

Product Name :
Energy Losses in Pipes

Product Code :
NLAB-MECHANICALAB230011



Description :

Energy Losses in Pipes

Technical Specification :

The trainer includes ten pipe sections with different pipe elements. Four of the pipe sections are straight and designed with a constant cross-sectional area; they differ from each other in material and cross-section. One of the pipe sections includes three different types of flow diversion: pipe bend, pipe angle and segment bend. Two other pipe sections include various shut-off valves and fittings with different resistances. The opening characteristics of the valves and fittings are determined in the experiment. Two other pipe sections contain gradual and sudden contractions and enlargements. The last pipe section is designed as a parallel, dual line.

In pipes through which water flows, the pipe friction and various deflections cause pressure losses that manifest themselves as pressure losses. Allows the investigation by experimentation of pressure losses in pipes and different pipe elements.

The pressure measuring points in the pipe system are designed as annular chambers and are located directly upstream and downstream of the pipe elements, ensuring a precise pressure measurement. The sensors are connected in pairs to a differential pressure meter, a manometer panel or twin tube manometers where the respective differential pressure can be read. The flow is displayed on a Rota meter.

Energy Losses in Pipes

FEATURES

Investigation of the pressure losses in pipe elements

Comparison of losses in similar components

Different types of pressure measurement

Selection of pipe sections via hose connections with quick-release coupling

SPECIFICATION

Pipe sections, length: 1000mm

Straight, Cu, diameter: 18x1mm,

Straight, galvanized steel, diameter: ½"

Straight, PVC, diameter: 20x1, 5mm,

Straight, PVC, diameter: 32x1, 5mm

Section with segment bend, pipe angle, pipe bend

Gradual/sudden enlargement in diameter: from 20 to 32mm

Gradual/sudden contraction in diameter: from 32 to 20mm

Dual line, PVC, diameter: 20x1, 5mm

Measuring ranges

Flow rate: 0...1600L/h

Differential pressure:

Differential pressure meter: 0...2000mbar

Twin tube manometer: 1000mmWC

6 tube manometers: 340mmWC

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