

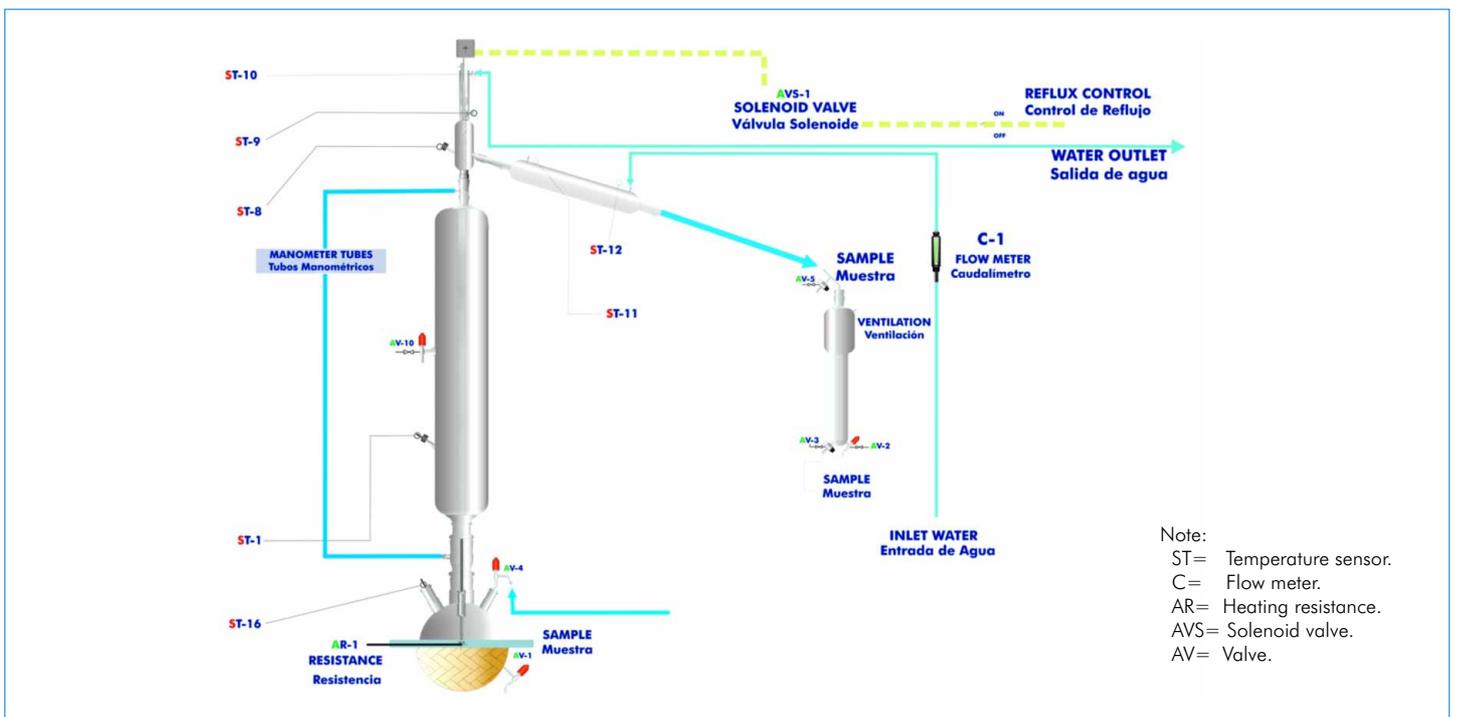
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Products
 Products range
 Units
 ↳ 11.-Chemical Engineering



Electronic Console

PROCESS DIAGRAM AND ELEMENTS ALLOCATION



ISO 9000: Quality Management
 (for Design, Manufacturing,
 Commercialization and After-sales service)



European Union Certificate
 (total safety)



Certificates ISO 14000 and
 ECO-Management and Audit Scheme
 (environmental management)



Worlddidac Quality Charter
 Certificate
 (Worlddidac Member)

DESCRIPTION

Distillation is used to separate liquid mixtures made up of individual liquids that are soluble in one another.

EDIBON's distillation unit, in its different versions, is one of the most powerful laboratory tools, for the study of the variables that affect the distillation process.

The student can investigate the principles that rule the material and energy transference, as well as determine the optima operation point to carry out a big quantity of separations.

It is basically composed by a boiler on which two types of interchangeable columns can be adapted (plate columns and Raschig Rings column), a reflux system and a tank for the distillation.

The steam that goes to the head of the column is sent to a total condenser. The cooling water flow that crosses the condenser is regulated and indicated in a flow meter.

The pressure loss in the column can be measured with a manometer.

The temperatures of the system are measured by temperature sensors placed in strategic positions.

SPECIFICATIONS

Anodized aluminium structure and panels in painted steel (epoxy paint).

Main metallic elements in stainless steel.

Diagram in the front panel with similar distribution to the elements in the real unit.

Sieve Plates Column with 8 plates with one temperature taking and sample, 50 mm. internal diameter and 1000 mm. length. Vacuumed, silver-plated and double transparent band for vision.

Column head with temperature taking and conical output for distilled product.

Head column with a valve for the steam distribution.

2l. Boiler (with sample outputs) with heating mantle.

2l. Distillation collector of graduated glass.

Refrigerator.

Temperature measurement system.

7 Temperature sensors "J" type.

Working temperature: Ambient temperature up to 125°C.

Flow meter, range of 0.5- 3l./min.

Manometer tubes.

Solenoid valve.

Electronic Console:

Metallic box.

Temperature sensors connections.

Digital display for temperature sensors.

Selector for temperature sensors.

Heating resistance (heating mantle) temperature control.

Solenoid valve switch.

Solenoid valve timer controller. (Solenoid valve reflux time control).

Cables and accessories, for normal operation.

Manuals: This unit is **supplied with the following manuals:** Required Services, Assembly and Installation, Starting-up, Safety, Maintenance, & Practices Manuals.

Optional Columns (not included in the standard supply):

- CAR1. Raschig Rings Column.
- C8P8. 8 Plates Type Column (8 Temperature points).
- C10P10. 10 Plates Type Column (10 Temperature points).
- C14P14. 14 Plates Type Column (14 Temperature points).
- C20P20. 20 Plates Type Column (20 Temperature points).

EXERCISES AND PRACTICAL POSSIBILITIES

Some Practical Possibilities of the unit:

- 1.- Preparation of solutions.
- 2.- Analytic valuation techniques.
- 3.- Filling of the column.
- 4.- Batch operation.
- 5.- Obtaining the McCabe-Thiele diagram. Without reflux.
- 6.- Obtaining the number of plates. Without reflux.
- 7.- Efficiency calculations. Without reflux.
- 8.- Variation of the composition of the distilled product: constant reflux ratio.
- 9.- Constant composition of the distilled product: variation of reflux ratio.
- 10.- Constant composition of the distilled product: constant reflux ratio.
- 11.- Mass and energy balances across the system.
- 12.- Plates fluid dynamics studies, including load loss and column flooding.
- 13.- Calculation of the theoretical number of floors in the plates columns, and the equivalent height of the theoretical floor (HEPT) in the Raschig rings columns.
- 14.- Pursuit of the temperatures in all plates in the column (Plates columns).
- 15.- Study of the rectification efficiency.
- 16.- Demonstration of azeotropic distillation.
- 17.- Studies of heating interchange in glass refrigerators.

REQUIRED SERVICES

- Electrical supply: 220 V./50Hz. or 110V./60Hz.
- Water supply.

RECOMMENDED REAGENTS

- Water/Methanol.
- Heptane/Methylcyclohexane.
- P-Xylene/Methylcyclohexane.

DIMENSIONS & WEIGHTS

UDDB:

Unit: -Dimensions: 900 x 500 x 2800mm. approx.

-Weight: 170 Kg. approx.

Electronic Console: -Dimensions: 490 x 330 x 310 mm. approx.

-Weight: 10 Kg. approx.

OPTIONAL COLUMNS

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- C8P8. 8 Plates Type Column (8 Temperature points).
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- C14P14. 14 Plates Type Column (14 Temperature points).
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AVAILABLE VERSIONS

Offered in this catalogue:

-UDDB. **Batch Distillation Unit.**

Offered in other catalogues:

-UDDC. Computer Controlled **Batch Distillation Unit.**

-UDCC. Computer Controlled **Continuous Distillation Unit.**

-UDCB. **Continuous Distillation Unit.**

* Specifications subject to change without previous notice, due to the convenience of improvements of the product.



C/ Del Agua, 14. Polígono Industrial San José de Valderas.
28918 LEGANÉS. (Madrid). SPAIN.
Phone: 34-91-6199363 FAX: 34-91-6198647
E-mail: edibon@edibon.com WEB site: www.edibon.com

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