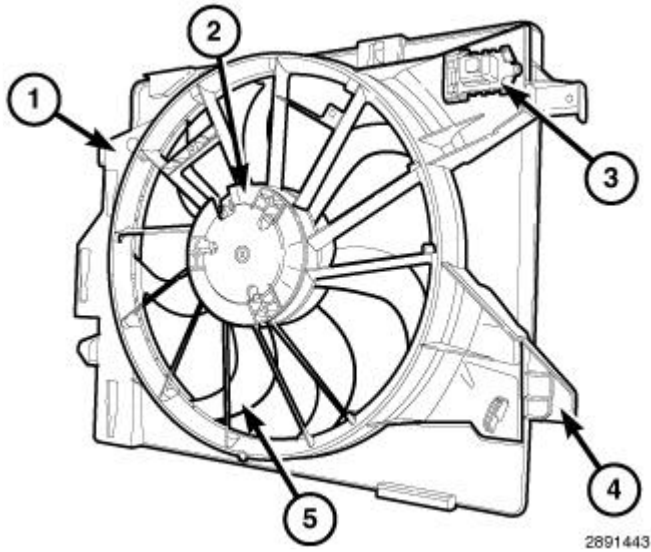


**FAN, COOLING****DESCRIPTION****DESCRIPTION**

**Fig. 42: Fan Shroud, Electric Motor, Resistor & Fan Blades**  
 Courtesy of CHRYSLER GROUP, LLC

The electric radiator fan is mounted to the back side of the radiator. The radiator fan assembly consists of the Fan shroud (1), electric motor (2), resistor (3), and a fan blades (5) as an assembly.

**OPERATION****GAS****RADIATOR FAN OPERATION CHART**

| COOLANT TEMPERATURE   |               |  | A/C PRESSURE         |   | TRANSAXLE OIL TEMPERATURE |  |
|-----------------------|---------------|--|----------------------|---|---------------------------|--|
| Fan Operation Speeds: | Initial       | Max  | Initial              | Max   | Initial                   | Max  |
| Fan On:               | 104°C (220°F) | 110°C (230°F) Fan Speed Duty-Cycles (Ramps-up) from 30% to 99% | 1, 724 Kpa (250 psi) | 2, 068 Kpa (300 psi) Fan Speed Duty-Cycles (Ramps-up) from 30% to 99% | 96°C (204°F)              | 111°C (232°F) Fan Speed Duty Cycles (Ramps-up) from 30% to 99% |
| Fan Off:              | 101°C (214°F) | Fan Speed Duty-Cycles (Ramps-down) from                        | 1, 710 Kpa (248 psi) | Fan Speed Duty-Cycles (Ramps-down) from                               | 89°C (192°F)              | Fan Speed Duty Cycles (Ramps-down) from                        |

**2012 Dodge Grand Caravan Crew**

2012 ENGINE Cooling System - Grand Caravan, Town &amp; Country

99% to 30%

99% to 30%

99% to 30%

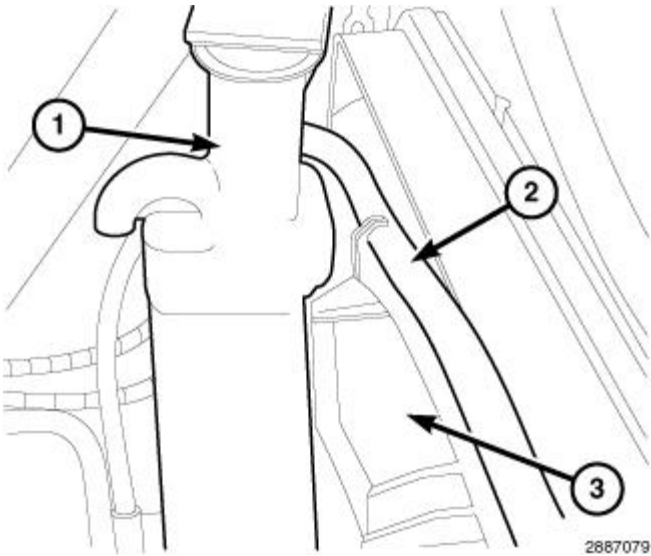
**DIESEL****RADIATOR FAN OPERATION CHART****FAN OPERATION AS A FUNCTION OF COOLANT TEMPERATURE**

| Fan Status | A/C On, High Ambient | A/C ON, Norm Ambient | A/C Off, Norm Ambient |
|------------|----------------------|----------------------|-----------------------|
| OFF        | 93°C (200°F)         | 96°C (205°F)         | 98°C (208°F)          |
| LOW TO OFF | 93°C (200°F)         | 96°C (205°F)         | 98°C (208°F)          |
| OFF TO LOW | 96°C (205°F)         | 98°C (208°F)         | 100°C (212°F)         |
| HI TO LOW  | 96°C (205°F)         | 100°C (212°F)        | 102°C (216°F)         |
| LO TO HIGH | 98°C (208°F)         | 102°C (216°F)        | 104°C (220°F)         |

**DIAGNOSIS AND TESTING****DIAGNOSIS AND TESTING - RADIATOR FAN DIAGNOSIS CHART**

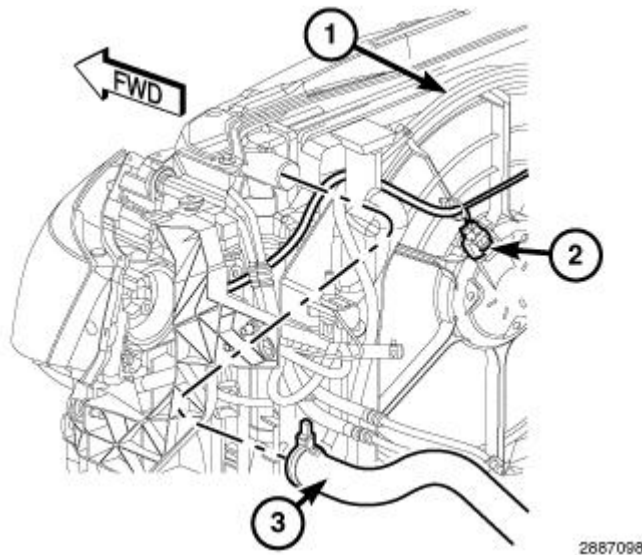
| CONDITION                                   | POSSIBLE CAUSES   | CORRECTION   |
|---|---|--|
| NOISY RADIATOR FAN                          | 1. Fan blade loose.   | 1. Replace fan assembly. Refer to <b><u>FAN, COOLING, REMOVAL.</u></b> |
|   | 2. Fan blade striking a surrounding object.   | 2. Locate point of fan blade contact and repair as necessary.          |
|   | 3. Air obstructions at radiator or A/C condenser.   | 3. Remove obstructions and/or clean debris.                            |
|   | 4. Electric fan motor defective.  | 4. Replace fan assembly. Refer to <b><u>FAN, COOLING, REMOVAL.</u></b> |
| ELECTRIC FAN MOTOR DOES NOT OPERATE         | 1. Fan relay, powertrain control module (PCM), coolant temperature sensor, or wiring defective. | 1. (Refer to Appropriate Diagnostic Information) Repair as necessary.  |
|   | 2. Defective A/C pressure transducer.   | 2. (Refer to Appropriate Diagnostic Information) Repair as necessary.  |
| ELECTRIC RADIATOR FAN OPERATES ALL THE TIME | 1. Fan relay, powertrain control module (PCM), coolant temperature sensor or wiring defective.  | 1. (Refer to Appropriate Diagnostic Information) Repair as necessary.  |
|   | 2. Check for low coolant level.   | 2. Add coolant as necessary.   |
|   | 3. Defective A/C pressure transducer.   | 3. (Refer to Appropriate Diagnostic Information) Repair as necessary.  |

**REMOVAL****REMOVAL**



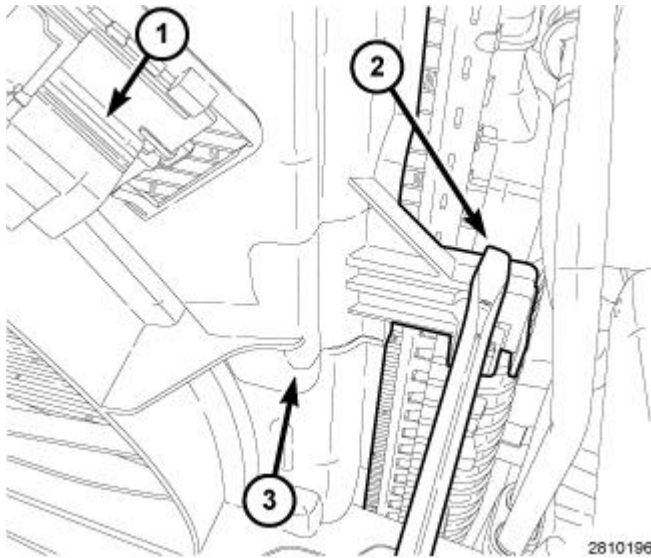
**Fig. 43: Overflow Tubing & Overflow Bottle**  
Courtesy of CHRYSLER GROUP, LLC

1. Remove the engine cover.
2. Disconnect and isolate negative battery cable.
3. Partially drain cooling system below upper radiator hose. Refer to **STANDARD PROCEDURE**.
4. Remove the overflow tubing (2).
5. Gas engine - Remove the overflow bottle (1) by pulling the bottle upwards.



**Fig. 44: Cooling Fan, Module & Upper Radiator Hose**  
Courtesy of CHRYSLER GROUP, LLC

6. Remove upper radiator hose (3) and position aside.
7. Disconnect the wiring harness to the cooling fan assembly (1) and the low speed resistor.

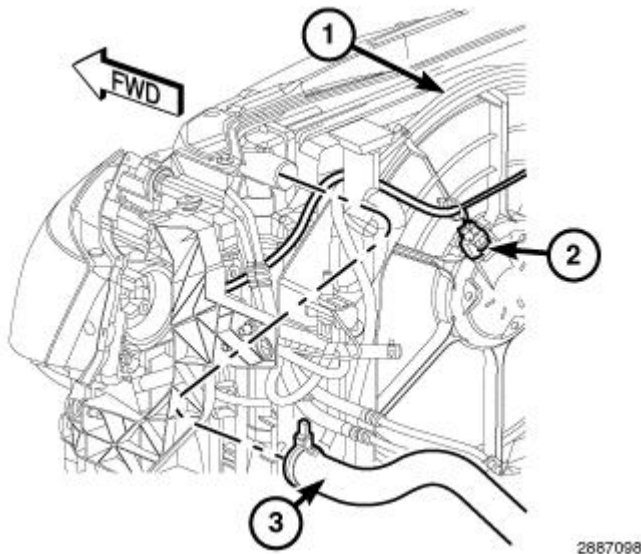


**Fig. 45: Electric Fan Connector & Clips**  
Courtesy of CHRYSLER GROUP, LLC

8. Remove the radiator fan (3) by pressing the retaining clips (2) in and lifting upwards to release from mounts.

## INSTALLATION

## INSTALLATION



**Fig. 46: Cooling Fan, Module & Upper Radiator Hose**  
Courtesy of CHRYSLER GROUP, LLC

1. Position the radiator cooling fan (1) into mounts and attaching clips on the radiator. Press down to lock into place.
2. Connect the cooling fan electrical connectors (2).

3. Gas engine - Install coolant recovery container and overflow hose.
4. Install upper radiator hose (3).
5. Install engine cover.
6. Connect the negative cable.
7. Fill cooling system. Refer to **STANDARD PROCEDURE**.