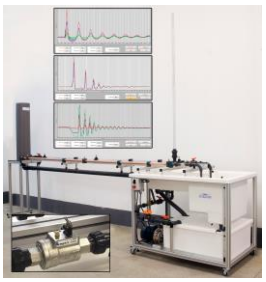
FL 05.1 - FLOW CHANNEL 2,5m (pag. C - 1)

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)

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

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FL 05.1 - FLOW CHANNEL 2,5m

This equipment is designed to study the behavior of fluids in open channels, and allows to perform a wide range of experiments and training.

HIGHLIGHTS

- Standalone operation, as long as it is connected to the power supply.
- Choice between negative and positive channel slope.
- A range of devices for reading different parametres, manometric gauges, limnimeter, Pitot tube, etc.
- Wide range of accessories to study multiple phenomena.
- It includes a valve to regulate the appropriate flow rate at any moment.
- The flowmeter provides readings of the workflow rate at any time.

IMPORTANT NOTE

- We can provide a range of flow channels in various sizes. Consult without compromise.

FL 05.3 - FLOW CHANNEL 5m

This equipment is designed to study the behavior of fluids in open channels, and allows to perform a wide range of experiments and training.

HIGHLIGHTS

- Standalone operation, as long as it is connected to the power supply.
- Choice between negative and positive channel slope.
- A range of devices for reading different parametres, manometric gauges, limnimeter, Pitot tube, etc.
- Wide range of accessories to study multiple phenomena.
- It includes a valve to regulate the appropriate flow rate at any moment.
- The flowmeter provides readings of the workflow rate at any time.

IMPORTANT NOTE

- We can provide a range of flow channels in various sizes. Consult without compromise.

FL 05.4 - 5M FLUME FOR HYDRAULIC BENCH

This equipment is designed to study the behavior of fluids in open channels, and allows to perform a wide range of experiments and training.

HIGHLIGHTS

- Choice between negative and positive channel slope.
- A range of devices for reading different parametres, manometric gauges, limnimeter, Pitot tube, etc.
- Wide range of accessories to study multiple phenomena.
- It includes a valve to regulate the appropriate flow rate at any moment.
- The flowmeter provides readings of the workflow rate at any time.

IMPORTANT NOTE

- We can provide a range of flow channels in various sizes. Consult without compromise.

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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, and allows to perform a wide range of experiments and training.

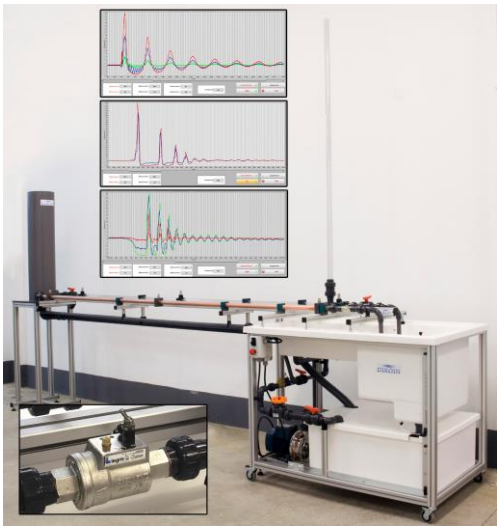
HIGHLIGHTS

- Choice between negative and positive channel slope.
- A range of devices for reading different parametres, manometric gauges, limnimeter, Pitot tube, etc.
- Wide range of accessories to study multiple phenomena.
- It includes a valve to regulate the appropriate flow rate at any moment.
- The flowmeter provides readings of the workflow rate at any time.

IMPORTANT NOTE

- We can provide a range of flow channels in various sizes. Consult without compromise.

FL 09.1 - WATER HAMMER



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

The equipment is designed to study the pressure increase produced by varying the flow through a valve, and to observe the positive and negative water hammer produced because of an instantaneous closure of a valve.

Also, it can be studied the effects of a surge pipe in reducing overpressure / depressure from water hammer.

The data is studied on a LabVIEW software.

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.

Furthermore, the equipment is provided with a volumetric vessel up to 500ml capacity in order to made the appropriate test measurement.

Finally, the equipment is provided with a hose for the possible connection to the hydraulic

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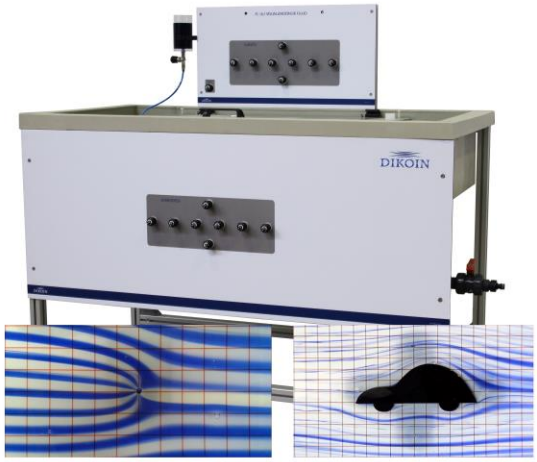
FL 16.1 - FLOW VISUALISATION



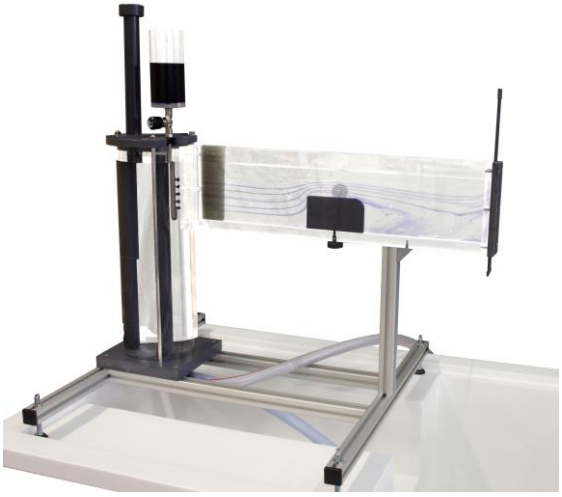
The flow visualization table allows to study the flow behaviour through different objects by flow lines, besides being able to simulate sources and sinks.

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 experiments 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 LYSIMETER

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.

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.

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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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