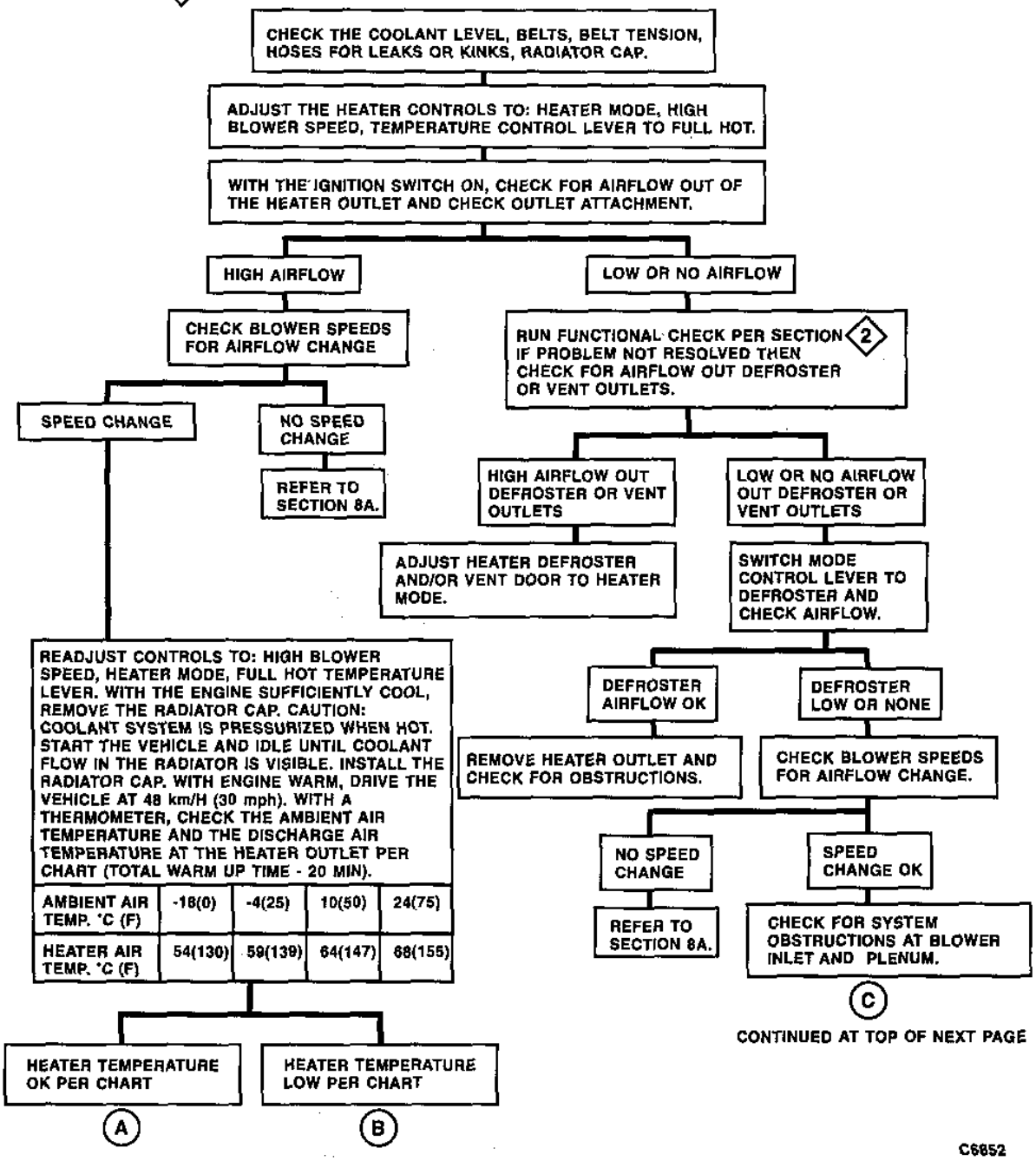


Figure 8—Body Ventilation

1 INSUFFICIENT HEATING OR DEFROSTING



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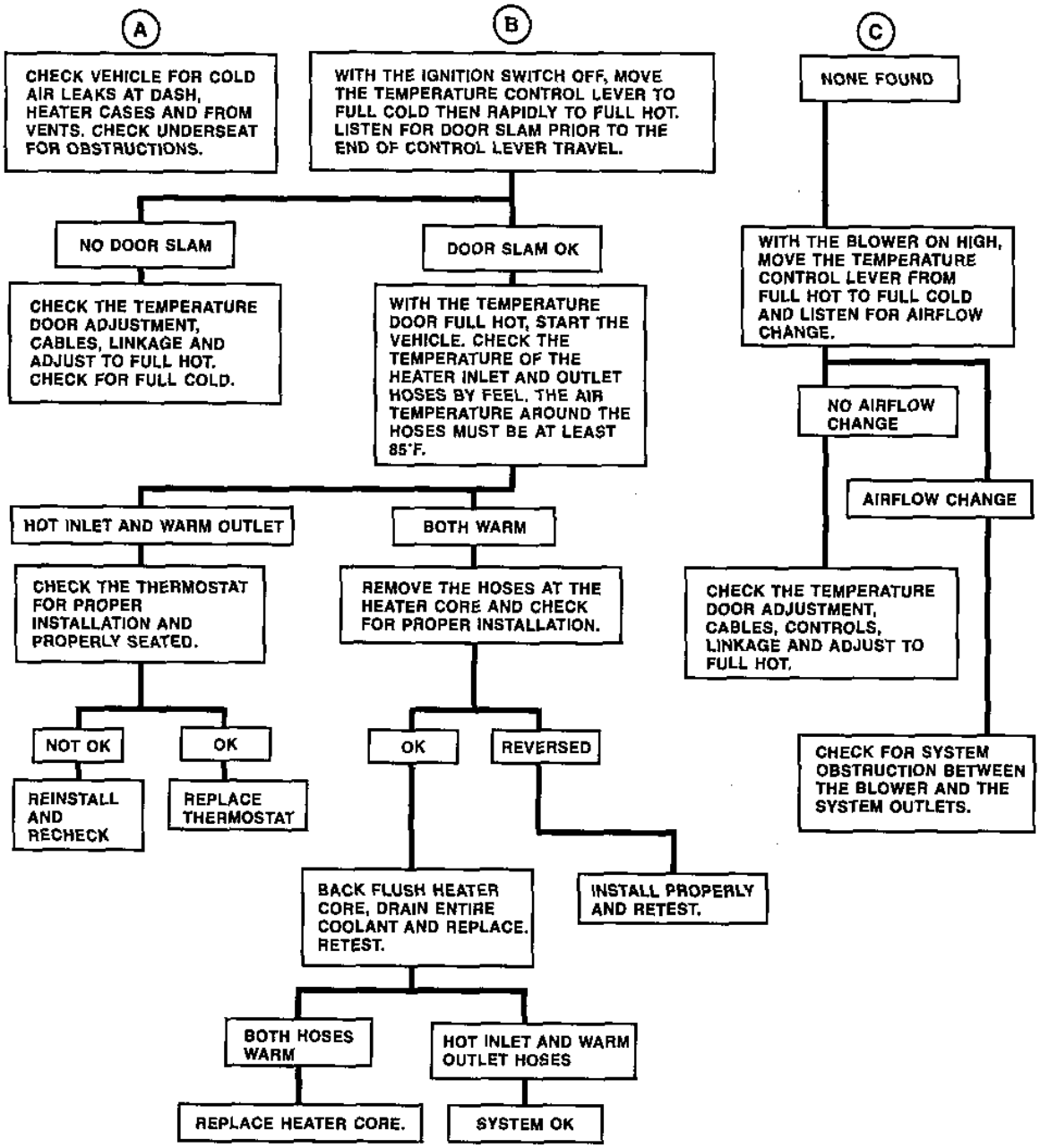

A
CHECK VEHICLE FOR COLD AIR LEAKS AT DASH, HEATER CASES AND FROM VENTS. CHECK UNDERSEAT FOR OBSTRUCTIONS.
NO DOOR SLAM
CHECK THE TEMPERATURE DOOR ADJUSTMENT, CABLES, LINKAGE AND ADJUST TO FULL HOT. CHECK FOR FULL COLD.
B
WITH THE IGNITION SWITCH OFF, MOVE THE TEMPERATURE CONTROL LEVER TO FULL COLD THEN RAPIDLY TO FULL HOT. LISTEN FOR DOOR SLAM PRIOR TO THE END OF CONTROL LEVER TRAVEL.
DOOR SLAM OK
WITH THE TEMPERATURE DOOR FULL HOT, START THE VEHICLE. CHECK THE TEMPERATURE OF THE HEATER INLET AND OUTLET HOSES BY FEEL. THE AIR TEMPERATURE AROUND THE HOSES MUST BE AT LEAST 85°F.
HOT INLET AND WARM OUTLET
CHECK THE THERMOSTAT FOR PROPER INSTALLATION AND PROPERLY SEATED.
NOT OK
REINSTALL AND RECHECK
OK
REPLACE THERMOSTAT
BOTH WARM
REMOVE THE HOSES AT THE HEATER CORE AND CHECK FOR PROPER INSTALLATION.
OK
BACK FLUSH HEATER CORE, DRAIN ENTIRE COOLANT AND REPLACE. RETEST.
BOTH HOSES WARM
REPLACE HEATER CORE.
HOT INLET AND WARM OUTLET HOSES
SYSTEM OK
REVERSED
INSTALL PROPERLY AND RETEST.
C
NONE FOUND
WITH THE BLOWER ON HIGH, MOVE THE TEMPERATURE CONTROL LEVER FROM FULL HOT TO FULL COLD AND LISTEN FOR AIRFLOW CHANGE.
NO AIRFLOW CHANGE
CHECK THE TEMPERATURE DOOR ADJUSTMENT, CABLES, CONTROLS, LINKAGE AND ADJUST TO FULL HOT.
AIRFLOW CHANGE
CHECK FOR SYSTEM OBSTRUCTION BETWEEN THE BLOWER AND THE SYSTEM OUTLETS.

C6853

2 IMPROPER AIR DELIVERY OR NO MODE SHIFT

WITH THE VEHICLE ON AND THE ENGINE WARM, RUN THE FOLLOWING FUNCTIONAL CHECKS. CHECK CABLES FOR EXCESSIVE EFFORT OR BINDING.

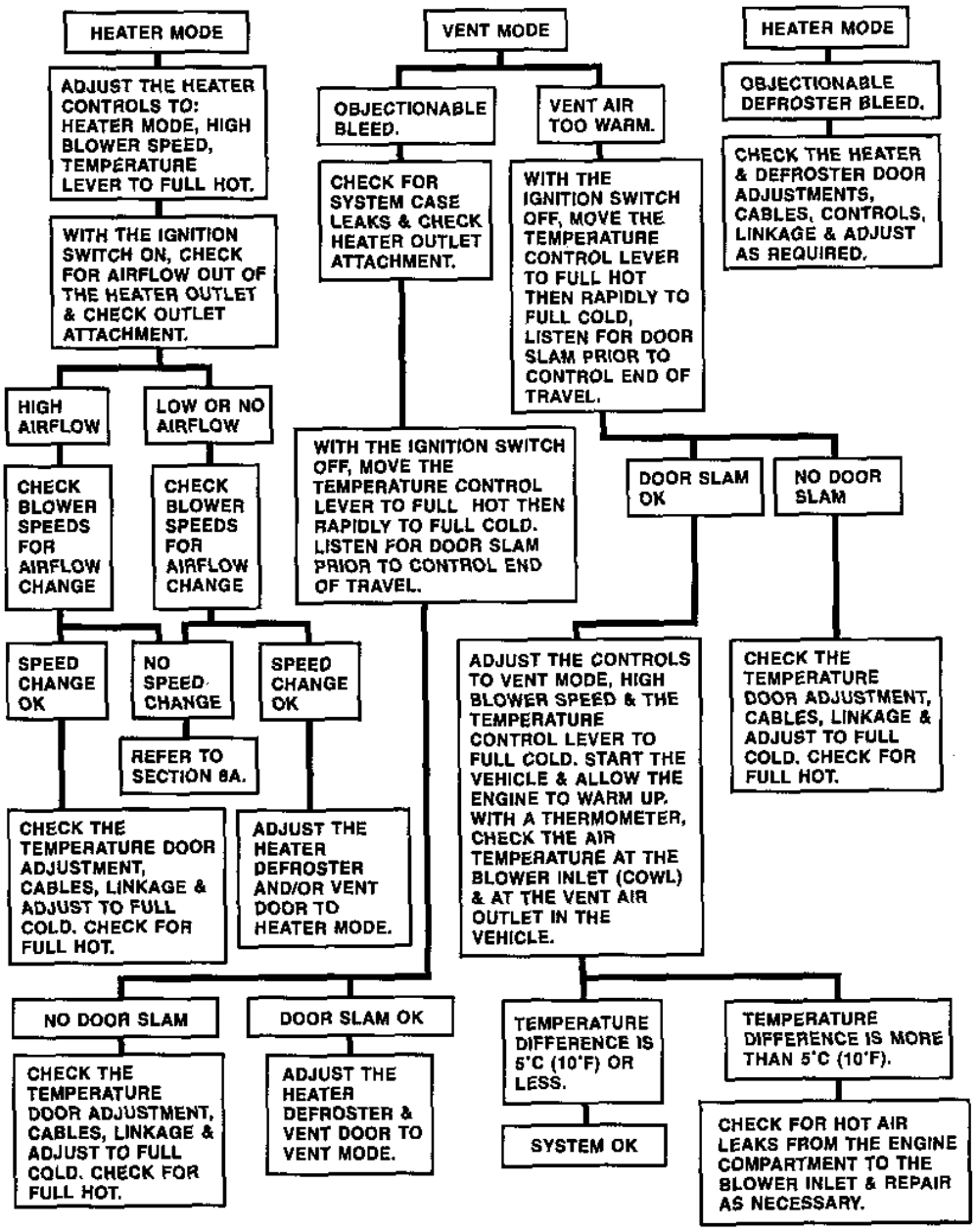
MODE	TEMP LEVER	FAN SWITCH	BLOWER SPEED	POWER VENT OUTLET	HEATER OUTLET	DEFR. OUTLET	SIDE WINDOW DEFOGGER OUTLET
VENT	COLD	OFF	OFF	NO AIRFLOW	NO AIRFLOW	NO AIRFLOW	NO AIRFLOW
VENT	COLD	HIGH	HIGH	AMBIENT AIRFLOW	NO AIRFLOW	NO AIRFLOW	NO AIRFLOW
HEATER	COLD TO HOT	HIGH	HIGH	NO AIRFLOW	COLD TO HOT AIRFLOW	MINIMUM COLD TO HOT AIRFLOW	MINIMUM COLD TO HOT AIRFLOW
DEFROSTER	COLD TO HOT	HIGH	HIGH	NO AIRFLOW	MINIMUM COLD TO HOT AIRFLOW	COLD TO HOT AIRFLOW	MINIMUM COLD TO HOT AIRFLOW

CHECK DOOR AFFECTED AT UNIT FOR CABLE CONNECTED AND CABLE SHEATH RETAINED.

- OK
  - DISCONNECT CABLE AT DOOR AND CHECK DOOR TRAVEL AND EFFORT.
    - NOT OK
      - REPAIR AS NECESSARY.
    - OK
      - CHECK CABLE TRAVEL BY MOVING CONTROL LEVER.
        - TRAVEL OK
          - REINSTALL AND RECHECK
        - NO TRAVEL
          - CHECK CABLE ATTACHMENT AT CONTROL AND CHECK FOR BROKEN CONTROL. REPAIR AS NECESSARY.
- NOT OK
  - REPAIR AS NECESSARY.

C6854

3 TOO MUCH HEAT



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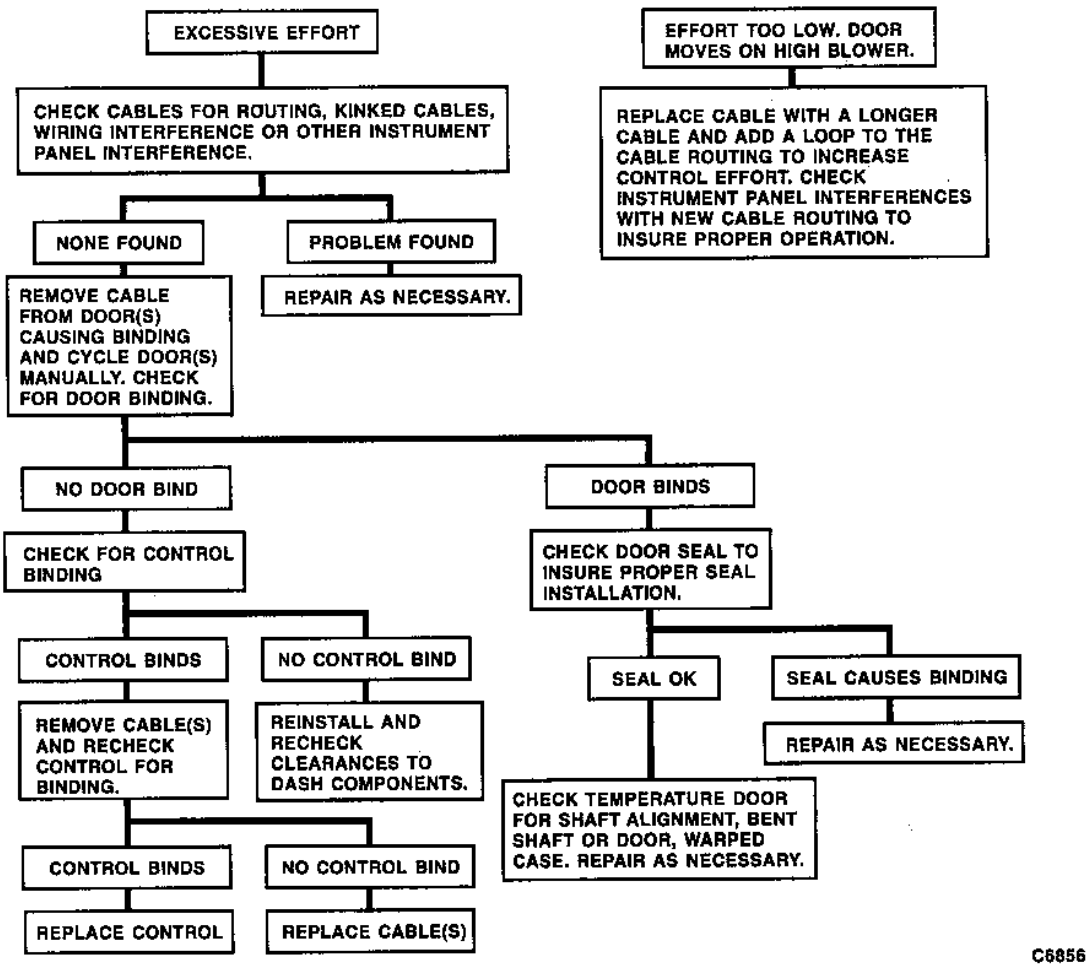
4 CONTROLS


EXCESSIVE EFFORT
CHECK CABLES FOR ROUTING, KINKED CABLES, WIRING INTERFERENCE OR OTHER INSTRUMENT PANEL INTERFERENCE.
NONE FOUND
PROBLEM FOUND
REPAIR AS NECESSARY.
REMOVE CABLE FROM DOOR(S) CAUSING BINDING AND CYCLE DOOR(S) MANUALLY. CHECK FOR DOOR BINDING.
NO DOOR BIND
CHECK FOR CONTROL BINDING
CONTROL BINDS
NO CONTROL BIND
REMOVE CABLE(S) AND RECHECK CONTROL FOR BINDING.
REINSTALL AND RECHECK CLEARANCES TO DASH COMPONENTS.
CONTROL BINDS
NO CONTROL BIND
REPLACE CONTROL
REPLACE CABLE(S)
EFFORT TOO LOW. DOOR MOVES ON HIGH BLOWER.
REPLACE CABLE WITH A LONGER CABLE AND ADD A LOOP TO THE CABLE ROUTING TO INCREASE CONTROL EFFORT. CHECK INSTRUMENT PANEL INTERFERENCES WITH NEW CABLE ROUTING TO INSURE PROPER OPERATION.
DOOR BINDS
CHECK DOOR SEAL TO INSURE PROPER SEAL INSTALLATION.
SEAL OK
SEAL CAUSES BINDING
REPAIR AS NECESSARY.
CHECK TEMPERATURE DOOR FOR SHAFT ALIGNMENT, BENT SHAFT OR DOOR, WARPED CASE. REPAIR AS NECESSARY.
C6856

5 BLOWER NOISE

CHECK ALL ELECTRICAL CONNECTIONS AND GROUNDS FOR PROPER CONNECTIONS. IF IN DOUBT, USE A VOLTMETER TO CHECK FOR CONSTANT VOLTAGE AT THE BLOWER MOTOR.

SIT IN THE VEHICLE WITH THE DOORS AND WINDOWS CLOSED. WITH THE IGNITION ON AND THE ENGINE OFF, START WITH THE BLOWER ON HIGH, IN VENT MODE AND THE TEMPERATURE CONTROL LEVER ON FULL COLD. CYCLE THROUGH BLOWER SPEEDS, MODES AND TEMPERATURE DOOR POSITIONS TO FIND WHERE THE NOISE OCCURS AND WHERE THE NOISE DOES NOT OCCUR. TRY TO DEFINE THE TYPE OF NOISE: AIR RUSH, WHINE, TICK/CLICK, SQUEAL/SCREECH, FLUTTER, RUMBLE OR SCRAPING NOISE. CHART BELOW SHOULD BE COMPLETELY FILLED IN AT COMPLETION.

A CONSTANT AIR RUSH NOISE IS TYPICAL OF ALL SYSTEMS ON HIGH BLOWER. SOME SYSTEMS AND MODES (USUALLY DEFROSTER) MAY BE WORSE THAN OTHERS. CHECK ANOTHER VEHICLE IF POSSIBLE (SAME MODEL) TO DETERMINE IF THE NOISE IS TYPICAL OF THE SYSTEM AS DESIGNED.

INDICATE THE TYPE OF NOISE AND WHERE IT OCCURS:

	VENT		HEATER		DEFROST	
	FULL COLD	FULL HOT	FULL COLD	FULL HOT	FULL COLD	FULL HOT
LOW BLOWER						
M2						
M3						
HIGH BLOWER						

A—WHINE, B—CLICK/TICK, C—SQUEAL/SCREECH, D—FLUTTER, E—RUMBLE, F—SCRAPING, G—AIR RUSH,

H—OTHER, DESCRIBE_____

1. NOISE IS CONSTANT BUT LESSENS WITH BLOWER SPEED REDUCTION. TYPICAL NOISES ARE WHINE, TICK/CLICK, FLUTTER OR SCRAPING NOISE.

2. NOISE IS AT START-UP ONLY OR IS INTERMITTENT. MAY OCCUR AT COLD AMBIENTS AND LOW BLOWER SPEEDS. TYPICAL NOISE IS AN OBJECTIONABLE SQUEAL/SCREECH.

3. NOISE IS CONSTANT AT HIGH BLOWER SPEEDS WITH SOME DOOR COMBINATIONS BUT CAN BE ELIMINATED AT LOWER BLOWER SPEEDS OR WITH OTHER DOOR COMBINATIONS. TYPICAL NOISES ARE FLUTTER OR RUMBLE.

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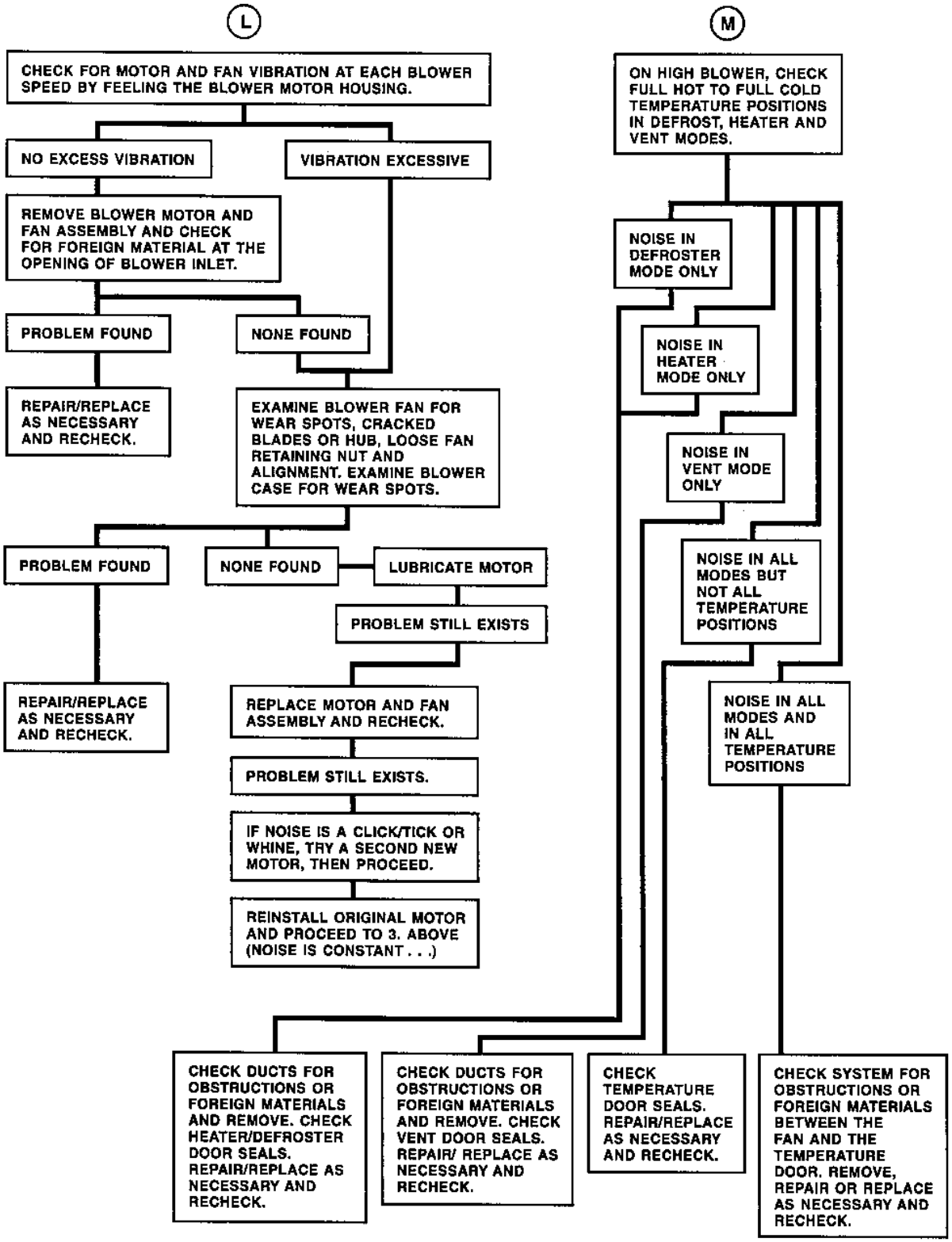

L
CHECK FOR MOTOR AND FAN VIBRATION AT EACH BLOWER SPEED BY FEELING THE BLOWER MOTOR HOUSING.
NO EXCESS VIBRATION
VIBRATION EXCESSIVE
REMOVE BLOWER MOTOR AND FAN ASSEMBLY AND CHECK FOR FOREIGN MATERIAL AT THE OPENING OF BLOWER INLET.
PROBLEM FOUND
NONE FOUND
REPAIR/REPLACE AS NECESSARY AND RECHECK.
EXAMINE BLOWER FAN FOR WEAR SPOTS, CRACKED BLADES OR HUB, LOOSE FAN RETAINING NUT AND ALIGNMENT. EXAMINE BLOWER CASE FOR WEAR SPOTS.
PROBLEM FOUND
NONE FOUND
LUBRICATE MOTOR
PROBLEM STILL EXISTS
REPAIR/REPLACE AS NECESSARY AND RECHECK.
REPLACE MOTOR AND FAN ASSEMBLY AND RECHECK.
PROBLEM STILL EXISTS.
IF NOISE IS A CLICK/TICK OR WHINE, TRY A SECOND NEW MOTOR, THEN PROCEED.
REINSTALL ORIGINAL MOTOR AND PROCEED TO 3. ABOVE (NOISE IS CONSTANT . . .)
M
ON HIGH BLOWER, CHECK FULL HOT TO FULL COLD TEMPERATURE POSITIONS IN DEFROST, HEATER AND VENT MODES.
NOISE IN DEFROSTER MODE ONLY
NOISE IN HEATER MODE ONLY
NOISE IN VENT MODE ONLY
NOISE IN ALL MODES BUT NOT ALL TEMPERATURE POSITIONS
NOISE IN ALL MODES AND IN ALL TEMPERATURE POSITIONS
CHECK DUCTS FOR OBSTRUCTIONS OR FOREIGN MATERIALS AND REMOVE. CHECK HEATER/DEFROSTER DOOR SEALS. REPAIR/REPLACE AS NECESSARY AND RECHECK.
CHECK DUCTS FOR OBSTRUCTIONS OR FOREIGN MATERIALS AND REMOVE. CHECK VENT DOOR SEALS. REPAIR/ REPLACE AS NECESSARY AND RECHECK.
CHECK TEMPERATURE DOOR SEALS. REPAIR/REPLACE AS NECESSARY AND RECHECK.
CHECK SYSTEM FOR OBSTRUCTIONS OR FOREIGN MATERIALS BETWEEN THE FAN AND THE TEMPERATURE DOOR. REMOVE, REPAIR OR REPLACE AS NECESSARY AND RECHECK.

C6858

ON-VEHICLE SERVICE

BLOWER CASE

Figure 9

Remove or Disconnect

1. Negative (-) battery cable.
2. Pull out instrument panel compartment while pushing its stopper from both left and right sides.
3. Instrument panel compartment by removing two hinge pins.
4. Blower motor and resistor electrical connectors.
5. Two screws, two electrical connectors and relay bracket from blower case (Figure 9).
6. Fresh/recirc air control cable from blower case.
7. Wiring harness from guide brackets on blower case.
8. Blower case from vehicle by removing two upper retaining bolts and one lower nut.

Install or Connect

1. Blower case to vehicle; secure with two upper retaining bolts and one lower nut.

Tighten

- Blower case retaining bolts and nut to 10 N·m (89 lbs. in.).

2. Wiring harness to guide brackets on blower case.
3. Fresh/recirc air control cable to blower case.
4. Turn signal electrical connectors.
5. Turn signal relay bracket to blower case; secure two screws.

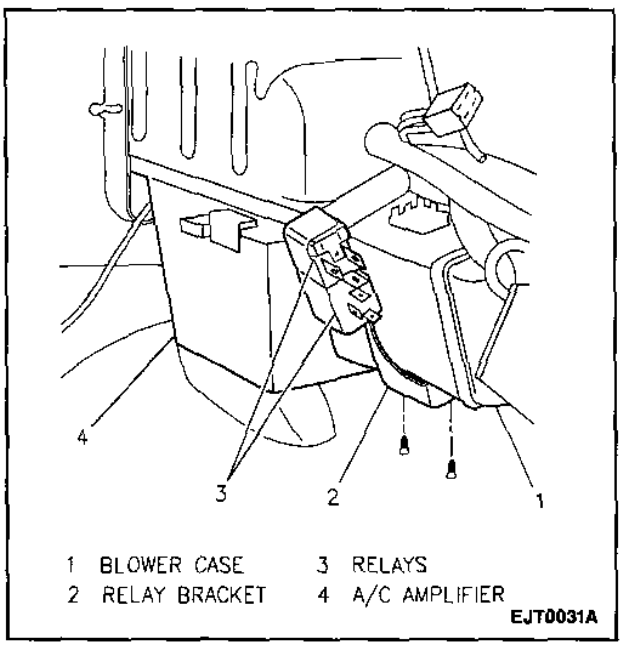


Figure 9—Relay Bracket

6. Motor and resistor electrical connectors.
7. Instrument panel compartment; secure with two hinge pins.
8. Negative (-) battery cable.

Tighten

- Negative (-) battery cable-to-negative (-) battery terminal retainer to 15 N·m (11 lbs. ft.).

Blower Motor

Figure 10

Remove or Disconnect

1. Negative (-) battery cable.
2. Blower case from vehicle. Refer to "Blower Case" earlier in this section.
3. Blower motor cooling duct.
4. Blower motor from case by removing three mounting screws (Figure 10).

Install or Connect

1. Blower motor to blower case; secure with three screws.
2. Blower motor cooling duct.

Tighten

- Blower case retaining bolts to 10 N·m (89 lbs. in.).

3. Blower case to vehicle. Refer to "Blower Case" earlier in this section.
4. Negative (-) battery cable.

Tighten

- Negative (-) battery cable-to-negative (-) battery terminal retainer to 15 N·m (11 lbs. ft.).

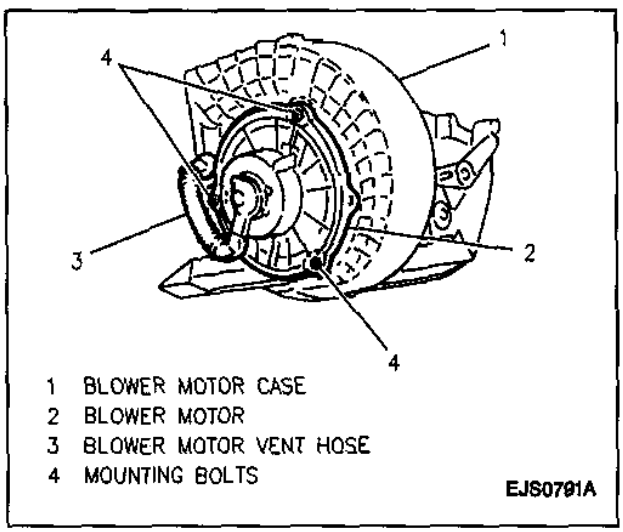


Figure 10—Blower Motor Mounting Screws

Blower Motor Resistor

Figure 11

Remove or Disconnect

1. Negative (-) battery cable.
2. Pull out instrument panel compartment while pushing its stopper from both left and right sides.
3. Resistor electrical connector.
4. Resistor fastening screw and resistor from blower case (Figure 11).

Install or Connect

1. Resistor to blower case.
2. Resistor electrical connector.
3. Close instrument panel compartment.
4. Negative (-) battery cable.

Tighten

- Negative (-) battery cable-to-negative (-) battery terminal retainer to 15 N·m (11 lbs. ft.).

Blower Motor Switch

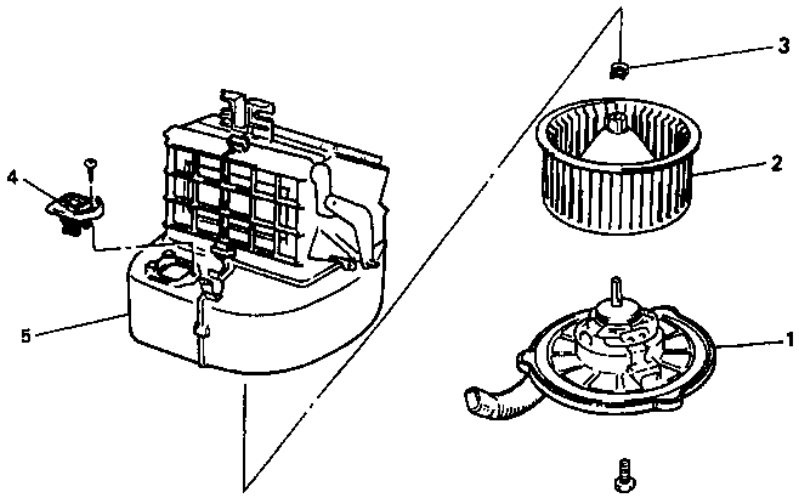
Figure 12

Remove or Disconnect

1. Negative (-) battery cable.
2. Ashtray from guide by depressing spring-loaded tab and pulling ashtray out from the guide.
3. Four knobs from heater control unit.
4. Heater control unit face plate from center trim bezel by pulling straight out (Figure 12).
5. Twist off heater control unit face plate illumination bulb socket.
6. Four screws and center trim bezel from instrument panel (Figure 12).
7. Blower switch electrical connector and blower motor switch from heater control unit.

Install or Connect

1. Blower motor switch to heater control unit, connecting switch electrical connector.
2. Center trim bezel to instrument panel; secure with four screws.
3. Heater control unit illumination bulb socket to heater control unit face plate by twisting clockwise.
4. Heater control unit face plate to instrument panel; push until it snaps in place.



1 BLOWER MOTOR
2 FAN
3 CLAMP
4 BLOWER MOTOR RESISTOR
5 BLOWER MOTOR CASE

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Figure 11—Blower Case, Blower Motor and Resistor

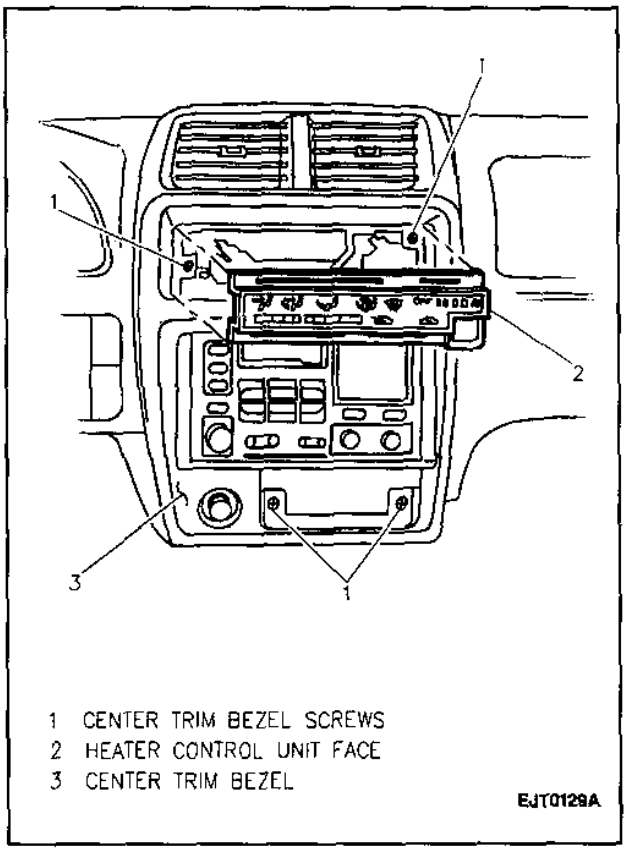


Figure 12—Heater Control Unit Face & Center Trim Bezel

5. Heater control unit knobs.
6. Slide ashtray into guide.
7. Negative (-) battery cable.

Tighten

- Negative (-) battery cable-to-negative (-) battery terminal retainer to 15 N.m (11 lbs. ft).

CONTROL, TEMPERATURE AND FRESH/RECIRCULATION CABLES

Figures 12 through 16

Remove or Disconnect

1. Negative (-) battery cable.
2. Ashtray from guide by depressing spring-loaded tab and pulling ashtray out from the guide.
3. Four knobs from heater control unit.
4. Heater control unit face plate from center trim bezel by pulling straight out (Figure 12).
5. Twist off heater control unit face plate illumination bulb socket.
6. Four screws and center trim bezel from instrument panel (Figure 12).
7. Mode control cable from heater control unit and heater case (Figures 13 and 14).
8. Temperature control cable from heater control unit and heater case (Figure 16).
9. Fresh/recirc cable from heater control assembly and blower case (Figure 13).

Install or Connect

1. Mode control cable:
   A. Move mode control lever to vent.
   B. Attach mode control cable to control assembly with 0 to 1 mm (0 to 0.039-inch) of cable projecting from clamp.
   C. At heater case, push door (damper) linkage fully in the direction of the arrow to affix cable and rod into position.
2. Temperature control cable:
   A. Move temperature control lever to cool.
   B. At heater case, push door (damper) fully in the direction of the arrow to affix cable into position.
3. Fresh/recirc cable:
   A. Move fresh/recirc lever to fresh.
   B. Install cable at heater case.
4. Center trim bezel, including ashtray guide, to instrument panel; secure with four screws.
5. Heater control unit illumination bulb socket to heater control unit face plate by twisting clockwise.
6. Heater control unit face plate to instrument panel; push until it snaps in place.
7. Heater control unit knobs.
8. Slide ashtray into guide.
9. Negative (-) battery cable.

Tighten

- Negative (-) battery cable-to-negative (-) battery terminal retainer to 15 N.m (11 lbs. ft).

HEATER CASE

Figures 9 and 17 through 19

Remove or Disconnect

1. Negative (-) battery cable.
2. Disable the SIR. Refer to SECTION 9J.
3. Drain cooling system. Refer to SECTION 6B.
4. Instrument panel. Refer to SECTION 8C.
5. Two bolts and right-side instrument panel center support (Figure 17).
6. Evaporator (if equipped). Refer to SECTION 1B.
7. Two screws securing SIR harness on sensing and diagnostic module bracket.
8. Sensing and diagnostic module electrical connector.
9. Four screws and sensing and diagnostic module bracket from vehicle.
10. Speedometer and antenna cables from heater case.
11. Floor duct from case.

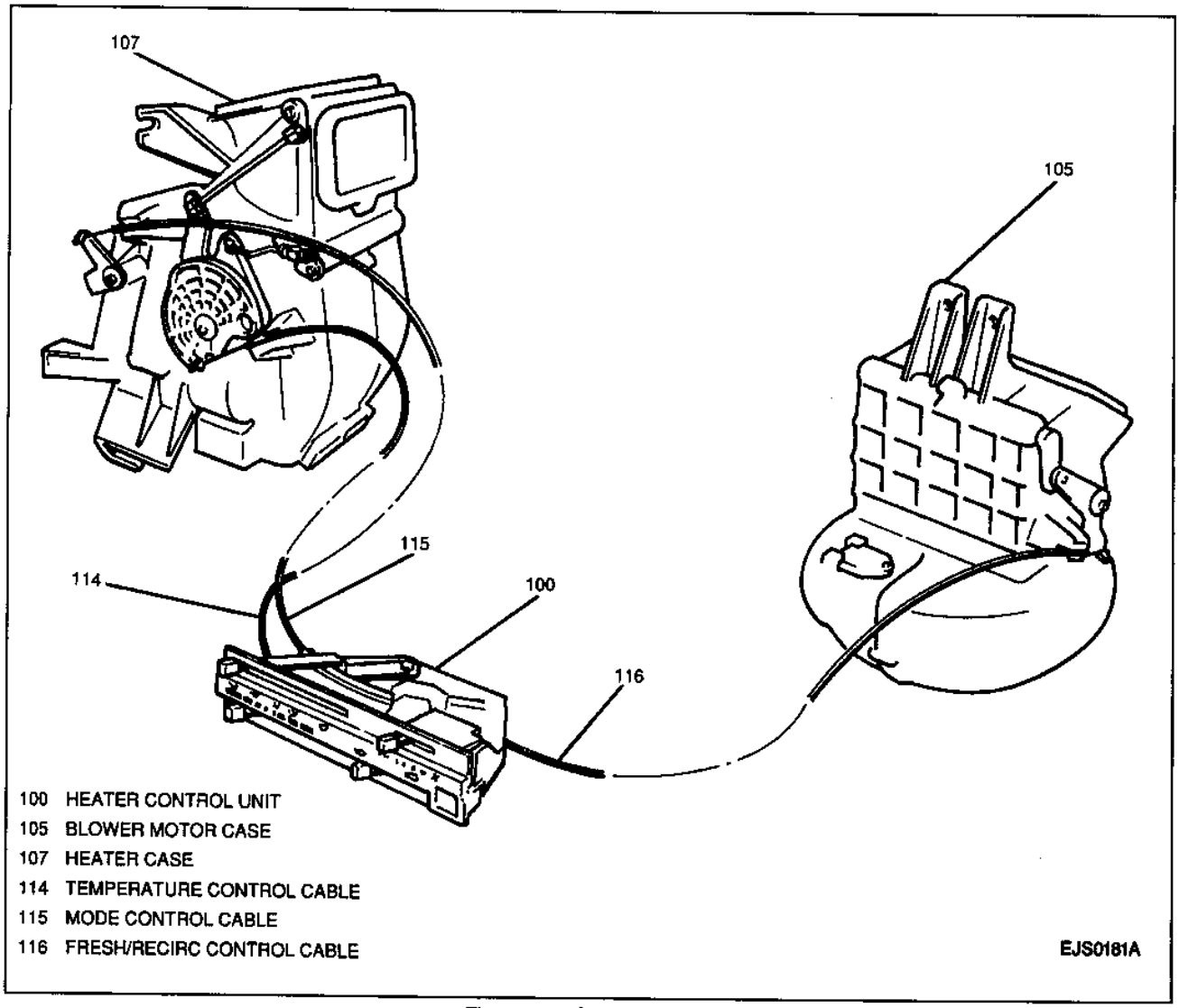


Figure 13—Control Cables

12. Electrical jumper harness for A/C amplifier.
13. Two screws and set aside relay bracket (Figure 9).
14. Two heater case mounting nuts from the engine compartment-side of the bulkhead, and two heater case mounting bolts (Figure 18).
15. Heater case from vehicle.

Disassemble

- Dampers and linkages as necessary (Figure 19).

Assemble

- Dampers and linkages (if removed) (Figure 19).

Install or Connect

1. Heater case to vehicle.
2. Mounting bolts and nuts.

Tighten

- Heater case bolts and nuts to 10 N.m (89 lbs. in.).

3. Electrical jumper harness for A/C amplifier.
4. Floor duct to heater case.
5. Speedometer and antenna cables to retaining bracket.
6. Relay bracket; secure with two screws.
7. Sensing and diagnostic module bracket to vehicle; secure with four screws.

Tighten

- Sensing and diagnostic module bracket bolts to 5.5 N.m (4 lbs. ft.)

8. Sensing and diagnostic module electrical connector.
9. Two screws securing SIR harness on sensing and diagnostic module bracket.

Tighten

- Sensing and diagnostic module bracket bolts to 5.5 N.m (4 lbs. ft.)

10. Evaporator (if equipped). Refer to SECTION 1B.

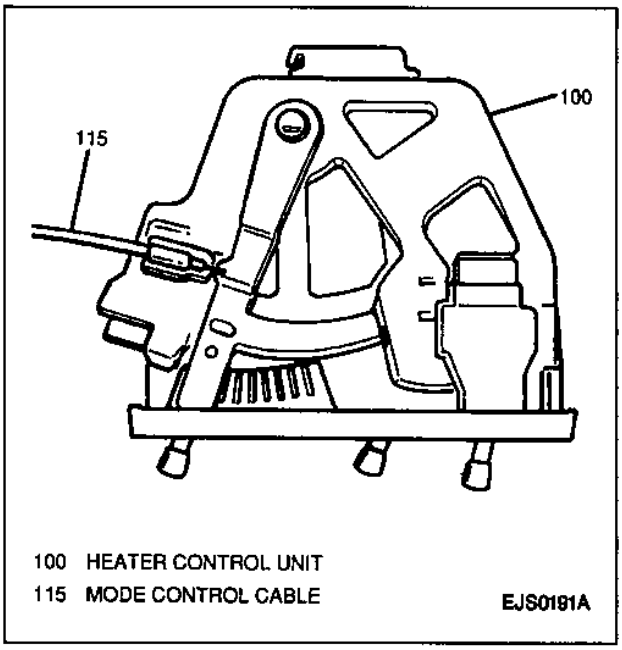


Figure 14—Mode Control Cable at Heater Control Unit

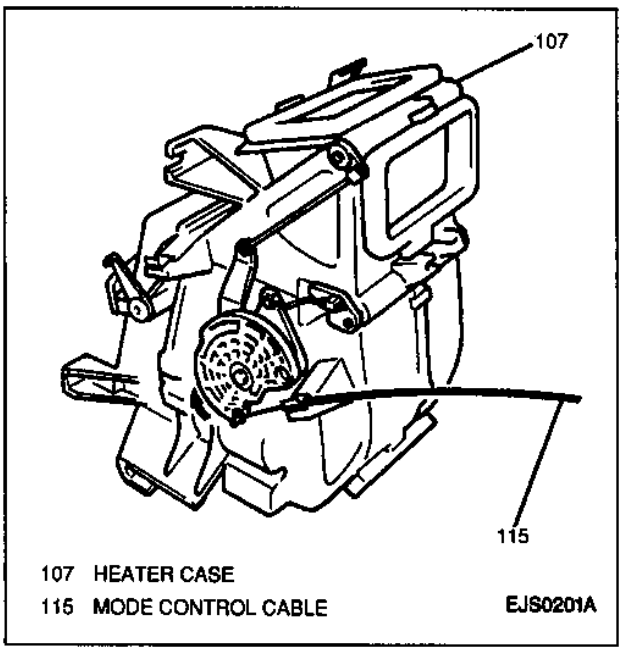


Figure 15—Mode Control Cable at Heater Case

11. Right-side instrument panel center support; secure with two bolts.
12. Instrument panel. Refer to SECTION 8C.
13. Heater hoses to heater core; take care not to spill coolant on vehicle.
14. Mode control cable:
    A. Move mode control lever to vent.
    B. Attach mode control cable to control assembly with 0 to 1 mm (0 to 0.039-inch) of cable projecting from clamp.
    C. At heater case, push door (damper) linkage fully in the direction of the arrow to affix cable and rod into position.
15. Temperature control cable:

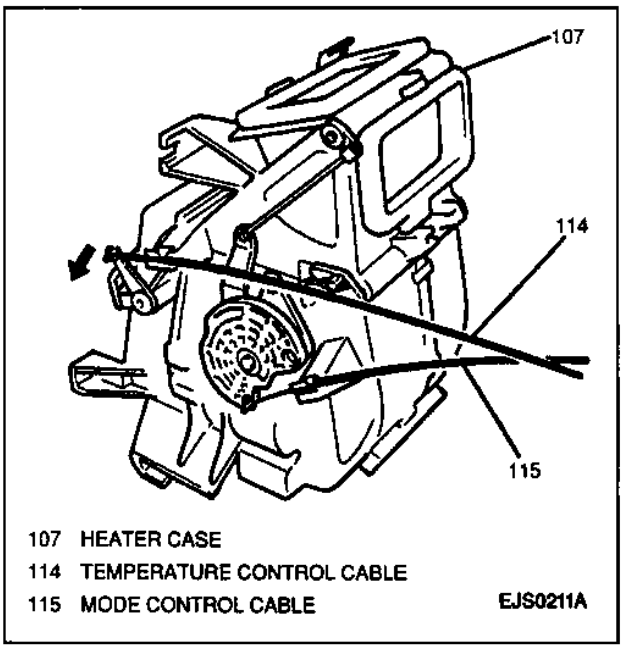


Figure 16—Temperature Control Cable at Heater Case

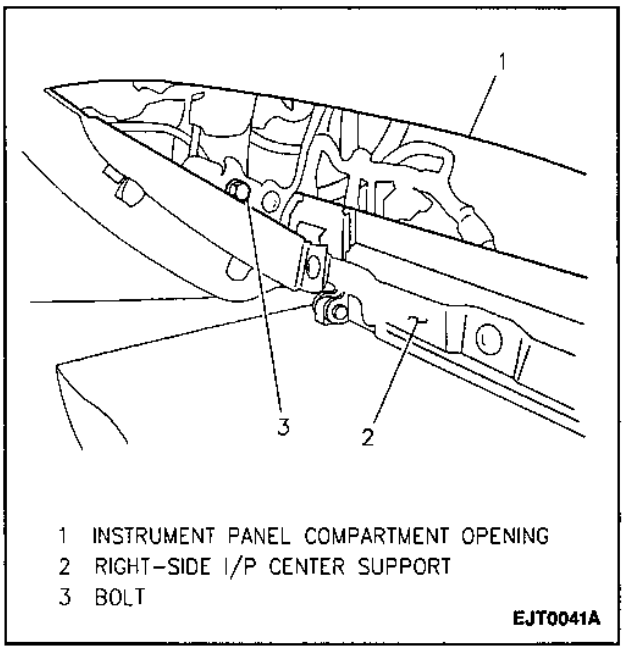


Figure 17—Right-Side Instrument Panel Center Support

    A. Move temperature control lever to cool.
    B. At heater case, push door (damper) fully in the direction of the arrow to affix cable into position.
16. Refill cooling system. Refer to SECTION 6B.
17. Enable the SIR. Refer to SECTION 9J.
18. Negative (-) battery cable.

Tighten

- Negative (-) battery cable-to-negative (-) battery terminal retainer to 15 N·m (11 lbs. ft.).

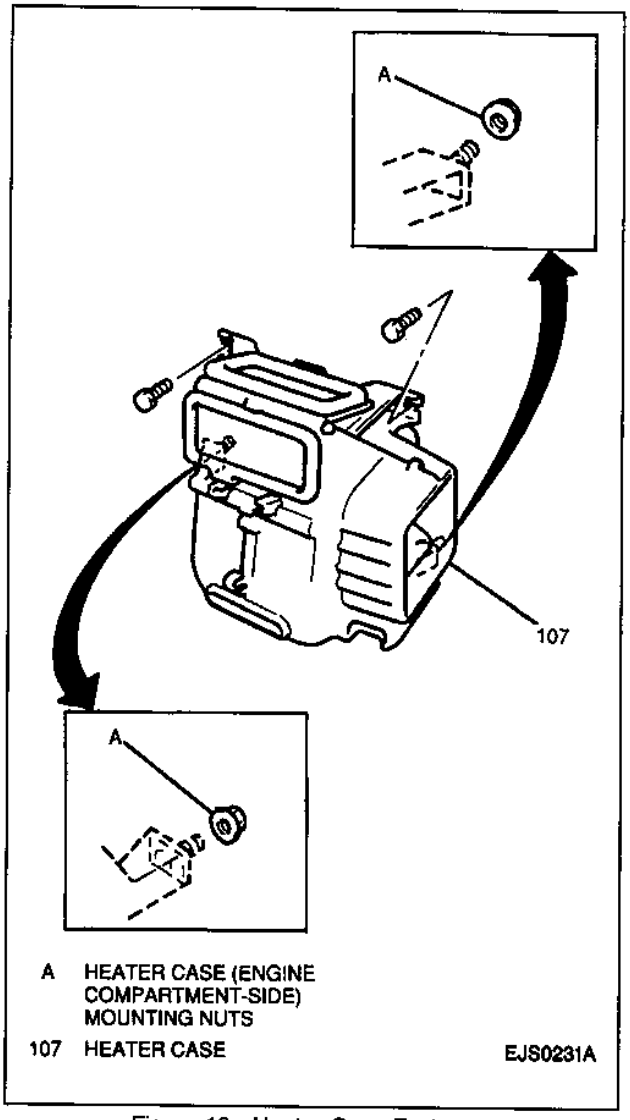


Figure 18—Heater Case Fasteners

Heater Core

Figure 20

Remove or Disconnect

1. Heater case. Refer to "Heater Case" earlier in this section.
2. One screw and heater core pipes bracket.
3. Heater core from heater case (Figure 20).

Install or Connect

1. Heater core to case.
2. Heater core pipes bracket; secure with one screw.
3. Heater case to vehicle. Refer to "Heater Core" earlier in this section.

HEATER HOSES

Remove or Disconnect

1. Drain cooling system. Refer to SECTION 6B.
2. Heater core inlet hose from bulkhead fitting and engine coolant pipe by loosening hose clamps.
3. Heater core outlet hose from bulkhead fitting and intake manifold by loosening hose clamps.

Install or Connect

1. Heater core outlet hose to bulkhead fitting and intake manifold; secure with hose clamps.
2. Heater core inlet hose to bulkhead fitting and engine coolant pipe; secure with hose clamps.
3. Refill cooling system. Refer to SECTION 6B.

REAR FLOOR HEAT DUCT

Figure 21

Remove or Disconnect

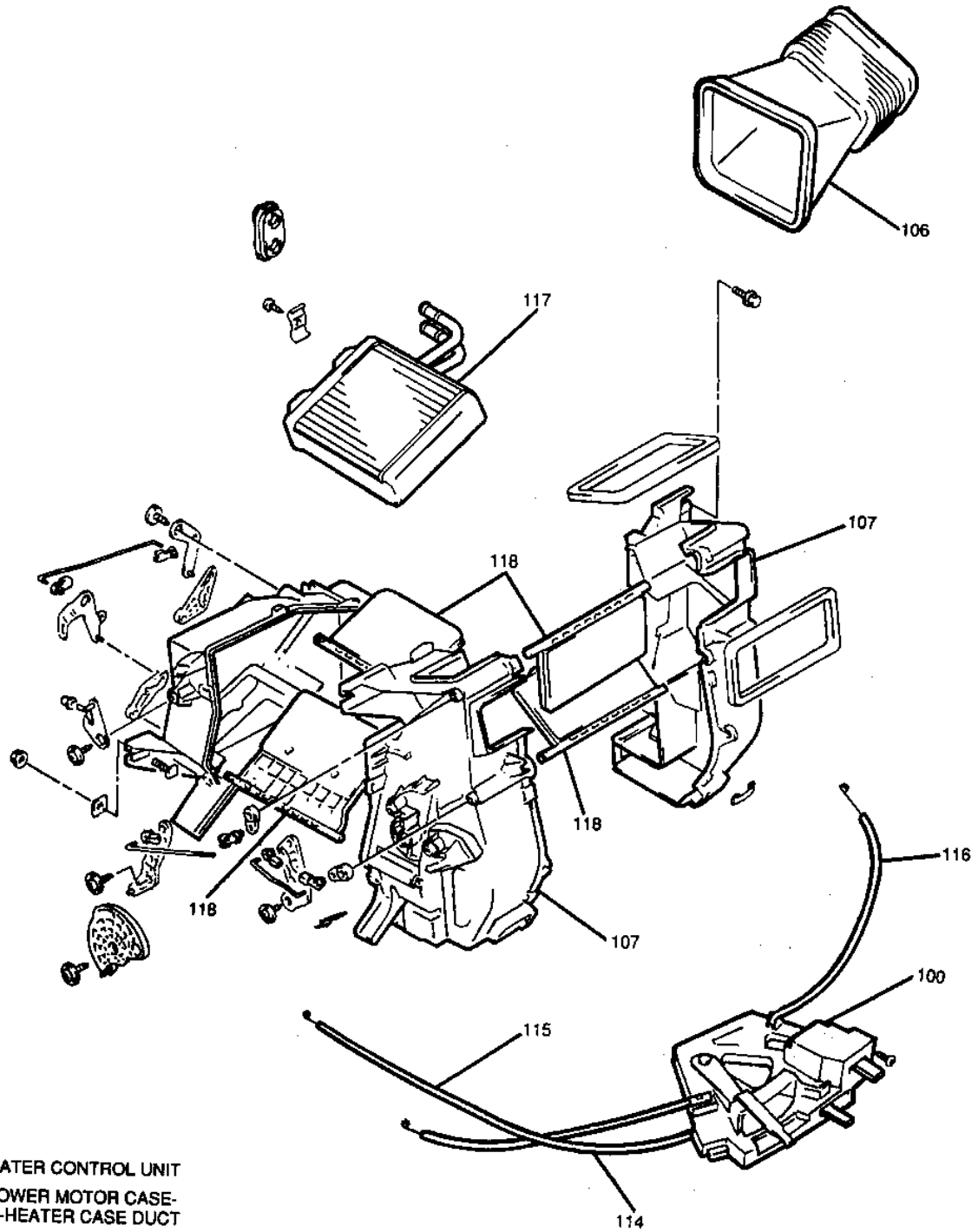
1. Negative (-) battery cable.
2. Disable the SIR. Refer to SECTION 9J.
3. Front seats. Refer to SECTION 10-10.
4. Two plastic retaining clips, two rear screws and parking brake lever bezel.
5. Two rear remote power window electrical connectors (if equipped).
6. Two screws, two plastic retaining clips and lift console.
7. "Power/Normal" switch electrical connector (if equipped with 4-speed A/T).
8. Two screws securing SIR harness on sensing and diagnostic module bracket.
9. Sensing and diagnostic module electrical connector.
10. Four screws and sensing and diagnostic module bracket from vehicle.
11. Floor carpet until rear duct is completely exposed (Figure 21).
12. Retaining screws and rear floor heat duct from vehicle.

Install or Connect

1. Rear floor heat duct to vehicle; secure with retaining screws.
2. Reposition floor carpet.
3. Sensing and diagnostic module bracket to vehicle; secure with four screws.

Tighten

- Sensing and diagnostic module bracket bolts to 5.5 N.m (4 lbs. ft.)



100 HEATER CONTROL UNIT
106 BLOWER MOTOR CASE-TO-HEATER CASE DUCT
107 HEATER CASE
114 TEMPERATURE CONTROL CABLE
115 MODE CONTROL CABLE
116 FRESH/RECIRC CONTROL CABLE
117 HEATER CORE
118 DAMPERS

EJS0221A

Figure 19—Heater Case (Sectional View)

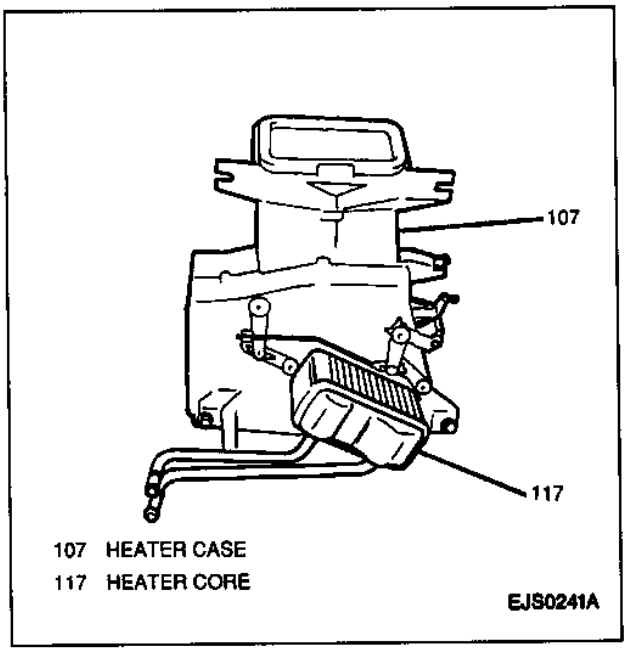


Figure 20—Heater Core

4. Sensing and diagnostic module electrical connector.
5. Two screws securing SIR harness on sensing and diagnostic module bracket.

Tighten

- Sensing and diagnostic module bracket bolts to 5.5 N.m (4 lbs. ft.)

6. "Power/Normal" switch electrical connector (if equipped with 4-speed A/T).
7. Console to vehicle; secure with two screws and two plastic retaining clips.
8. Rear remote power window switch electrical connectors (if equipped).
9. Parking brake lever bezel; secure with two plastic retaining clips and two rear screws.
10. Front seats. Refer to SECTION 10-10.
11. Enable the SIR. Refer to SECTION 9J.
12. Negative (-) battery cable.

Tighten

- Negative (-) battery cable-to-negative (-) battery terminal retainer to 15 N.m (11 lbs. ft).

INSTRUMENT PANEL OUTLETS

Center Vent Louver

Remove or Disconnect

1. Instrument Panel from vehicle. Refer to SECTION 8C.
2. Four screws and defroster duct, including side demister ducts.
3. Two screws and center vent duct.
4. Two screws and center vent louver.

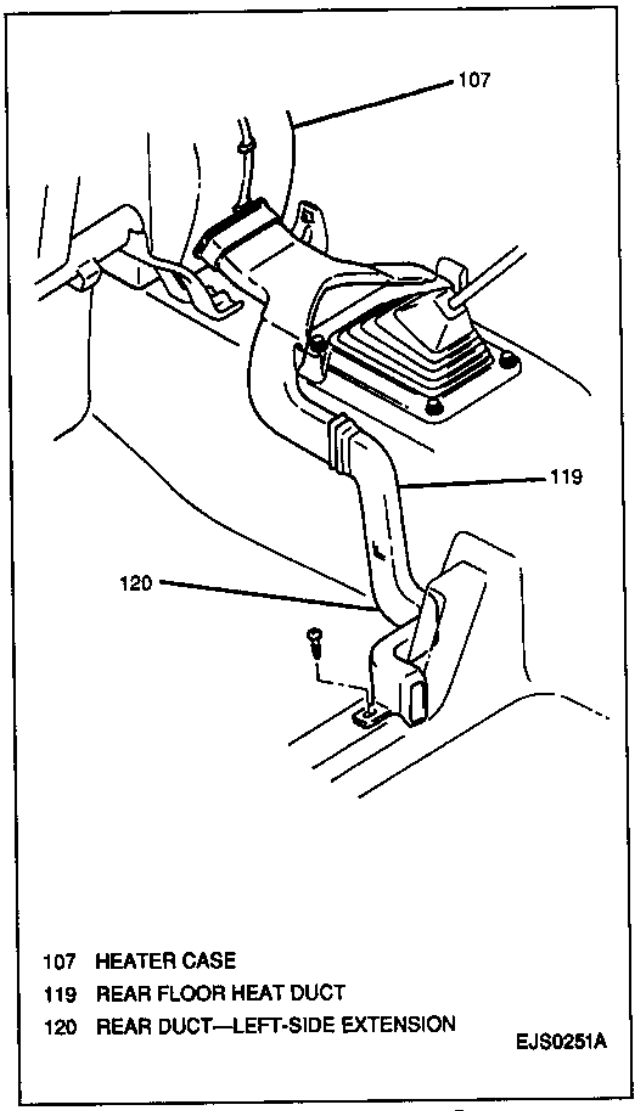


Figure 21—Rear Floor Heat Duct

Install or Connect

1. Center vent louver; secure with two screws.
2. Center vent duct; secure with two screws.
3. Side demister ducts to defroster duct; secure to instrument panel with four screws.
4. Instrument Panel. Refer to SECTION 8C.

Left Vent Louver

Remove or Disconnect

1. Instrument Panel. Refer to SECTION 8C.
2. Four screws and defroster duct, including side demister ducts.
3. Two screws and center vent duct.
4. One screw, two locking tabs and left vent louver.

Install or Connect

1. Left vent louver; secure with one screw.
2. Center vent duct; secure with two screws.