

CHAPTER VI

The Cooling System

Collant Pump - Coolant Level - Frost Precautions.

Coolant Pump.

The centrifugal coolant circulating pump is fitted with a special double packing gland designed to facilitate lubrication, and thereby reduce wear.

It is improbable that any leakage or any other trouble will be experienced over long intervals of running, provided that the gland is properly and regularly lubricated.

A screw-down greaser is provided for lubricating the gland and bearings and it should be filled one-third full of grease every 2,500 miles, as directed on page 22, and screwed right down, preferably when the engine is warm.

Coolant Level.

This should be inspected daily, and if plain water is being used the level should be maintained about half way across the upper radiator water pipe, as shown in Fig. 3.

If an anti-freeze mixture is being used, the level should be maintained so as to just cover the upper tubes of the radiator core.

Frost Precautions.

Where plain water is being used as the coolant medium and there is any possibility of the car being exposed to low, frosty temperatures, with the engine not running, it is of vital importance that the water system should be drained by opening the drain tap on the water pump and releasing the filler cap. Also, after a frost and before attempting to start, or even move, the engine again, *hot water should first be poured over the water pump*, as otherwise damage may be caused to the pump rotor by the presence of particles of ice within the casing. Warm water can be used with advantage for refilling the radiator.

A suitable anti-freeze mixture is made by mixing soft water with either inhibited ethylene glycol or "Bluecol" in proportions dependent on the degree of frost likely to be encountered.

The following table gives an approximate indication of the amount of frost protection ensured by different strengths of mixture.

Freezing point	22° F.	12° F.	2° F.	-3° F.
Degrees of frost	10° F.	20° F.	30° F.	35° F.
I Inhibited Ethylene Glycol ...	4½ pts.	6¾ pts.	10 pts	11 pts.
2"Bluecol"	4½ pts.	6¾ pts.	10pts	11pts.

When changing from water to anti-freeze or from a glycol mixture to a glycerine mixture, the radiator system must be drained. New anti-freeze of the required amount should be mixed with an equal quantity of soft water before being poured into the radiator, the radiator being finally topped up with soft water.

The engine should then be run until normal operating temperature is reached, to ensure uniform distribution of the anti-freeze throughout the system.

The rubber connections must be carefully examined and replaced if unsound, as any leakage will necessitate replenishment with anti-freeze mixture.

When using an anti-freeze mixture as described, a similar mixture should be used for topping up purposes.