# Engine Cooling Systems

## GENERAL COOLING SYSTEM SERVICING (Cont.)

mately 7 psi (.5 kg/cm²). Race engine. If needle on tester fluctuates, it indicates a combustion leak.

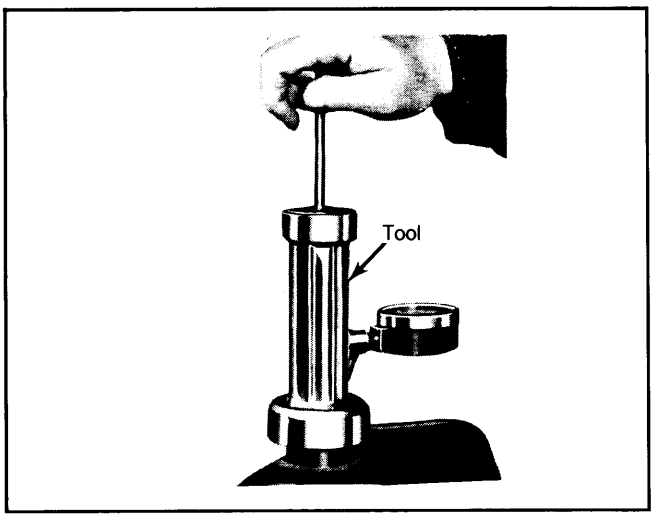
**NOTE: Pressure may build up quickly. Release any pressure above the limit of pressure cap specifications or cooling system damage may result.**

**3)** If needle does not fluctuate, race engine a few more times and check for water at tailpipe. Excessive water would indicate a faulty head gasket, cracked block or cylinder head near exhaust ports. Remove oil dipstick and if water globules appear in the oil, a serious internal leak is indicated.

### ANTI-FREEZE CONCENTRATION

Test anti-freeze concentration. The tester should have a temperature compensating feature. Failure to take temperature into consideration could cause an error as large as 30°F in freeze or overheating protection. Follow manufacturer's instructions for correct use of tester.

***Fig. 3: Pressure Testing Cooling System***




*Be sure tester has a temperature compensating feature.*

## COOLANT RECOVERY SYSTEMS

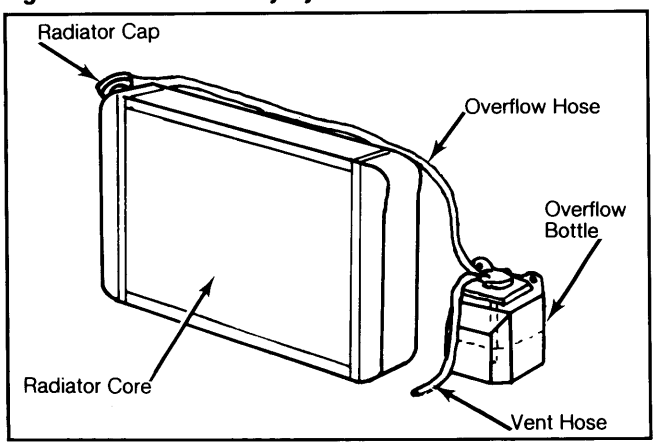
### DESCRIPTION

A coolant recovery system differs from a normal cooling system in that an overflow bottle is connected to the radiator overflow hose. The overflow bottle is transparent or translucent to permit checking of coolant level without removing radiator cap. No adjustment or test is required beyond keeping vent hole or hose clean and checking pressure relief of radiator cap.

### OPERATION

As coolant temperature rises and pressure in system exceeds pressure relief valve of radiator cap, excess coolant flows into overflow bottle. As engine cools and coolant contracts, vacuum is formed in system, drawing coolant, stored in overflow bottle, back into radiator. In a properly maintained cooling system, the only coolant losses will be through evaporation.

***Fig. 1: Coolant Recovery System***



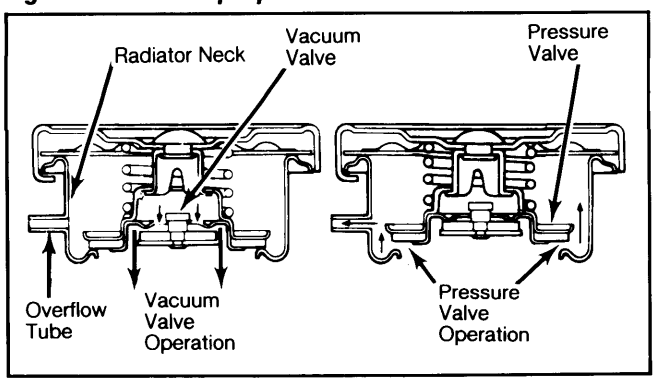

*System should eliminate loss of coolant.*

## RADIATOR CAPS

### DESCRIPTION

The radiator cap consists of a pressure valve and a vacuum valve. The cap has several different functions: It prevents coolant loss when vehicle is in motion; prevents impurities from entering cooling system minimizing corrosion; allows atmospheric pressure to eliminate the vacuum that occurs in system during cooldown; and raises coolant boiling point approximately 2°F per psi of pressure by maintaining a constant cooling system pressure. *For radiator cap testing specifications, see appropriate manufacturer's article in this section.*

***Fig. 1: Radiator Cap Operation***




*Cap should maintain constant cooling pressure in system.*

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