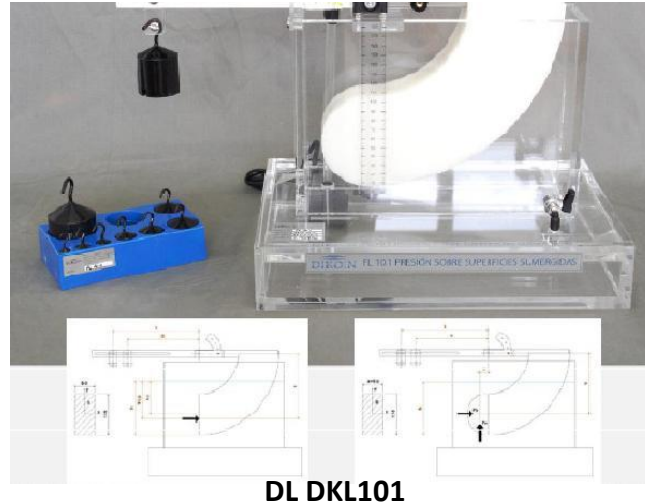




HYDROSTATIC PRESSURE ON SUBMERGED SURFACES



The system is designed to study and calculate of the pressure force acting on a submerged surface; it is a simple and completely autonomous equipment that can be easily located in a laboratory without any installation.

It is possible to use liquids of different densities to determine the different exerted forces between them.

HIGHLIGHTS

- Stand-alone equipment
- Possibility to determine the exerted pressure on flat and curved surfaces.

PERFORMABLE EXPERIMENTS

With this didactic equipment it is possible to perform the following experiments:

- Measure and verify the momentum created by the pressing force acting on a submerged flat vertical surface.
For that it is necessary to determine both the magnitude of the force and its pressure center. It is possible to distinguish two different cases:
 - Complete submerged surface.
 - Partially submerged surface.
- Obtaining and verifying the momentum created by pressure force acting on a submerged curved surface.

It is necessary calculate the magnitude of the force and its pressure center. It is possible to distinguish three different cases:

- Semicircular sector completely submerged.
- Semicircular sector partially submerged , fluid level above the center of gravity.
- Semicircular sector partially submerged , fluid level below the center of gravity.



FLUID MECHANICS



TECHNICAL DATA

Motor pump:

- Max flow rate: 400 l/h
- Max height: 60cm
- Power: Pump + headlamp = 18W
- Power consumption: Pump + headlamp= 1.6A

Quadrant:

- Inner \varnothing : 100mm
- Outer \varnothing : 200mm
- Width: 50mm

Counterweights:

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

Surfaces to be studied:

- Readings on flat and curved surfaces.

Forces measurement:

- Balancing forces are measured by momentum.

Dimensions:

- Methacrylate tank: 380 x 200mm.

Employed materials:

- Methacrylate
- Aluminum
- Polyethylene