



THE STUDY OF FLOW METERS



DL DKL231

Equipment designed to allow the study and comparison of some of the types of existing flow-meters; in particular, this system includes the more didactic and representative flow gauges such as: Venturi tube, rotameter, diaphragm, an angled seat valve and a Pitot tube that placed all in series grant a direct comparison of results.

Students can perform practical exercises in order to understand the nature of fluids related to the laws of statics, dynamics and thermodynamics.

It is also possible to observe in easy and effective way general principles such as the laws of mass and energy conservation; a regulating valve included in the system grants the possibility to adjust the flow rate according to the needs of each experiment. The results are displayed both in the water column manometer and in the supplied electronic differential gauge; students will be able to find data taken from various strategic points of the piping thanks to the manometers installed in the system.

HIGHLIGHTS

- The equipment can be connected either a hydraulic bench or a hydraulic group.
- For a better experience and visualization, the flow meters and main elements are built with transparent materials.

PERFORMABLE EXPERIMENTS

- Flow measurement comparison between the following elements:
 - Venturi tube
 - Rotameter
 - Diaphragm
 - Angled seat valve
 - Pitot tube
 - 90° elbow
- Load loss calculation for
 - Venturi tube
 - Rotameter
 - Diaphragm
 - Angled seat valve
 - Pitot tube
 - 90° elbow
- Demonstration of Bernoulli equation in a Venturi tube.
- Study of static, dynamic and total pressure.



FLUID MECHANICS



TECHNICAL DATA

Inner diameters:

- Main pipe: \varnothing 25mm

Manometer:

- Water column manometer: 500mm
- Electronic differential pressure gauge

Pressure measuring points:

- Quick fittings with double closing.

Diaphragm:

- Hole diameter of the plate: \varnothing 13mm
- Hole diameter of the plate: \varnothing 15mm

Rotameter:

- Measuring range: 150 – 1500 l/min

Venturi tube:

- Throat \varnothing 12mm
- Inner diameter upstream: \varnothing 21.2mm
- Upstream tapering: 22°
- Downstream tapering: 7°

Other elements:

- Pitot tubes

Requirements:

Hydraulic bench DL DKL014 or Hydraulic group DL DKL011, not included in this item.