

## AUXILIARY COOLING

The operating temperature of the engine is extremely important. An engine operating too hot will be damaged, while one operating too cold will cause sludge deposits within the engine.

The normal apparatus cooling system may be inadequate to keep the engine from overheating, especially while operating hard on the fireground with no ram air passing through. For this reason, an auxiliary cooling system is added to the pumper. This system acts as a heat exchanger. Cool water from the pump circulates through a coil, with the water from the radiator on the outside of the coil. Heat is transferred from the engine cooling water to the pump water.

Water from the pump enters the coil by opening the auxiliary cooling valve. Note that the pump water does not mix with the radiator water when the auxiliary cooling valve is opened. Open the auxiliary cooling valve slowly so that the optimum operating temperature can be obtained without cooling the engine too much.

The radiator fill valve admits pump water directly to the radiator. This is an emergency device only and should be used with care. Since the incoming water is from the pump discharge under pressure, opening the valve wide will allow a large flow of water to enter the radiator.

The overflow piping of the radiator may not be sufficient to handle the incoming water from the pump. If the pressure in the radiator builds up, bursting can occur. It is necessary, therefore, to remove the radiator cap before opening the valve. Exercise extreme caution when removing the cap because the original problem was the excess temperature, and as the cap is removed, steam under pressure could be released. Before removing the radiator cap, open the radiator fill valve a small amount, or open the radiator fill valve until water comes out of the overflow piping. Then, the valve is shut and the temperature is checked possibly eliminating the need for removing the radiator cap.