DIKOIN

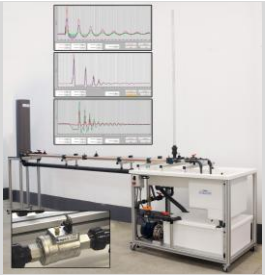
C - HYDRAULICS, HYDROLOGY AND WATER TREATMENT

FL 05.1 - FLOW CHANNEL 2,5m (pag. C - 1)

FL 05.3 - FLOW CHANNEL 5m (pag. C - 1)

FL 05.4 - 5M FLUME FOR HYDRAULIC BENCH (pag. C - 1)

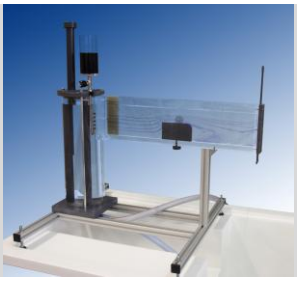
FL 05.5 - 2,5M FLUME FOR HYDRAULIC BENCH (pag. C - 2)



FL 09.1 - WATER HAMMER (pag. C - 2)

FL 09.2 - HYDRAULIC RAM (pag. C - 2)

FL 16.1 - FLOW VISUALISATION (pag. C - 3)



FL 16.2 - STREAMLINES VISUALIZATION IN A CHANNEL (pag. C - 3)

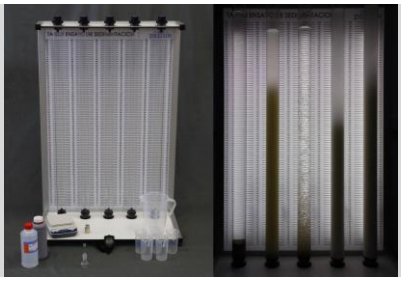
FLB 09.2 - HYDRAULIC RAM STUDY (pag. C - 3)

HD 06.1 - HYDRAULIC FLOW DEMONSTRATION CHANNEL (pag. C - 4)

HD 10.1 - DEMONSTRATION LISIMETER (pag. C - 4)

HD 11.1 - INFILTRATION DEMONSTRATOR (pag. C - 4)

TA 02.2 - SEDIMENTATION TANK (pag. C - 5)



TA 03.2 - SEDIMENTATION STUDY (pag. C - 5)

FL 05.1 - FLOW CHANNEL 2,5m

This equipment is designed to study the behavior of fluids in open channels, by performing a wide range of experiments and experiences.

HIGHLIGHTS

- Standalone operation, you only need one electrical outlet.
- Possibility of negative and positive channel slope.
- Various elements of reading, manometric gauges, limnimeter, pitot tube, etc.
- Wide range of accessories to study multiple phenomena.
- It includes a self-regulating valve with which it is possible to establish the appropriate flow rate at each moment.
- The flowmeter available allows to know the flow rate of work at any time.

IMPORTANT NOTE

Is possible to manufacture with other dimensions towing tank. Please ask your distributor.

FL 05.3 - FLOW CHANNEL 5m

FL 05.4 - 5M FLUME FOR HYDRAULIC BENCH

This equipment is designed to study the behavior of fluids in open channels by conducting a wide range of practices and experiences.

HIGHLIGHTS

- Possibility of negative and positive channel slope.
- Various reading elements, gauge, limnimeter, Pitot tube, etc.
- Wide variety of accessories for the study of multiple phenomena.
- The length of this model has an advantage compared to the shorter channels, which allows to observe the uniform flow in a notorious way.
- It includes a self-regulating valve with which its possible to establish the appropriate flow rate at each moment.
- The available flowmeter allows to know the flow rate of work at any time.

IMPORTANT NOTE

There is the possibility of making hydrodynamic channels with other dimensions. Consult without obligation.

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FL 05.5 - 2,5M FLUME FOR HYDRAULIC BENCH

This equipment is designed to study the behavior of fluids in open channels by conducting a wide range of practices and experiences.

HIGHLIGHTS

- Possibility of negative and positive channel slope.
- Various reading elements, gauge, limnimeter, Pitot tube, etc.
- Wide variety of accessories for the study of multiple phenomena.
- It includes a self-regulating valve with which its possible to establish the appropriate flow rate at each moment.
- The available flowmeter allows to know the flow rate of work at any time.

IMPORTANT NOTE

There is the possibility of making hydrodynamic channels with other dimensions. Consult without obligation.

FL 09.1 - WATER HAMMER

This equipment is to visualize and study the phenomenon of water hammer.

The eqipment is prepared for both viewing and checking the pressure increase produced by varying the flow path through a valve to the observation of water hammer, produced positive and negative instantaneous closure of a valve.

Also, you can study the effects of a surge shaft in reducing overpressure / vacuum from water hammer.

FL 09.2 - HYDRAULIC RAM

The FL09.2 is a equipment that aims to demonstrate and study the phenomenon known as water hammer, this phenomenon is the one that occurs due to the rapid closure of the passage of water through a pipe. The design of the equipment is made with special emphasis on the didactic field, so it is supplied with variable elements, to achieve a greater number of tests for a better understanding of the student.

The set has three different tanks which are located at different heights. One of them is used to make the water supply constant, for that we use a tank with pressurized air that homogenizes the water supply to the raised tank. In order that the fluid does not return to this tank this is supplied with a non-return valve. In the case of the other two tanks one has a fixed level overflow and the other an adjustable level overflow which is the tank which is situated at a higher height.

The equipment has a quick-closing valve which allows the flow generated by the overpressure to be cut in the pipe that causes the water hammer phenomenon.

In addition, the equipment has two lengths of pipes of different lengths (one section will be of a length of 1m and the other section will have a length of 3m), which allows to perform different tests , exchanging the hoses and performing a greater number of tests.

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FL 16.1 - FLOW VISUALISATION

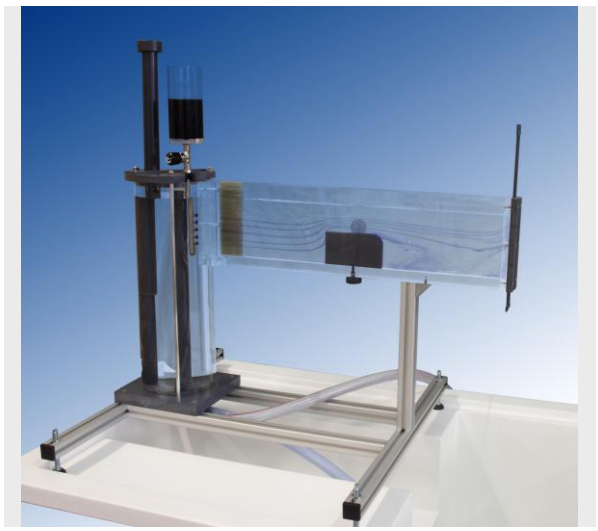
The flow visualization table allows to study the flow behaviour through different objects by flow lines, besides being able to simulate sources and sinks.

Upstream, the ink is supplied through needles generating current lines. The ink flow is controlled by a **regulating valve**.

Handeling the needle valves, we can introduce in the current **sinks** (points where water leaves the stream), **sources** (points where water enters the stream) or a combination of both.

Different models are supplied with the equipment: car profile, aerodynamic profile, circle, rectangle, square, teardrop, etc., with which we can clearly see the flow of current lines passing aroung these.

FL 16.2 - STREAMLINES VISUALIZATION IN A CHANNEL



This equipment allows the study of the behavior of fluids in open channels and flow lines that form around different submerged objects.

The service for the experiments is the flowing water. So that the flow lines are visible during the experiments, diluted ink is used in water. This combination of elements with the feature that the channel is completely transparent allows optimal viewing of the flow lines .

Different bodies of landfill and profiles are provided as varied forms.

FLB 09.2 - HYDRAULIC RAM STUDY

With this equipment is intended to study and demonstrate the operation of a hydraulic ram, a system by which we can raise a liquid to a height higher than the height of supply, without external energy input.

The ram uses more water in its process than the one that drives, the proportion driven is between 10-15%. But as it operates all the time, this small amount will always be useful.

The practices and experiences that will be realized with this equipment are the following:

- Visualization and analysis of the water hammer phenomenon caused by the closing of a valve.
- Study and understanding the operation of the hydraulic ram.
- Obtaining the flow ratio.
- Water hammer efficiency.

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HD 06.1 - HYDRAULIC FLOW DEMONSTRATION CHANNEL

To study the behavior of fluids in open channels and closed conduits, performing a wide range of experiments with open channel or closed conduit.

The feature that the channel is completely transparent allows optimal viewing of hydraulic flow.

Also, as mentioned, the equipment allows the experiments as a closed conduit as using a cover a completely airtight conduit is achieved.

The pitot tube disposion along the entire length of the channel provides information about the operating pressure in 6 points. The values of the pressure are given in multitube manometer included.

The computer allows both water buildup in the inlet tank and the outlet tank using gates.

HD 10.1 - DEMONSTRATION LISIMETER

With the HD 10.1 equipment, it is a question of knowing the water retention capacity of a soil using the hydrological balance, differentiating each one of its elements.

By means of the simulation of a rain on a soil, the following elements of the hydrological cycle are distinguished:

- Surface runoff: Once the soil is flooded, surface runoff begins, collecting it externally and proceeding to its measurement by evaluating its quantity in volume.
- Subsurface and subterranean runoff: The infiltrated water is collected by the bottom of the container, measuring this runoff by its volume.
- The rest of the water is absorbed by the soil that can be known by performing a weighing of the same before the rain and another after. The difference corresponds to the volume of stored water.

By establishing the equality of volumes, the values of surface runoff, ground runoff and soil runoff are known.

The equipment has a digital balance on which the floor model is set, so that the weight variation can be continuously displayed.

HD 11.1 - INFILTRATION DEMONSTRATOR

With the equipment HD 11.1, it is a question of knowing the ease that a land has, to the passage of the water inside, by obtaining its coefficient of permeability k, applying the Law of Darcy.

To do this, a flow is pumped into a small tank (constant load) from which the water exits to a cylindrical vessel open at both ends, placing the ground inside the cylinder.

Once the equality between the incoming flow and the overflow has been established, the pressure of the water in the upper part of the ground as well as the lower one is measured, verifying the loss of load that is produced.

Once known the cross section of the cylinder, the flow rate and the loss of charge the Darcy's Law is applied, obtaining the permeability coefficient of the field tested.

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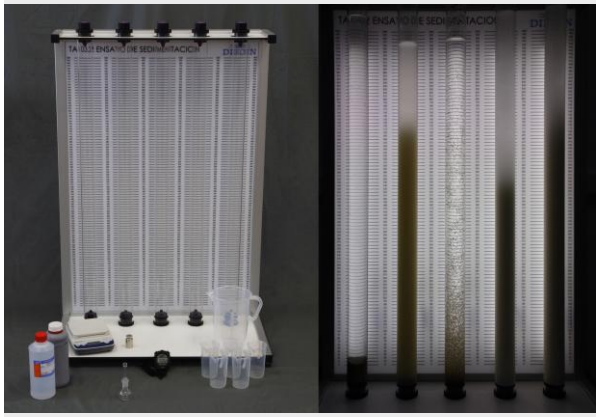
TA 02.2 - SEDIMENTATION TANK

With this equipment is intended to study and visualize in a continuous regime, the natural phenomenon called sedimentation, whereby particles that are denser than the fluid that contains them and in which they are dispersed, fall by gravity depositing in the bottom of the container.

Sedimentation is used to clarify all types of water, reducing turbidity. Depending on the characteristics of the suspension (heterogeneous mixture formed by solid particles dispersed in a fluid), the particles will sediment in different ways depending on the density of them, its concentration in the solution, and the density and viscosity of the fluid in which they are dispersed.

The sedimentation tank has a lower tank of mixture in which a suspension is prepared by adding the additive whose sedimentation we want to study. In addition, the mixing tank has a stirring system to prevent sedimentation of the suspension.

TA 03.2 - SEDIMENTATION STUDY



The objective of this equipment is to study and visualize the natural phenomenon called sedimentation, whereby the particles denser than the fluid that contains them and in which they are dispersed, fall by gravity depositing in the bottom.

Sedimentation is used to clarify all types of water, reducing turbidity. Depending on the characteristics of the suspension (heterogeneous mixture formed by solid particles dispersed in a fluid), the particles will sediment in different ways depending on the density of them, its concentration in the solution, and the density and viscosity of the fluid in which they are dispersed.

The equipment consists of 5 glass tubes placed in a support structure with a backlit graduated panel. Using this system we obtain an optimal visualization of the sedimentation process and its interfaces, with which we can measure the velocity of the sedimentation. Five 250 ml beakers and a 2 liter jar are supplied to prepare the suspensions that are to be introduced into the tubes. These can be extracted from their location to be able to agitate them until obtaining a homogenous dissolution of the aggregated solids.

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