



The aim of this training unit is the study and comparison of some of the different types of existing **flow meters**. This equipment is intended for groundwork and it is implemented with the most didactic and widely-used flow meters.

In our case, the flow meters chosen are a **venturi**, a **rotameter** and a **diaphragm** placed in series will allow direct comparison of results.

Through the realization of some of the experiments of this equipment has failed to understand the behavior of fluids against certain **laws of statics, dynamics, thermodynamics**. They may implement general principles such as the **conservation of mass, or energy** in a simplified and easily.

Besides regulating valve with variable flow rates allow you to work according to the needs of the experiment.

The pattern of the flow measurements are made using the volumetric tank of the hydraulic bench (required), so that the **relationship between the pressure drop and the fluid velocity** is also studied.

Pressure readings are displayed on a multi-tube manometer 8 outlets through which values are extracted on 8 strategic points of the equipment.

LEARNING OBJECTIVES

- Calibration of flow measuring elements from a flow pattern:
 - Rotameter
 - Venturi tube
 - Diaphragm
- Comparison between the flow rate using the following elements:
 - Rotameter
 - Venturi tube
 - Diaphragm
- Calculating the secondary load loss of the following elements:
 - Rotameter
 - Venturi tube
 - Diaphragm

TECHNICAL DATABores:

- \varnothing internal main pipe = 32 mm. ; \varnothing external = 40 mm.

Manometer:

- Water column gauge, measuring range: 500 mm wc
- N of manometric tubes: 8.

Diaphragm:

- Diameter orifice plate: \varnothing 20 mm.

Rotameter:

- Measuring range: 150-1500 l/h.

Venturi tube:

- \varnothing 15 mm diameter throat.
- \varnothing 32 mm diameter upstream.
- 21° upstream taper.
- 14° downstream taper.

REQUIREMENTS:

- DIKOIN hydraulic bench.