## The Cooling System

The heat produced on the power stroke of a diesel engine can be as high as 1600’C and this is greater than the melting point of the engine parts that come in contact with the heat, thus it is essential to have an efficient cooling system.

Assuming the heat value of the fuel used to be 100% then probably 30% is used to produce power, 40% is passed to the atmosphere via the exhaust and 30% is dissipated by the cooling system. Some heat is also removed by the oil employed by the lubrication system. It is very important that the engine does not over heat or “boil the water”, but it is equally important that the engine does not run too cool or the fuel will not vaporize properly, again causing damage and rapid wear.

## Air Cooling

This method is used mainly for small single cylinder engines, such as those fitted to horticultural machines, or which may be found around the farm driving such things as elevators. Cooling in this case is done by directing a blast of air around the cylinder and cylinder head, both of which are finned. This finning provides a large surface area through which the h eat can spread and from which heat is taken away were and directed over the cylinder to cool it.

The majority of tractor engines are water cooled. This is a more effective ling for a multi-cylinder engine. The engine cylinders are completely surrounded by a water jacket which also form another outlet for the cooling air. The blast of air is created by fitting a blower fan on the engine flywheel and this is encased in a cowling which extends over and around the cylinder. Overheating of this type of engine will take place if the spaces between the fins are allowed to become choked with dirt.