

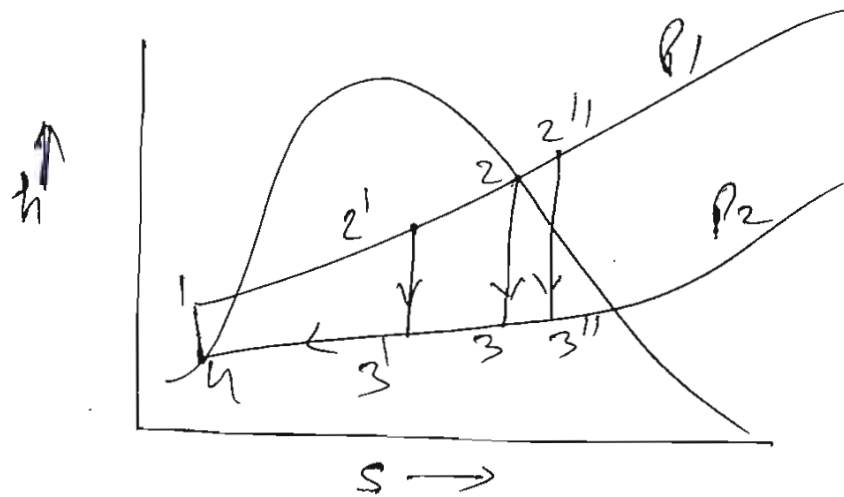
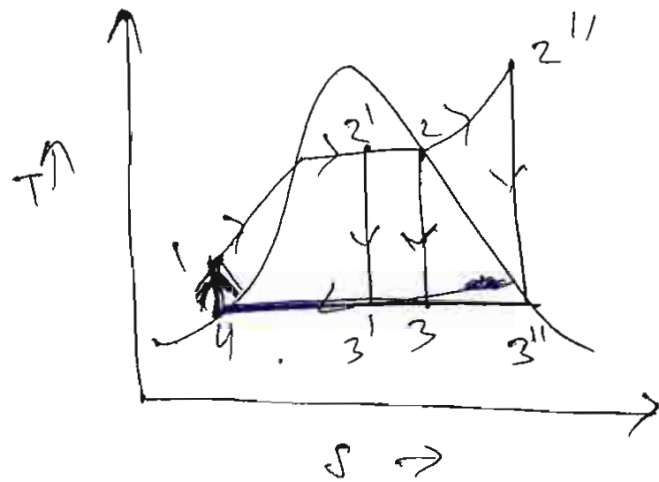
Process in Rankine cycle -

Process 1-2 :- Constant pressure Heat transfer process in the boiler -

Process 2-3 :- Reversible adiabatic expansion process in the steam turbine

Process 3-4 :- Constant pressure Heat rejection process in Condenser.

Process 4-1 :- Reversible adiabatic compression process or pumping process

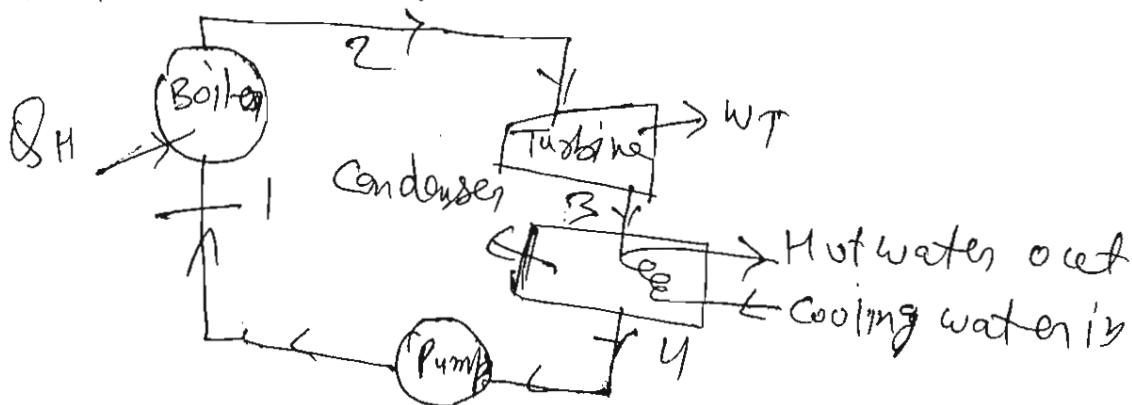


★ for any query - / question call b/n - 4 to 5 pm

Topic - Rankine cycle - Date - 4-04-2020

Vapour power cycle → Vapour power cycles, as the name indicates, use vapour in one phase of the cycle for power generation or moving the prime mover in steam power plants because of its abundant supply, very low cost and suitability. The various vapour cycles are the Rankine cycle, the regenerative cycle and the Carnot cycle among others. The Carnot cycle is the most efficient cycle theoretically, but practically, the Rankine cycle is best suited and popular. Vapour power cycles are used in steam power plants.

Rankine cycle → The simplest way of solving the problem associated with Carnot cycle, without deviating too much from it is to keep the processes 1-2 and 2-3 of the latter unchanged and to continue the process 3-4 in the condenser until all the vapour has been converted into liquid water. Water is then pumped into the boiler upto the pressure corresponding to the state 1 and the cycle is completed. Such a cycle is known as the Rankine cycle. This theoretical cycle is free of all the practical limitations of the Carnot cycle.



A Simple Rankine cycle,