


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

 <p>ST261B-A</p>	<p>RADKITPLUS 078-00497</p>
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Draining

⚠ 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.

⚠ CAUTION: Care must be taken to ensure the accessory drive belt does not become contaminated with engine coolant.

⚠ 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 specifications ESE-M97B44-A (green color). Others are filled with Motorcraft Premium Gold Engine Coolant VC-7-A or equivalent meeting Ford specification WSS-M97B51-A1 (yellow color). Always refill the cooling system with the same coolant that was drained from the system. Do not mix coolant types.

1. Release the pressure in the cooling system by slowly turning the pressure relief cap one half turn counterclockwise. When the pressure is released, remove the pressure relief cap.
2. **NOTE:** Less than 80% of coolant can be recovered with the engine in the vehicle. Dirty, rusty or contaminated coolant requires replacement.

Place a suitable container below the radiator draincock. If equipped, disconnect the coolant return hose at the oil cooler.

- Close the radiator draincock when finished.

Filling and Bleeding With RADKITPLUS

1. 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.

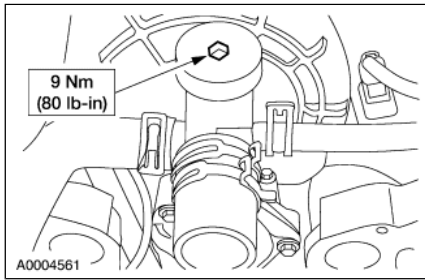
When adding engine coolant, use a 50/50 mixture of engine coolant and clean, drinkable water.

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

- Add Motorcraft Premium Engine Coolant VC-4-A (VC-5 in Oregon, CXC-10 in Canada) 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 coolant that was drained from the cooling system. Do not mix coolant types.
- Do not add orange-colored Motorcraft Speciality Orange Engine Coolant VC-2 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 or methanol antifreeze. These can cause engine damage from overheating or freezing.
- Do not mix 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 a coolant may harm the engine and cooling system components.

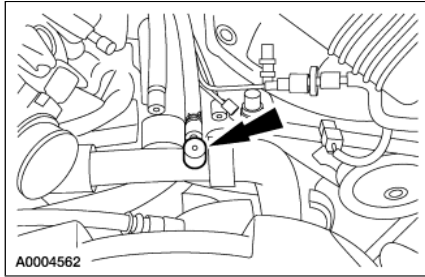
On 3.9L engines

1. Remove the engine fill cap.



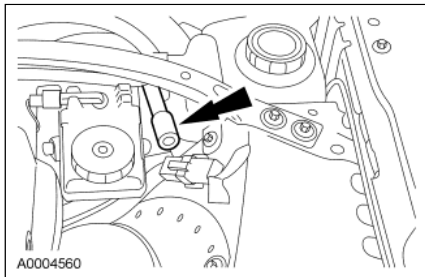
On 3.0L engines

- Open the engine air bleed.



On all engines

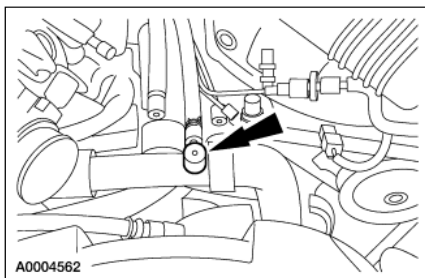
- Open the heater air bleed.



- Add coolant to the degas bottle allowing the system to equalize until no more coolant can be added.

On 3.0L engines

- Close the engine air bleed when coolant begins to escape.



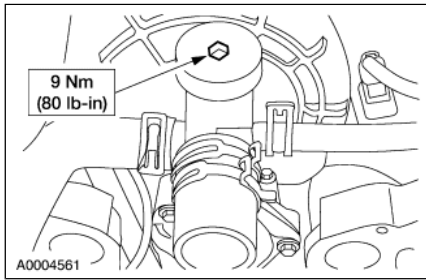
On all engines

- Replace the degas bottle cap.

On 3.9L engines

⚠ CAUTION: Care must be taken to ensure the accessory drive belt does not become contaminated with engine coolant.

- Add as much coolant as possible to the engine fill. The heater air bleed will remain open.
- Replace the engine fill cap.

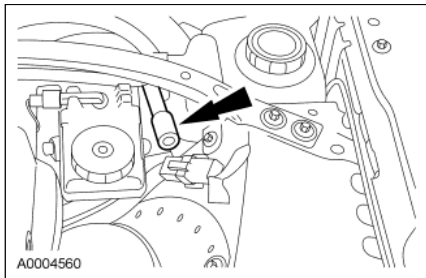


On all engines

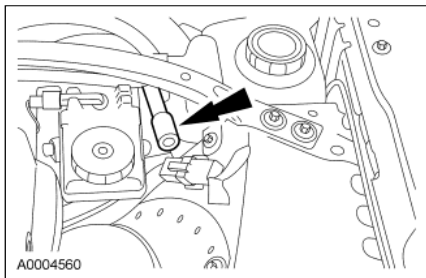
9. **NOTE:** The heater air bleed remains open.

Start the engine and turn the heater to MAX position.

10. Close the heater air bleed when a steady stream of coolant comes from it, during engine idle.



11. Allow the engine to idle for five minutes, add coolant to the degas bottle as needed to maintain the cold fill MAX mark.
12. Reopen the heater air bleed to release any entrapped air and close again.



On 3.9L engines

13. Maintain engine speed of 2,000 rpm for 3-5 minutes or until hot air comes from the heater.
14. Return to idle and verify hot air is still coming from the heater.

On 3.0L engines

15. Maintain engine speed of 1,500 rpm for 3-5 minutes or until hot air comes from the heater.
16. Return to idle and verify hot air is still coming from the heater.

On all engines

17. Set the heater temperature setting to 24°C (75°F) and allow the vehicle to idle for two minutes.
18. Shut the engine off and allow to cool.
19. After the engine has cooled, add coolant to the degas bottle to bring the level to the cold fill MAX mark.

