

DOUBLE EFFECT EVAPORATOR



Experimental capabilities

- Identification of the components of a double effect evaporator
- Commissioning of the equipment
- Study of the operation of a double effect evaporator
- Study of the operation of a single effect evaporator
- Entropy diagram of water
- Enthalpy balance

Operating principle

The GPCV30 bench allows the study of single and double effect evaporation.

A mixture goes into the first evaporator using a pump. The mixture rises through the evaporator and empties into the first cyclone. The depleted liquid solution is led into the second evaporator. The concentrated liquid solution rises in the second evaporator and flows into the second cyclone. By gravity, the liquid solution containing the concentrated product is directed into the concentrate recipe and the vapor made up of water moves through a condenser and is then recovered in the distillate recipe.

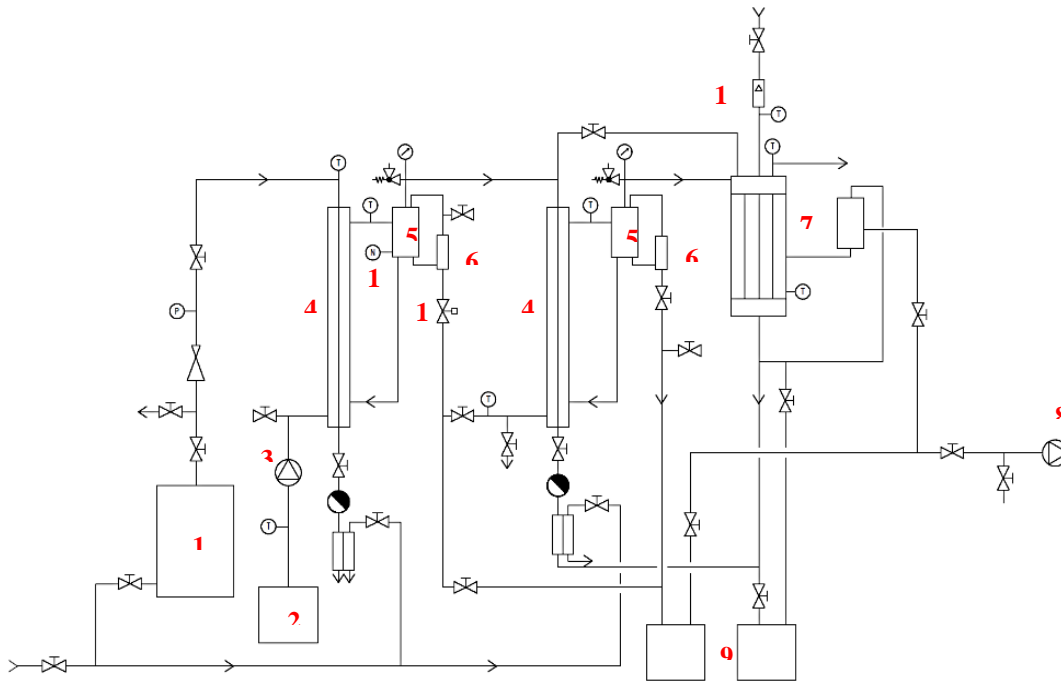
The robust design of this device makes it suitable for use in schools.

The equipment is set up on an Anodized aluminium frame on casters wheels. This gives it great strength and a flexibility of integration into your premises.

The manufacture of this equipment complies with the European standard for machinery manufacturing.

Illustrations

Technical details



1. Steam generator

- Heating power 9kW

2. Product feed can

- Material: Polypropylene
- Volume: 20 L
- Drain valve

3. Peristaltic pump

- Maximum flow: 30L/h

4. Glass evaporation columns

- Length: 1000 mm
- Include a stainless-steel tube and stainless steel flanges

5. Glass separators

- Volume: 25 L
- Stainless steel flanges

6. Glass level guard

7. Glass condenser

- Comprising a stainless-steel condenser tube + stainless steel flanges

8. Vacuum pump

9. Recovery canisters

- Volume: 10L

10. Float flowmeter

- Scale: 50-500 L/h

11. Solenoid valve

- For level control of the first separator

12. Level detector

- Stainless steel vibrating blades

13. Electrical box,

- With general power disconnecter and 30mA differential circuit breaker

Measures

Safety

DIDATEC– Zone d'activité du parc – 42490 FRAISSES- FRANCE
Tél. +33(0)4.77.10.10.10 – Fax+33(0)4.77.61.56.49 – www.didatec-technologie.com
email : service_commercial@didatec-technologie.com

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As part of the continuous improvement of our products, this technical specification may be modified without previous notifying

Illustrations non contractuelles / Illustrations not contractual

version : FT-GPCV30-STD-A

GPCV30



- Supervision screen with temperature measurements
- 8 thermocouple type K temperature probes
- 1 steam inlet pressure gauge
- 2 installation pressure gauges
- 1 vacuum pressure gauge
- 1 cooling water flowmeter
- 1 level detector with vibrating blades in the first separator
- 2 safety valves calibrated at 0.3 bar
- Pressure switch calibrated at 0.2 bar
- 1 internal safety valve in the steam generator

Services required

- Electrical supply: 400 Vac – 50 Hz – 16 A
- Electrical network: 3 phase(s) + Neutral + Earth.
- Water supply: 15 L/min – 3 bars
- Water drain: on the floor
- Dimensions: (LxWxH mm): 2500 x 800 x 2000
- weight (Kg): 250

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine

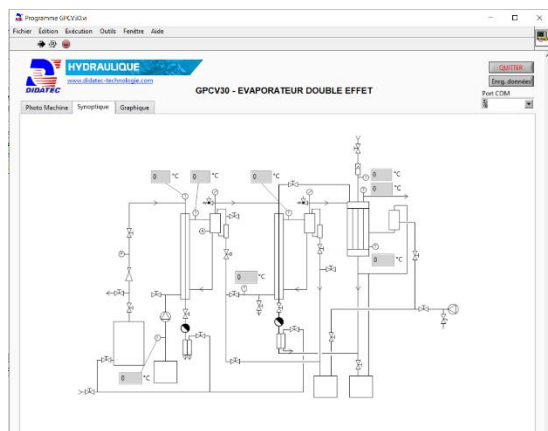
Documentation

- User's manual
- Technical documentation of the components
- Lab exercises
- Hydraulic diagram
- Electrical diagram
- Certificate of conformity CE

Supervision

The bench is also equipped with supervision software. The connection to the PC is made by Wifi. The software is divided into two parts:

SYNOPTIC:



We find in this window the synoptic of the machine with the location of the different measurements of the process and their values.

GRAPHIC:

We find in this graphical window, the possibility to draw measurement curves as a function of time by selecting the desired quantities and to save the measurements.

