MAINTENANCE MATTERS

Cooling system maintenance

Coolant absorbs heat from the engine. It also absorbs heat from the transmission fluid and engine. The water pump circulates coolant through the engine, engine oil cooler, transmission oil cooler, auxiliary heater and engine heating circuits. Coolant then flows through the thermostats to the radiator module and back to the water pump. Major cooling-system components include the radiator module, surge tank, water pump and thermostat. The engine is designed to operate with the cooling system components to regulate coolant temperature.

DAILY MAINTENANCE

1. With the engine and coolant cold, check the coolant level in the surge tank. If low, fill the tank with premixed coolant.
2. Inspect for signs of leakage in the system.

PERIODIC MAINTENANCE

Every 10,000 Miles (16,000 km)

Check coolant and inhibitor concentration with a hydrometer or coolant test kit (approved by engine manufacturer).

Every 20,000 Miles (32,000 km)

1. Check the belts for condition and tension. Tighten loose belts. Replace worn or frayed belts.
2. Check the water pump operation and installation.
3. Check water pump, thermostat housing and other components for gasket leakage. Replace leaking gaskets.
4. Inspect the radiator and hoses for leakage or deterioration. Repair or replace damaged components.
5. Replace the coolant filter element. To remove the filter element, close the two shut-off cocks at the filter mounting head and remove the old element.

Every 100,000 Miles (160,000 km)

1. Drain and clean the radiator cores to remove all dirt and sediment.
2. Inspect radiator mounts. Tighten as required.
3. Refill with coolant, check inhibitor.

Every 200,000 Miles (320,000 km)

1. Drain, clean and inspect the cooling system.
2. Refill with new coolant and inhibitor solution.

COOLANT TESTING

Always test the antifreeze solution before and after adding water or antifreezes. Use a standard antifreeze tester or a coolant test kit approved by the engine manufacturer. With the coolant slightly warm, fill and empty the tester several times to pre-heat it before making the actual test. Keep testers clean inside and out. Some testers are only accurate at a specific coolant temperature. Others have a conversion for the actual coolant temperature.

CLEANING THE COOLING SYSTEM

Only use engine manufacturer-approved radiator cleaners and flushing solutions. Exercise caution and follow the manufacturer’s recommendations.