

## HEATER SYSTEM

### Article Text

1993 Volkswagen EuroVan  
For Volkswagen Technical Site  
Copyright © 1998 Mitchell Repair Information Company, LLC  
Saturday, March 18, 2000 10:33PM

#### ARTICLE BEGINNING

1993 HEATER SYSTEMS  
Volkswagen United States, Inc.

EuroVan

NOTE: The gas-fired auxiliary heater is not covered in this article.

#### DESCRIPTION

This vehicle uses a flow-through ventilation and heating system. Air flows through grille below engine compartment hood and into passenger compartment. Interior compartment air is drawn out of vehicle through vents at rear of vehicle. The vents are located at bottom of each "D" pillar.

CAUTION: When battery is disconnected, radio will go into anti-theft protection mode. Obtain radio anti-theft protection code from owner prior to servicing vehicle.

#### AIR BAG SYSTEM PRECAUTIONS

##### SYSTEM OPERATION CHECK

Two lights pertaining to air bag system are located directly above air bag symbol in instrument cluster. Control light is used to indicate readiness of system. With ignition on, control light comes on for about 5-8 seconds then goes out, while diagnosis unit in air bag control unit performs an electronic test cycle of system.

If control light does not function as described, a fault probably exists in system. If fault occurs while ignition is on, it will be stored in fault memory. Warning light will then come on, and air bag system will be switched off. If warning light comes on or flickers while driving, air bag system should be tested.

##### SERVICE PRECAUTIONS

Observe these precautions when working with air bag systems:

- \* DO NOT use computer memory saver tool. Using computer memory tool will keep air bag system active and may cause accidental deployment of air bag unit.
- \* Disable air bag system before servicing any air bag system or steering column component. See DISABLING & ACTIVATING AIR BAG SYSTEM.
- \* Because of critical operating requirements of system, DO NOT attempt to service any air bag system component.
- \* DO NOT leave air bag parts unattended. Install parts in vehicle immediately after obtaining.

## HEATER SYSTEM

### Article Text (p. 2)

1993 Volkswagen EuroVan

For Volkswagen Technical Site

Copyright © 1998 Mitchell Repair Information Company, LLC

Saturday, March 18, 2000 10:33PM

- \* DO NOT use air bag components that have been dropped from height of more than 18 inches.
- \* DO NOT allow chemical cleaners, oil and grease to contact vinyl covering on air bag unit.
- \* DO NOT place stickers or covers on steering wheel.
- \* Always disable air bag system before performing electric welding on vehicle.
- \* Air bag system can only be tested using Diagnostic Tester (VAG 1551) and Multimeter (US-1119). Never use test light on air bag system.
- \* DO NOT expose air bag unit to temperatures greater than 194°F (90°C).

### DISABLING & ACTIVATING AIR BAG SYSTEM

**WARNING:** System voltage is retained for about 20 MINUTES after system is deactivated. Wait about 20 MINUTES after system is disabled before servicing, as air bag may accidentally deploy, causing personal injury.

#### Disabling & Activating System

To disable system, disconnect negative battery cable. Wait 20 MINUTES before working on vehicle. To activate system, reconnect negative battery cable. Verify system is functioning properly. See SYSTEM OPERATION CHECK.

## OPERATION

### AIR RECIRCULATION SWITCH

A rectangular air recirculation switch is located above heater control panel. This switch, through a solenoid and vacuum servo, opens and closes a flap that is located in air inlet duct. See Fig. 3. When flap is open, outside air enters vehicle. When flap is closed, the vehicle's interior compartment air is recirculated to help prevent exhaust or harmful fumes from entering vehicle.

### HEATER CONTROL PANEL

Three slide levers and a fan switch rotary knob are used on control panel. Top left lever is used to control airflow to footwells. Top right lever is used to control airflow to head (upper body) area.

Bottom slide lever controls temperature. Depending on position of levers, fresh (cool) air or heated air flows out of vents.

A rear heater blower motor switch, located above heater control panel, has 3 fan speeds. See Fig. 1. Temperature setting for front heater is also the temperature setting for the rear heater.

## HEATER SYSTEM

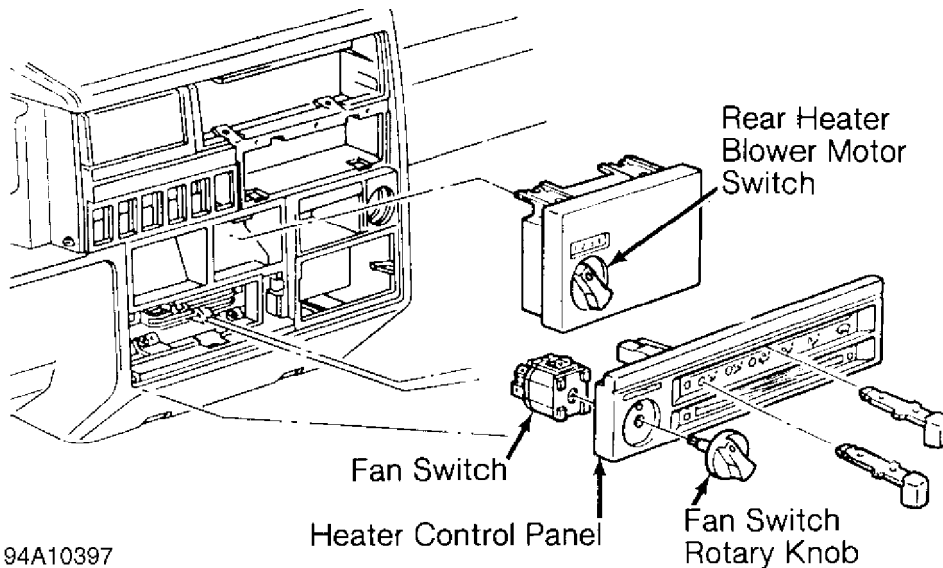
### Article Text (p. 3)

1993 Volkswagen EuroVan

For Volkswagen Technical Site

Copyright © 1998 Mitchell Repair Information Company, LLC

Saturday, March 18, 2000 10:33PM



94A10397

Fig. 1: Heater System Control Panels  
Courtesy of Volkswagen United States, Inc.

## HEATER SYSTEM

### Front

The front heater system uses a heater control valve and is cable operated. The heater control valve is located on left side of engine compartment, below brake booster. See Fig. 2.

The cable-actuated heater control valve, controls temperature for both front and rear heater systems. Air distribution is controlled by defroster flap and footwell flap cables.

### Rear

The rear heater, located underneath vehicle, is standard equipment on all models. Engine coolant is supplied to rear heater core by 2 heater hoses. The intake for the rear heater is located in the sliding door footwell, allows interior air to be recirculated through the heater core for greater efficiency.

A blower motor forces air through heater core, and out of an adjustable vent. On EuroVan CL, rear air outlet vent is located between middle row of seats. On EuroVan MV, rear air outlet vent is located underneath right jump seat.

## ADJUSTMENTS

### COOLING SYSTEM BLEEDING

1) Place heater control panel to maximum heat position. Remove cap from coolant expansion tank. Open cooling system bleed screw (on heater hose to heater control valve). See Fig. 2.

2) Fill coolant expansion tank to MAX line. Close bleed screw. Run engine at fast idle speed. Check coolant level and add as necessary. Install cap on coolant expansion tank. Run engine until cooling fan comes on.

## HEATER SYSTEM

### Article Text (p. 4)

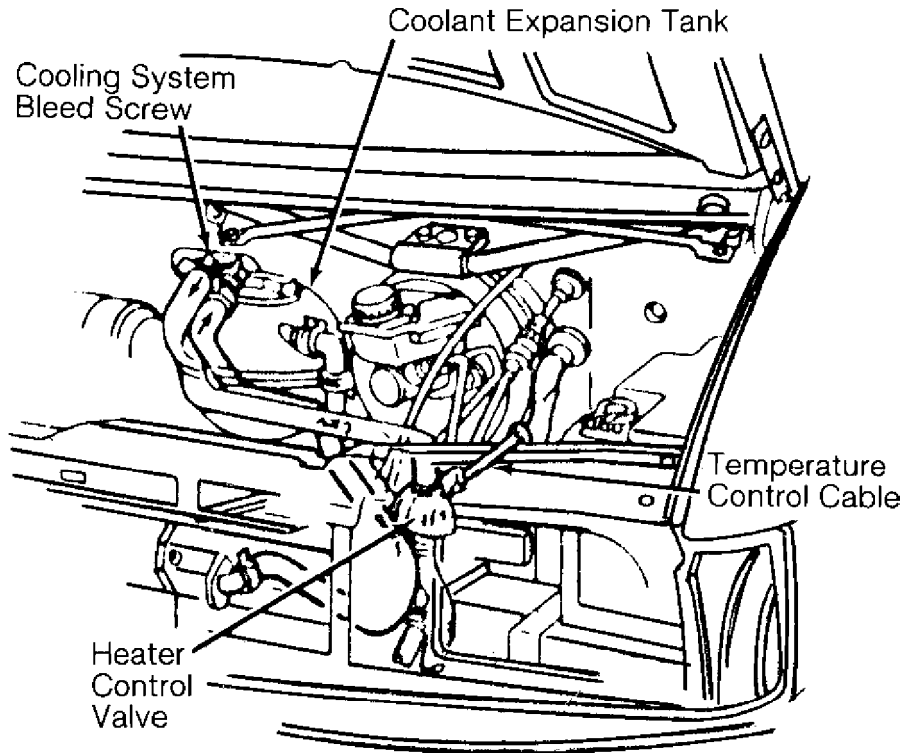
1993 Volkswagen EuroVan

For Volkswagen Technical Site

Copyright © 1998 Mitchell Repair Information Company, LLC

Saturday, March 18, 2000 10:33PM

3) Check coolant level once again and add coolant as necessary. With engine at operating temperature, coolant level must be slightly above MAX line. With engine cold, level must fall between MAX and MIN lines.



94B10398

Fig. 2: Bleeding Cooling System  
Courtesy of Volkswagen United States, Inc.

### HEATER CONTROL PANEL CABLES

1) Before installing heater control panel, attach cables onto panel. Position cable sleeves on stops, and secure cables with clips.

2) Push temperature control cable through firewall and into engine compartment. See Fig. 2. Slide temperature control lever to left stop. Slide control lever on heater control valve away from cable retaining clip (no coolant flow). Hold heater control valve lever in this position, and attach cable.

3) Slide defroster (top right) lever to left stop. Slide defroster flap lever toward cable retaining clip. Hold defroster flap lever in this position and attach cable.

4) Slide footwell (top left) lever to right stop. Slide footwell flap lever away from cable retaining clip. Hold footwell flap lever in this position and attach cable.

5) To complete adjustment, move control lever(s) from stop to stop. The cables for the defroster and footwell flaps are self-adjusting. See Fig. 3.

## HEATER SYSTEM

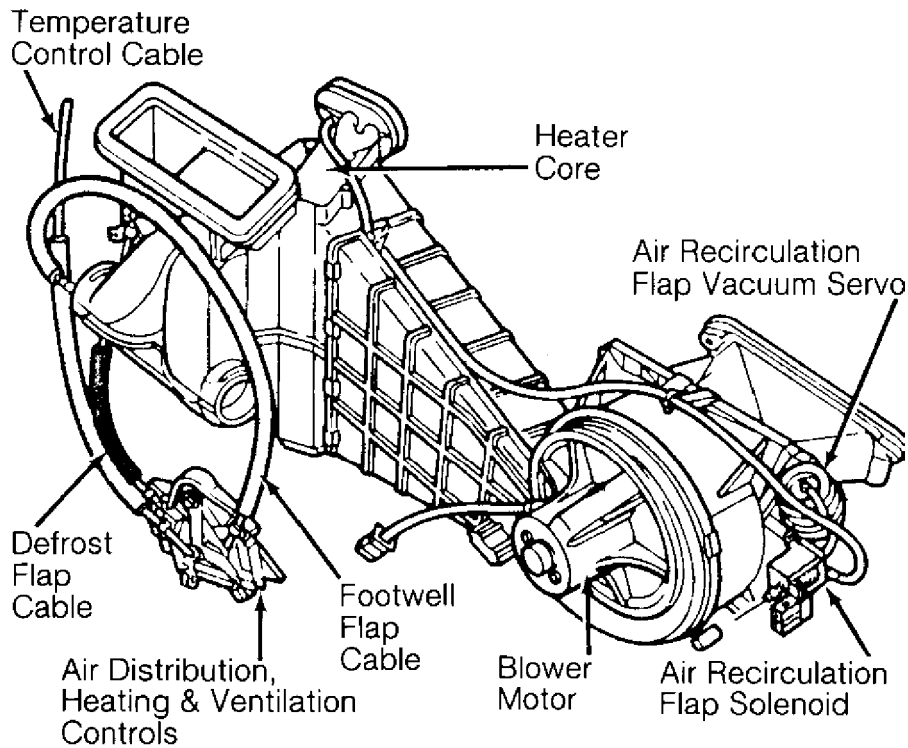
### Article Text (p. 5)

1993 Volkswagen EuroVan

For Volkswagen Technical Site

Copyright © 1998 Mitchell Repair Information Company, LLC

Saturday, March 18, 2000 10:33PM



94C10399

Fig. 3: Locating Heater System Component  
Courtesy of Volkswagen United States, Inc.

### TESTING

Testing information is not available from manufacturer. Use wiring diagram as a guide. See WIRING DIAGRAM.

### REMOVAL & INSTALLATION

**WARNING:** To avoid injury from accidental air bag deployment, read and carefully follow all SERVICE PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM procedures.

#### BLOWER MOTOR & RESISTOR

##### Removal & Installation (Front)

1) Open glove box. Remove glove box light, and disconnect wiring harness. Remove 7 screws and glove box. Disconnect wiring harness from blower motor resistor. Remove blower motor resistor (if necessary).

2) Disengage locking tab, and rotate blower motor clockwise. To remove blower motor, pull blower motor toward center of instrument panel. To install blower motor or resistor, reverse removal procedure. See Fig. 4.

##### Removal & Installation (Rear)

## HEATER SYSTEM

### Article Text (p. 6)

1993 Volkswagen EuroVan

For Volkswagen Technical Site

Copyright © 1998 Mitchell Repair Information Company, LLC

Saturday, March 18, 2000 10:33PM

Raise and support vehicle. Locate rear heater housing underneath vehicle. Disconnect wiring harness from rear blower motor. Remove rear blower motor. To install rear blower motor, reverse removal procedure.

NOTE: Rear blower motor resistor removal and installation procedure is not available from manufacturer. Rear blower motor resistor is located on left side of engine compartment.

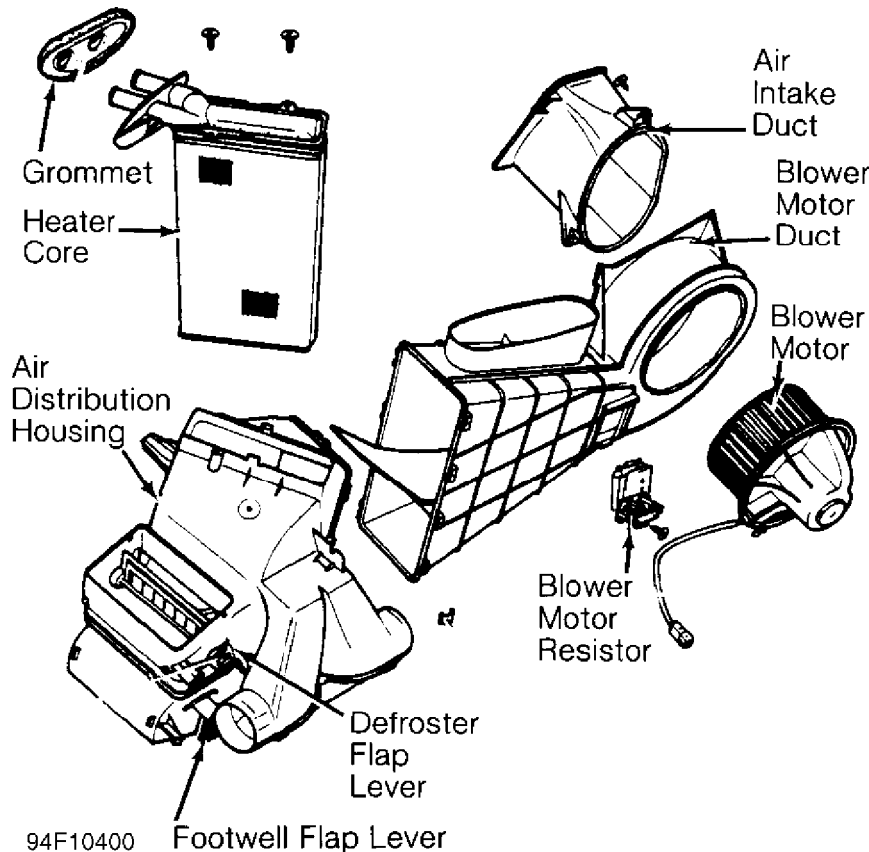


Fig. 4: Exploded View Of Front Heater Assembly  
Courtesy of Volkswagen United States, Inc.

### BLOWER MOTOR SWITCH

#### Removal & Installation (Rear Heater)

Using a screwdriver, carefully pry blower motor switch (located above heater control panel) from instrument panel. Disconnect wiring harness and remove switch. To install switch, reverse removal procedure.

### HEATER CONTROL PANEL

#### Removal

Remove fan switch rotary knob. See Fig. 1. Remove air distribution/temperature control levers. Remove heater control panel screws. Pull heater control panel away from instrument panel. Detach

## HEATER SYSTEM

### Article Text (p. 7)

1993 Volkswagen EuroVan

For Volkswagen Technical Site

Copyright © 1998 Mitchell Repair Information Company, LLC

Saturday, March 18, 2000 10:33PM

heater control panel cables.

#### Installation

Attach and adjust heater control cables. See HEATER CONTROL PANEL CABLES under ADJUSTMENTS. To complete installation, reverse removal procedure.

### FRONT HEATER CORE

#### Removal (Front)

1) Obtain radio anti-theft protection code from owner prior to servicing vehicle. Open hood. Disconnect negative battery cable. Remove 3 screws and air intake duct from engine compartment side of firewall.

2) Open glove box. Remove glove box light, and disconnect wiring harness. Remove 7 screws and glove box. Remove right air duct. Carefully remove vent from center air outlet. Remove screws, and carefully pry out center air outlet.

3) Remove center air duct (if equipped). Detach control cables from heater housing. Disconnect wiring harness from blower motor resistor. Remove footwell air outlet console and cover.

4) Disconnect temperature control cable from heater control valve (in engine compartment). Disconnect heater hoses, and plug openings. Remove screws, on engine compartment side of firewall, and remove heater assembly. Disassemble air distribution housing to remove heater core. See Fig. 4.

#### Installation (Front)

To install, reverse removal procedure. Install seal around entire circumference of heater core so there are no gaps.

## HEATER SYSTEM

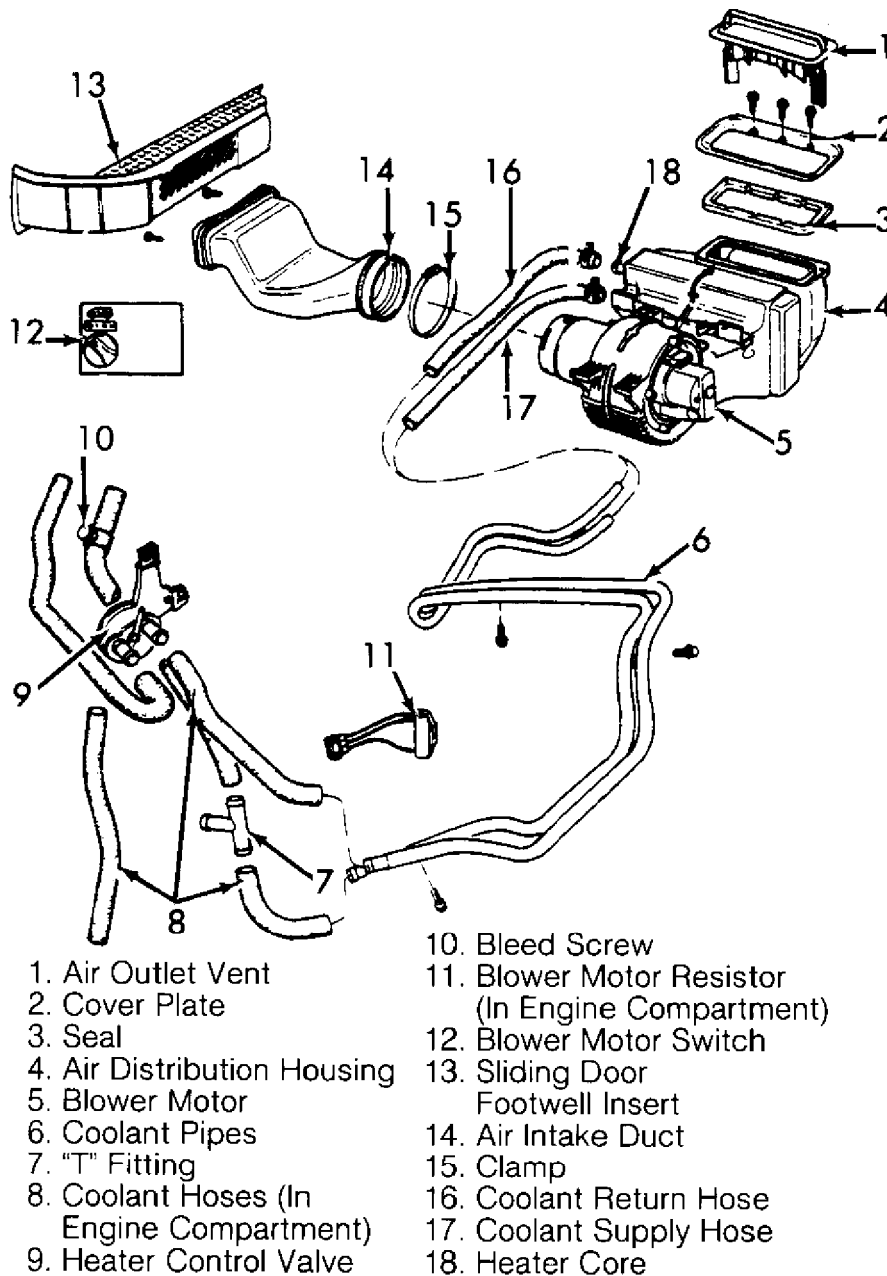
### Article Text (p. 8)

1993 Volkswagen EuroVan

For Volkswagen Technical Site

Copyright © 1998 Mitchell Repair Information Company, LLC

Saturday, March 18, 2000 10:33PM



94G10401

Fig. 5: Identifying Rear Heater Components (EuroVan CL)

Courtesy of Volkswagen United States, Inc.

### REAR HEATER CORE

#### Removal

1) On EuroVan CL, locate rear air outlet vent between middle row of seats. Pull up on rear air outlet vent to remove. Remove rear air outlet vent cover plate.

2) On EuroVan MV, locate rear air outlet vent underneath right jump seat. Remove screws from top of rear air outlet vent. Using a screwdriver, carefully unlock latch from bottom edge of rear air



## HEATER SYSTEM

### Article Text (p. 9)

1993 Volkswagen EuroVan

For Volkswagen Technical Site

Copyright © 1998 Mitchell Repair Information Company, LLC

Saturday, March 18, 2000 10:33PM

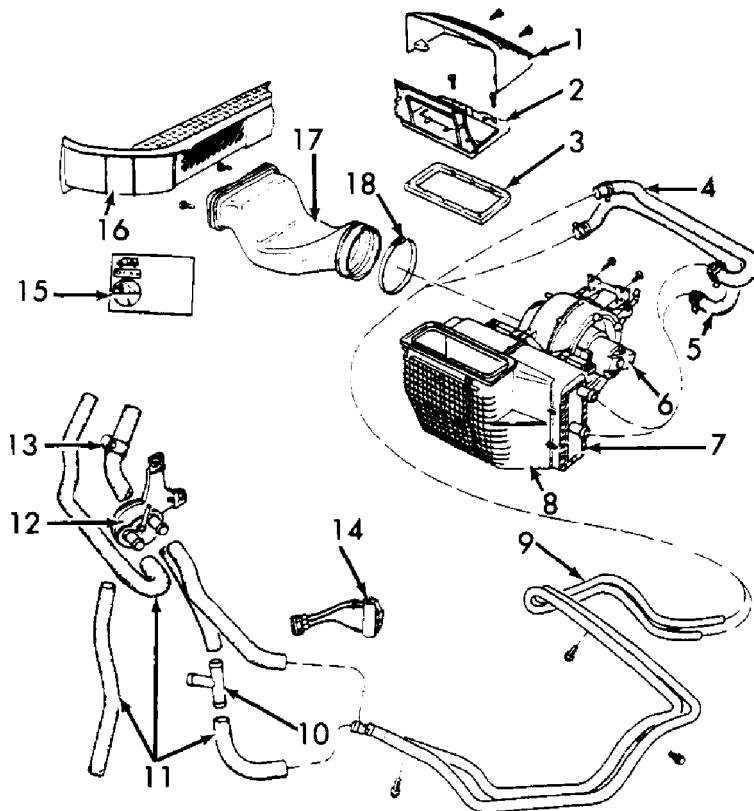
outlet vent. Remove rear air outlet vent bracket.

3) On all models, raise and support vehicle. Locate rear heater housing underneath vehicle. Disconnect wiring harness from rear heater housing. Detach heater hoses from heater core. See Fig. 5 or 6. Remove rear heater housing or heater core as necessary.

4) If air duct removal is necessary, remove sliding door footwell insert. Remove air duct screws. Loosen air duct clamp and remove air duct. If rear heater hose removal is necessary, remove fuel tank. Remove torsion bar. Remove rear heater hoses.

### Installation

To install, reverse removal procedure. Install seal around entire circumference of heater core so there are no gaps.



- |                             |   |
|-----------------------------|---|
| 1. Air Outlet Vent          | 11. Coolant Hoses (In Engine Compartment)         |
| 2. Air Outlet Vent Bracket  | 12. Heater Control Valve                          |
| 3. Seal                     | 13. Bleed Screw                                   |
| 4. Coolant Return Hose      | 14. Blower Motor Resistor (In Engine Compartment) |
| 5. Coolant Supply Hose      | 15. Blower Motor Switch                           |
| 6. Blower Motor             | 16. Sliding Door Footwell Insert                  |
| 7. Heater Core              | 17. Air Intake Duct                               |
| 8. Air Distribution Housing | 18. Clamp   |
| 9. Coolant Pipes            |   |
| 10. "T" Fitting             |   |

94H10402

Fig. 6: Identifying Rear Heater Components (EuroVan MV)

Courtesy of Volkswagen United States, Inc.

**HEATER CONTROL VALVE**

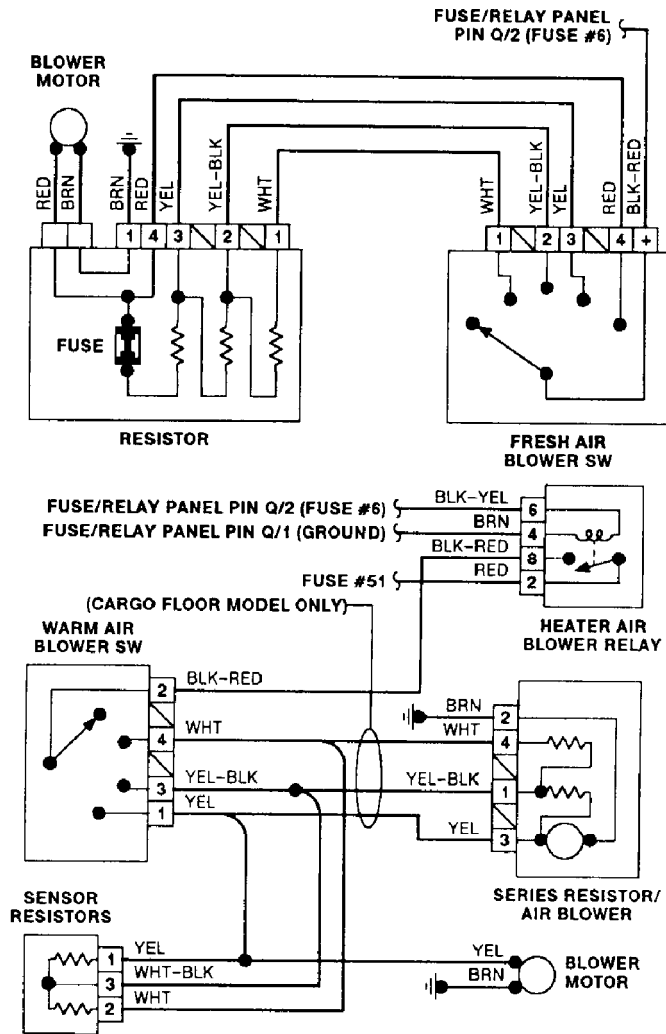
Removal & Installation (Front)

Detach temperature control cable from heater control valve. Clamp shut heater hoses at heater control valve. Detach hoses, and remove heater control valve. To install, reverse removal procedure.

Removal & Installation (Rear)

Detach temperature control cable from heater control valve. Clamp shut heater hoses at heater control valve. Detach hoses and remove heater control valve from expansion tank. To install, reverse removal procedure.

**WIRING DIAGRAM**



94C10811  
 Fig. 7: Heater System Wiring Diagram