

The future of Innovation and Sustainability.

# VACUUM EVAPORATORS LINE















## Vacuum evaporation

## The future of industrial treatment

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Vacuum evaporation is a breakthrough in liquid effluent treatment, allowing clean, efficient and safe operation even where traditional systems are ineffective.

This physical process separates water from dissolved substances, but with a fundamental advantage: operating at a pressure lower than the atmospheric one, the boiling temperature is lowered, optimizing the energy consumption.

Thanks to this principle, energy can be recovered in different ways, using advanced technologies to maximize treatment efficiency.

- **Cost optimization:** reduction of disposal costs and clean water consumption
- **Recovery and reuse:** recovery of treated water and valuable materials as reusable by-products
- Environmental efficiency: reduction of discharges up to ZLD and regulations compliance
- Advanced technology: effective solution where other systems fail, with simplified management and lower operating costs
- **Sustainability:** protection of water resources and less environmental impact.

100%





Themis produces high quality industrial vacuum evaporators, designed to use existing thermal energy.

Our goal is to achieve **ZLD (Zero Liquid Discharge)**, that is the complete recovery and reuse of purified water (95-98%), eliminating waste and obtaining a solid concentrate that, in many cases, can become a reusable raw material with market value (2-5%). In this way, all treated waste water is reintegrated into the process without being released into the environment.

- Recycling of purified water with closed loop recovery
- Disposal costs reduction
- Raw material recovery
- Improved environmental sustainability
- Compliance with waste disposal regulations



## WASTE WATER 95-98% TREATED WATER 2-5% CONCENTRATE

## Themis LAB

# **Testing and pilot plants**

The key to customized solutions

Preliminary testing steps are essential to identify the most suitable technology for specific treatment needs. Through laboratory tests and pilot plants, we provide accurate and reliable data to ensure maximum operational efficiency.

Thanks to these analyses a precise evaluation is possible:

- The efficiency of the treatment, ensuring optimal performance in water recovery and purification.
- CAPEX (capital expenditure), optimizing the initial investment necessary for the system's implementation.
- ROI (return on investment) and OPEX (operating costs), ensuring long-term economic sustainability.

Thanks to these tests, we can offer customized, efficient and competitive solutions, ensuring the maximum value for your industrial process.

## **Materials**

## Resistance and high quality

We use high quality materials to ensure durability, corrosion resistance and maximum efficiency in our vacuum evaporation systems. The choice of the most suitable material depends on the characteristics of the effluent to be treated and the specific requirements of the process.

The main used materials include:

- AISI 316 / 316L (1.4401 1.4404) Standard for industrial applications with good corrosion resistance
- ٠ SAF 2507 (1.4410) – Super duplex steel with high resistance to chlorides and aggressive agents
- 904L (1.4539) High-nickel stainless steel, ideal for highly corrosive environments ٠
- SN28 (1.4563) - Special material with excellent resistance to strong acids
- Alloy 31 High performance alloy for extreme chemical conditions
- Titanium Excellent chemical and mechanical resistance, perfect for highly corrosive environments
- Acid-resistant resins For the protection and coating of components in contact with aggressive substances

Selecting the right material is essential to ensure the best performance, long life and low maintenance costs.







# **Efficiency and reliability**

Our vacuum evaporators are designed to deliver optimal performance with the ultimate in automation. Thanks to the modular structure, they can be integrated into different contexts easily, both indoor and outdoor

#### Main features:

- Complete automation for 24/7 continuous operation without supervision •
- High-quality, certified materials for a long service life •
- Intuitive HMI interface for simple and efficient management
- Advanced PLC that enables networked communication with the customer's plant
- Remote control and real-time monitoring of process parameters

Reliable, versatile and efficient, our evaporators optimize the industrial processes management by reducing costs and emissions.

## THE RIGHT SOLUTION **FOR EVERY SECTOR**

êV	DETERGENTS AND COSMETICS	Water cleaning of production equipment
$\bigotimes$	ALUMINIUM COATING AND SURFACE TREATMENT	Oil emulsion, release agents, lubricants, mold cleaning, water and glycol
63	PHARMACEUTICAL, CHEMICAL	Cleaning process, thermolabile solutions
$\dot{\ominus}$	FOOD AND DRINK	Water cleaning, recovery and concentration of sugar solution, brine, enzyme concentration, aromas
	BIOMETHANE & BIOGAS PRODUCTION	Agricultural digestion treatment with ammoniacal nitrogen, COD/BOD, phosphorus and heavy metals
<u>R</u>	MECHANICAL TREATMENT	Waste oil emulsions, wash tunnel waste water, tumbling water, cooling and penetrating liquid
	WASTE DISPOSAL PLATFORMS	Salt waste water, exhausted solutions
Y T	INDUSTRIAL PAINTING	Painting and washing processes of paint equipment. Degreasing, phosphating, passivation, pre-washing and rinsing
${}^{}$	PACKAGING AND INKS	Machines washing and production lines
LEFE	GALVANIC AND SURFACE TREATMENTS	Alkaline acid waste; washing baths, exhausted saline solutions
	GALVANIC AND SURFACE TREATMENTS ELECTRONICS AND SEMICONDUCTORS	Alkaline acid waste; washing baths, exhausted saline solutions Acid or alkaline waste

## The range

THM DRY-HP HEAT PUMP VACUUM EVAPORATOR

THM DPM MULTI-EFFECT EVAPORATOR POWERED BY STEAM OR HOT WATER

**THM DPM-SE** MULTI-EFFECT EVAPORATOR POWERED BY STEAM OR HOT WATER

THM VR-HP HEAT PUMP VACUUM EVAPORATOR

THM VR-WW THERMAL VACUUM EVAPORATOR

## THM VS-HP / SMALL

HEAT PUMP VACUUM EVAPORATOR



# THM DRY-HP

HEAT PUMP VACUUM EVAPORATOR 250-1000 (10-42 L/h)



#### THM DRY-HP EVAPORATORS

ARE DESIGNED TO RECOVER SLUDGE AND RAW MATERIALS DISSOLVED IN WASTE.

VERSION WITH SCRAPER BLADES FOR SEMI-SOLID CONCENTRATE.

## MAIN DATA

- Vacuum evaporator with heat pump suitable for the production of semi-solid concentrates.
- Horizontal design boiling chamber, equipped with a covered heat exchanger.
- Front opening door for the concentrate's inspection and manual extraction.
- Total control via PLC and main parameters displayed on LCD TOUCH display.
- Standard execution in Aisi 316, other special alloys on request.
- Standard evaporator from 250 to 1,000 liters/day nominal capacity.

The evaporator can be made with automatic internal scraper blades for continuous mixing of the concentrate and to facilitate its extraction.

## APPLICATIONS

- Quenching salts recovery.
- Purification and recovery of quenching and cleaning water.
- Recovery from ultrasonic washing, pickling and hand cleaning.
- Concentration of plant extracts and aromas.
- Obtaining of semi-solid or dry

### FEATURES

- Compact and neat design.
- Quick and easy installation.
- Low temperature process = low contact temperature due to very high vacuum level and heat pump technology.
- Skid mount with easy access from all sides.
- Very simple and fast routine maintenance, periodic checks of values and functionality.
- Pipes, valves, pumps and every flange component to guarantee the seal over time and to facilitate intervention in case of need.
- The system is supplied after thorough internal testing.
- Cleaning operations can be automated, reducing manual intervention. Access to the inside is easy thanks to large front or upper doors.
- Fully automated foam control system.
- Super concentration system to obtain semi-solid or dry concentrate.
- Each function and setting is variable and can be monitored from a touch panel.
- Each plant is made to measure.
- Scheduled maintenance on request.
- Worldwide service.

## CONTROL UNIT

- Fully automated process: no manual intervention required.
- The control system ensures ease and intuitiveness in every operation.
- A specific coding makes the understanding of functions very intuitive.
- Language customization.
- Operations are customizable for specific needs.
- 6 months of remote support included (if the Teleservice Web control system is installed).
- Pressure, temperature and values are monitored with high precision via analog control: the values are shown on the large display.

## INSTALLATION

#### Waste water:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Distillate:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Final concentrate:

A collection tank is recommended depending on the destination of the concentrate. The extraction takes place by dropping the concentrate directly from the plant door.

## Conditions of the input product, output distillate and concentrate:

Up to 0.5 bar, the plant is self-contained. For higher heads, a dedicated booster system is required.

#### Installation location:

T min/ max: +5/ +35 °C (weatherproof)

In case of installation in hot zones, the system may be equipped with water or air/water condensing exchangers.

In case of installation in outdoor environments with frost risk, fully insulated version can be requested.

#### T Max incoming product:

Temperatures above 30 °C and below 10 °C should be avoided.

T distilled output: 15 - 20 °C

#### T concentrate output: 35 - 40 °C

#### Recommended minimum area:

To ensure routine maintenance operations, consider at least one meter per side.





		250 DRY	350 DRY	500 DRY	750 DRY	1.000 DRY
Power and Consumption	ИМ					
Distillate Production*	L/h	10,5	15	21	31	42
*Nominal capacity referred to water	m³/24h	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						
Lenght	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 8	Ø 8	Ø 8	Ø 8	Ø 8
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

Boiling vessel	AISI 3
Support frame	Squa
Recirculation circuit valve	PVDF
Sight glass with lamp	Stand
Backsplash demister system	PP
Condensation exchanger	AISI 3
Vapor condensation circuit	PP / 1
Distillate tank	AISI 3
Distillate tank exchanger	AISI 3
Vacuum circuit	1.440
Vacuum pump	AISI 3
Vacuum circuit valves	PVC /
Product inlet valve	PVC
Heat exchanger - product heating	AISI 3
Screws	AISI 3
Level sensors	Magr
Antifoam circuit and valves	PVC /
Refrigerant gas (not in contact with the product)	Freor
Heat pump circuit (not in contact with the product)	Сорр
Piping	PVDF
Valves	PVDF
PLC and operator panel	Siem
Cabling junction	PVC
Cables	Flam

316 / 316L certificate.

are-section reinforced support frame in AISI 304

F/PTFE

dard design

316L

1.4401 / 1.4404 / PTFE / FPM

316

316L

01 / 1.4404 / PVC / FPM (flanged)

316

/ FPM

316 / 316L certificate.

316

netic floater

/ FPM

n R407C

per - Aluminum - 1.4401 / 1.4404 (flanged)

F / PVC seals PTFE / FPM

DF / PTFE - PVC / FPM (flanged)

nens or similar

ne retardant

## THM DPM

MULTI-EFFECT EVAPORATOR POWERED BY STEAM OR HOT WATER 4000-30000 (165-1.250 L/h)



#### THM DPM EVAPORATORS

ARE DESIGNED TO EFFICIENTLY TREAT MEDIUM TO LARGE FLOW RATES, USING ANY THERMAL SOURCE BY RECYCLING THE ENERGY PRODUCED.

SPECIALLY DESIGNED FOR HAZARDOUS WASTEWATER, THEY CAN BE USED WHENEVER NO MAINTENANCE IS REQUIRED.

SINGLE OR MULTIPLE EFFECTS CONFIGURATION IS POSSIBLE.

POSSIBILITY OF CONDENSATION WITH EVAPORATIVE TOWER OR PLATE-MOUNTED EXCHANGER.

## MAIN DATA

- Multi-effect modular vacuum evaporator, suitable for the concentration of large quantities of aqueous solution.
- Designed for 24/7 automatic operation.
- Horizontal design boiling chamber equipped with removable, high-efficiency heat exchanger.
- Steam or hot water supply, condensation with plate heat exchanger or special condenser.
- Totally controlled by a color touch display.
- Easy to expand, over time, up to a maximum of three stages.
- Standard execution in AISI 316.
- Special alloys on request.
- Standard evaporator range from 4 to 30 m 3/day nominal capacity.

## APPLICATIONS

- Oily emulsions, waste water from finishing processes, exhausted washings.
- Die-casting (release agents, glycols, lubricants).
- Galvanic waste water, drain, eluates from resin regeneration.
- Chemical finishing ZLD target.
- Platforms for waste disposal.
- Landfill leachate.

### FEATURES

- Specific compact and neat design.
- Quick and easy installation.
- Vacuum process, no fumes or odor leakage, very safe installation areas.
- Skid mount with easy access from all sides.
- Very simple and fast routine maintenance.
- Pipes, valves, pumps and every component flanged to ensure tightness over time and to facilitate intervention in case of need.
- The system is supplied after thorough internal testing.
- Cleaning operations can be automated, reducing manual intervention. Access to the interior is easy thanks to large front or upper doors.
- Fully automated foam control system.
- Magnetically controlled density meter for the determination of discharge. The densimeter can be calibrated to the specific needs of the user.
- Automatic recirculation system useful for constant mixing of the product during the concentration phase.
- Each function is variable and can be monitored from a touch panel.
- Each plant is custom-made.
- Scheduled maintenance on request.

## CONTROL UNIT

- Fully automated process: no manual intervention required.
- The control system ensures ease and intuitiveness in every operation.
- A specific coding makes the understanding of functions very intuitive.
- Language customization.
- Operations are customizable for specific needs.
- 6 months of remote support included (if the Teleservice Web control system is installed).
- Pressure, temperature and values are monitored with high precision via analog control: the values are shown on the large display.

## INSTALLATION

#### Waste water:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Distillate:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Final concentrate:

A storage volume is recommended for the optimization of the product to be disposed (referring to the specific plant).

## Conditions of the input product, output distillate and concentrate:

Up to 0.5 bar, the plant is self-contained. For higher heads, a dedicated booster system is required.

#### Installation location:

T min/ max: +5/ +35 °C (weatherproof) In case of outdoor installation with frost risk, insulation of the evaporation chamber and primary piping can be requested.

#### T Max incoming product:

Temperatures above 30 °C and below 10 °C should be avoided.

T distilled output: 35 - 60 °C

#### T concentrate output: 45 - 70 $^{\circ}\mathrm{C}$

Variable values depending on the type of power supply, condensation, and number of effects.

#### Recommended minimum area:

To ensure routine maintenance operations, consider at least one meter per side.

The system does not require any air exchange in the installation room.







		4.000 DPM1	8.000 DPM1	10.000 DPM1	8.000 DPM2	16.000 DPM2
Power and Consumption	UM					
# effect	n°	1	1	1	2	2
Distillate Production*	L/h	165	330	420	330	660
*Nominal capacity referred to water	m³/24h	4	8	10	8	16
Installed electrical power	kW	4,5	4,5	4,5	9,8	9,8
Thermal requirement	kWt	116	232,6	290,7	126,7	253,5
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 (the cor	densation	section is not in	cluded)			
Lenght	mm	3300	3300	3400	3300	3300
Width	mm	1100	1200	1200	1900	2300
Height	mm	3300	3800	3800	3300	3800
Weight	kg	1250	1550	1600	2450	3050
Working level	L	550	950	950	1100	1900
Main Connection						
Wastewater inlet / Distillate outlet	Ø pollici	1	1	1	1	1
Concentrate outlet (with pump)	Ø pollici	1	1	1	1" 1/2	1" 1/2
Compressed air	mm	Ø 8	Ø 8	Ø 8	Ø8	Ø 8
Cleaning inlet water	Ø pollici	1	1	1	1	1
Antifoam inlet	Ø pollici	1/2	1/2	1/2	1/2	1/2
Service water inle	Ø pollici	1/2	1/2	1/2	1/2	1/2
Hot water/steam inlet	Ø pollici	2" 1/2 - 3"	3" - 4"	3" - 4"	2" 1/2 - 3"	3" - 4"
Hot water - condensate outlet	Ø pollici	2" 1/2 - 1"	3" - 1" 1/2	3" - 1" 1/2	2" 1/2 - 1"	3" - 1" 1/2

		20.000 DPM2	12.000 DPM3	20.000 DPM3	24.000 DPM3	30.000 DPM3
Power and Consumption	ИМ					
# effect	n°	2	3	3	3	3
Distillate Production*	L/h	840	500	840	1000	1250
Nominal capacity referred to water	m³/24h	20	12	20	24	30
nstalled electrical power	kW	9,8	14,2	14,2	14,2	14,2
Thermal requirement	kWt	316,9	143,2	238,7	286,4	358
/oltage		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 (the con	densation s	section is not in	cluded)			
_enght	mm	3300	3200	3300	3300	3300
Width	mm	2300	3000	3680	3680	3680
Height	mm	3800	3200	3800	3800	3800
Neight	kg	3150	3700	4550	4600	4750
Norking level	L	1900	1650	2850	2850	2850
Main Connection						
Nastewater inlet / Distillate outlet	Ø pollici	1	1	1	1	1
Concentrate outlet (with pump)	Ø pollici	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2
Compressed air	mm	Ø 8	Ø8	Ø 8	Ø 8	Ø8
Cleaning inlet water	Ø pollici	1	1	1	1	1
Antifoam inlet	Ø pollici	1/2	1/2	1/2	1/2	1/2
Service water inle	Ø pollici	1/2	1/2	1/2	1/2	1/2
Hot water/steam inlet	Ø pollici	3" - 4"	2" 1/2 - 3"	3" - 4"	3" - 4"	3" - 4"
Hot water - condensate outlet	Ø pollici	3" - 1" 1/2	2" 1/2 - 1"	3" - 1" 1/2	3" - 1" 1/2	3" - 1" 1/2

Boiling vessel	AISI 316 / 316L certificate
Recirculation circuit	AISI 316 / 316L certificate
Recirculation circuit valve	AISI 316 / 316L certificate (flanged)
Sight glass with lamp	Standard Design
Backsplash demister system	PP
Condensation exchanger	AISI 316 / 316L certificate
Vapor condensation circuit	1.4401/1.4404
Distillate tank	AISI 316 / 316L
Distillate tank exchanger	AISI 316L
Vacuum circuit	AISI 316 / 316L certificate (flanged)
Vacuum pump	AISI316 / 316L certificate (flanged)
Vacuum circuit valves	AISI 316 / 316L certificate (flanged)
Product inlet valve	AISI 316 / 316L certificate (flanged)
Screws	AISI 316
Heat exchanger – product heating	AISI 316 / 316L certificate
Densimeter	With magnetic floating
Level sensors	Electronics with vibration
Antifoam circuit and valves	AISI 316 / 316L certificate
Cleaning circuit and valves	AISI 316 / 316L certificate
Concentrate outlet valve	AISI 316 / 316L certificate (flanged)
Concentrate outlet piping	AISI 316 / 316L certificate
Piping	AISI 316 / 316L certificate
Support frame	AISI 304
Concentrate pump	AISI 316 / 316L certificate (flanged)
PLC and operator panel	Siemens or similar
Cabling junction	PVC
Cables	Flame retardant



# THM DPM-SE

MULTI-EFFECT EVAPORATOR POWERED BY STEAM OR HOT WATER *30000-200000 (1.250-8.000 L/h)* 



#### THM DPM-SE VACUUM EVAPORATORS

ARE DESIGNED FOR THE CONCENTRATION OF LARGE VOLUMES OF WATER-BASED SOLUTIONS AND HIGH-SALT CONCENTRATION SOLUTIONS.

POWERED BY THERMAL SOURCES SUCH AS HOT WATER OR STEAM.

SINGLE OR MULTIPLE EFFECT.

DESIGNED TO MEET SEVERE TREATMENT CONDITIONS WITH DIFFERENT HAZARDOUS WASTE WATER.

## MAIN DATA

- Modular multi-effect vacuum evaporator, suitable for the concentration of large quantities of aqueous solution.
- Designed for 24/7 automatic operation.
- Boiling chamber with horizontal design, equipped with removable, high-efficiency heat exchanger.
- Steam or hot water supply, condensation with plate exchanger or special condenser.
- Totally controlled by a color touch display.
- Easy to expand over time, up to a maximum of three stages.
- Standard execution in AISI 316
- Special alloys on request.
- Standard evaporator range from 4 to 30 m^3/day nominal capacity.

## APPLICATIONS

- Oily emulsions, waste water from finishing processes, exhausted washings.
- Die-casting (release agents, glycols, lubricants).
- Galvanic waste water, drain, eluates from resin regeneration.
- Landfill leachate.
- Washing of reactors, process wastewater for the chemical/pharmaceutical industry.
- Treatment of the aqueous solution.

### FEATURES

- Specific compact and neat design.
- Quick and easy installation.
- Vacuum process, no fumes or odor leakage, very safe installation areas.
- Skid mount with easy access from all sides.
- Very simple and fast routine maintenance, periodic checks of values and functionality
- Pipes, valves, pumps and every component flanged to ensure tightness over time and to facilitate intervention in case of need.
- The system is supplied after thorough internal testing.
- Cleaning operations can be automated, reducing manual intervention. Access to the interior is easy thanks to large front or upper doors.
- Fully automated foam control system.
- Magnetically controlled densimeter system for discharge determination.
- Automatic recirculation system useful for constant mixing of the product during the concentration phase.
- Each function and setting is variable and can be monitored from a touch panel.
- Each plant is custom-made.
- Scheduled maintenance on request.

## CONTROL UNIT

- Fully automated process: no manual intervention required.
- The control system ensures ease and intuitiveness in every operation.
- A specific coding makes the understanding of functions very intuitive.
- Language customization.
- Operations are customizable for specific needs.
- 6 months of remote support included (if the Teleservice Web control system is installed).
- Pressure, temperature and values are monitored with high precision via analog control: the values are shown on the large display.

## INSTALLATION

#### Waste water:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Distillate:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Final concentrate:

A storage volume is recommended for the optimization of the product to be disposed (referring to the specific plant).

## Conditions of the input product, output distillate and concentrate:

Up to 0.5 bar, the plant is self-contained. For higher heads, a dedicated booster system is required.

#### Installation location:

T min/ max: +5/ +35 °C (weatherproof) In case of outdoor installation with frost risk, insulation of the evaporation chamber and primary piping can be requested.

#### T Max incoming product:

Temperatures above 30 °C and below 10 °C should be avoided.

T distilled output: 35 - 60 °C

#### T concentrate output: 45 - 70 $^{\circ}\mathrm{C}$

Variable values depending on the type of power supply, condensation, and number of effects.

#### Recommended minimum area:

To ensure routine maintenance operations, consider at least one meter per side.

The system does not require any air exchange in the installation room.







Boiling vessel	AISI 3
Recirculation circuit	AISI 3
Recirculation circuit valve	AISI 3
Sight glass with lamp	Stand
Backsplash demister system	PP
Condensation exchanger	AISI 3
Vapor condensation circuit	1.4401
Distillate tank	AISI 3
Distillate tank exchanger	AISI 3
Vacuum circuit	AISI 3
Vacuum pump	AISI31
Vacuum circuit valves	AISI 3
Product inlet valve	AISI 3
Screws	AISI 3
Heat exchanger – product heating	AISI 3
Densimeter	With
Level sensors	Electr
Antifoam circuit and valves	AISI 3
Cleaning circuit and valves	AISI 3
Concentrate outlet valve	AISI 3
Concentrate outlet piping	AISI 3
Piping	AISI 3
Support frame	AISI 3
Concentrate pump	AISI 3
PLC and operator panel	Sieme
Cabling junction	PVC
Cables	Flame

316 / 316L certificate

516 / 316L certificate

316 / 316L certificate (flanged)

dard Design

516 / 316L certificate

1/1.4404

516/316L

516L

516 / 316L certificate (flanged)

16 / 316L certificate (flanged)

516 / 316L certificate (flanged)

316 / 316L certificate (flanged)

6

316 / 316L certificate

magnetic floating

ronics with vibration

516 / 316L certificate

516 / 316L certificate

516 / 316L certificate (flanged)

516 / 316L certificate

516 / 316L certificate

604

516 / 316L certificate (flanged)

ens or similar

e retardant

## THM VR-HP

## HEAT PUMP VACUUM EVAPORATOR 500-3000 (20-125 L/h)



#### THM VR-HP VACUUM EVAPORATORS

ARE SPECIALLY CONFIGURED TO CONCENTRATE WATER-BASED ENCRUSTING SOLUTIONS FROM 20 TO 125 L/H.

THEY ARE FITTED WITH AN INTERNAL SCRAPER TO CONCENTRATE UNTIL CRYSTALLIZATION.

RECOMMENDED FOR THE TREATMENT OF HIGH-DENSITY AQUEOUS WATER SOLUTIONS AND ENCRUSTING WASTE WATER.

## MAIN DATA

- Vacuum evaporator for concentrating aqueous solutions with high viscosity and density.
- Vertical boiling chamber with enclosed heat exchanger and internal scraper.
- Standard evaporator from 250 to 3000 L/day nominal capacity.
- Designed for 24/7 automatic operations.
- Top heat exchanger for steam condensation.
- Removable and inspection condensation zone.
- Automated operation with PLC and touch panel with LCD display.
- Standard execution in 1.4401/1.4404 (AISI 316/ 316L).
- Special alloys on request.

## APPLICATIONS

- Sticky and encrusting streams.
- Treatment and recovery of inks.
- Treatment of exhausted fixings.
- Printing industry.
- Concentration of high salinity waste water (reverse osmosis concentrate).
- ZLD (Zero Liquid Discharge).

### FEATURES

- Specific compact and neat design.
- Quick and easy installation.
- Low temperature process = low contact temperature thanks to a very high vacuum level and heat pump technology (distilled output at about 20°C, boiling point at about 35-40°C).
- Skid mount with easy access from all sides.
- Very simple and fast routine maintenance, periodic checks of values and functionality
- Pipes, valves, pumps and every component flanged to ensure tightness over time and to facilitate intervention in case of need.
- The system is supplied after thorough internal testing.
- Cleaning operations can be automated, reducing manual intervention.
- Fully automated foam control system.
- Magnetically controlled densimeter system for discharge determination.
- Automatic recirculation system useful for constant mixing of the product during the concentration phase.
- Each function and setting is variable and can be monitored from a touch panel.
- Each plant is custom-made.
- Scheduled maintenance on request.

## CONTROL UNIT

- Fully automated process: no manual intervention required.
- The control system ensures ease and intuitiveness in every operation.
- A specific coding makes the understanding of functions very intuitive.
- Language customization.
- Operations are customizable for specific needs.
- 6 months of remote support included (if the Teleservice Web control system is installed).
- Pressure, temperature and values are monitored with high precision via analog control: the values are shown on the large display.

## INSTALLATION

#### Waste water:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Distillate:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Final concentrate:

In case of gravity discharge, provide a tank under the boiling chamber (also available in the raised version); In the case of pump discharge, provide for storage appropriate to the state of the concentrate (referring to the specific plant).

## Conditions of the input product, output distillate and concentrate:

Up to 0.5 bar, the plant is self-contained. For higher heads, a dedicated booster system is required.

#### Installation location:

T min/ max: +5/ +35 °C (weatherproof)

In case of installation in hot zones, the system may be equipped with water or air/water condensing exchangers. In case of installation in outdoor environments with frost risk, fully insulated version can be requested.

#### T Max incoming product:

Temperatures above 30 °C and below 10 °C should be avoided.

T distilled output: 15 - 20 °C

#### T concentrate output: 35 - 40 °C

#### Recommended minimum area:

To ensure routine maintenance operations, consider at least one meter per side.





		500 VR	750 VR	1.000 VR	1.500 VR	2.000 VR	2.500 VR	3.000 VR
Power and Consumption	ИМ							
Distillate Production*	L/h	21	31	42	63	83	104	125
*Nominal capacity referred to water	m³/24h	0,5	0,75	1	1,5	2	2,5	3
Installed power	kW	7,4	8,2	16	24,5	25,5	28,7	35,5
Voltage		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Compressed air	Bar	7	7	7	7	7	7	7
Approximate Measurements								
Lenght	mm	2250	2300	2700	3000	3700	3800	3800
Width	mm	1050	1200	1400	1600	1700	1700	1700
Height	mm	2750	2850	3000	2800	3300	3300	3500
Weight	kg	600	650	1300	1400	1600	1800	2350
Working level	L	260	310	550	800	1200	1500	1600
Main Connection								
Wastewater inlet	Ø pollici	1	1	1	1	1	42	42
Distillate outlet	Ø pollici	1/2	1/2	1/2	1	1	1	1
Concentrate outlet (with pump)	Ø pollici	2	2	2	2	2	2	2
Compressed air	mm	Ø 8	Ø 8	Ø8	Ø8	Ø8	Ø8	Ø 8
Cleaning inlet water (boiler)	Ø pollici	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Cleaning inlet water (sight glass)	Ø pollici	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Antifoam inlet	Ø pollici	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Service water inlet	Ø pollici	1/2	1/2	1/2	1/2	1/2	1/2	1/2

Boiling vessel	AISI 3
Recirculation circuit	PVDF
Recirculation circuit valve	PVDF
Sight glass with lamp	Stand
Backsplash demister system	PP
Condensation exchanger	AISI 31
Vapor condensation circuit	PP / 1.4
Distillate tank	AISI 31
Distillate tank exchanger	AISI 3
Vacuum circuit	1.4401
Vacuum pump	AISI 31
Vacuum circuit valves	PVC/
Product inlet valve	PVDF
Concentrate outlet piping	PVDF
Concentrate pump	AISI 3
Concentrate outlet valve	PVDF
Heat exchanger - product heating	AISI 31
Densimeter	Magn
Level sensors	AISI 31
Antifoam circuit and valves	PVC/
Cleaning circuit and valves	PVC/
Heat pump circuit (not in contact with the product)	Coppe
Refrigerant gas (not in contact with the product)	Freon
Piping	PVDF
Valves	PVDF
Concentrate pump	PVDF
PLC and operator panel	Sieme
Cabling junction	PVC
Cables	Flame
Support frame	AISI 30
Screws	AISI 31

316 / 316L certificate

/ PVC seals PTFE / FPM

/ PTFE

dard Design

516L

.4401/1.4404/PTFE/FPM

16

516L

1/1.4404/PVC/FPM (flanged)

516

FPM

/ PTFE

316

/ PTFE

16 / 316L certificate. Jacketed heat exchanger

netic floater

516

FPM

FPM

er – Aluminum - 1.4401 / 1.4404 (flanged)

n R407C

/ PVC seals PTFE / FPM

/ PTFE – PVC / FPM (flanged)

(flanged)

ens or similar

e retardant

604

16

# THM VR-WW

## THERMAL VACUUM EVAPORATOR **750-20000 (30-833 L/h)**



#### THM VR-WW VACUUM EVAPORATORS

ARE DESIGNED FOR THE TREATMENT AND RECOVERY OF ENCRUSTING AND STICKY AQUEOUS SOLUTIONS.

RECOMMENDED FOR THE TREATMENT OF HIGH DENSITY SLUDGE AND ZLD.

## MAIN DATA

- Vacuum evaporator for concentrating water-based solutions with high degree of viscosity and density.
- Vertical boiling chamber with enclosed heat exchanger and internal scraper.
- Standard evaporator from 2,000 to 20,000 L/day of nominal capacity.
- Designed for 24/7 automatic operations.
- Automated operation with PLC and touch panel with LCD display.
- Standard execution in 1.4401/1.4404 (AISI 316/ 316L).
- Special alloys on request.

### **APPLICATIONS**

- Flussi collosi e incrostanti.
- Trattamento e recupero di inchiostri.
- Trattamento di fissaggi esausti.
- Industria della stampa.
- Concentrazione di acque reflue ad alta salinità (concentrato da osmosi inversa).
- ZLD (Zero Liquid Discharge).

### FEATURES

- Specific compact and neat design.
- Quick and easy installation.
- Skid mount with easy access from all sides.
- Very simple and fast routine maintenance, periodic checks of values and functionality
- Pipes, valves, pumps and every component flanged to ensure tightness over time and to facilitate intervention in case of need.
- The system is supplied after thorough internal testing.
- Cleaning operations can be automated, reducing manual intervention.
- Fully automated foam control system.
- Magnetically controlled densimeter system for discharge determination.
- Automatic recirculation system useful for constant mixing of the product during the concentration phase.
- Each function and setting is variable and can be monitored from a touch panel.
- Each plant is custom-made.
- Scheduled maintenance on request.

## CONTROL UNIT

- Fully automated process: no manual intervention required.
- The control system ensures ease and intuitiveness in every operation.
- A specific coding makes the understanding of functions very intuitive.
- Language customization.
- Operations are customizable for specific needs.
- 6 months of remote support included (if the Teleservice Web control system is installed).
- Pressure, temperature and values are monitored with high precision via analog control: the values are shown on the large display.

## INSTALLATION

#### Waste water:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Distillate:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Final concentrate:

In case of gravity discharge, provide a tank under the boiling chamber (also available in the raised version); In the case of pump discharge, provide for storage appropriate to the state of the concentrate (referring to the specific plant).

## Conditions of the input product, output distillate and concentrate:

Up to 0.5 bar, the plant is self-contained. For higher heads, a dedicated booster system is required.

#### Installation location:

T min/ max: +5/ +35 °C (weatherproof)

In case of installation in hot zones, the system may be equipped with water or air/water condensing exchangers. In case of installation in outdoor environments with frost risk, fully insulated version can be requested.

#### T Max incoming product:

Temperatures above 30 °C and below 10 °C should be avoided.

T distilled output: 35 - 50 °C

#### T concentrate output:50 - 70 °C

#### Recommended minimum area:

To ensure routine maintenance operations, consider at least one meter per side.





		2.000 VR	6.000 VR	10.000 VR	15.000 VR	20.000 VR
Power and Consumption	UМ					
Distillate Production*	L/h	83	250	420	625	833
*Nominal capacity referred to water	m³/24h	2	6	10	15	20
Installed power	kW	4	7	7,5	14	16
Voltage		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Thermal requirement	kWt	58	175	300	450	600
Approximate Measurements						
Lenght	mm	3000	4200	4500	4800	4800
Width	mm	1600	2000	2000	2200	2200
Height	mm	3300	4500	5000	5600	7000
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 (with pump)	Ø pollici	2	2	2	2	2
Compressed air	mm	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8
Cleaning inlet water (boiler)	Ø pollici	1/2	1/2	1/2	1/2	1/2
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
Service water inlet	Ø pollici	1/2	1/2	1/2	1/2	1/2

Boiling vessel	AISI 3
Recirculation circuit	PVDF
Recirculation circuit valve	PVDF
Sight glass with lamp	Stand
Backsplash demister system	PP
Condensation exchanger	AISI 3
Vapor condensation circuit	PP / 1.
Distillate tank	AISI 3
Distillate tank exchanger	AISI 3
Vacuum circuit	1.4401
Vacuum pump	AISI 31
Vacuum circuit valves	PVC/
Product inlet valve	PVDF
Concentrate outlet piping	PVDF
Concentrate pump	AISI 3
Concentrate outlet valve	PVDF
Heat exchanger - product heating	AISI 3
Densimeter	Magn
Level sensors	AISI 31
Antifoam circuit and valves	PVC/
Cleaning circuit and valves	PVC/
Heat pump circuit (not in contact with the product)	Coppe
Refrigerant gas (not in contact with the product)	Freon
Piping	PVDF
Valves	PVDF
Concentrate pump	PVDF
PLC and operator panel	Sieme
Cabling junction	PVC
Cables	Flame
Support frame	AISI 3
Screws	AISI 3

316 / 316L certificate

/ PVC seals PTFE / FPM

/ PTFE

dard Design

516L

.4401 / 1.4404 / PTFE / FPM

16

516L

1 / 1.4404 / PVC / FPM (flanged)

516

FPM

/ PTFE

316

/ PTFE

16 / 316L certificate. Jacketed heat exchanger

netic floater

516

FPM

FPM

er – Aluminum - 1.4401 / 1.4404 (flanged)

n R407C

/ PVC seals PTFE / FPM

/ PTFE – PVC / FPM (flanged)

(flanged)

ens or similar

e retardant

04

516

## THM VS-HP THM VS-HP SMALL

HEAT PUMP VACUUM EVAPORATOR 500-20000 (20-833 L/h)



#### THM VS-HP VACUUM EVAPORATORS

ARE DESIGNED TO EFFICIENTLY TREAT AQUEOUS SOLUTIONS FROM 20 TO 750 L/H AT LOW TEMPERATURE (35°C) TO RECYCLE WATER AND RAW MATERIALS OR MEET DISCHARGE LIMITS.

THEY CAN BE CUSTOM-MADE ACCORDING TO SPECIFIC TREATMENT NEEDS.

### MAIN DATA

- Vacuum evaporator for treating water-based solutions from 10 to 750 L/h.
- Recommended for average amounts of wastewater.
- Designed for 24/7 automatic operation.
- Removable submersible heat exchanger.
- Built-in upper condenser.
- Automated operation with PLC and touch panel with LCD display.
- Standard execution in 1.4401 / 1.4404 (AISI 316 / 316L).
- Special alloys on request.

## APPLICATIONS

- Exhausted baths.
- Eluates from resin regeneration.
- Exhausted oily emulsions.
- Wastewater from vibratory finishing, spent washing.
- Foundry (release agents, glycols, lubricants).
  - Wastewater from surface treatment.
  - Food and beverage industry (electropolished equipment).

### FEATURES

- Specific compact and neat design.
- Quick and easy installation.
- Low temperature process = low contact temperature thanks to a very high vacuum level and heat pump technology (distilled output at about 20°C, boiling point at about 35-40°C).
- Skid mount with easy access from all sides.
- Very simple and fast routine maintenance, periodic checks of values and functionality
- Pipes, valves, pumps and every component flanged to ensure tightness over time and to facilitate intervention in case of need.
- The system is supplied after thorough internal testing.
- Cleaning operations can be automated, reducing manual intervention.
- Fully automated foam control system.
- Magnetically controlled densimeter system for discharge determination.
- Automatic recirculation system useful for constant mixing of the product during the concentration phase.
- Each function and setting is variable and can be monitored from a touch panel.
- Each plant is custom-made.
- Scheduled maintenance on request.

## CONTROL UNIT

- Fully automated process: no manual intervention required.
- The control system ensures ease and intuitiveness in every operation
- A specific coding makes the understanding of functions very intuitive.
- Language customization.
- Operations are customizable for specific needs.
- 6 months of remote support included (if the Teleservice Web control system is installed).
- Pressure, temperature and values are monitored with high precision via analog control: the values are shown on the large display.

## INSTALLATION

#### Waste water:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Distillate:

A storage volume twice the nominal daily evaporation capacity is recommended.

#### Final concentrate:

A storage volume is recommended for the optimization of the product to be disposed (referring to the specific plant).

## Conditions of the input product, output distillate and concentrate:

Up to 0.5 bar, the plant is self-contained. For higher heads, a dedicated booster system is required.

#### Installation location:

T min/ max: +5/ +35 °C (weatherproof)

In case of installation in hot zones, the system may be equipped with water or air/water condensing exchangers. In case of installation in outdoor environments with frost risk, fully insulated version can be requested.

#### T Max incoming product:

Temperatures above 30 °C and below 10 °C should be avoided.

T distilled output: 15 - 20 °C

#### T concentrate output: 35 - 40 °C

#### Recommended minimum area:

To ensure routine maintenance operations, consider at least one meter per side.

		3.000 VS	4.000 VS	5.500 VS	7.000 VS
Power and Consumption	ИМ				
Distillate Production*	L/h	125	166	230	290
*Nominal capacity referred to water	m³/24h	3	4	5,5	7
Installed power	kW	25,5	33,5	52,5	71
Voltage		400/3/50	400/3/50	400/3/50	400/3/50
Compressed air	Bar	7	7	7	7
Approximate Measurements (the condensa	tion section is	not included)			
Lenght	mm	3400	3500	3700	4000
Width	mm	1400	1400	1500	1500
Height	mm	2800	2900	3100	3200
Weight	kg	1550	1850	2150	3000
Working level	L	380	450	600	750
Main Connection					
Wastewater inlet	Ø pollici	1	1	1	1
Distillate outlet	Ø pollici	1/2	1/2	1/2	1
Concentrate outlet (with pump)	Ø pollici	1	1	1	1
Compressed air	mm	Ø8	Ø8	Ø8	Ø8
Cleaning inlet water (boiler)	Ø pollici	1/2	1/2	1/2	1/2
Cleaning inlet water (sight glass)	Ø pollici	1/2	1/2	1/2	1/2
Antifoam inlet	Ø pollici	1/2	1/2	1/2	1/2
Service water inlet	Ø pollici	1/2	1/2	1/2	1/2





		9.000 VS	12.000 VS	15.000 VS	18.000 VS
Power and Consumption	UM				
Distillate Production*	L/h	375	500	625	750
*Nominal capacity referred to water	m³/24h	9	12	15	18
Installed power	kW	84	100	146	152
Voltage		400/3/50	400/3/50	400/3/50	400/3/50
Compressed air	Bar	7	7	7	7
Approximate Measurements (the condensat	tion section is	not included)			
Lenght	mm	4500	4600	5600	5600
Width	mm	2000	2200	2200	2400
Height	mm	3300	3300	3800	4200
Weight	kg	3400	3700	4300	5350
Working level	L	1150	1100	1900	2230
Main Connection					
Wastewater inlet	Ø pollici	1	1	1	1
Distillate outlet	Ø pollici	1	1	1	1
Concentrate outlet (with pump)	Ø pollici	1	1	1	1
Compressed air	mm	Ø 8	Ø8	Ø8	Ø 8
Cleaning inlet water (boiler)	Ø pollici	1/2	1/2	1/2	1/2
Cleaning inlet water (sight glass)	Ø pollici	1/2	1/2	1/2	1/2
Antifoam inlet	Ø pollici	1/2	1/2	1/2	1/2
Service water inlet	Ø pollici	1/2	1/2	1/2	1/2

SMALL		250 VS	500 VS	750 VS	1.000 VS	1.500 VS	2.000 VS
Power and Consumption	UM						
Distillate Production*	L/h	10	21	31	42	63	83
*Nominal capacity referred to water	L/24h	250	500	750	1000	1500	2000
Installed power	kW	5,2	6,5	6,9	8,9	14,5	17,1
Voltage		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Compressed air	Bar	7	7	7	7	7	7
Approximate Measurements (the cor	ndensation	section is not	included)				
Lenght	mm	2150	2150	2300	2900	3000	3400
Width	mm	850	870	890	1250	1250	1400
Height	mm	1850	2250	2250	2550	2550	2400
Weight	kg	500	650	850	1000	1000	1100
Working level	L	50	70	100	150	200	220
Main Connection							
Wastewater inlet	Ø pollici	1	1	1	1	1	1
Distillate outlet	Ø pollici	1/2	1/2	1/2	1	1	1
Concentrate outlet (with pump)	Ø pollici	1	1	1	1	1	1
Compressed air	mm	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8
Cleaning inlet water (boiler)	Ø pollici	1/2	1/2	1/2	1/2	1/2	1/2
Cleaning inlet water (sight glass)	Ø pollici	1/2	1/2	1/2	1/2	1/2	1/2
Antifoam inlet	Ø pollici	1/2	1/2	1/2	1/2	1/2	1/2
Service water inlet	Ø pollici	1/2	1/2	1/2	1/2	1/2	1/2

Boiling vessel	AISI 316 / 316L certificate
Recirculation circuit	PVC / AISI 316
Recirculation circuit valve	PVC / AISI 316
Sight glass with lamp	Standard Design
Backsplash demister system	PP
Condensation exchanger	AISI 316L certificate
Vapor condensation circuit	PP/1.4401/1.4404/PTFE/FPM
Distillate tank	AISI 316
Distillate tank exchanger	AISI 316L
Vacuum circuit	1.4401 / 1.4404 / PVC / FPM (flanged)
Vacuum pump	AISI 316
Vacuum circuit valves	PVC / AISI 316 flanged
Product inlet valve	PVC / AISI 316 flanged
Concentrate outlet piping	PVC / AISI 316
Concentrate pump	AISI 316 flanged
Heat exchanger - product heating	AISI 316 / 316L certificate
Heat exchanger - product heating Densimeter	AISI 316 / 316L certificate Magnetic floater
Heat exchanger - product heating Densimeter Level sensors	AISI 316 / 316L certificate Magnetic floater AISI 316
Heat exchanger - product heating Densimeter Level sensors Antifoam circuit and valves	AISI 316 / 316L certificate Magnetic floater AISI 316 PVC / AISI 316
Heat exchanger - product heatingDensimeterLevel sensorsAntifoam circuit and valvesCleaning circuit and valves	AISI 316 / 316L certificate Magnetic floater AISI 316 PVC / AISI 316 PVC / AISI 316
Heat exchanger - product heatingDensimeterLevel sensorsAntifoam circuit and valvesCleaning circuit and valvesHeat pump circuit (not in contact with the product)	AISI 316 / 316L certificate Magnetic floater AISI 316 PVC / AISI 316 PVC / AISI 316 Copper - Aluminum - 1.4401 / 1.4404 (flanged)
Heat exchanger - product heatingDensimeterLevel sensorsAntifoam circuit and valvesCleaning circuit and valvesHeat pump circuit (not in contact with the product)Refrigerant gas (not in contact with the product)	AISI 316 / 316L certificate Magnetic floater AISI 316 PVC / AISI 316 PVC / AISI 316 Copper - Aluminum - 1.4401 / 1.4404 (flanged) Freon R407C
Heat exchanger - product heatingDensimeterLevel sensorsAntifoam circuit and valvesCleaning circuit and valvesHeat pump circuit (not in contact with the product)Refrigerant gas (not in contact with the product)Piping	AISI 316 / 316L certificate Magnetic floater AISI 316 PVC / AISI 316 PVC / AISI 316 Copper - Aluminum - 1.4401 / 1.4404 (flanged) Freon R407C PVDF / PVC seals PTFE / FPM
Heat exchanger - product heatingDensimeterLevel sensorsAntifoam circuit and valvesCleaning circuit and valvesHeat pump circuit (not in contact with the product)Refrigerant gas (not in contact with the product)PipingValves	AISI 316 / 316L certificate Magnetic floater AISI 316 PVC / AISI 316 PVC / AISI 316 Copper - Aluminum - 1.4401 / 1.4404 (flanged) Freon R407C PVDF / PVC seals PTFE / FPM PVC / AISI 316 (flanged)
Heat exchanger - product heatingDensimeterLevel sensorsAntifoam circuit and valvesCleaning circuit and valvesHeat pump circuit (not in contact with the product)Refrigerant gas (not in contact with the product)PipingValvesDistillate booster pump - if applicable	AISI 316 / 316L certificate Magnetic floater AISI 316 PVC / AISI 316 PVC / AISI 316 Copper - Aluminum - 1.4401 / 1.4404 (flanged) Freon R407C PVDF / PVC seals PTFE / FPM PVC / AISI 316 (flanged)
Heat exchanger - product heatingDensimeterLevel sensorsAntifoam circuit and valvesCleaning circuit and valvesHeat pump circuit (not in contact with the product)PipingValvesDistillate booster pump - if applicablePLC and operator panel	AISI 316 / 316L certificateMagnetic floaterAISI 316PVC / AISI 316PVC / AISI 316Copper - Aluminum - 1.4401 / 1.4404 (flanged)Freon R407CPVDF / PVC seals PTFE / FPMPVC / AISI 316 (flanged)AISI 316 (flanged)Siemens (A+B on request)
Heat exchanger - product heatingDensimeterLevel sensorsAntifoam circuit and valvesCleaning circuit and valvesHeat pump circuit (not in contact with the product)PipingValvesDistillate booster pump - if applicablePLC and operator panelCabling junction	AISI 316 / 316L certificateMagnetic floaterAISI 316PVC / AISI 316PVC / AISI 316Copper - Aluminum - 1.4401 / 1.4404 (flanged)Freon R407CPVDF / PVC seals PTFE / FPMPVC / AISI 316 (flanged)AISI 316 (flanged)Siemens (A+B on request)PVC
Heat exchanger - product heatingDensimeterLevel sensorsAntifoam circuit and valvesCleaning circuit and valvesHeat pump circuit (not in contact with the product)Refrigerant gas (not in contact with the product)PipingValvesDistillate booster pump - if applicablePLC and operator panelCabling junctionCables	AISI 316 / 316L certificateMagnetic floaterAISI 316PVC / AISI 316PVC / AISI 316Copper - Aluminum - 1.4401 / 1.4404 (flanged)Freon R407CPVDF / PVC seals PTFE / FPMPVC / AISI 316 (flanged)AISI 316 (flanged)Siemens (A+B on request)PVCFlame retardant
Heat exchanger - product heatingDensimeterLevel sensorsAntifoam circuit and valvesCleaning circuit and valvesHeat pump circuit (not in contact with the product)PipingValvesDistillate booster pump - if applicablePLC and operator panelCablesSupport frame	AISI 316 / 316L certificate Magnetic floater AISI 316 PVC / AISI 316 PVC / AISI 316 PVC / AISI 316 Copper – Aluminum - 1.4401 / 1.4404 (flanged) Copper – Aluminum - 1.4401 / 1.4404 (flanged) Freon R407C PVDF / PVC seals PTFE / FPM PVDF / PVC seals PTFE / FPM PVC / AISI 316 (flanged) AISI 316 (flanged) Siemens (A+B on request) PVC Flame retardant









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Seguici su **in**