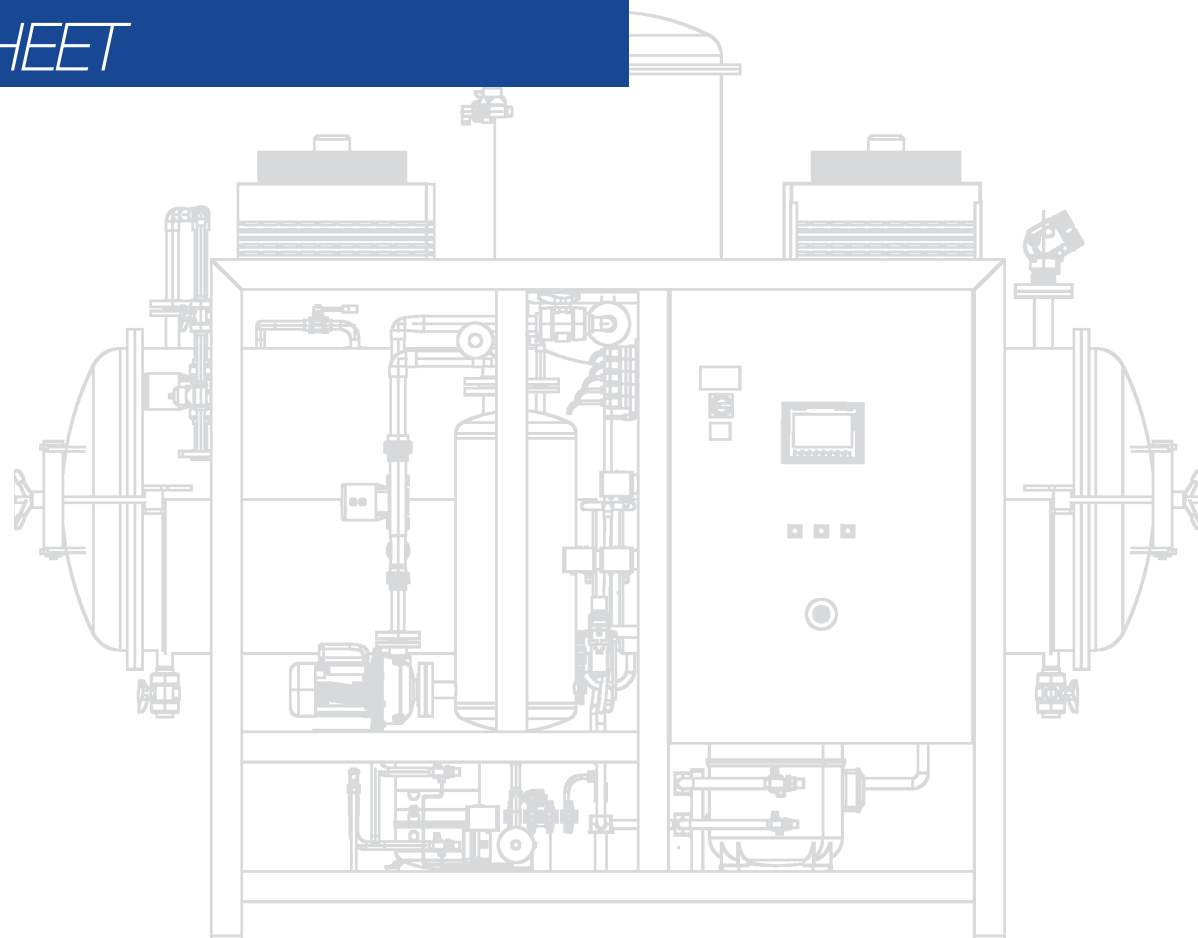
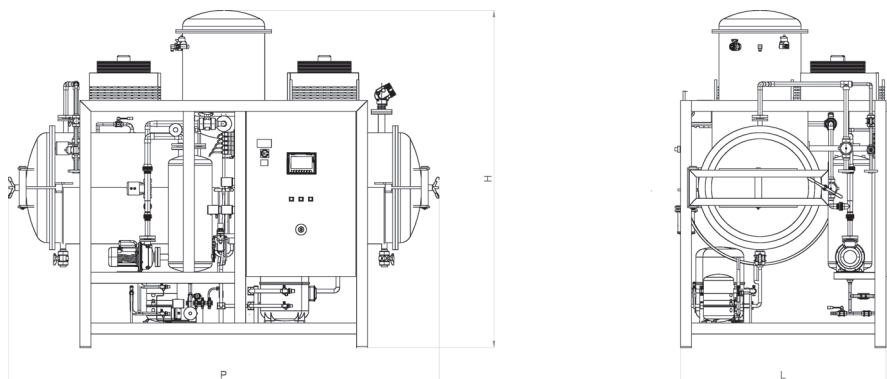


HEAT PUMP VACUUM EVAPORATOR

ECO DRY-HP *DATA SHEET*





Heat pump vacuum evaporator suitable to obtain semi-solid concentrate. Boiling chamber with horizontal design, having a saddle jacketed heat exchanger. Frontal hatch opening for inspection and manual extraction of the concentrate. Total control through PLC and main parameters viewable on LCD TOUCH display. Standard execution in Aisi 316, other special alloys on request. Standard evaporator from 250 to 1.000 liter/day of nominal capacity. There is the possibility to realize the evaporator with an automatical internal scraping screw for a continuous concentrate mixing and to facilitate its extraction.

Main application

ECO DRY HP mainly designed for:

- Quenching salts recovery
- Purification and recovery of fire extinguishing and cleaning water
- Recovery from ultrasound washing, pickling and hand cleaning
- Concentration of plant extracts and flavourings
- Obtaining of semi-solid or dry concentrate

		250 DRY	350 DRY	500 DRY	750 DRY	1000 DRY
Power and Consumption		UM				
Distillate* production	L/h	10,5	15	21	31	42
*Nominal capacity referred to water	m ³ /24h	0,25	0,35	0,5	0,75	1
Installed power	kW	4,2	5	6,2	11,1	14
Voltage		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Compressed air	Bar	7	7	7	7	7
Approximate Measurements						
Length	mm	1500	1700	2600	2900	3200
Width	mm	1400	1500	1600	1750	1600
Height	mm	2300	2300	2300	2300	2500
Weight	kg	380	430	550	650	1150
Working level	L	75	95	200	350	700
Main Connection						
Wastewater inlet	Ø pollici	1	1	1	1	1
Distillate outlet	Ø pollici	1/2	1/2	1/2	1	1
Concentrate outlet	Ø pollici	2	2	2	2	2
Compressed air	mm	Ø 8mm	Ø 8mm	Ø 8mm	Ø 8mm	Ø 8mm
Cleaning inlet water (sight glass)	Ø pollici	1/2	1/2	1/2	1/2	1/2
Antifoam inlet	Ø pollici	1/2	1/2	1/2	1/2	1/2

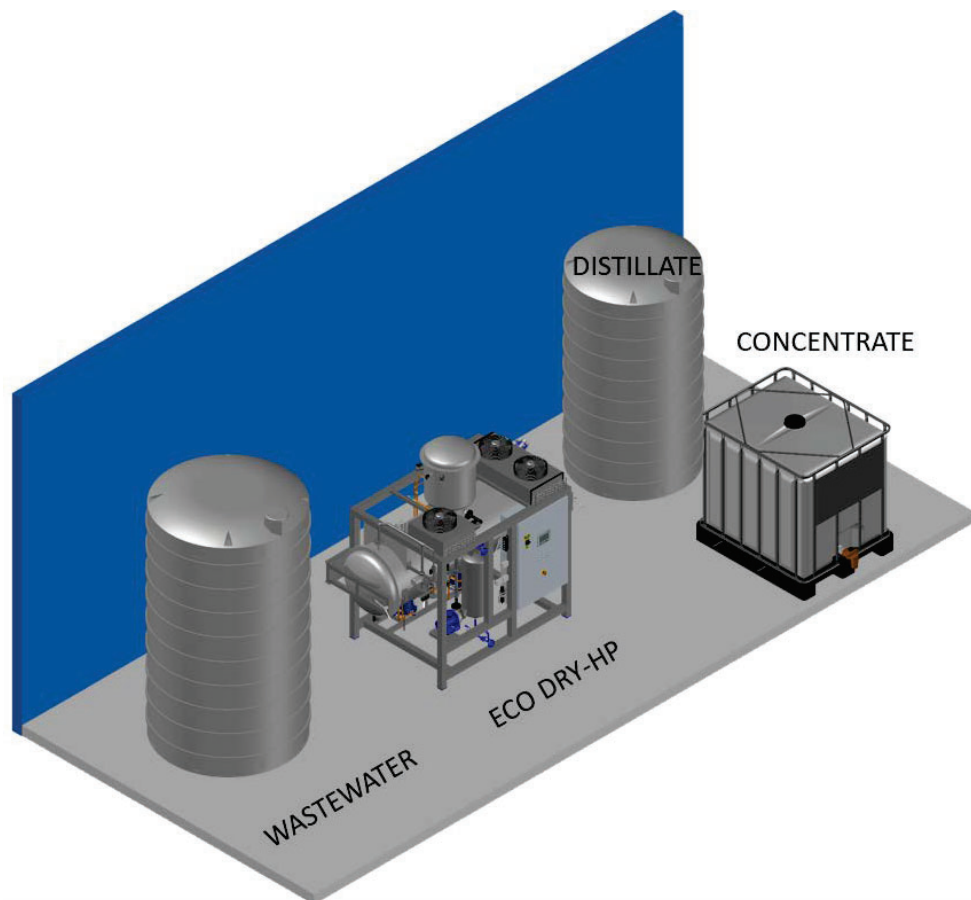


HEAT PUMP VACUUM EVAPORATOR

ECO DRY-HP CONSTRUCTION MATERIALS



Boiling vessel	AISI316 / 316L certificate. Double flanged structure for an easy disassembly and maintenance.	Heat exchanger - product heating	AISI316 / 316L certificate. In case of maintenance, the heat exchanger is easily removable.
Support frame	Square-section reinforced support frame in AISI 304	Screws	AISI 316
Recirculation circuit valve	PVDF/PTFE	Level sensors	Magnetic floaters - design Eco-Techno
Sight glass with lamp	design Eco-Techno	Antifoam circuit and valves	PVC/FPM
Backsplash demister system	PP – design Eco-Techno	Refrigerant gas (not in contact with the product)	Freon R407C
Condensation exchanger	AISI 316L – design Eco-Techno	Heat pump circuit (not in contact with the product)	Copper – Aluminum - 1.4401/1.4404 (flanged)
Vapor condensation circuit	PP / 1.4401/1.4404 / PTFE/FPM	Piping	PVDF/PVC seals PTFE/FPM
Distillate tank	AISI 316 – design Eco-Techno	Valves	PVDF/PTFE – PVC/FPM (flanged)
Distillate tank exchanger	AISI 316L – design Eco-Techno	PLC and operator panel	Siemens (A+B on request)
Vacuum circuit	1.4401/1.4404 / PVC/FPM (flanged)	Cabling junction	PVC
Vacuum pump	AISI 316	Cables	Flame retardant
Vacuum circuit valves	PVC/FPM	Support frame	AISI 304
Product inlet valve	PVC		



RECOMMENDED STORAGE

Wastewater:	Recommended a double storage volume compare to the daily nominal capacity of evaporation.
Distillate:	Recommended a double storage volume compare to the daily nominal capacity of evaporation.
Final concentrate:	Recommended a collection tank based on concentrate destination. The extraction takes place by falling of the concentrate directly from the plant hatch.(referred to the specific plant)
Condition of inlet product, outlet distillate and concentrate:	Until 0,5 Bar the plant is autonomous. For higher prevalence it is needed a dedicated system of relaunch.

LIQUID TEMPERATURE

T Max inlet product:	Avoid Temperature greater than 30° C and lower than 10° C for the inlet product.
T distillate outlet:	15 - 20 ° C
T concentrate outlet:	35 - 40 ° C

OPERATING CONDITIONS

Installation site*:	T min / max: +5 / + 35 °C (sheltered from weathering such as rain, snow or hail).
----------------------------	--

* In case of installation in warm areas, the plant can be equipped with condensation exchangers working with water or air/water. In case of installation in outdoor areas with risk of frost, it is possible to require a complete insulated version.

INSTALLATION AREA

Minimum recommended project area:	In order to ensure the ordinary maintenance operations, consider a meter for each side minimum. Guarantee an appropriate air exchange based on the dimension of the installed subcooler.
--	---

Control unit

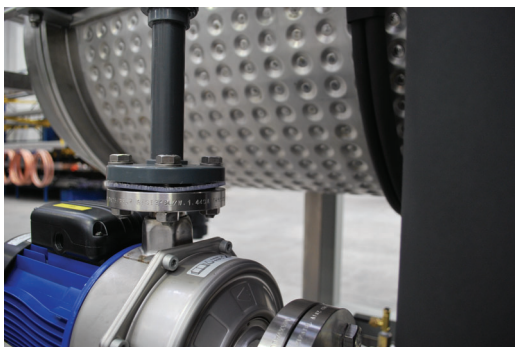
- Completely automated process: manual interventions are not needed.
- HMI Siemens control system guarantees an easy and intuitive control for every operation.
- A specific codification makes the comprehension of the functions very intuitive and understandable.
- Languages customization.
- The operations are customizable for specific needs.
- 6 months of remote assistance included (if the Web Teleservice control system is installed).
- Pressure, temperature and values are monitored with high accuracy by analogic control; the values are visible on wide HMI display.

Materials

- Extreme attention on the material choice (all certified) and on the assembly.
- Certification on every type of welding.
- Tracking guarantee on the used material (e.g.: 10204: 3.1 for stainless steel).
- High accuracy on production standard according to most restrictive regulations (ISO EN 3834).
- Quality check during the production (NDT on welding, individual check on every boiler and pressurized element) by issuing specific certificates (PED Pressure Equipment Directive).

Main features

- Compact and well-kept specific design.
- Easy and rapid installation.
- Low temperature process = low contact temperature thanks to a very high vacuum level and to the heat pump technology (distillate outlet about at 20°C, boiling point about at 35-40°C).
- Assembly on skid with easy access from every sides.
- Very easy and quick ordinary maintenance on periodic checks of values and functionality.
- Piping, valves, pumps and every component flanged to guarantee the seal over time and for ease of intervention in case it is necessary.
- The plant is provided after accurate internal test.
- Cleaning operations can be automated, reducing manual intervention. The access to the internal parts is easy thanks to wide frontal or top hatches.
- Foam control system completely automated.
- Super-concentration system to obtain semi-solid or dry concentrate.
- Every function and setting is variable and monitorable from a touch panel.
- Every plant is tailor-made for every customer.
- Programmed maintenance on request.
- Worldwide assistance.



Vacuum Evaporators

from 1984



ECO-TECHNO srl - Via del Lavoro, 42 - 20874 Busnago (MB) - Italia - Phone +39 039 6095958 - Fax +39 039 6820584

www.eco-techno.it - e-mail: info@eco-techno.it

This brochure shows models, outfitting versions and configuration possibilities (standard and optional) of vacuum evaporation systems for industrial applications, manufactured and distributed by ECO-TECHNO. The content is intended for general information purpose only. The details it contains shall not be deemed a contractually binding document, since ECO-TECHNO may make constructive and outfitting modifications anytime and during the period between publication of this catalogue, the manufacturing of the equipment and the publication of an update catalogue.