Cooling System: Service and Repair
Cooling System - Draining and Filling
COOLING SYSTEM

DRAINING

When servicing the cooling system, it is essential that coolant does not drip onto the accessory drive belts and/or pulleys. Shield the belts with shop towels before working on the cooling system. If coolant contacts the belts or pulleys, flush both with clean water.

WARNING: Make sure engine cooling system is cool before servicing. Do not remove any clamps or hoses, pressure cap, or open the radiator draincock. When the system is hot and under pressure serious burns from coolant can occur.

1. Position a clean collecting container under draincock location.
2. Open radiator draincock located at the lower right side of radiator. Turn draincock counterclockwise until it stops.
3. Remove coolant pressure cap and open cooling system bleed valve.
4. Raise vehicle on hoist.
5. 2.7L: Remove heater hose at heater tube located at the right front inner frame rail and direct coolant flow into container.

FILLING

CAUTION: Do not use well water or suspect water supply in cooling system. A 50/50 mixture of the recommended ethylene glycol and distilled water is recommended.

NOTE: Cooling system fill procedure is critical to overall cooling system performance.

NOTE: Make sure all hoses are connected and radiator draincock is closed. Draincock should be hand tightened only.

FILLING - 2.0L / 2.4L/

1. Close radiator draincock by turning clockwise.

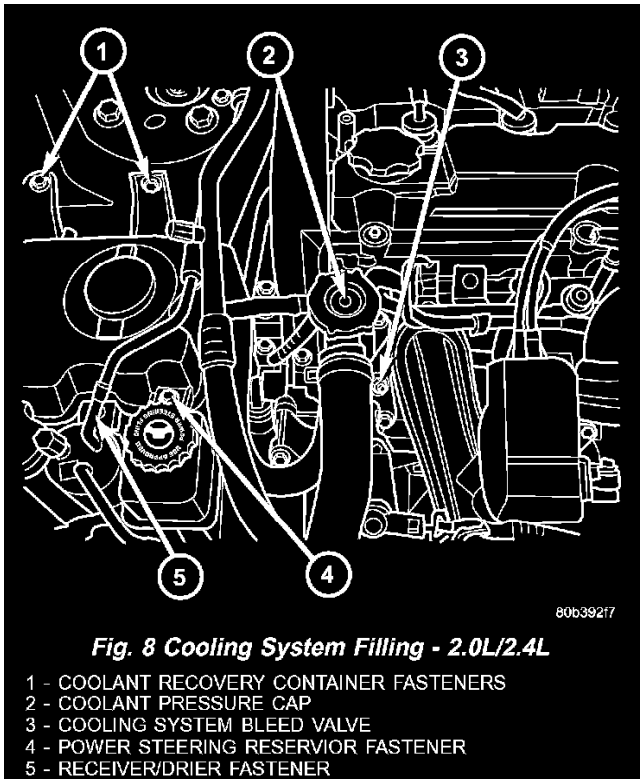

Fig. 8 Cooling System Filling - 2.0L/2.4L

1 - COOLANT RECOVERY CONTAINER FASTENERS
2 - COOLANT PRESSURE CAP
3 - COOLING SYSTEM BLEED VALVE
4 - POWER STEERING RESERVIOR FASTENER
5 - RECEIVER/DRIER FASTENER

Fig. 8

2. Open cooling system bleed valve (Fig. 8).
3. Attach a **6.35 mm (0.250 inch)** inside diameter clear hose that is **120.0 cm (48 inch)** long to the bleed valve. Route the hose away from accessory drive belts and radiator fan. Position the other end of hose into a clean collecting container. The hose will prevent coolant from contacting accessory drive belts and other components.
4. Remove cooling system pressure cap and fill cooling system with recommended coolant mixture.
5. Slowly continue filling until a steady stream of coolant flows from attached hose on bleed valve.
6. Close bleed valve and remove hose.

7. Fill coolant to the top of pressure cap neck.
8. Install cooling system pressure cap.
9. Fill coolant recovery container to the MAX mark.
10. Start engine and allow to run until thermostat opens and radiator fans cycle.

NOTE: It may be necessary to add additional coolant to the coolant recovery container after three or four warm-up/cool down cycles to maintain coolant level between the MIN and MAX marks; as additional trapped air is removed from the system.

FILLING - 2.7L

NOTE: Draincock should be hand tightened only.

1. Close radiator draincock by turning clockwise.

NOTE: It is imperative that the cooling system air bleed valve be opened before any coolant is added to the cooling system. Failure to open the bleed valve first will result in an incomplete fill of the system.

2. Open cooling system bleed valve (Fig. 9).
3. Attach a **6.35 mm (0.250 inch)** inside diameter clear hose that is **120.0 cm (48 inch)** long to the bleed valve. Route the hose away from accessory drive belts and radiator fan. Position the other end of hose into a clean collecting container. The hose will prevent coolant from contacting accessory drive belts and other components.
4. Remove cooling system pressure cap. Attach Filling Aid Funnel 8195, to coolant pressure container filler neck.

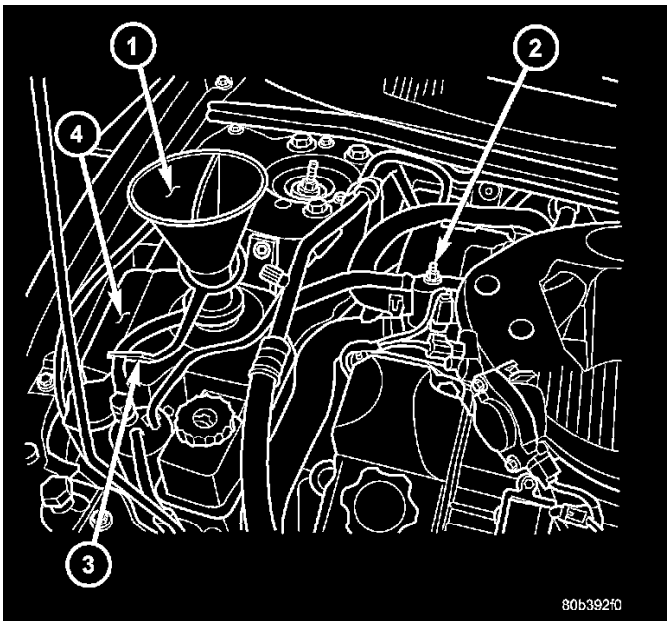

Fig. 9 Cooling System Filling - 2.7L

1 - SPECIAL TOOL 8195
2 - COOLING SYSTEM BLEED VALVE
3 - PINCH OVERFLOW HOSE
4 - COOLANT PRESSURE CONTAINER

Fig. 9

5. Use the supplied clip to pinch overflow hose that connects between the two chambers of the pressure container (Fig. 9).
6. Pour coolant into the larger section of Filling Aid Funnel (the smaller section of funnel is to allow air to escape).
7. Slowly continue filling until a steady stream of coolant flows from attached hose on bleed valve.
8. Close bleed valve and continue filling system to top of Filling Aid Funnel. DO NOT overtighten. Tighten to **12.4 Nm (110 inch lbs.)**.
9. Remove clip from overflow hose.
10. Allow coolant in Filling Aid Funnel to drain into overflow chamber of pressure container.
11. Remove Filling Aid Funnel 8195 and install pressure cap on pressure container.
12. Remove hose from bleed valve.
13. Start engine and allow to run until thermostat opens and radiator fans cycle.

NOTE: The engine cooling system will push any remaining air into the pressure container within about one half hour of normal driving. As a result, a drop in coolant level in the pressure container may occur.
If the engine cooling system overheats and pushes coolant into the overflow chamber of the pressure container, this coolant will be sucked back into the cooling system ONLY IF THE PRESSURE CAP IS LEFT ON THE PRESSURE CONTAINER. Removing the pressure cap breaks the vacuum path between the two chambers of the pressure container and the coolant will not return to the cooling system.

14. Shut off engine and allow it to cool down. This permits coolant to be drawn into the pressure chamber.
15. With engine COLD, observe coolant level in pressure chamber. Coolant level should be within MIN and MAX marks. Adjust coolant level as necessary.