



VAPOZEM

MECHANICAL VAPOR RECOMPRESSION

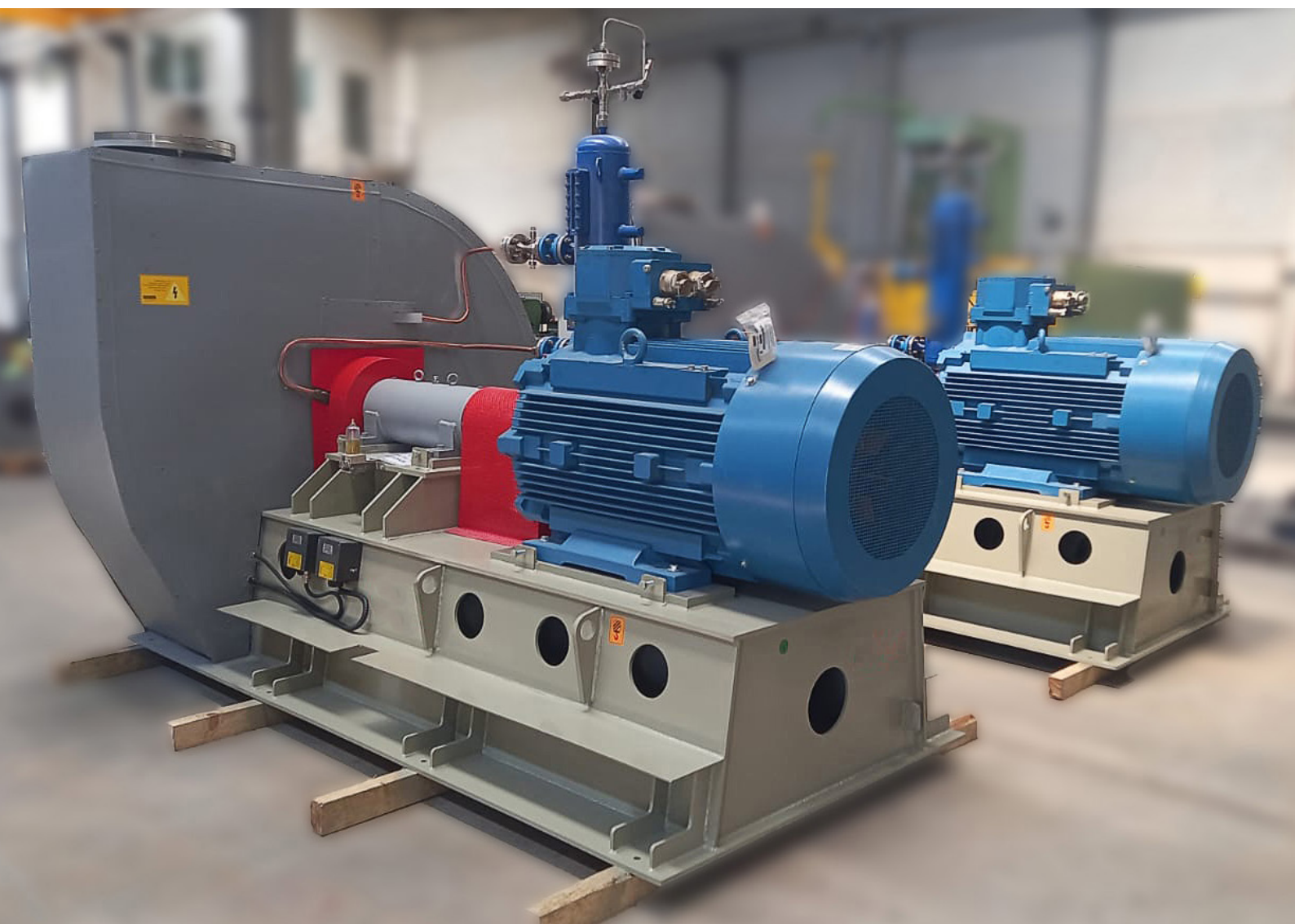


Engineering Today: Greener Tomorrow

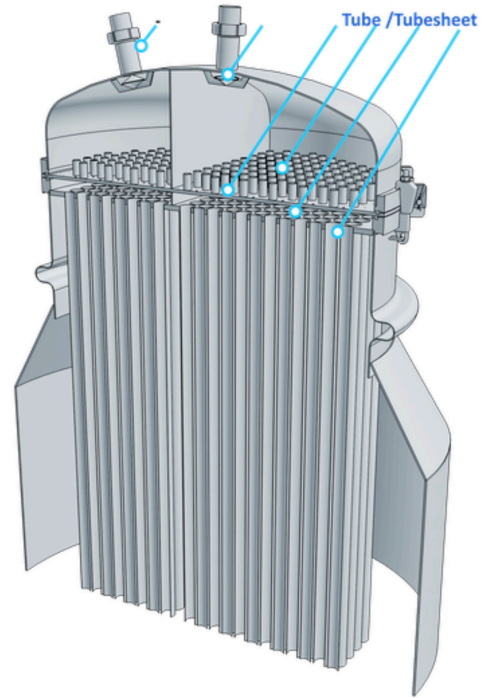
VAPOZEM

MECHANICAL VAPOR RECOMPRESSION

VAPOZEM is derived from Vaporisation of APOZEM (a concentrated liquor resulting from heating or infusing a substance) VAPOZEM has been designed keeping in view the potential Pharmaceutical, Biotech and Food markets. The advantages the technology offered by Vaporising at Low Temperatures, also extended to the wastewater management and helping clients meet the ZLD norms.



Tube Falling Film Evaporator



System Design

System comprises of Plate Type or Tube Type Exchangers alongwith a compressing station the MVR. The high surface area per unit volume makes these Evaporators small and compact design. Proprietary Serrated design gives a high heat transfer coefficient. Water travels downward like a film that is why the name.



High Surface Area per unit Volume.



Small and Compact Evaporators.



Proprietary Serrated design.



ΔT from 9 to 60 °C.



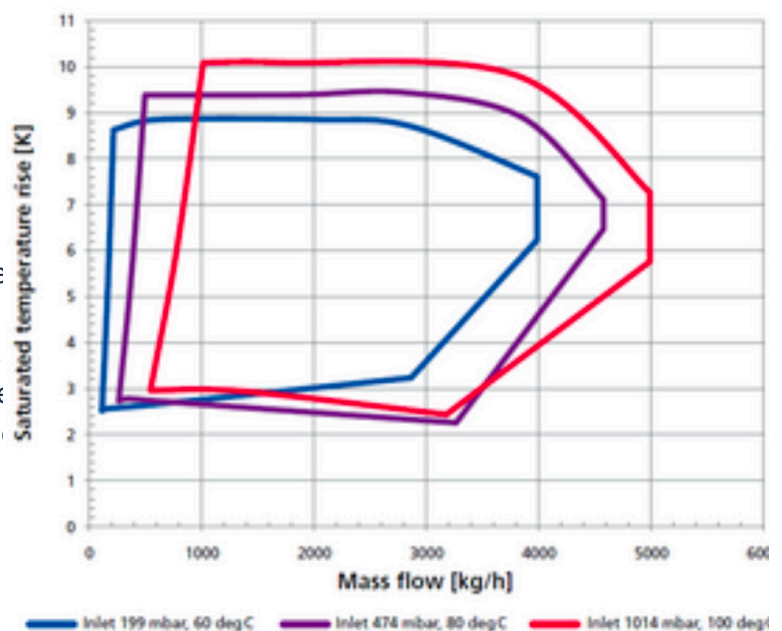
Evaporation capacity range: 1000 – 100,000 kg/h.



Energy consumption: 12 – 40 kWh/ Ton evaporated water.

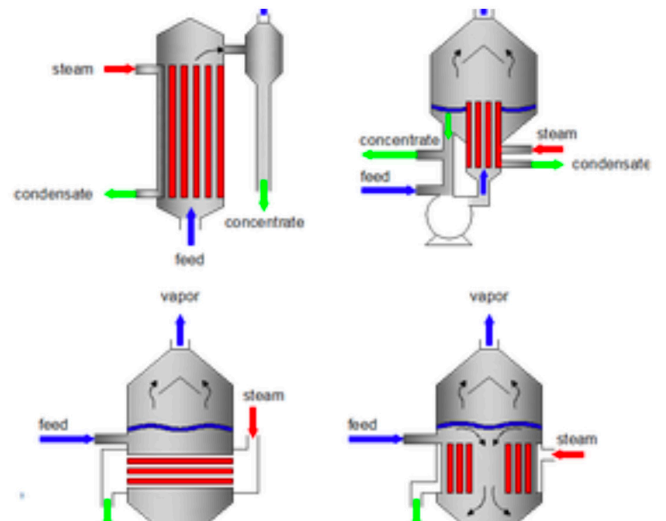
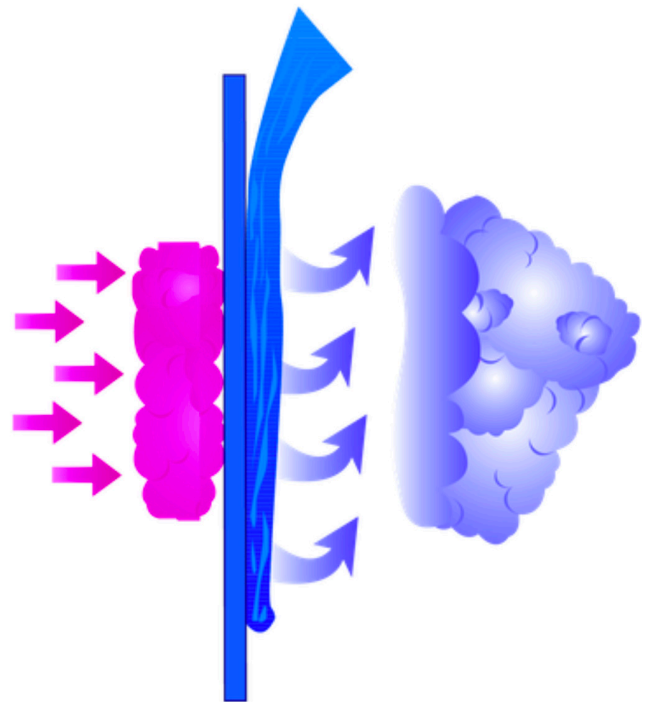
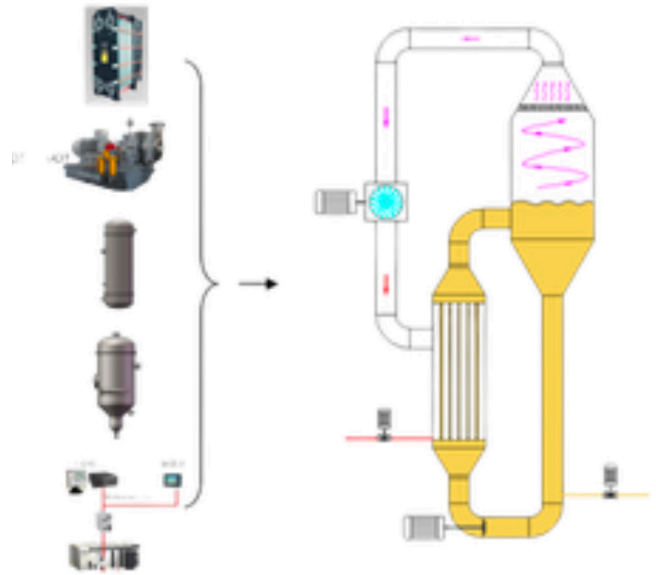
Precision Designed MVR

MVR compresses the spent vapor to a higher pressure thereby bringing a temperature rise in the spent vapours. The high temperature vapours are now used in closed loop to recover the enthalpies. The condensate recovered after the heat exchange is used to pre- heat feed product through plate type heat exchanger. This makes the system the most energy efficient system.



Compressor - MVR

- Turbine Tip speeds of up to 320 m/s nearing sonic velocities
- Water injection keeps impellers clean and the steam saturated Low wear floating carbon ring labyrinth seals guarantee long term tightness
- Squeeze-oil-damping combines the simplicity of anti-friction bearings with the performance of hydrodynamic bearings
- For higher temperature rises up to four MVR Blowers can be used in series
- Suitable for conditions of corrosive environment such as sulphuric acid vapors
- Mechanical vapor recompression was initially used almost exclusively in the milk and dairy industry. And now it is used in various low temperature evaporation application





Advantages

1. CAPEX advantages of reduced footprint area as compared to MEE No boiler & steam utility required
2. No cooling towers & condensing station required.
3. No Boiler – No Pollution – environmentally friendly
4. Fully automated without any manual intervention Less maintenance cost
5. Low manpower requirement

Applications

- Starch
- Sugar
- Yeast
- Gelatine
- Pectins
- Grain Processing
- Vegetable Processing
- Fruit Juices
- Electrolyte Baths
- Saline Water
- Citric Acid and Acetic
- Sulphuric Acid
- ZLD -Zero Liquid Discharge
- Sewage Sludge
- Lacquer Sludge
- Liquid Manure
- Oil Recycling
- Recycling of special metals
- Seawater Desalination
- Paper Drying
- Boiler Feedwater
- Blood Plasma
- Commercialisation of Meat and Fish
- PTA
- EPDM
- Butadiene
- Waste water
- Wood Drying, Pellets Drying and Peat Drying
- Petrochemical