

# HEATER SYSTEM

## Article Text

1991 Volkswagen Passat  
For Volkswagen Technical Site  
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Wednesday, August 25, 1999 08:45PM

### ARTICLE BEGINNING

1990-92 AIR CONDITIONING & HEATING  
Volkswagen Heater Systems

1990-92 Passat  
1991-92 Cabriolet, Corrado, Fox, Golf, GTI, Jetta, Vanagon

**\* PLEASE READ THIS FIRST \***

**WARNING:** To avoid injury from accidental air bag deployment, read and carefully follow all SERVICE PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM procedures in AIR BAG article in the ACCESSORIES/SAFETY EQUIPMENT Section.

### DESCRIPTION

The heater is a water-valve type which combines heating, defrosting and ventilation into one unit. See Figs. 1 through 7. Controls include fan control knob and air distribution and temperature control levers. Blower fan provides 3 speeds.

**NOTE:** Vanagon heater system information is not available from manufacturer. Only exploded view and wiring diagrams are provided. See Figs. 5, 12 and 13.

### OPERATION

When air distribution lever (upper lever) is in the center stop position and lower temperature control lever is to the far left, no air enters vehicle. As air distribution lever is moved to the left, air is directed to floor vents. As distribution lever is moved to the right, air is directed to defroster vents.

As heater lever (lower lever) is moved to the right, heater turns on and heat output is increased. As the fan control knob is turned to the right, the fan turns on and can be switched across its 3 speeds.

### ADJUSTMENTS

#### TEMPERATURE CONTROL LEVER

Move temperature control lever to extreme left position. Place heater control valve lever in closed position. Secure cable with clip.

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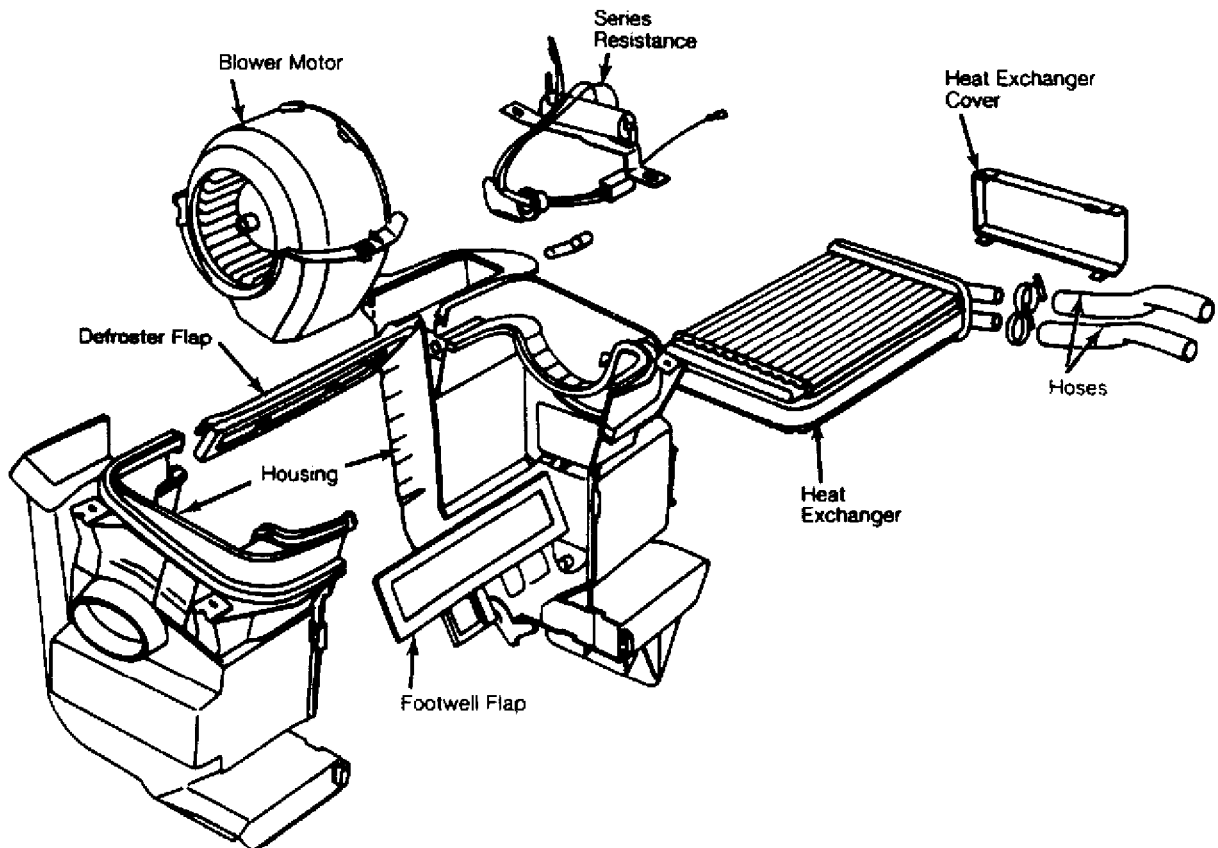


Fig. 1: Exploded View of Heater System (Cabriolet)  
Courtesy of Volkswagen United States, Inc.

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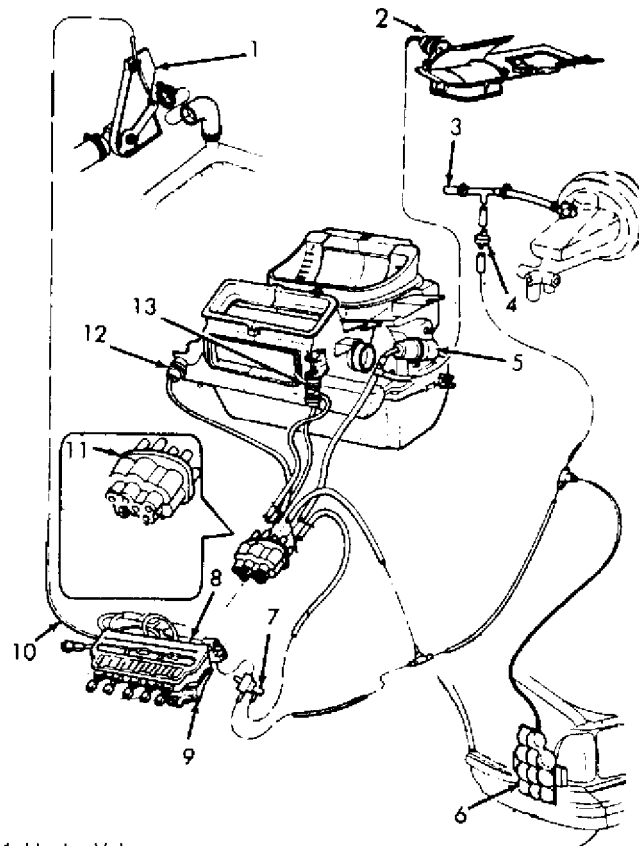
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- |                                  |                              |
|----------------------------------|------------------------------|
| 1. Heater Valve                  | 8. Control Panel (Upper)     |
| 2. Recirculation Door Servomotor | 9. Control Panel (Lower)     |
| 3. Vacuum Supply                 | 10. Heater Control Cable     |
| 4. Check Valve                   | 11. Vacuum Harness Connector |
| 5. Temperature Door Servomotor   | 12. Floor Door Servomotor    |
| 6. Vacuum Reservoir              | 13. Defrost Door Servomotor  |
| 7. Recirculation Vacuum Switch   |                              |

Fig. 2: Identifying Heater System Components (Fox)  
Courtesy of Volkswagen United States, Inc.

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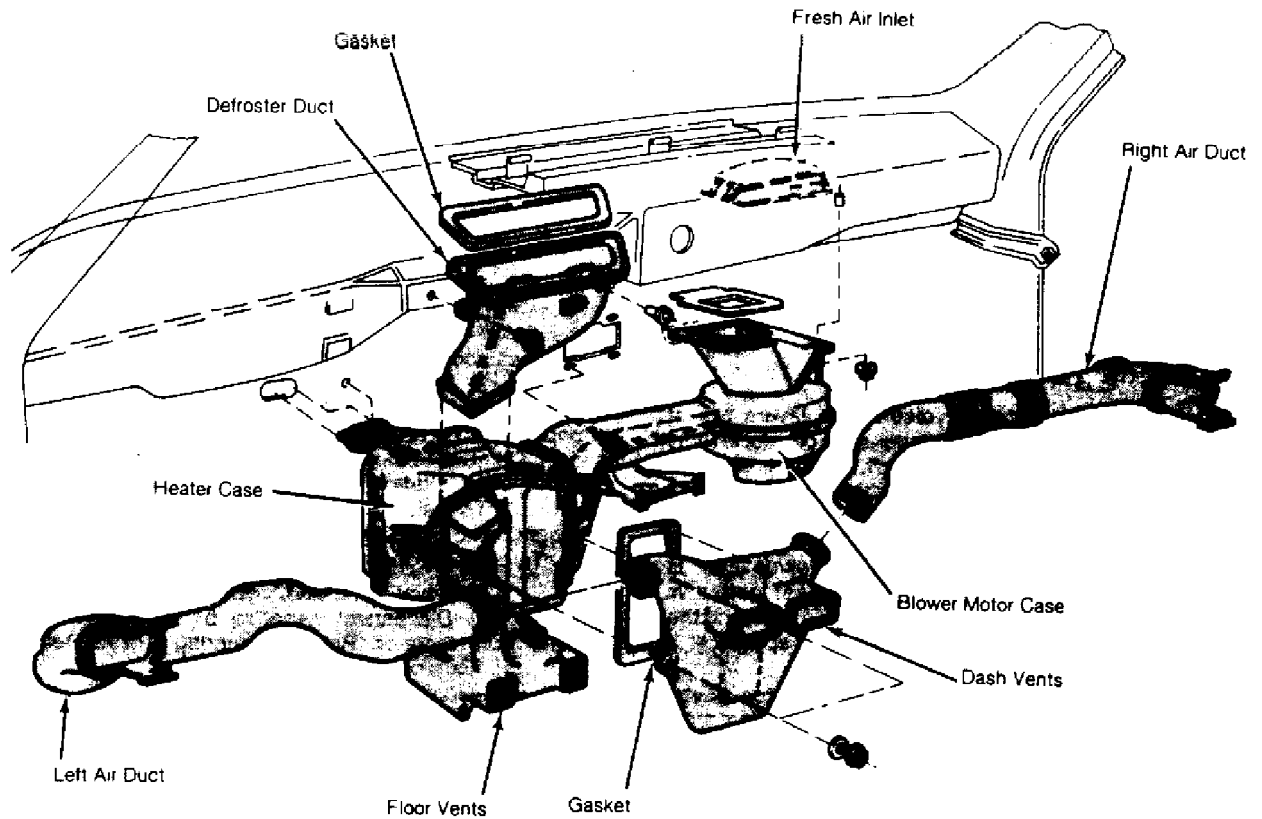


Fig. 3: Exploded View of Heater System (Golf, GTI & Jetta)  
Courtesy of Volkswagen United States, Inc.

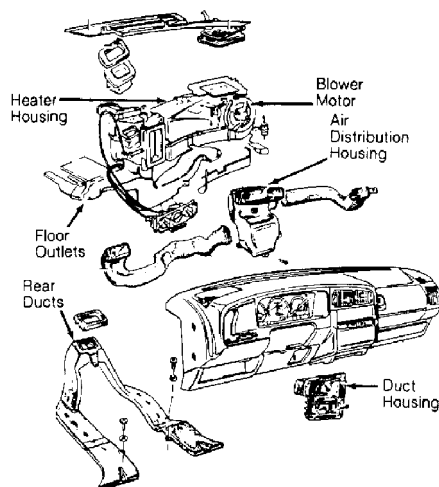
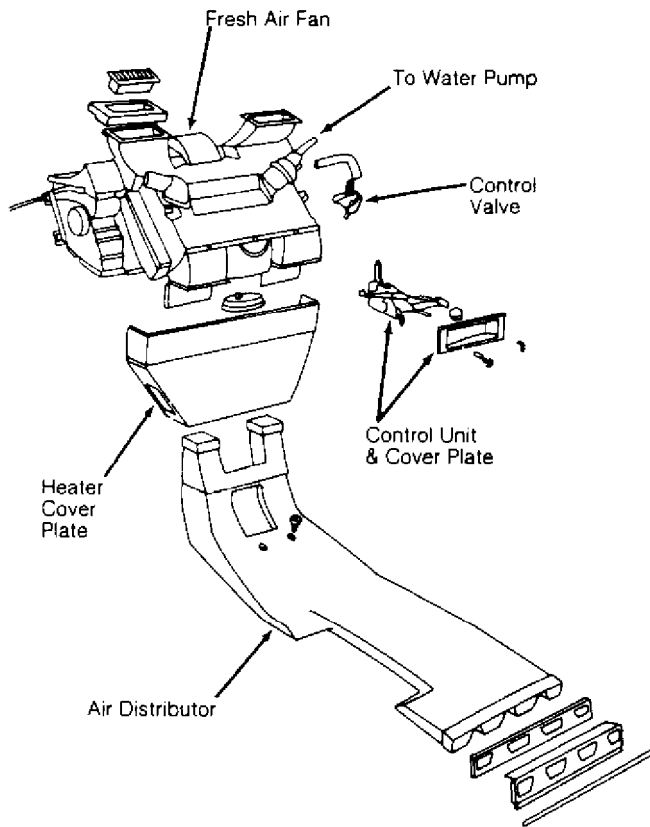


Fig. 4: Exploded View of Heater System (Passat)  
Courtesy of Volkswagen United States, Inc.

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**Fig. 5: Exploded View of Heater System (Vanagon)**  
Courtesy of Volkswagen United States, Inc.

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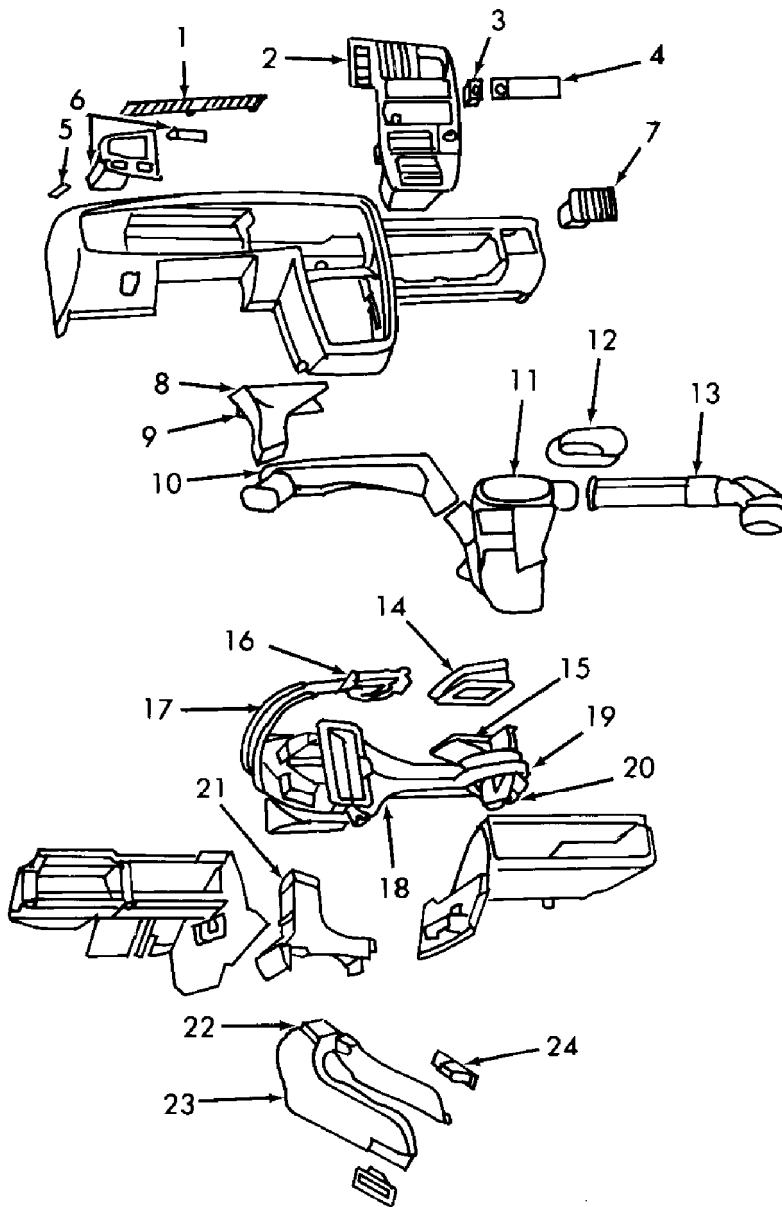
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- |                              |  |
|------------------------------|--|
| 1. Defroster Vents           | 13. Air Duct (Right)                             |
| 2. Instrument Panel Center   | 14. Air Intake Duct                              |
| 3. Fresh Air Blower Switch   | 15. Seal   |
| 4. Air Control Fascia        | 16. Air Control Assembly                         |
| 5. Side Window Air Vent      | 17. Control Cables                               |
| 6. Air Outlet & Grille       | 18. Air Distribution Housing<br>With Heater Core |
| 7. Air Outlet                | 19. Blower Resistor                              |
| 8. Seal                      | 20. Blower                                       |
| 9. Defroster Air Duct        | 21. Footwell Air Outlets                         |
| 10. Air Duct (Left)          | 22. Seal   |
| 11. Air Distribution Housing | 23. Rear Footwell Air Duct                       |
| 12. Center Air Outlet Duct   | 24. Rear Footwell Air Outlet                     |

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**Fig. 6: Exploded View of Heater System (Corrado)**

Courtesy of Volkswagen United States, Inc.

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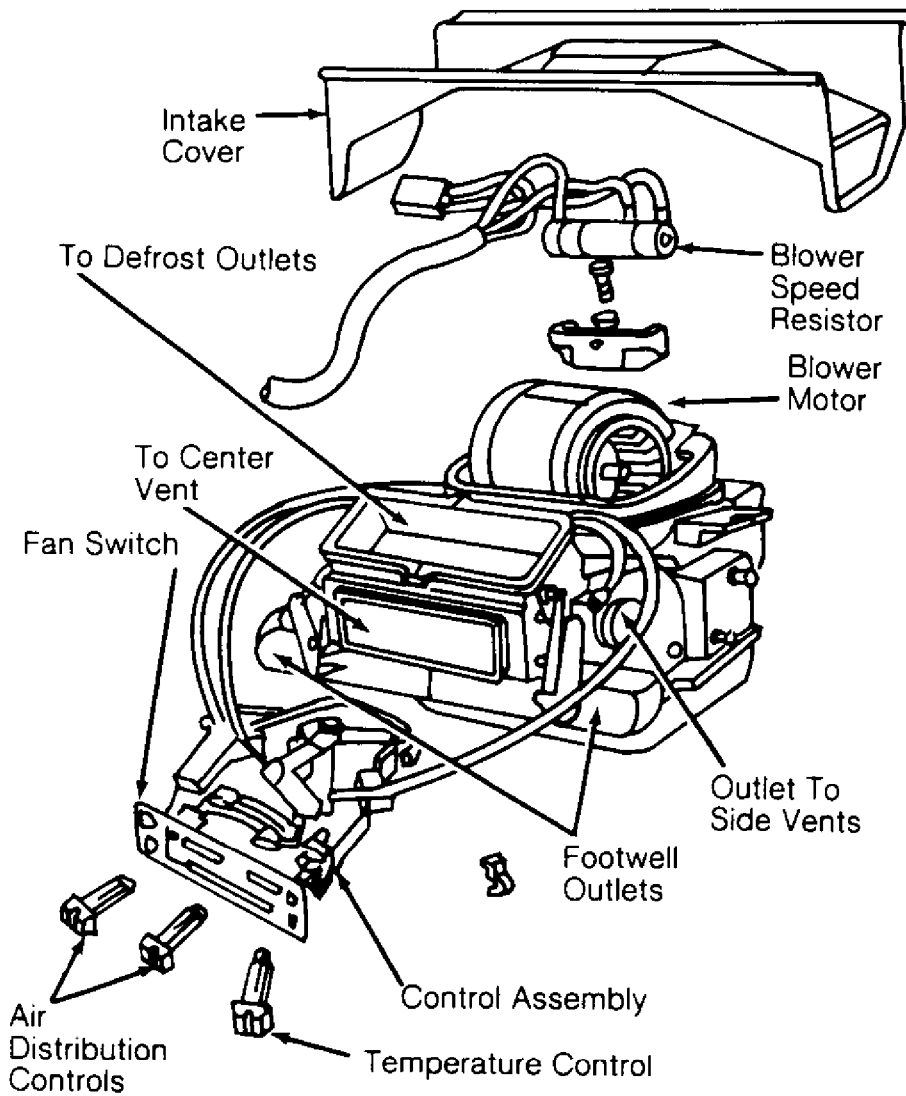
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Fig. 7: Exploded View of Heater System (Fox)  
Courtesy of Volkswagen United States, Inc.

## TESTING

### BLOWER MOTOR

Golf & Jetta

1) Remove blower motor. See BLOWER MOTOR under REMOVAL & INSTALLATION. Using an ohmmeter, connect leads across thermofuse terminals. If resistance reading is approximately zero ohm, go to next step. If resistance reading is not as specified, replace thermofuse.

2) Check resistance between terminals "A" and No. 1. See Fig. 8. Resistance reading should be 3.3 ohms. If reading is as specified, check resistance between terminals "A" and No. 2.

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3) Resistance reading should be 0.8 ohms. If resistance readings are not as specified, replace blower resistor. If resistor is okay, check wiring. See WIRING DIAGRAMS. If wiring is okay, replace blower motor.

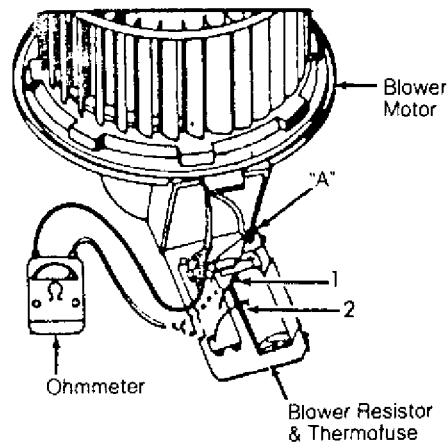


Fig. 8: Testing Blower Motor (Golf & Jetta)  
Courtesy of Volkswagen United States, Inc.

## REMOVAL & INSTALLATION

\* PLEASE READ THIS FIRST \*

**WARNING:** To avoid injury from accidental air bag deployment, read and carefully follow all SERVICE PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM procedures in AIR BAG article in the ACCESSORIES/SAFETY EQUIPMENT Section.

### BLOWER MOTOR

#### Removal & Installation (Fox)

1) Disconnect negative battery cable. Remove front cover gasket and water deflector. Release front fresh air housing cover clips and remove front and rear fresh air housing covers.

2) Disconnect vacuum hoses. Disconnect blower resistor harness connector and remove resistor. Loosen blower mounting screw. Disconnect blower motor harness connector.

3) Remove blower motor upper and lower housing covers. Rotate blower motor toward front of vehicle and remove motor. To install, reverse removal procedure.

#### Removal & Installation (Corrado, Golf & Jetta)

Disconnect blower motor harness connector. Depress blower

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motor retaining clip and rotate motor clockwise to disengage lug on motor from clip. Remove motor. To install, reverse removal procedure.

#### BLOWER RESISTOR

##### Removal & Installation (Fox)

Remove blower housing cover. Disconnect blower resistor harness connector. Remove retaining screws and remove blower resistor. To install, reverse removal procedure.

##### Removal & Installation (Passat)

Remove glove box. Disconnect blower resistor and remove resistor. To install, reverse removal procedure.

#### HEATER ASSEMBLY

##### Removal (Cabriolet & Fox)

1) Drain coolant from radiator. Loosen clamps and remove heater core hoses. Disconnect battery ground cable. Pull heater control knobs off. Remove trim plate and underdash access panels.

2) Disconnect wiring from blower motor, and remove cable from temperature control lever. Pry spring clamp off with screwdriver and separate heater assembly halves. Remove heater core and blower motor.

##### Installation

To install, insert blower motor and heater core into right half of housing. Position left half and install spring clips. To complete installation, reverse removal procedure.

##### Removal (Golf, GTI & Jetta)

1) Disconnect negative battery cable. Drain coolant from radiator. Remove steering wheel. Remove lower left instrument panel retaining screws. Remove lower left instrument panel. Remove lower right instrument panel tray retaining screws.

2) Remove lower right instrument panel. Remove gearshift lever knob. Remove gearshift lever boot. Remove center console retaining screws. Slide center console rearward. Disconnect electrical connectors attached to center console. Remove center console.

3) Remove temperature control knobs. Remove trim plate. Remove radio. Remove switches from instrument panel. Remove instrument panel trim plate retaining screws. Remove instrument panel trim plate. Remove instrument cluster retaining screws. Remove instrument cluster.

4) Disconnect speedometer cable, electrical connectors and vacuum hoses from instrument cluster. Remove speaker grilles. Remove air outlet grilles from housings. Remove housing retaining screws. Remove air outlet housings. Remove instrument panel mounting nuts and screws.

5) Remove instrument panel. Disconnect heater hoses from heater core. Remove heater assembly mounting bolts and nuts. Remove all attaching ducts. Disconnect cables from heater assembly. Remove heater assembly.

### Installation

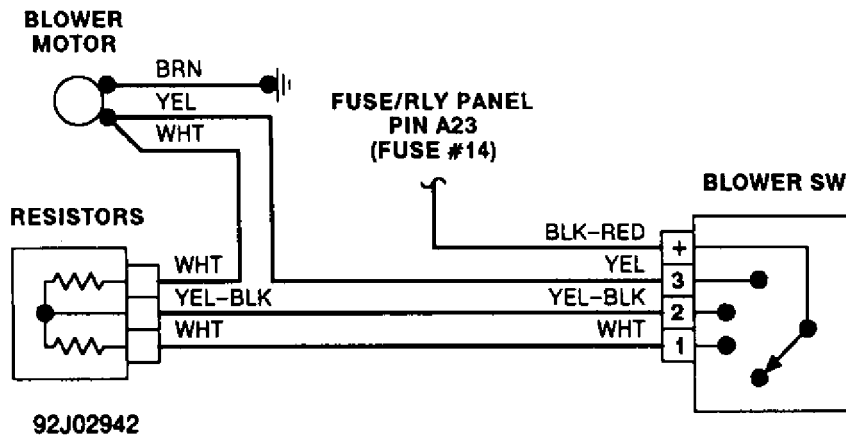
To install, reverse removal procedure. Fill radiator with coolant and start engine. Ensure heater control is in warm position to purge air from heater core.

### HEATER CONTROL PANEL

#### Removal & Installation (Passat)

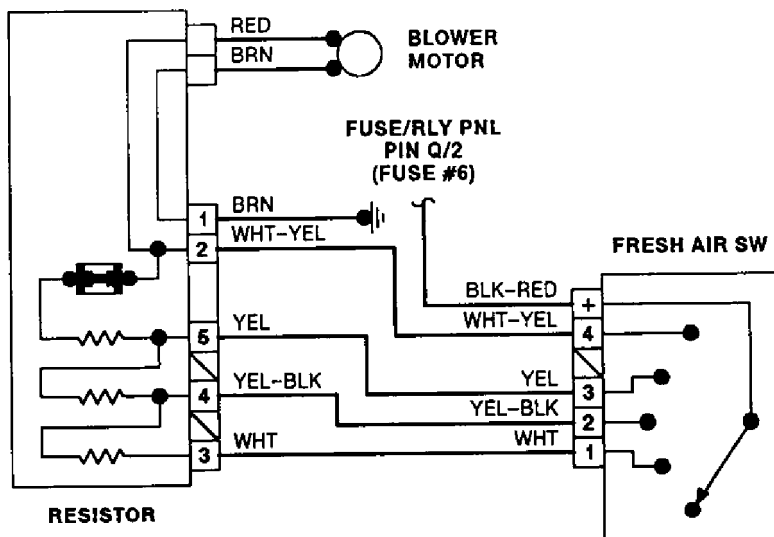
Remove control panel trim. Remove control panel mounting screws and pull panel forward out of dashboard. Disconnect harness connector and control cables. Remove control panel. To install, reverse removal procedure.

### WIRING DIAGRAMS



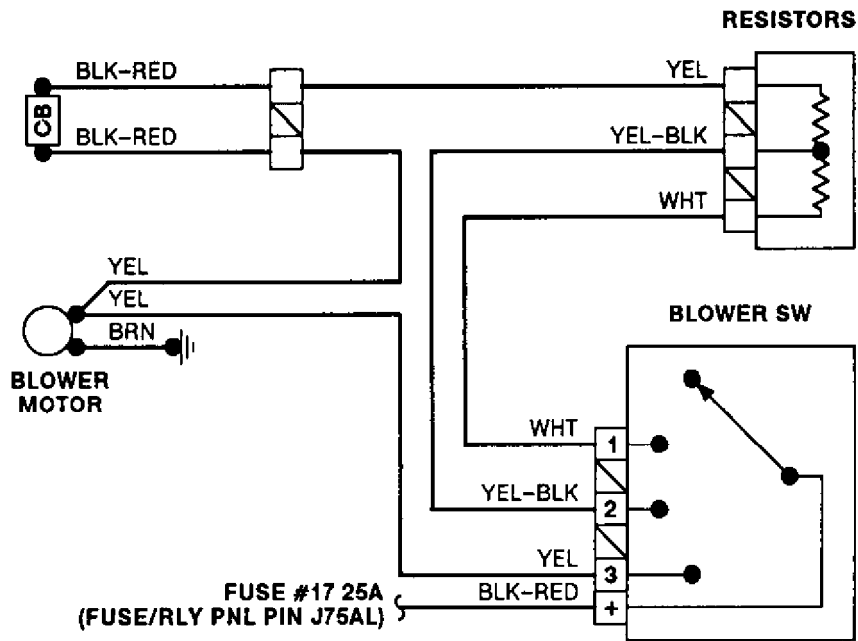
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Fig. 9: Heater System Wiring Diagram (Cabriolet)



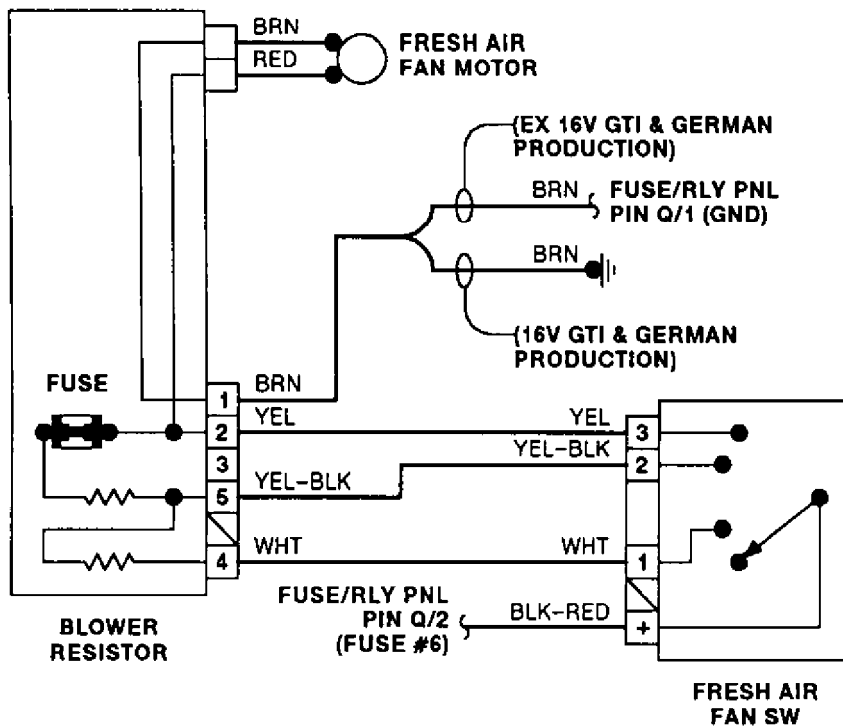
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Fig. 10: Heater System Wiring Diagram (Corrado)



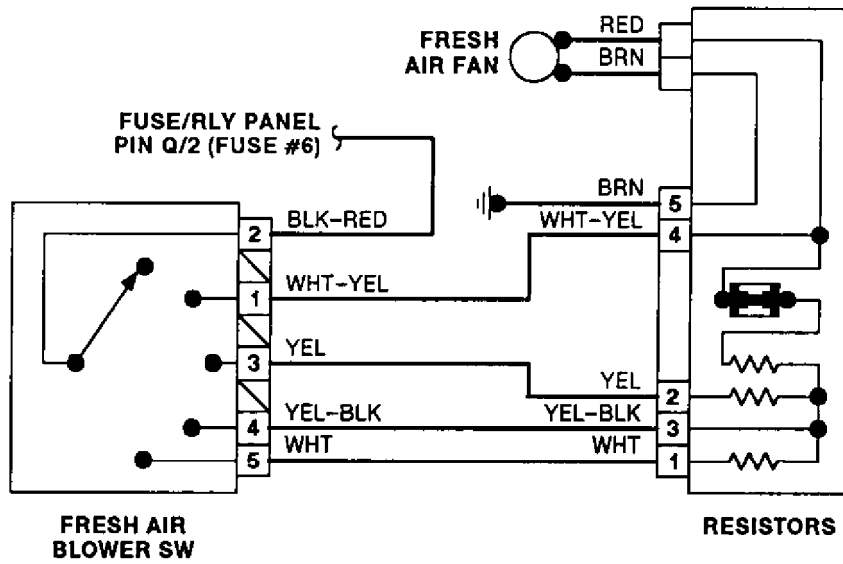
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Fig. 11: Heater System Wiring Diagram (Fox)



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Fig. 12: Heater System Wiring Diagram (Golf, GTI & Jetta)



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Fig. 13: Heater System Wiring Diagram (Passat)

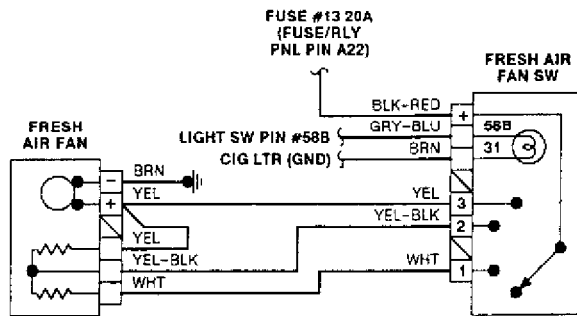


Fig. 14: Fresh Air Blower Motor Wiring Diagram (Vanagon)

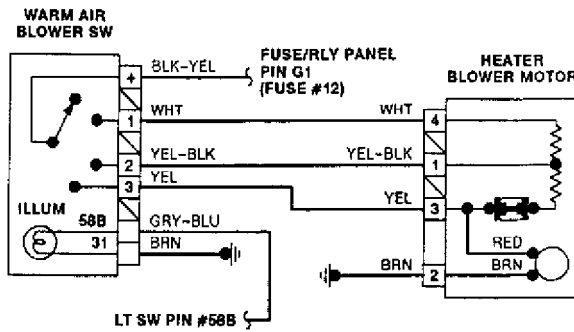


Fig. 15: Warm Air Blower Motor Wiring Diagram (Vanagon)

END OF ARTICLE