

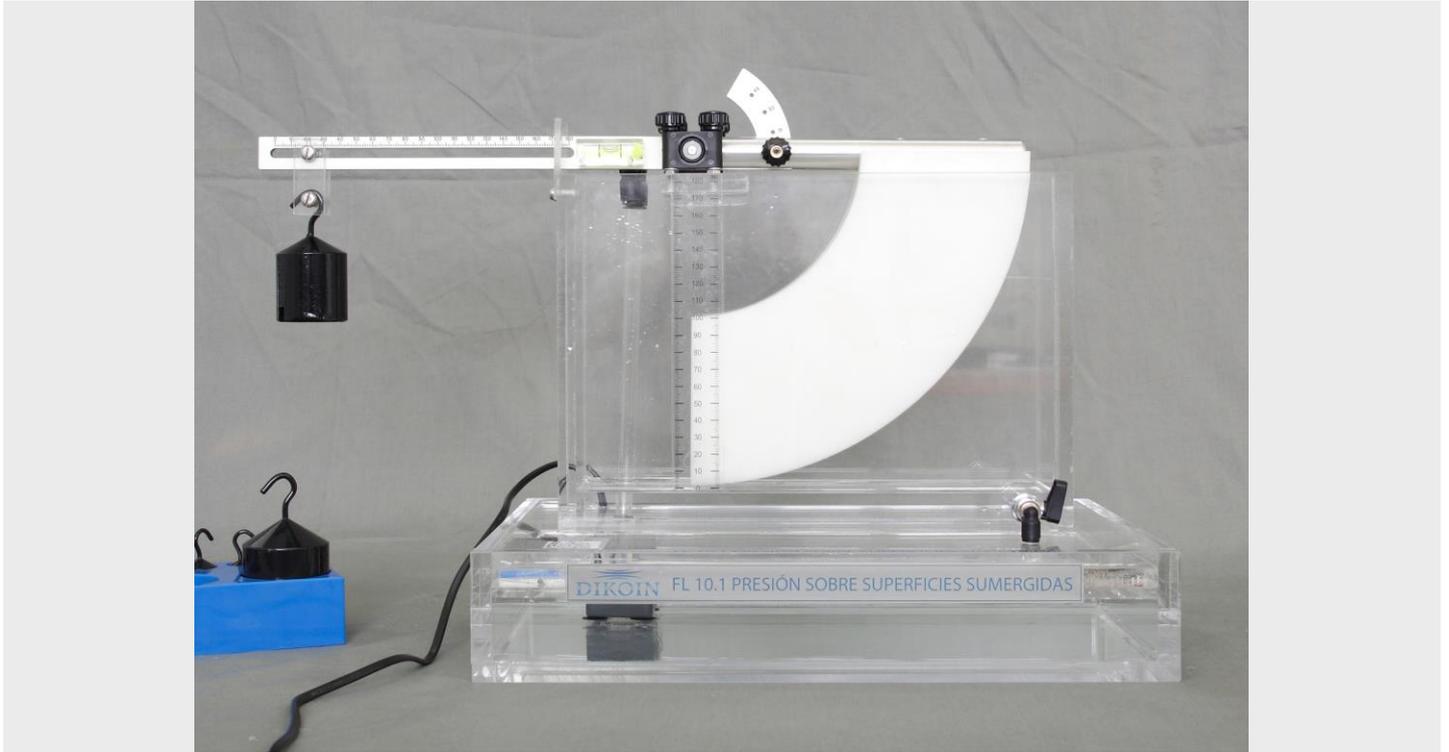
This equipment aims the study and determination of the pressure force acting on a submerged surface in a liquid.

It is a simple and completely autonomous equipment that can be located anywhere in the laboratory without any installation.

Liquids of different densities can be used to determine the influence of this on the exerted pressure force.

#### **HIGHLIGHTS**

- Independent operating equipment.
- Calculation of the pressure force exerted on both flat and curve surfaces.
- Possibility of varying the angle of the surface on which the study is made.
- It has a pump to recirculate the water, so it doesn't need any jar or element to fill the tank during the experiments.



Possibility of carry out practices with flat or semicircular gate, to be able to verify the differences between both.



The equipment has the possibility of varying the angle of the flat or semicircular gate, in order to be able to check how influences the angle of application of the forces exerted on the gates.



Easy system of emptying the upper tank for the realization of the practices, and at the end of them.



Filling the upper tank with a small, quiet pump.

**LEARNING OBJECTIVES**

The objectives that are intended to be achieved with this equipment are the following:

- Measure and check the moment created by the pressure force acting on a submerged vertical flat surface. For this, it is necessary to determine the magnitude of the force and its center of pressure. We will distinguish two different cases:

- \*Fully submerged surface.

- \*Partially submerged surface.

- Obtain and check the moment created by the force of pressure acting on a submerged curved surface. We need to calculate the magnitude of the force and its center of pressure. We will distinguish three different cases:

- \*Fully submerged semicircular sector.

- \*Partially submerged semicircular sector, level of the liquid above the gravity center.

- \*Partially submerged semicircular sector, level of the liquid below the gravity center.

**TECHNICAL DATA**Pump:

- Maximum flow.: 400 l/h
- Maximum height: 60 cm
- Power: 18 W
- Consumption: 1,6 amp

Quadrant:

- Inner diameter 100 mm (D. Int).
- External diameter 200 mm (D. Ext).
- Width 50 mm.

Counterweights:

Set of weights:

- 1x 10 g
- 2x 20 g
- 1x 50 g
- 1x 100 g
- 2x 200 g
- 1x 500 g
- 1x 1000 g

Type of surfaces to study:

- Readings on flat and curved surfaces.

Measurement of forces:

- Balancing forces are measured by moments.

Dimensions:

- Dimensions of methacrylate tank: 380 x 200 mm.

Materials:

- Materials used:
  - Methacrylate
  - Polyethylene
  - Aluminium

**REQUIREMENTS**

- Power supply: 230V/50Hz.