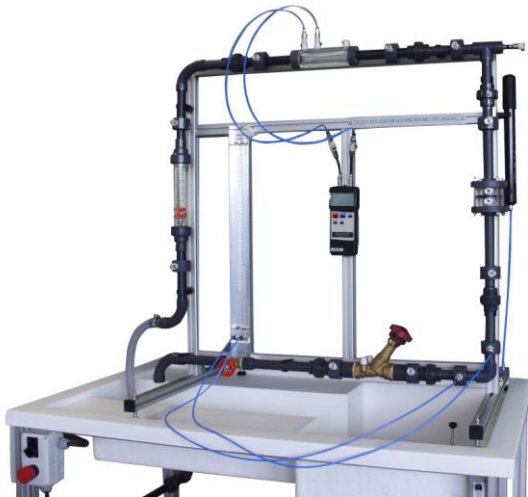




STUDY OF FLOWMETERS



DL DKL231

The objective of this equipment is the study and comparison of some of the different types of existing flow-meters. The system includes several representative flow gauges such as a Venturi tube, a rotameter, a diaphragm, a globe valve and a Pitot tube placed in series to allow a direct comparison of results.

By doing some of the practices proposed, it is possible to understand the nature of fluids and the laws of statics, dynamics and thermodynamics.

It is also possible to easily observe general principles such as the laws of mass and energy conservation. With help of a regulating valve it is possible to adjust the flow rate according to the needs of practice.

The results are displayed in the water column manometer and the supplied electronic differential gauge. Through these pressure gauges students can work with data taken from different strategic points of the piping.

TRAINING OBJECTIVES

- Flow measurement comparison between the following elements:
 - Venturi tube
 - Rotameter
 - Diaphragm
 - Globe valve
 - Pitot tube
 - 90° elbow
- Load loss calculation for
 - Venturi tube
 - Rotameter
 - Diaphragm
 - Globe valve
 - Pitot tube
 - 90° elbow
- Demonstration of Bernoulli equation in a Venturi tube.

TECHNICAL DATA

Inner diameter: Main pipe: \varnothing 25mm

Gauges:

- 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°



FLUID MECHANICS

- Study of static, dynamic and total pressure.

For a better experience and visualization, the flow meters are built with transparent material.

- Downstream tapering: 7°

Other elements:

- Pitot tubes

Necessary accessory:

DL DKL014 – Hydraulic bench

The basic hydraulic bench is a simple, mobile, self-contained module that allows a supply of "hydraulic energy", i.e. an accurately controlled and measurable flow of water.

It includes two collecting tanks, a centrifugal pump, a flowmeter, a mobile frame work on wheels, a set of valves and piping.

Or DL DKL011 – Hydraulic group

