

HEATER SYSTEM

1993 Jeep Cherokee

1993 AIR CONDITIONING & HEAT
Chrysler Motors Corp. Heater Systems

Jeep; Cherokee & Wrangler

DESCRIPTION

Cherokee and Wrangler use a blend-air heater system. Temperature of air entering passenger compartment is controlled by regulating amount of airflow through heater core and then blending it with a controlled amount of cool air that by-passes the heater core.

OPERATION


CHEROKEE

Mode Control Lever

The upper control lever on the control panel operates a vacuum switch on back of control panel. Vacuum switch controls vacuum to defroster, floor and panel vacuum motors, as well as a vacuum-actuated heater coolant control valve. See Figs. 1 and 4. The heater coolant control valve closes when vacuum is applied to it.

Temperature Control Lever

The lower control lever on the control panel moves a cable that controls the position of the blend-air door in the heater case.

Mode Lever Position	Air Discharge	Blower Speeds	Panel Door	Floor Door	Defrost Door	Water Valve
Off	Closed	None	Closed	Closed	Closed	Closed
Vent	Panel Registers	4	Open	Closed	Closed	Closed
Bi-Level	Panel Registers and Floor With Def. Bleed	4	Open	Open	Bleed	Open (1)
Heat	Floor With Def. Bleed	4	Closed	Open	Bleed	Open (1)
	Defroster	4	Closed	Closed	Open	Open (1)

(1) HEATER CONTROL VALVE CLOSES IN FULL COOL TEMPERATURE LEVER POSITION

Fig. 1: Heater System Operation (Cherokee)
Courtesy of Chrysler Corp.

WRANGLER

NOTE: System does not use a heater coolant control valve. Coolant always flows through the heater core.

Mode Control Lever

The upper lever on the control panel moves 2 cables, one for the vent doors and one for the defrost/floor duct door. See Figs. 2 and 3. Lever also operates vacuum switch on back of control panel. The

vacuum switch allows or denies vacuum to the fresh air door vacuum motor.

Temperature Control Lever

The lower lever on the control panel moves a cable that controls the position of the blend-air door in the heater case.

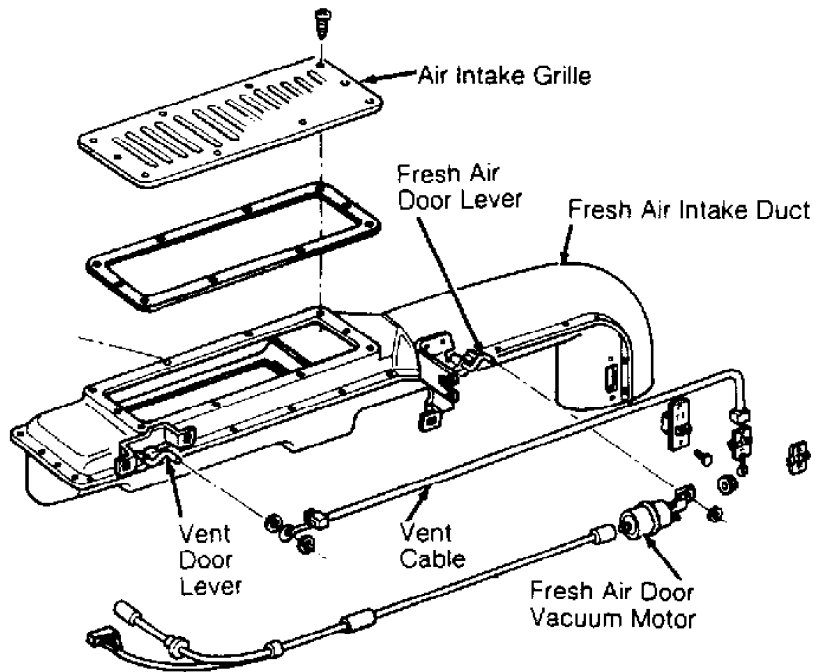
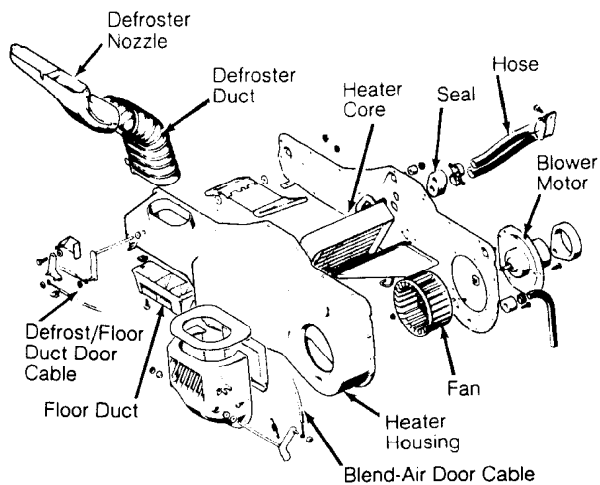


Fig. 2: Exploded View Of Air Intake System (Wrangler)
Courtesy of Chrysler Corp.



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Fig. 3: Exploded View Of Heater Case (Wrangler)
Courtesy of Chrysler Corp.

ADJUSTMENTS

CONTROL CABLES

Cherokee

Temperature control cable is attached to blend-air door lever by a retaining clip and a self-adjusting clip. When connecting cable to door lever, self-adjusting clip will adjust cable when it is snapped into position on lever.

Wrangler

1) Since left cable operates right cable, install and adjust cables in correct sequence. This maintains self-adjusting mechanism.

2) Connect cables to control panel. Connect only right vent door cable to vent door. Open and close right vent door one time by sliding control panel lever. Connect left cable, and ensure both vent doors open at same time.

TROUBLE SHOOTING

BLOWER DOES NOT RUN

Blown fuse. Loose connection or poor ground. Faulty switch, motor or resistor.

BLOWER RUNS AT ONE SPEED

Faulty switch or resistor.

BLOWER RUNS, BUT NO AIR CIRCULATION

Air inlet blocked. Fan not attached to motor shaft. Inoperative air inlet door.

HEAT OUTPUT WHEN CONTROLS ARE OFF

Blend-air door cable misadjusted. Blend-air door binding in housing.

LITTLE OR NO AIR FROM DEFROSTER OUTLETS

Defroster duct misaligned. Defroster cable incorrectly adjusted. Leaking air duct seals. Defroster duct damaged.

LITTLE OR NO AIR FROM FLOOR OUTLETS

Misadjusted heater air door cable. Obstructed heater housing or ducts. Clogged heater core fins. Leaking air duct seals.

NOT ENOUGH HEAT

Low coolant or plugged heater core. Incorrect thermostat. Incorrect adjustment of cables. Heater system air leaks. Blend-air door not in proper position.

REMOVAL & INSTALLATION

BLOWER MOTOR

Removal & Installation (Cherokee - 2.5L Engine)

Disconnect blower motor connector in engine compartment, near

blower motor. Remove blower motor screws. Remove blower motor. To install, reverse removal procedure.

Removal & Installation (Cherokee - 4.0L Engine)

1) Remove coolant bottle retaining strap. Move bottle aside. Remove coolant bottle bracket. Remove anti-lock brake pump and bracket as an assembly (if equipped). Move assembly aside.

2) Disconnect blower motor connector in engine compartment, near blower motor. Remove blower motor screws. Remove blower motor. To install, reverse removal procedure.

Removal & Installation (Wrangler)

Remove heater housing. See HEATER HOUSING. Remove blower motor screws and blower motor. To install, reverse removal procedure.

CONTROL CABLES

Removal (Cherokee)

Remove control panel. See CONTROL PANEL. Disconnect cable wire from blend-air door lever. Squeeze cable housing tabs together using needle-nose pliers to detach cable housing from slot in case. DO NOT break cable housing. Remove cable.

Installation

Connect cable wire to blend-air door lever. Snap cable housing tabs into slot in case. Route cable to control panel. Connect cable wire to control panel. Install control panel.

Removal & Installation (Wrangler)

Disconnect cables from vent doors. Disconnect cables from control panel levers. Remove cables by squeezing tabs using needle-nose pliers. Remove cable. Connect and adjust cables. See ADJUSTMENTS.

CONTROL PANEL

Removal & Installation

1) Disconnect negative battery cable. Remove 6 screws from instrument panel bezel. Remove bezel (on Cherokee, bezel is snap-fitted to instrument panel). Remove radio (if equipped).

2) Remove control panel screws. Pull out control panel and disconnect vacuum hoses, wires and cables. Note locations for installation reference. Remove control panel. To install, reverse removal procedure.

HEATER CORE

Removal & Installation (Cherokee)

1) Drain cooling system. Disconnect heater hoses from heater core tubes. Remove blower housing. Remove heater core screws. Pull heater core out of housing.

2) To install, cement heater core seal in place to prevent it from moving during installation. Insert heater core into housing. To install remaining components, reverse removal procedure.

Removal & Installation (Wrangler)

Remove heater housing. See HEATER HOUSING. Remove cover from housing. Remove heater core from housing. To install, reverse removal procedure.

HEATER HOUSING

Removal & Installation (Cherokee)

- 1) Disconnect negative battery cable. Drain cooling system. Disconnect blower motor connector in engine compartment, near blower motor. Remove console (if equipped). Remove lower instrument panel.
- 2) Disconnect blower motor resistor connector. Disconnect vacuum hose from vacuum motor. Cut plastic strap holding blower housing to heater housing.
- 3) Disconnect control cable from blend-air door lever. Remove control cable. Remove clip from rear of blower housing flange, and remove housing screws. Remove right kick panel.
- 4) Remove instrument panel support bolt. To disengage blower housing studs from firewall, gently pull out right side of instrument panel and then rotate blower housing downward and rearward. Remove blower housing.
- 5) Remove heater core screws. Remove heater core. Remove defroster duct. Disconnect vacuum hoses from vacuum motors. Remove heater housing nuts from engine compartment firewall. Remove heater housing.
- 6) To install, reverse removal procedure. Before installing heater core, cement core seal to core to keep it in place during installation. After installation, fill cooling system.

Removal & Installation (Wrangler)

- 1) Disconnect negative battery cable. Drain about 2 quarts of coolant from radiator. Disconnect heater hoses from core tubes. Disconnect vent door cables. Disconnect blower motor connector in engine compartment, near blower motor. Disconnect defroster duct.
- 2) Remove heater housing nuts from studs on engine compartment firewall. Tilt heater housing downward to disengage it from defroster duct. Pull heater housing rearward and out from under instrument panel. To install, reverse removal procedure.

VACUUM DIAGRAM

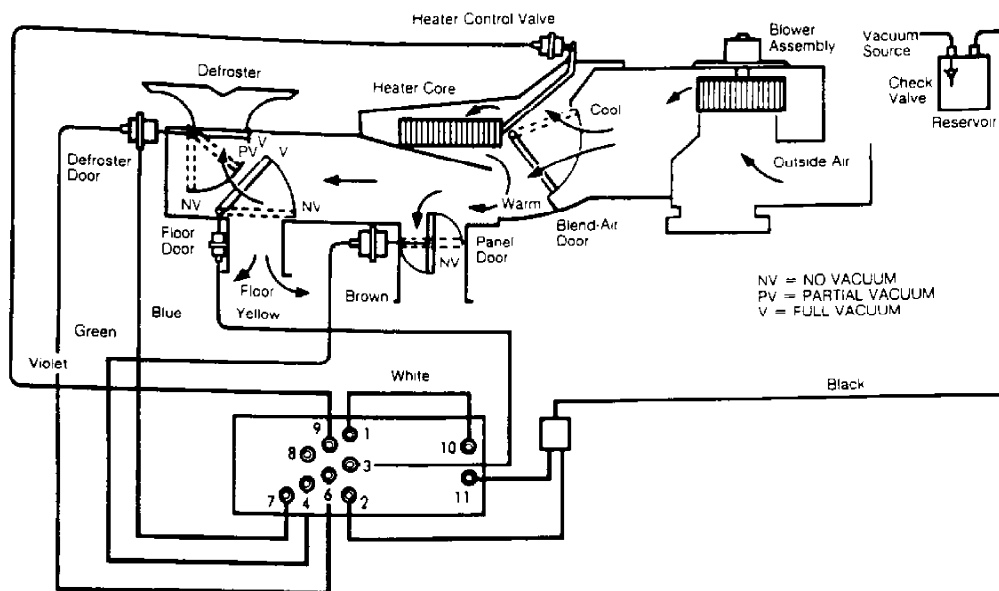
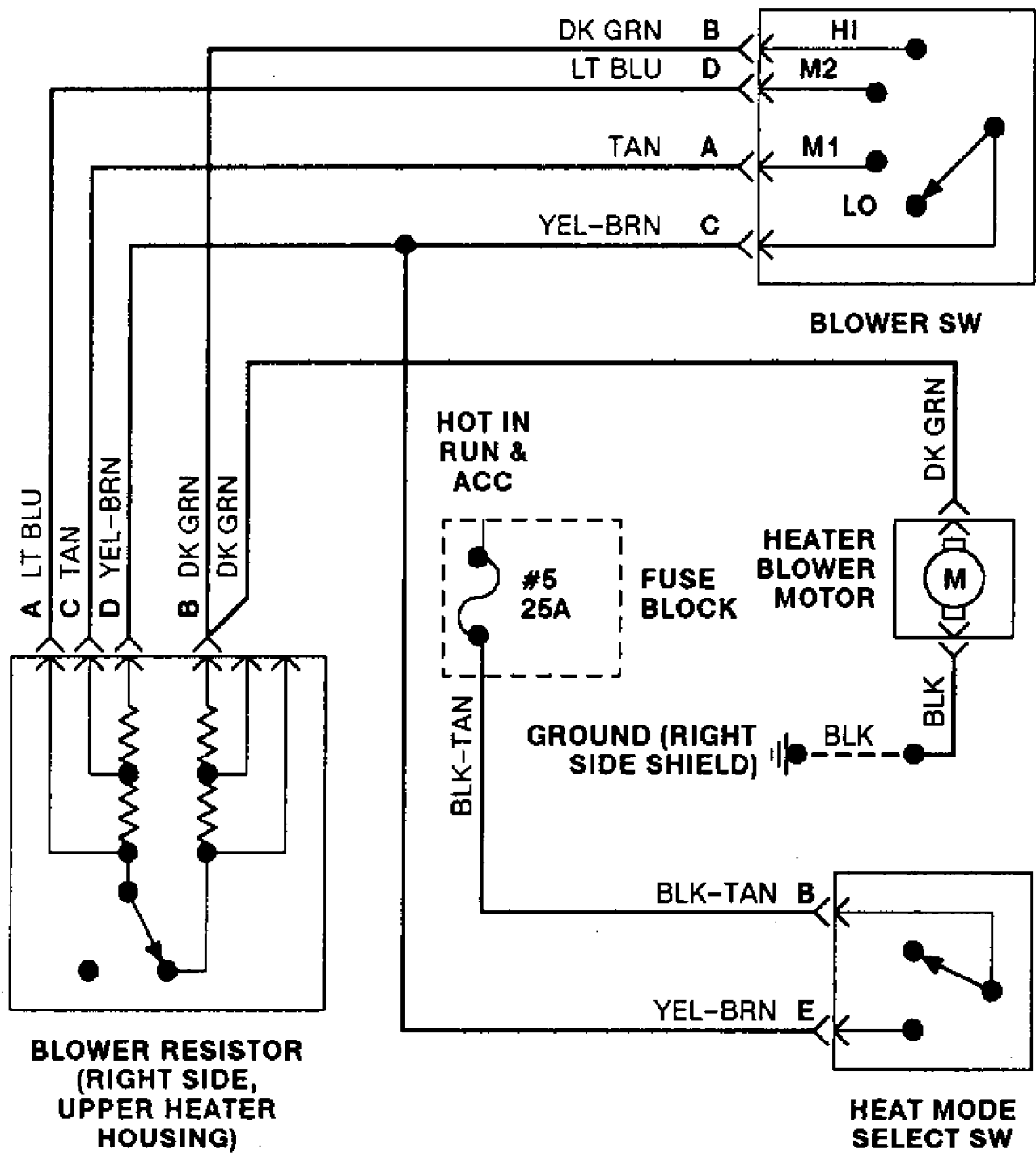


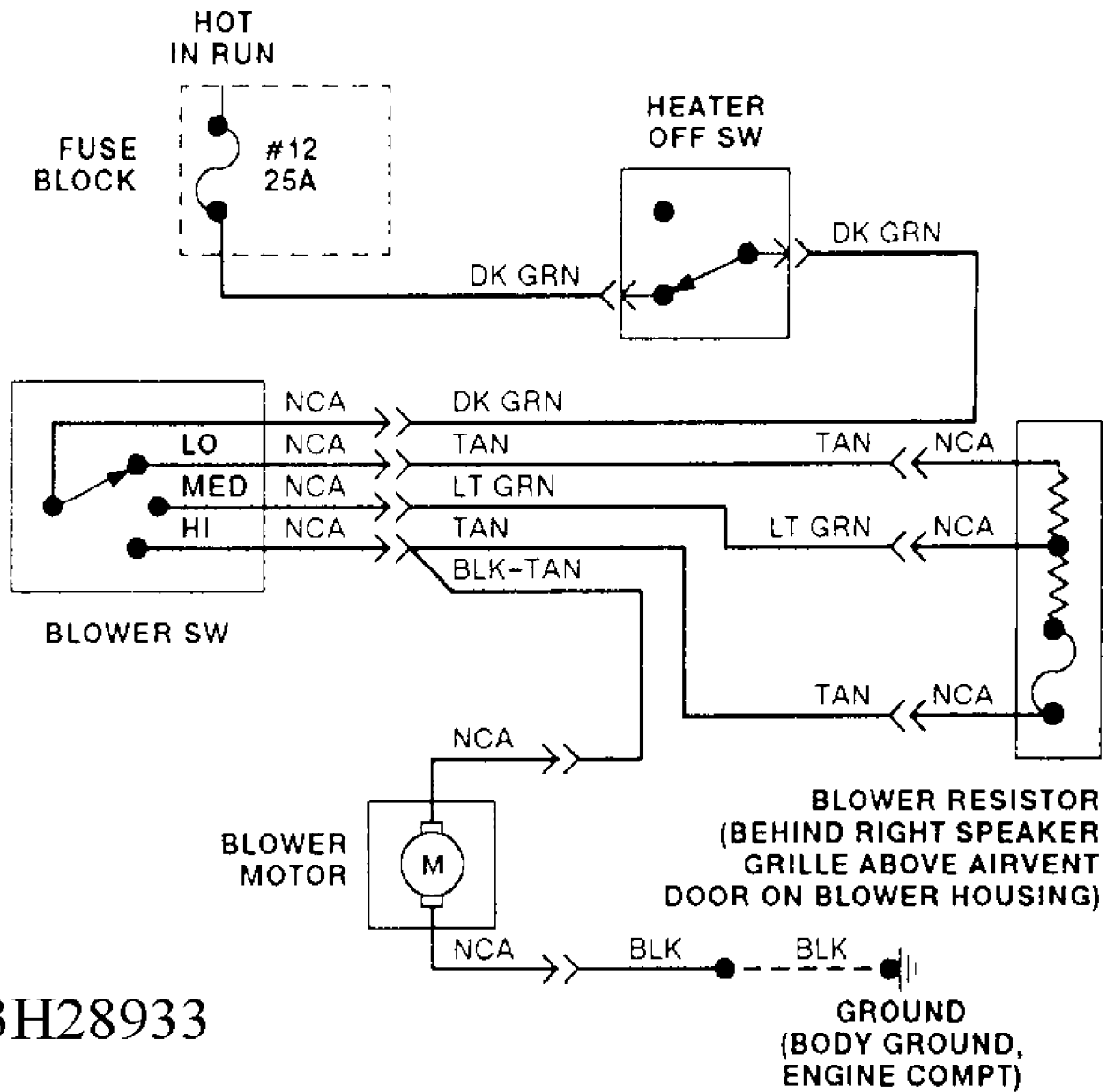
Fig. 4: Heater Control System Vacuum Diagram (Cherokee)
Courtesy of Chrysler Corp.

WIRING DIAGRAMS



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Fig. 5: Heater System Wiring Diagram (Cherokee)



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Fig. 6: Heater System Wiring Diagram (Wrangler)