

Cooling System Draining, Filling and Bleeding**Special Tool(s)**

	RADKITPLUS 078-00497
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Draining

- Bring the engine to normal operating temperature and turn the engine off. With the cooling system under pressure, inspect cooling system hoses and clamped hose connections for leaks, excessive deterioration or contact wear. Inspect radiator installation retention. Note any discrepancies and proceed.
- WARNING:** Never remove the pressure relief cap while the engine is operating or when the cooling system is hot. Failure to follow these instructions can result in damage to the cooling system or engine or personal injury. To avoid having scalding hot coolant or steam blow out of the degas bottle when removing the pressure relief cap, wait until the engine has cooled, then wrap a thick cloth around the pressure relief cap and turn it slowly. Step back while the pressure is released from the cooling system. When you are sure all the pressure has been released, (still with a cloth) turn and remove the pressure relief cap.

CAUTION: The coolant must be recovered in a suitable, clean container for reuse. If the coolant is contaminated, it must be recycled or disposed of correctly and replaced.

CAUTION: Some vehicle cooling systems are filled with Motorcraft Premium Engine Coolant VC-4-A (in Oregon VC-5, in Canada CXC-10) or equivalent meeting Ford specification ESE-M97B44-A (green color). Others are filled with Motorcraft Premium Gold Engine Coolant VC-7-A meeting Ford specification WSS-M97B51-A1 (yellow color). Always fill the cooling system with the same coolant that is present in the system. Do not mix coolant types.

NOTE: Less than 80 percent of coolant capacity can be removed from the engine. Dirty, rusty or contaminated coolant requires replacement.

Drain engine coolant as follows:

- Open radiator draincock to drain the coolant system.
- Disconnect radiator overflow hose from radiator filler neck connection. Remove radiator coolant recovery reservoir and empty the fluid. Flush radiator coolant recovery reservoir with clean water. Drain and reinstall radiator coolant recovery reservoir and radiator overflow hose and clamp to radiator filler neck.
- Correct, repair or install new components found to be inoperative in Step 1.

Filling and Bleeding with RADKITPLUS

- Using the special tool, install the RADKITPLUS and follow the RADKITPLUS manufacturer's instructions to fill and bleed the cooling system.

Filling and Bleeding without RADKITPLUS

CAUTION: Engine coolant provides freeze protection, boil protection, cooling efficiency and corrosion protection to the engine and cooling components. In order to obtain these protections, the engine coolant must be maintained at the correct concentration and fluid level in the degas bottle.

When adding engine coolant, use a 50/50 mixture of engine coolant and clean, drinkable water.

To maintain the integrity of the coolant and the cooling system:

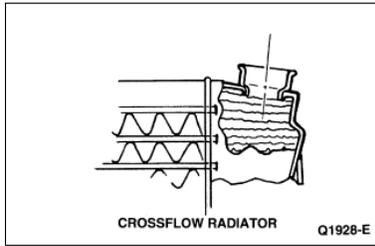
- Add Motorcraft Premium Engine Coolant VC-4-A (CXC-10 in Canada, VC-5 in Oregon) or equivalent meeting Ford specification ESE-M97B44-A (green color) or Motorcraft Premium Gold Engine Coolant VC-7-A or equivalent meeting Ford specification WSS-M97B51-A1 (yellow color). Use the same type of coolant that was drained from the cooling system. Do not mix coolant types.
- Do not add orange-colored Motorcraft Specialty Orange Engine Coolant VC-2 or equivalent, meeting Ford specification WSS-M97B44-D. Mixing coolants may degrade the coolant's corrosion protection.
- Do not add alcohol, methanol, brine or any engine coolants mixed with alcohol, methanol, brine or antifreeze. These can cause engine damage from overheating or freezing.
- Do not mix with recycled coolant unless it meets the requirements of Ford specification ESE-M97B44-A or WSS-M97B51-A1. Not all coolant recycling processes meet these Ford specifications. Use of such coolants may harm the engine and cooling system components.

- Refill the engine cooling system as follows:
 - Close the radiator draincock and install cylinder block drain plugs.
 - Fill radiator until engine coolant level in the radiator reaches the radiator filler neck seat. Refill the radiator to approximately 0 to 5 cm (0 to 2 inches) below the filler neck seat.

- WARNING:** To avoid the possibility of personal injury or damage to the vehicle, do not operate engine with hood open until fan blade has been first examined for possible cracks and separation.

Operate the engine until the thermostat opens and the radiator upper hose becomes hot.

- Stop the engine and add a 50/50 mixture of Motorcraft Premium Engine Coolant VC-4-A (CXC-10 in Canada, VC-5 in Oregon) or equivalent meeting Ford specification ESE-M97B44-A or Motorcraft Premium Gold Engine Coolant VC-7-A or equivalent meeting Ford specification WSS-M97B51-A1 and water up to the filler neck seat.
- Install the radiator cap.
- Add a 50/50 mixture of Motorcraft Premium Engine Coolant VC-4-A (CXC-10 in Canada, VC-5 in Oregon) or equivalent meeting Ford specification ESE-M97B44-A or Motorcraft Premium Gold Engine Coolant VC-7-A or equivalent meeting Ford specification WSS-M97B51-A1 and water to the FULL HOT mark on the radiator coolant recovery reservoir to provide adequate cooling system fill. Install the cap.



6. Bleed the cooling system as follows:

- Select maximum heater temperature and blower motor speed settings. Position the control to discharge air at A/C vents in the instrument panel (04320).
- Start the engine and allow to idle. While the engine is idling, feel for hot air at the A/C vents.
-  **CAUTION: If air discharge remains cool and the engine coolant temperature gauge does not move, the engine coolant level is low in the engine and must be filled. Stop the engine, allow to cool and fill the cooling system.**

Start the engine and allow to idle until normal operating temperature is reached. Hot air should discharge from the A/C vents. The engine coolant temperature gauge should maintain a stabilized reading in the middle of the NORMAL range and the upper radiator hose (8260) should feel hot to the touch.

- Shut the engine off and allow to cool.
- Check the engine for coolant leaks.
- Check the engine coolant level in the degas bottle and fill as necessary.

