ENVIDEST DPM 2

Vacuum Evaporators powered by
hot water or steam

condorchem
envitech

HIGHLIGHTS

Modular Multi Effect Evaporator fit to concentrate high capacities of water based solutions. Horizontal boiling vessels with high-efficiency immersed heat exchanger.

Powered by hot water, steam or diathermic oil. Special condensation tower included. Full automatic operation system by PLC; display of main parameters by LCD TOUCH screen. Standard manufacturing AISI316 – special alloys on demand.

Standard range from 4 to 30 t/day of evaporated water.

HORIZONTAL TYPE EVAPORATORS WITH IMMERSION HEAT-EXCHANGER:

STRUCTURE

• Modular skid made of austenitic steel, single or multiple effect, with possible extension from 1 up to 3 evaporation modules.
• Horizontal boiling chamber, fitted with external tube-nest heat-exchangers, pullout type.
• The multi-stage version allows the recovery of the latent heat of vaporization, in "cascading" effect, from 1st to stage to next ones, reducing of 1/3 the otherwise required energy.
• Digital and analogue control instrument for the automatic monitoring of the system.

VACUUM CIRCUIT AND CONDENSED MATERIAL LINE

• Circuit for condensate extraction composed by storage and liquid preheating tanks, centrifugal pumps for vacuum generation, Venturi ejector, manual nonreturn valves, digital and analogue control.

CONCENTRATE DISCHARGE AND RICIRCULATION SYSTEM

• Automatic circuit for the recirculation and discharge of the concentrate, complete with extraction pumps, pneumatic and manual valves, on-off valves for taking product samples during processing.
• The automatic discharge function is programmable through an adjustable density control device or by a timer for a complete customization of the process.

MAIN CHARACTERISTICS

• Power supply by hot water or steam.
• Immersion horizontal heat-exchanger.
• Heat exploiting at multiple effect.
• Possible recycling of already available heat sources.
• Low energy consumption.
• Possible addition of evaporation modules without more energy supply.
• Limited maintenances.
• Wastewater inlet, distillate and condensate outlet automatically operated.
• Check by PLC Siemens S7-200 PLC with TP 170 b keyboard.
• Pull-out boiling chamber and heat exchangers.
• Main frame, pipes and valves made in stainless steel AISI 316 L.
• Special corrosion-resistant material upon request.
• Possible extension from one up to three modules.

MAIN APPLICATIONS

ENVIDEST DPM 2 series is particularly suitable for:

• oily emulsions, wastewater from vibratory finishing, exhausted baths.
• wastewater from pressure die-casting (release agents, glycols, lubricant oils).
• wastewater from galvanization (chromium, nickel, copper), exhausted baths, eluates.
• recycling of exhausted baths.
• treatment of foamy liquids.
• treatment of water-based solutions.

STEAM CONDENSING CIRCUIT

• The condensation of the evaporated wastewater happens in closed circuit with the steam passage through a water cooled plate heat exchanger or by cooling tower fitted with air/water heat exchanger.

CLEANING SYSTEM

• The automatic system is complete with pneumatic valve and rotating nozzle. The circuit allows the release of cleaning agents inside the evaporator: the wash cycle time can be adjusted from the control panel according to the actual needs.

FOAM CONTROL BATCHING SYSTEM

• Automatic system complete with foam formation sensor and variable setting control. The circuit allows the automatic injection of antifoam products inside the evaporator: the quantity of injected antifoam is adjustable by the control panel according to the actual needs.

CONTROL UNIT

• Siemens PLC control unit and touch screen control panel.
• Electrical panel in painted sheet, protection IP 54.
• Automatic overload cutout for all motors.
• 24 volts auxiliary circuit.
• Wiring made in flame proofs cables.
• Level control regulators for tanks and outside reservoirs level.

OPTIONALS

"Teleservice" Control System for remote assistance"

EXAMPLES OF INSTALLATIONS

TECHNICAL DATA

	Units	8000	10000	16000	20000
Feed Inlet	l/d	8.000	10.000	16.000	20.000
Nominal Capacity	l/h	330	416	660	850
Energy Consumption	KCal	110.000	135.000	215.000	250.000
Dimensions (LxPxH)	cm	320x190x320	320x230x380	330x230x380	330x230x380

PROCESS DIAGRAM