

VAPOZEM

MVR EVAPORATORS

SOLUTIONS FOR SUGAR & ALLIED INDUSTRIES



FIELDS OF APPLICATION

- Melt Concentration in Raw/Back End Refinery
- Post concentration of Sulphited Syrup to increase Brix for reduced Pan vapor consumption.
- Clear Juice and Sulphited Juice heating using low-temperature vapor
- Use of 3rd Vapor for C massecuite boiling
- Increase Bagasse saving for Sale or Fuel for Distillery
- Thin Slop Evaporation in Grain distillery



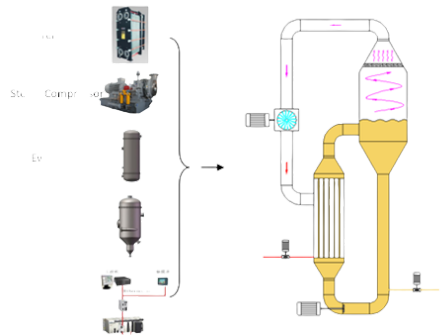
Improve
Sugar Quality
Reduce Energy costs



Name **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 Sugar manufacturing process

The technology offers the advantage of Vaporising at Low Temperatures. Low-temperature evaporation has immense benefits like low scaling, less color formation.

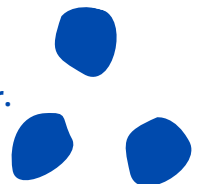


Falling film and forced circulation MVR evaporators

VAPOZEM evaporators are bespoke solutions for your critical process applications in Sugar Industry. Low ICUMSA values were achieved using this process, notwithstanding low energy costs and no steam requirement. This has a direct impact on your bagasse consumption in the Sugar factory

Evaporation capacity range from 1000 – 100.000 kg/h.

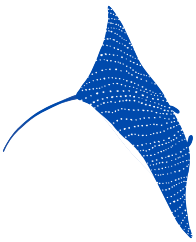
Energy consumption is 12 – 40 kWh/t evaporated water.





"Did you know that
VAPOZEM evaporator
reduces Bagasse
Consumption in a Sugar
plant"

Reduce Bagasse Consumption



VAPOZEM comes with its inherent advantages :

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

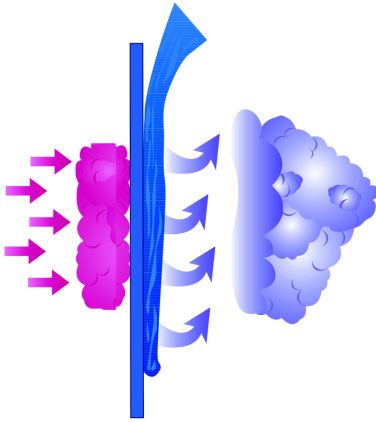


PILOT PLANT

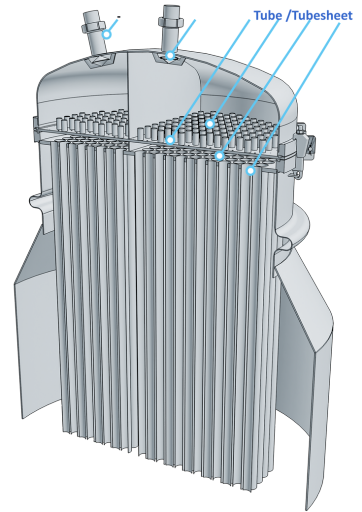
RECYCLE AT LOW ENERGY COSTS

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

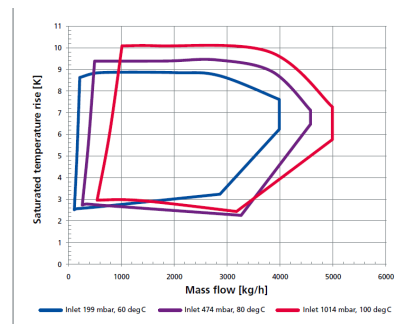


Tube Falling Film Evaporator



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

Two Types of Compressors are used

- **Lobe Compressor** - Capacity -up to 2T/hour
- **Centrifugal Ultra High speed** (up to 12000 RPM - Above 2T/Hour to 20T/Hour

The heart of the System is precision and consistent compression. The compressor has some salient features

- 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 the 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



Lobe Compressor - For low capacity eveporation



Lobe Compressor for evaporation upto 2T/hour



High Precision - High Speed Centrifugal compressor for 3t/hour and above



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ENGINEERING TODAY FOR A GREENER TOMORROW