Cooling System: Service and Repair
Draining and Filling Cooling Systems

Caution: As long as there is pressure in the cooling system, the temperature can be considerably higher than the boiling temperature of the solution in the radiator without causing the solution to boil. Removal of the pressure cap while the engine is hot and pressure is high will cause the solution to boil instantaneously possibly with explosive force—spewing the solution over the engine, fenders and the person removing the cap.

Notice: When adding coolant, use DEX-COOL (R) coolant. If silicated coolant is added to the system, premature engine, heater core or radiator corrosion may result. In addition, the engine coolant will require change sooner—at 50 000 km (30,000 mi.) or 24 months.

Before draining and recovering the cooling system, inspect the system. Perform any service needed to ensure that the system is clean, does not leak and is in proper working order.

Some coolant manufacturers are mixing other types of glycol in their coolant formulations; propylene glycol is the most common new ingredient. Propylene glycol is not recommended for use in GM vehicles that were manufactured with GM Goodwrench Dex-Cool. A hydrometer will not always provide a correct measurement of freeze protection when anything other than ethylene glycol and water is being tested. The degree of inaccuracy will vary depending on the proportion of other glycols present in the coolant. Hydrometers test the amount of glycol in a mixture by measuring the specific gravity of the mixture. The higher the concentration of ethylene glycol, the higher the float balls go in the hydrometer. This in turn indicates better freeze protection. Because ethylene glycol and propylene glycol do not have the same specific gravities, hydrometer readings of mixtures containing propylene glycol give incorrect values. It is recommended that a refractometer be used when testing coolant. Refractometers test for the amount of glycol in a coolant mixture by measuring the speed of light as it passes through the fluid and are not affected by the specific gravity of the glycol.

Draining
1. Park the vehicle on a level surface.
2. When the engine is cool, remove the surge tank cap by following these steps:
   2.1. Slowly rotate the surge tank cap counterclockwise about a 1/4 turn and then stop.
   2.2. Wait until any residual pressure is relieved. Residual pressure is indicated by a hissing sound.
   2.3. After all hissing stops, continue to rotate the surge tank cap counterclockwise until the cap is removed.

Important: For procedures requiring the cooling system to be partially drained, opening the radiator drain valve should provide sufficient draining. No further actions should be necessary.

3. Use a 1/4 square drive or a 3/16 inch hex drive in order to open the radiator drain valve. The radiator drain valve is located at the bottom of the radiator tank.
4. Remove the engine block drain plug.
5. Allow the coolant to drain completely.
6. Inspect the drained coolant:
   ^ Flush the cooling system if the coolant is discolored.
   ^ Continue with the filling procedure if the coolant appears normal.

Refilling
1. Close the radiator drain cock.
2. If previously removed, install the engine block drain plugs. When installing the drain plugs, use pipe sealer GM P/N 12346004.

Important: Open the coolant air bleed valve. The coolant air bleed valve is located on the top of the thermostat bypass pipe/heater pipe assembly.
Close the valve once a continuous stream of coolant is expelled from the valve.

3. Fill the surge tank to the base of the filler neck.
4. Start the engine with the pressure cap off. Run the engine until the upper radiator hose starts to get hot.
5. If the coolant level in the surge tank is low, add the proper mix of coolant until the level reaches the full cold line.

**Important:** After servicing the cooling system, and if the vehicle is equipped with an intermittent low coolant light, an occasional low coolant light may be encountered during some extreme driving maneuvers. This complaint should be eliminated by removing the surge tank cap and adding coolant to a level just at or above the full cold line when the system is cold.

6. Install the cap onto the tank with hand tight pressure.

**Recycling**

**Important:** Dispose of used coolant in a proper fashion, such as in a used coolant holding tank. Never pour used coolant down the drain. Ethylene glycol antifreeze is a very toxic chemical. Disposing of ethylene glycol antifreeze into the sewer system is both illegal and ecologically unsound.

There is currently no approved method for recycling used DEX-COOL (R) coolant into new DEX-COOL (R) coolant. DEX-COOL (R) coolant can be recycled into new conventional coolant. Consult local listings for coolant recycling facilities in your area.