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LOMBARDYNE

I N D U S T R I E S

The best in Waste Water Treatment Technologies

Steam Free MVR Vacuum Evaporators

Electrocoagulation Plants

Centrifugal Dryers

About Company

Lombardyne Industries was founded in 2001

We manufacture both standard models as well as customized capacity of Vacuum Evaporators, Electro coagulation Plants and Dryers.

We have clients pertaining from various industries such as Pharmaceuticals, Chemicals, Textiles & Dyes, Agro and Automotive Industries

We have clients and dealers in six countries.

We have TWO manufacturing units with latest generation fabrication machines.

We have technically sound, highly skilled & experienced work force numbering to 40+

We have supplied more than 100 evaporators around the globe.

Latest trending Technology of Heat Pump concept used in all evaporators which avoids the need for a steam boiler or any other external heat source.

MVR technology concept incorporated in all evaporators which result in lower running cost.

Our evaporators have higher concentration levels compared to conventional technology.

Our Electro coagulation plants are completely skid Mounted plug and play units.

All our Electro coagulation Plants are Automatic function type.

Our own proprietary designs incorporated in Electro coagulation units enables customers for easy replacement of Anodic / Cathodic Plates.

Our Patented designs involve collaboration of Vacuum Evaporator Technology with Electro coagulation Technology. Together they treat raw effluent having TDS, COD, BOD, TSS.



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ADVANTAGES AND BENEFITS

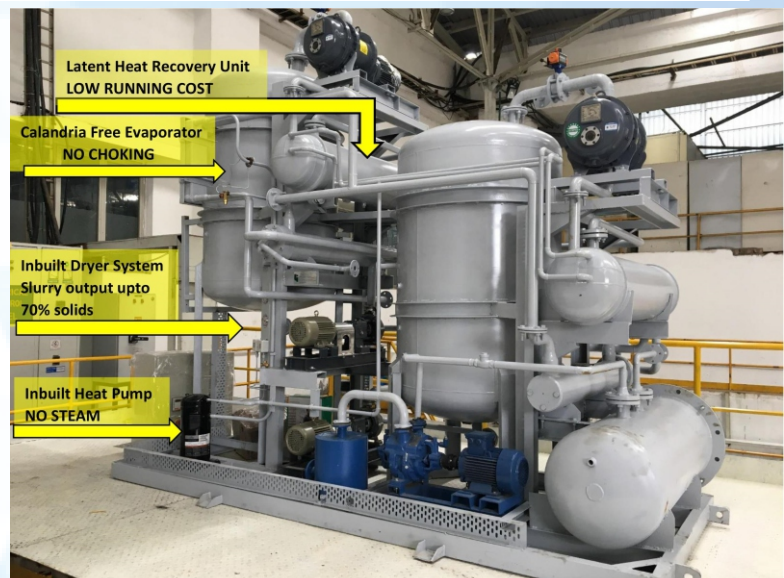
Below is a basic differentiation table between a conventional MEE and a Lombardyne Vacuum Evaporator

SR NO	CONVENTIONAL EVAPORATOR	LOMBARDYNE VACUUM EVAPORATOR
1	HIGH CAPITAL COST	LOWER CAPITAL COST
2	HIGH RUNNING COST (Rs. 0.80/- to 1.2/- per Ltr)	LOW RUNNING COST (Rs. 0.40/- per Ltr)
3	STEAM REQUIRED	NO STEAM REQUIRED
4	NO HEAT RECOVERY SYSTEM	HEAT RECOVERY SYSTEM INCLUDED
5	HIGH CHOKING FREQUENCY	NO CHOKING
6	FREQUENT FOULING	LESS FREQUENT FOULING
7	ERECTION AT SITE LARGE SPACE REQUIRED	NO ERECTION AT SITE REQUIRED SKID MOUNTED UNIT
8	OLD AGE TECHNOLOGY CALANDRIA USED FOR EVAPORATION	NEW AGE TECHNOLOGY EVAPORATOR EMPTY VESSEL USED
9	SEMI AUTOMATIC	FULLY AUTOMATIC AUTO CONCENTRATE DISCHARGE AUTO DISTILLED WATER DISCHARGE AUTO EFFLUENT INTAKE AUTO CLEANING CYCLE
10	STEAM BOILER NEEDED	RUNS ON ELECTRICITY ONLY
11	CONCENTRATE OUTPUT MAX 30% (3,00,000 TDS)	CONCENTRATE CONVERT TO SLURRY UPTO 50% (5,00,000 TDS)

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Key Features

- Inbuilt Heat Pump for Effluent Heating
- Steam free Operation
- No choking.
- Skid Mounted Unit
- Calandria Free
- Inbuilt Concentrator unit



Evaporator Section

Heat Pump Technology

Steam Free

Heat Pump technology is incorporated for higher energy savings. The generated heat by the Heat Pump is almost 4 times of the electrical energy consumed by the Heat Pump. (1:4 Ratio)

Due to this, Lombardyne evaporator **running cost is 60% less** compared to a conventional MEE.

Unlike conventional MEE, Lombardyne Evaporators are designed for **Low Boiling Point Evaporation**. This results in **much higher condensate quality** in single stage evaporation.



Inbuilt Concentrator Unit

Slurry form output

Conventional Evaporators have a maximum limit of concentration level of approximately 30% solids.

Lombardyne has implemented Concentrator technology in all the evaporators which result in higher levels of **concentration of approximately 55% to 70%**.

These specially designed concentrators keep concentrating the effluent inside the evaporator until the concentrate become a thick slurry.

This results in smaller capacity of dryer to be used.

In case of ATFD, the running cost can be reduced drastically.



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Skid Mounted Unit

Plug & Play



All Lombardyne Evaporators are Skid mounted units and are ready for plug and play at site.

Unlike conventional evaporators where a lot of site fabrication is needed along with huge space, Lombardyne evaporators take up very less space. With the help of a simple fabrication setup, the unit can be placed and immediately commissioned.

TECHNICAL

DETAILS

MODEL NO / CAPACITY	INPUT LOAD KW/HR	EFFLUENT INPUT FLOW RATE (LPH)	EFFLUENT INPUT TDS RANGE	CONDENSATE FLOW RATE (LPH)	CONCENTRATE OUTPUT TDS	DIMENSIONS (mm)	WEIGHT kgs
500 LPH	31	500	1500 - 130000	470	450000 - 600000	3800 L X 1500 W x 2200 H	6800
1000 LPH	63	1000	1500 - 130000	930	450000 - 600000	4900 L X 1800W x 2200H	10500
1500 LPH	96	1500	1500 - 130000	1390	450000 - 600000	6000 L X 1800W x 2200H	14000
2000 LPH	125	2000	1500 - 130000	1850	450000 - 600000	6500 L X 2400W x 2800H	18500
3000 LPH	189	3000	1500 - 130000	2800	450000 - 600000	8000 L X 3000W x 3000H	24000
5000 LPH	315	5000	1500 - 130000	4300	450000 - 600000	9500 L X 3300W x 3600H	38000

All above models are inbuilt with Heat Pumps, MVR technology.

All above models are Fully automatic function: Auto Effluent Feed, Auto Condensate Discharge, Auto Concentrate Drain.

All above models are included with Concentrator Unit.

All above models are 3 Phase, Electrical source only. No external Heat source required.

All above models are Skid Mounted Ready for installation and commissioning.

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Slurry Outlet

Boiling Vessel can be in SS316L / Duplex 2205. Easy Access through Man-hole and Sight Glass.

Boiling Vessel equipped with Level Sensors, Concentration Monitoring Sensor and Temperature Sensors.

Heat Pump designed for Low temperature Boiling point with clearer condensate quality.

Automatic Effluent inlet port, Automatic Concentrate Discharge port.

Automatic CIP cycle port.

Automatic Touchscreen PLC with Communication Port

ADVANTAGES AND BENEFITS

ELECTRO COAGULATION UNITS



Our Electrocoagulation units are designed according to the characteristics of the effluent. Design parameters change with change in effluent characteristics

Our Units are designed for reducing COD, BOD and TSS upto 90%

Our units are easier to operate than conventional plants as complete system is automated.

Electrode replacement in our units are more convenient than conventional designs and can be done within an hour.

Electrodes installed in our units have longer life upto 100 days.

Our units are skid mounted with plug and play at site readiness.

Our skids are fully loaded with Clarifier, Sludge drain and Effluent auto feed.

Provides a larger surface area in a small compact design. This allows a simpler design and uses lower amperage requirements per cell than standard plate EC units.

Much lower operating cost. Our design uses very low voltages, providing big savings to the customer.

TECHNOLOGY COMPARISON

FEATURES



Filtration

Filtration technology requires a high particle size for it to work. It is limited to only certain types of contaminants. COD . Dye Colour cannot be treated by filtration method.

If free oils and greases are present it will cause high maintenance cost on filters.

Biological Treatments

This type of technology treats oil and grease relatively well but does not treat suspended solids or heavy metals.

It also requires careful pH adjustments to keep the bacteria alive. It can therefore be high maintenance.

Chemical Treatment (Chemical Coagulation)

This technology can treat heavy metals but requires very strict control of pH. Most of the time chemical treatment methods increase the TSS (total suspended solids) and produce large volumes of sludge with high bound water content. This is because the electrical double layer formed by chemicals is not as strong and pronounced as when formed by electrocoagulation. Therefore chemical coagulation is usually slow to filter and difficult to dewater because the floc contains more water.

Electrocoagulation

This technology uses the same mechanism as chemical coagulation but the characteristics of the floc are dramatically different than the floc formed by chemical coagulation. The floc produced by Electrocoagulation contains less bound water, and is easier to filter because is more shear resistant. In addition, Electrocoagulation is able to treat oil and greases with ease, reduce TSS COD and BOD.

ELECTRODE MATERIAL OPTIONS: ALUMINUM / STAINLESS STEEL / MILD STEEL / IRON

CAPACITY: 500 LPH TO 10000 LPH

MODES: MANUAL / SEMI AUTOMATIC / AUTOMATIC



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