



Electronic Console

DESCRIPTION

The TFUB unit demonstrates the principles of continuous and batch filtration.

This filtration unit lets the study of the filtration process for two different filters. On one side a vertical plates filter, composed of sheets of nylon, 5 microns in diameter, allowing us to filter the CaCO_3 suspension of known concentration. In addition, a filter cartridge, more suitable for continuous filtration of material in a larger size, will filter and "clean" water with small pieces of paper sample.

To carry out the experiments, the mixture is taken from a tank through a centrifugal pump, which sends it to one of the filters depending on the position of the valves. A motor-driven stirrer will make more homogeneous the sample inside the tank.

Along the way, the mixture goes through a manometer and a flow meter, which will help us to determine the flow through the circuit. The initial temperature of the sample can be controlled by a resistance and a temperature sensor, which will give the temperature value at any time.

There are two ways of working with the unit: the product (filtered) can be resent to the initial tank to be refiltered again or it can be sent to the "product tank" to analyse the result after just one passing through the filters. Depending on the conditions you want to work, depending on what you want to study, we will work in one or another way. To change the way to work, just turn the valves after the flow meter.

SPECIFICATIONS

This filtration unit demonstrates the principles of continuous and batch filtration.

Bench-top unit with 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.

Double tank (capacity: 9 litres), connecting to a centrifugal pump which feeds a slurry to one of the filters depending on the position of the valves.

Centrifugal pump (max. 4 bar).

Heating resistance. Range: 300 W.

Level switch in the tank.

Vertical plates filter, composed of 4 sheets of nylon, 5 microns diameter, allowing us to filter the CaCO_3 suspension of known concentration.

Filter cartridge will filter and "clean" water with small pieces of paper sample.

Stirrer.

2 Temperature sensors, "J" type, range: 0-60°C.

Manometers.

Flow meter.

Water and calcium carbonate are the recommended working materials for reasons of safety and ease to use.

Electronic Console:

Metallic box.

Connections for the temperature sensors. Selector for the temperature sensors. Digital display for the temperature sensors.

Heating resistance regulator.

Pump regulator.

Stirrer switch.

Cables and Accessories, for normal operation.

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

EXERCISES AND PRACTICAL POSSIBILITIES

Some Practical Possibilities of the Unit:

- 1.- Understanding the principles of continuous and batch filtration using both constant pressure and constant flow operating modes (vertical plates and cartridge filters).
- 2.- Study of the filter plate at a constant pressure.
- 3.- Study of the filter plate at a constant flow.
- 4.- Study of the filter cartridge at constant pressure.
- 5.- Study of the filter cartridge at constant flow.
- 6.- Demonstrating filtration through membrane technology.
- 7.- Mass balancing.
- 8.- Precoat and body aid filtration.
- 9.- Demonstration of precoat filtration.
- 10.- Optimisation of filtration performance using body aid.
- 11.- Demonstration of Darcy's Law.
- 12.- Effect of body aid on medium and cake resistances.
- 13.- Determination of medium and cake resistances.
- 14.- Filter cake washing and dewatering.
- 15.- Study of commercial aspects of filtration and optimisation of filtration operations.

REQUIRED SERVICES

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

OPTIONAL ACCESORIES

- Turbidity meter.

DIMENSIONS & WEIGHTS

TFUB:

- Unit: -Dimensions: 750 x 750 x 400 mm. approx.
-Weight: 30 Kg. approx.
- Electronic Console: -Dimensions: 490 x 330 x 310 mm. approx.
-Weight: 12 Kg. approx.

* 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

Issue: ED02/10
Date: November/2010

REPRESENTATIVE:

