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# COOLING SYSTEM



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# I C ENGINE COOLING

The temperature of gases inside the cylinder will be around  $2300-2500^{\circ}\text{C}$ . This is a very high temperature and may result into burning of oil film between the moving parts and may result into seizing or welding of the same.

So, this temperature must be reduced to about  $150-200^{\circ}\text{C}$  at which the engine will work most efficiently.

Too much cooling is also not desirable since it reduces the thermal efficiency.

So, the object of cooling system is to keep the engine running at its most efficient operating temperature.



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# Purpose of cooling

- To maintain optimum temperature of engine for efficient operation under all conditions.
- To dissipate surplus heat for protection of engine components like cylinder, cylinder head, pistons, piston rings and valves.
- To maintain the lubricating properties of oil inside the engine cylinder for normal functioning of the engine.



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# Methods of cooling

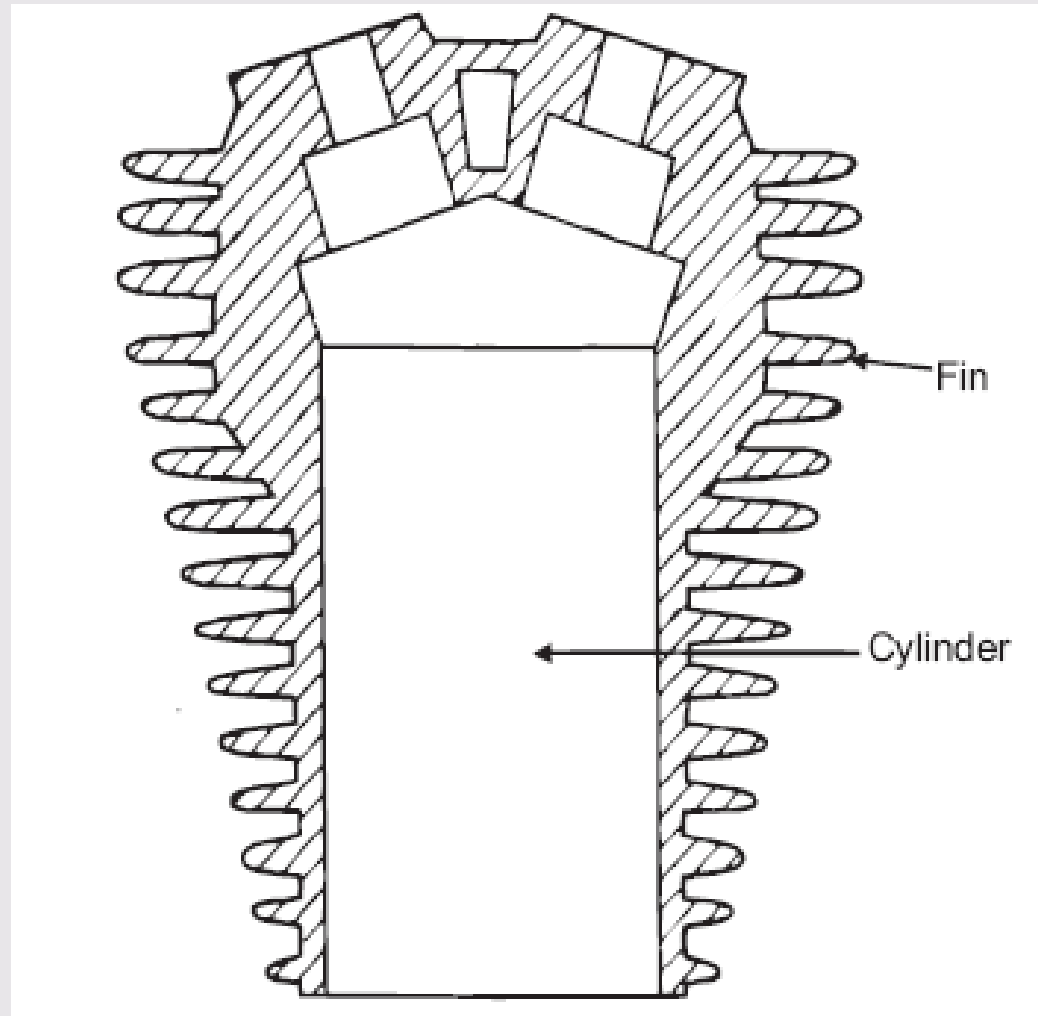
## Air cooling

## Water cooling



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# AIR COOLING SYSTEM





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# Types of water cooling system

Open jacket or hopper method

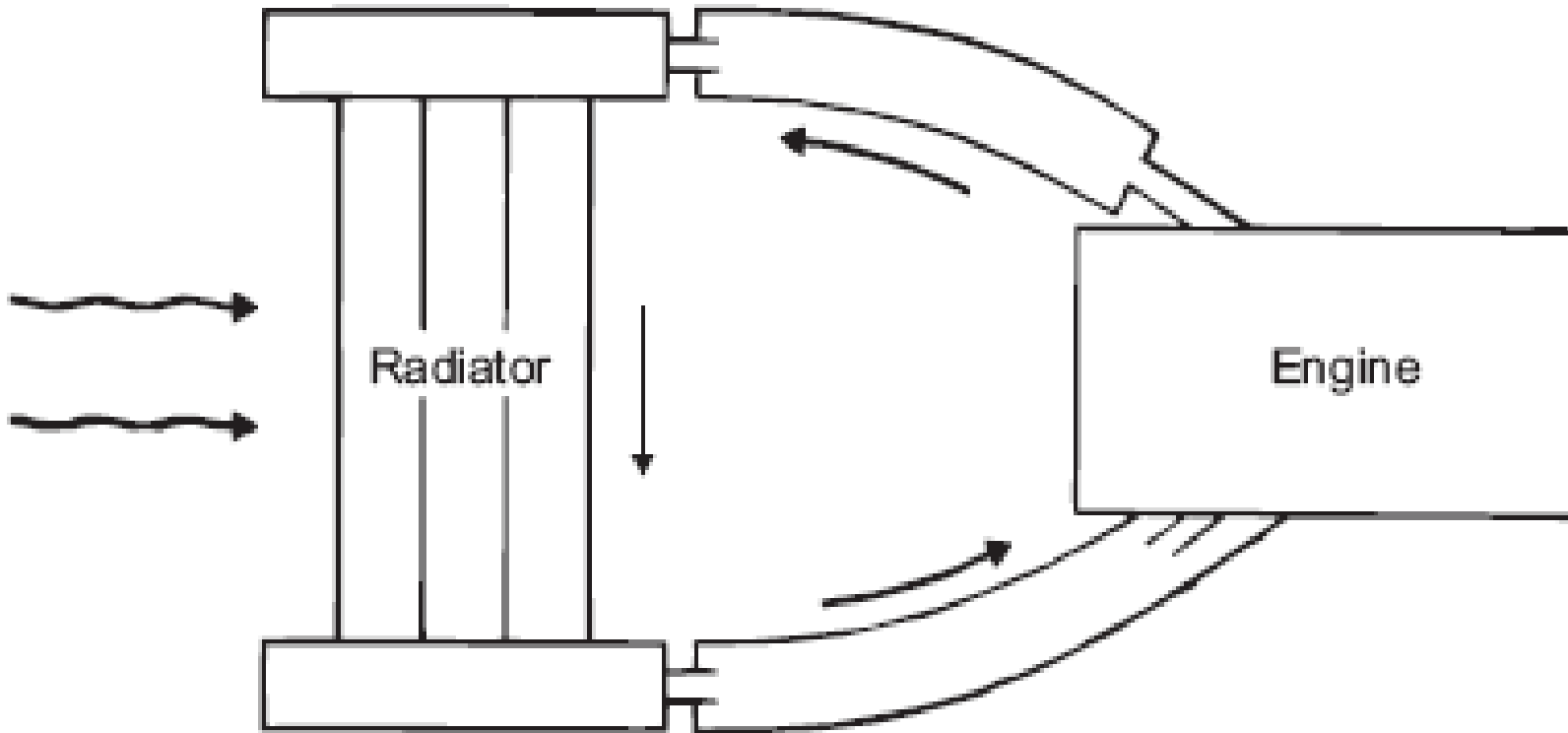
Thermo siphon system

Forced circulation method



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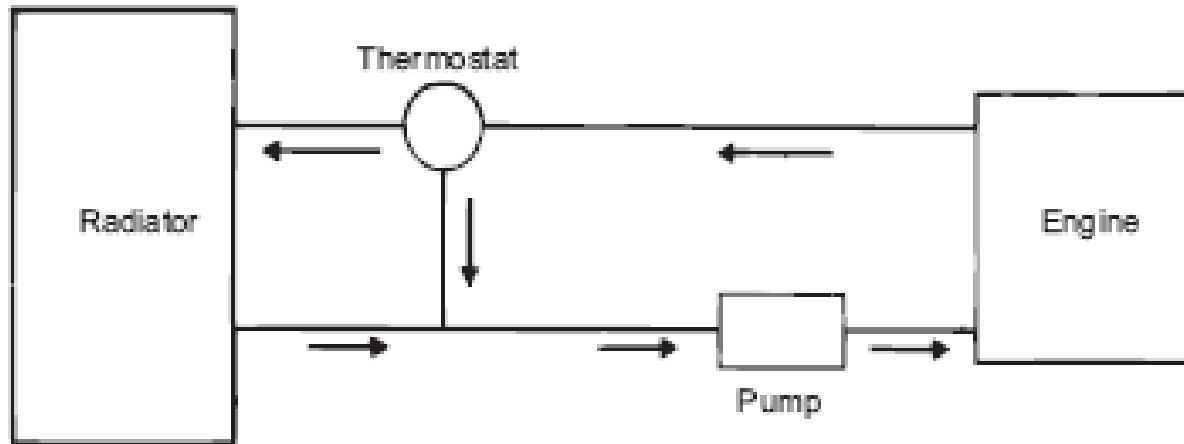
# Thermo Siphon System





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# Components of Water Cooling System



**Figure 5.4 : Water Cooling System using Thermostat Valve**

