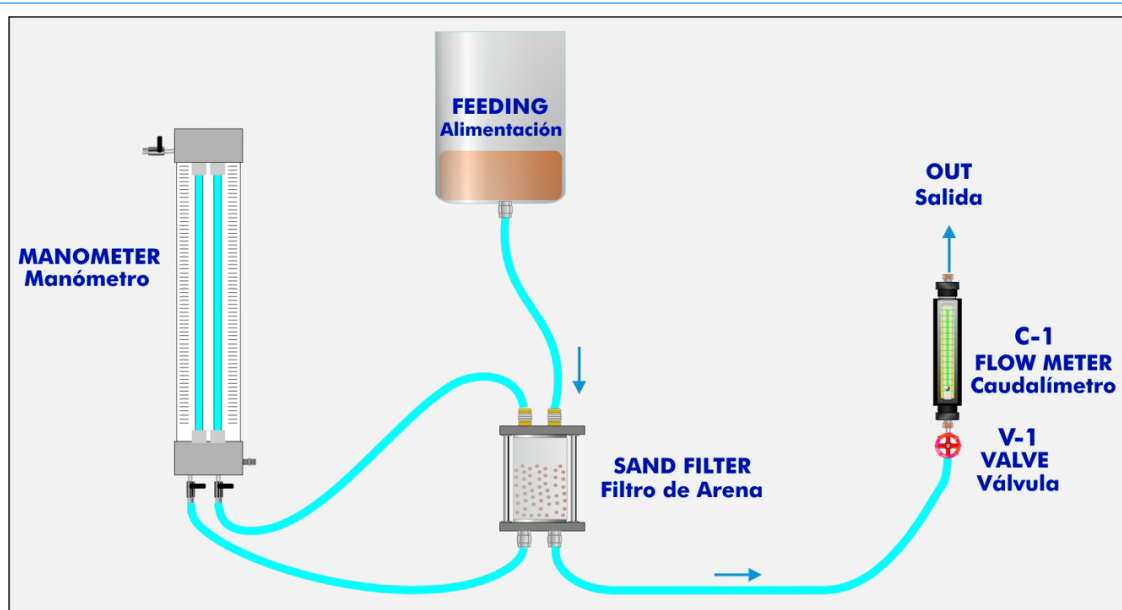




PROCESS DIAGRAM AND ELEMENTS ALLOCATION



DESCRIPTION

The PEIF is an unit for demonstrating the filtering process through a porous media. It enables a water quality test to be made on a suspension to be filtered through sand or similar granular media.

This unit utilises a bed of granular material, normally sand, which can be chosen by the student to suit his own purposes. The measurements taken with this unit enable a filterability index to be calculated which has significance in deep bed filter performance.

The PEIF unit is a bench-top unit composed of a feeding tank, where the initial solution of water with solids in suspension is placed. During the normal operation, the tank is communicated with the sand filter upper part, through a pipe of 10 mm diameter. The filter lower part is communicated with the flowmeter. A regulation valve located at the flowmeter allows to change the flow which passes through the filter. The fluid pressure is obtained by means of the gravity, because the feeding tank is placed in high. The pressure is measured by a manometer.

The filter cartridge is easily removable, so it allows to study the difference between different media, both in compositions and in mesh.

This unit, in addition to students teaching and training, also can be used in routine control at water purification works, or at water treatment works which employ tertiary filtration.

SPECIFICATIONS

Bench top unit.

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.

Feeding tank of 1 litre capacity.

Filtration unit, with porous bed filter, removable:

Height of the filter: 70 mm.

Test filter cell diameter: 44 mm.

The filter unit can be dismantled to change the sand.

A regulation valve controls the flow, which is observed on a flow meter.

Water flow meter, range: 0-550 cc/min.

Differential manometer of 500 mm, to measure the head loss.

Corrosion-resistant materials are used.

The elements and tubing connections of this unit are transparent so that the operation can be observed and air bubbles avoided.

Accessories included with the unit:

Thermometer, with range from -10° C to 110° C.

Stopwatch.

1 litre graduated test tube.

0.6 litres glass beaker (to collect filtrate).

Air pump for purging the manometer.

Manuals:

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

EXERCISES & PRACTICAL POSSIBILITIES

Some Practical Possibilities of the Unit:

- 1.- Study of the filtration operation principles.
- 2.- Filtration procedure.
- 3.- Flowmeter calibration.
- 4.- Calculation of Filterability Index from measurements taken.
- 5.- Flow through permeable layers.
- 6.- Deep bed filtration of suspensions with different particle layers.
- 7.- Practice of sand filter cleaning.

REQUIRED SERVICES

- Water supply.
- Drain.

DIMENSIONS & WEIGHT

- Dimensions: 600 x 400 x 800 mm. approx.
- Weight: 25 Kg. approx.

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

REPRESENTATIVE:



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