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Thermo processor and MVR system, Care and maintenance of evaporators

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Outline

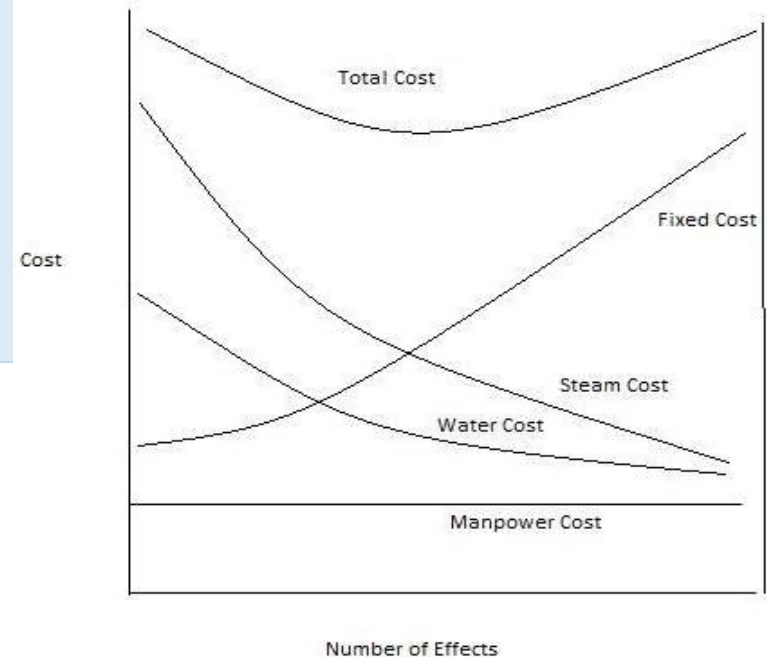
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- Vapor recompression in milk condensing plants
- Thermal vapor recompression (TVR)
- Mechanical vapor recompression (MVR)



Introduction

The economy of the evaporation system increases with number of effects, simultaneously the capital investment is also increase with number of effects. Hence overall economy of the operation is based on the cost benefit ratio. Further the improvement in economy Is possible by the use of vapour recompression system.

Cost Factors in evaporator Selection





Vapor recompression in Milk Condensing Plant

There are two ways for recompressing the low pressure steam i.e. Thermal Vapour Recompression (TVR) by steam-jet vapour compressor or thermo compressor and Mechanical Vapour Recompression (MVR). At present in India TVR is common, while MVR is getting importance recently due to its extremely favourable characteristics for conservation of energy.



Thermal Vapor recompression (TVR)

In thermo compressor, the kinetic energy of a jet of steam is used to compress the vapour. It consists of a steam nozzle, suction chamber with inlet for sucking in the vapour, mixing chamber and recompression chamber as shown in Figure.

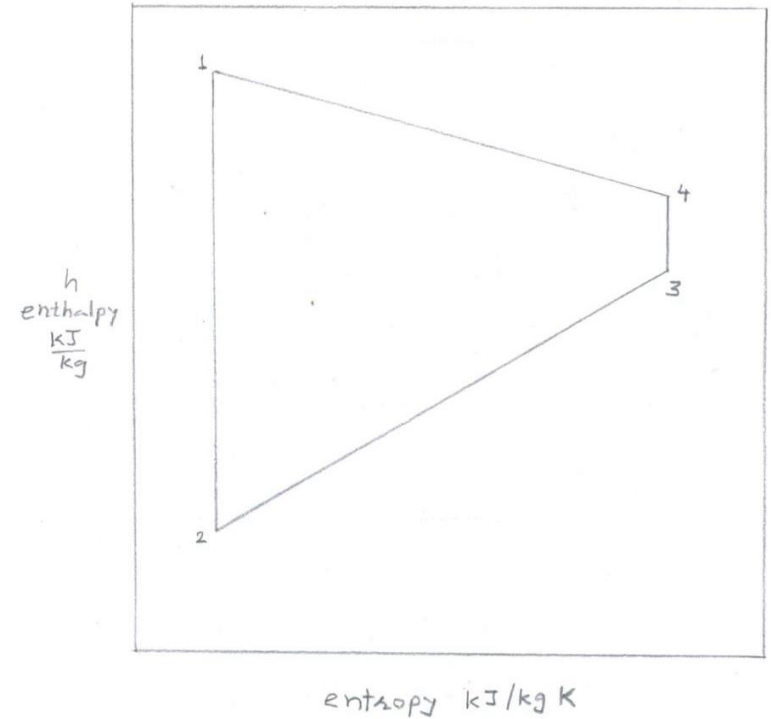
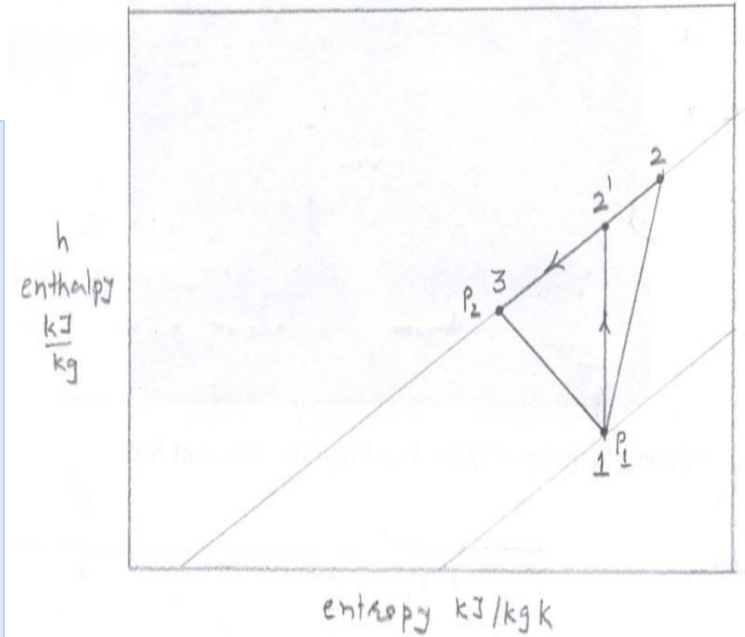


Fig. Enthalpy entropy diagram of thermal vapour recompression (TVR)



Mechanical Vapor Recompression (MVR)

Here, the low pressure vapour is compressed mechanically i.e. employing single or multiple stage radial flow compressors or by axial flow compressors. These compressors may be driven by electric motors, I.C. engines or steam turbines.





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Thank you