

ENGINE COOLING FAN

1993 Jeep Cherokee

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Chrysler Corp. Engine Cooling Fans

Jeep; Cherokee, Grand Cherokee, Wrangler

NOTE: Information for Grand Cherokee with 5.2L V8 engine is not available from manufacturer.

ELECTRIC COOLING FAN

On Cherokee 4.0L engine with heavy-duty cooling and/or air conditioning, an auxiliary electric fan operates whenever engine temperature exceeds 190°F (88°C), or air conditioner is on. If Powertrain Control Module (PCM) detects a fan control circuitry problem, a fault code will set.

NOTE: For more information on vehicle self-diagnostics, see appropriate SELF-DIAGNOSTICS article in ENGINE PERFORMANCE.

TROUBLE SHOOTING & TESTING

Electric Cooling Fan Circuit

1) Ensure fuses No. 4 and 6 on Power Distribution Center (PDC), near battery, are good. Ensure fan operates. See MOTOR under COMPONENT TESTING. Remove cooling fan relay from PDC. Start engine. Using a test light, check for power at terminal No. 2 (Light Green/Red wire) of PDC. If test light does not illuminate, repair open circuit in Light Green/Red wire between terminal No. 2 and fuse No. 4.

2) Connect a jumper wire between terminal No. 2 (Light Green/Red wire) and terminal No. 4 (Light Green wire) on PDC. If fan does not operate, leave jumper wire connected. Unplug fan connector on left side of fan shroud.

3) Using a test light, check for power at Light Green wire on fan harness connector. If no power exists, repair Light Green wire between fan harness connector and terminal No. 4 on PDC. If power exists at Light Green wire, repair open circuit in Black wire between fan harness connector and ground.

4) Turn ignition off. Reconnect fan motor connector. Remove jumper wires. Reinstall relay. Connect Diagnostic Readout Box II (DRB-II) to engine diagnostic connector. Connector is located in engine compartment, next to PCM.

5) Start engine. Energize fan relay circuit by warming engine until coolant temperature is higher than 190°F (88°C), or by turning air conditioning on (if equipped). If relay clicks but fan does not operate, check for poor relay connections at socket. If connections are okay, test relay. See RELAY under COMPONENT TESTING.

6) If relay does not click, put DRB-II into voltmeter mode. Measure voltage at cavity A1 (Dark Blue/White wire) in relay connector. If voltage is less than 10 volts, repair open circuit in Dark Blue/White wire between cavity A1 and fuse No. 6. If voltage is 10 volts or more, turn ignition off and reconnect relay.

7) Unplug connector from PCM. Examine connector. If connector is okay, turn ignition on. With DRB-II in voltmeter mode, measure voltage at terminal No. 31 (Dark Blue/Pink wire) on PCM harness connector. If voltage is 10 volts or more, replace PCM. If voltage is less than 10 volts, repair open circuit in Dark Blue/Pink wire between PCM terminal No. 31 and PDC terminal No. 5.

COMPONENT TESTING

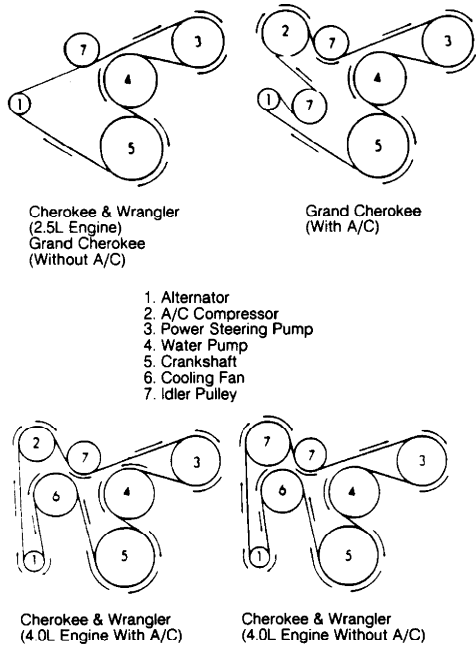
Motor

Unplug fan motor connector at left side of fan shroud. Connect a jumper wire from terminal "B" (Black wire) of fan motor connector to a known good engine ground. Using another jumper with a 25-amp in-line fuse, supply battery power to terminal "A" (Red wire) of fan motor connector. Service fan motor if it does not run.

Relay

1) Remove relay from Power Distribution Center (PDC). Connect a self-powered test light between relay terminals No. 2 and 4. See Fig. 1. Test light should indicate no continuity. Leave test light connected.

2) Using a jumper wire, connect relay terminal No. 5 to a good ground. Using another jumper with a 15-amp in-line fuse, supply battery power to relay terminal No. 1. If test light does not indicate continuity, replace relay.

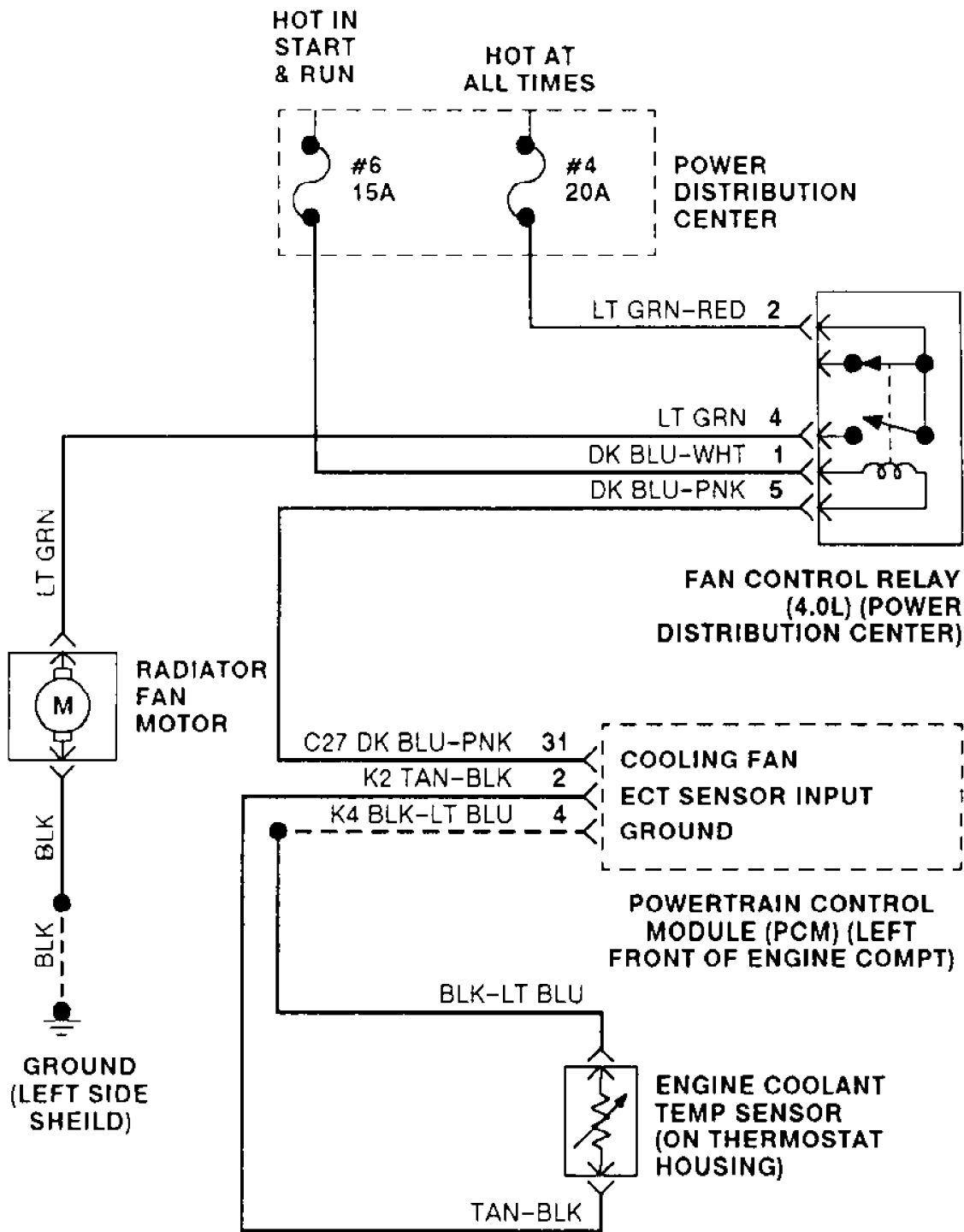


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Fig. 1: Identifying Fan Relay Connector Terminals
Courtesy of Chrysler Corp.

WIRING DIAGRAM

Also see appropriate chassis wiring diagram in WIRING DIAGRAMS.



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Fig. 2: Electric Cooling Fan Wiring Diagram