Sedimentation Tank

PDS

Technical Teaching Equipment

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Products
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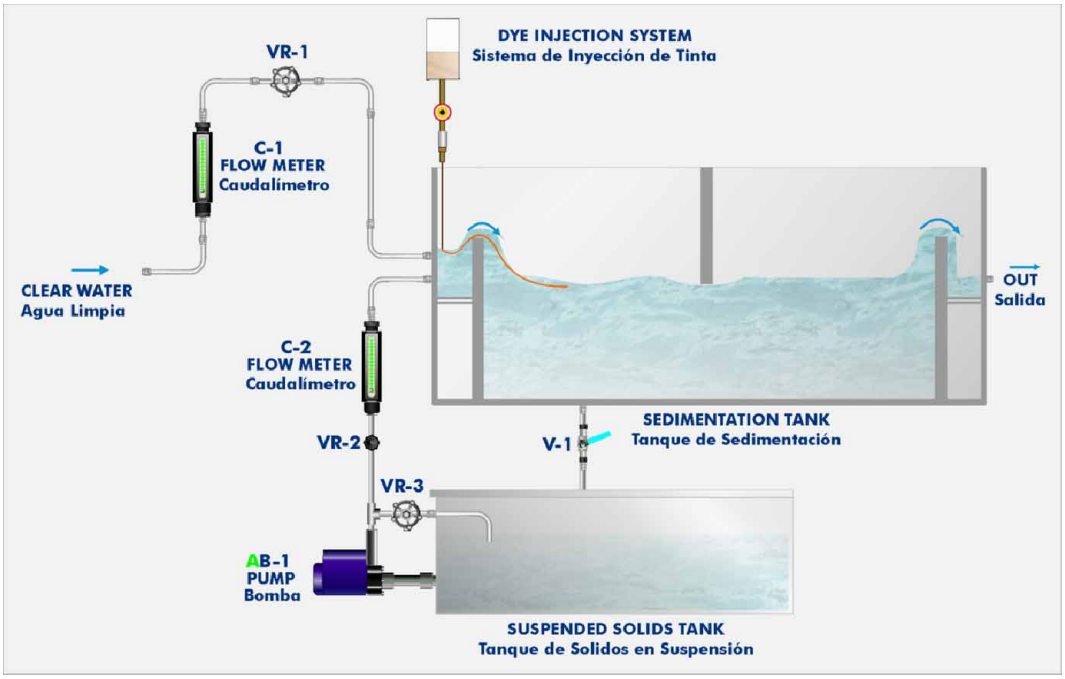
Units
13.-Environment

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

PDS is a teaching unit designed by EDIBON to demonstrate the sedimentation process and to familiarize with the settling principle of discrete or floculated particles settling into a tank. It will also allow to study the hydraulic characteristics of a rectangular sedimentation tank which works in continuous.

As it is a laboratory unit, it allows to obtain valid conclusions about its operation and to apply them to the operation of a real scale unit.

The great advantage of the PDS unit is that its sedimentation tank is made in transparent methacrylate. So, this allows the student to understand the sedimentation principles. This fact allows to carry out several practices, as well as to make easier the comprehension of the different variables influence on the process.

The practices start preparing a suspension in the suspended solids tank, placed at the unit lower part. A pump drives the suspension from the suspended solid tank to the sedimentation tank with a flow selected by using a regulation valve. This suspension is mixed with clean water at the sedimentation tank inlet. The clean water flow is controlled by a flowmeter by using its regulation valve.

Once the fluids are mixed, the current is passed into the sedimentation tank through the inlet weir. Here, the solids in suspension settle at the bottom.

The clarified water outlet is produced through the outlet weir at the tank outlet section. In this tank outlet section there is a flexible pipe on which the outlet clarified water quality can be analyzed.

The unit has a dye injection and tracer system, which allows to study the fluid current lines into the sedimentation tank.

It also has two adjustable in height baffle plates, which can be placed at any point of the tank length, what makes easier for the student the possibility of changing the flow lines direction and its study.

As support to carry out the practices, the following accessories are supplied: two Imhoff cones and a graduated test tube of 1 litre.

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.

Sedimentation tank, made in transparent methacrylate. Length: 1000 mm; width: 400 mm; height: 250 mm.

Suspended solids installation, composed of:

- **Suspended solids tank of 140 litres.**
- **Centrifugal pump. Flow up to 80 l./min.**
- **Flow regulation valve.**
- **Water flowmeter, range: 0-2 l./min.**

Clean water installation, composed of:

- **Flow regulation valve.**
- **Water flowmeter, range: 0-10 l./min.**

Dye injection and tracer system, which allows to study the fluid current lines into the sedimentation tank.

2 Baffle plates, adjustable in height, what makes easier for the student the possibility of changing the flow lines direction and its study.

Accessories included:

- **2 Imhoff cones of 1000 ml., to measure the solids concentrations.**
- **Graduated test tube of 1 litre.**

The unit incorporates wheels for its mobility.

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.

EXERCISES AND PRACTICAL POSSIBILITIES

Some Practical Possibilities of the Unit:

1.- Study of the basic principles of solids in suspension separation.

2.- Flowmeter calibration.

3.- Efficiency of the separation by sedimentation process.

4.- Study of the current lines.

5.- Study of the effect of the flow rate and of the baffle position on dispersion.

6.- Measuring sediment removal efficiencies and relating these to the hydraulic characteristics.

7.- To measure the flow short-circuiting and dead space using a tracer.

8.- Comparison of real flow regimes with idealised flow models.

REQUIRED SERVICES

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

-Water supply and drainage.

DIMENSIONS & WEIGHTS

-Dimensions: 1400 x 700 x 1300 mm. approx.

-Weight: 150 Kg. approx.

RECOMMENDED ACCESSORIES

-Precipitated calcium carbonate.

-Balances.

-Colorimeter.

AVAILABLE VERSIONS

Offered in this catalogue:

- PDS. **Sedimentation Tank.**

Offered in other catalogue:

- PDSC. Computer Controlled **Sedimentation Tank.**

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

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