



FLOW NETWORKS



DL DKL272

This system reproduces the problem that usually appears in pressure and flow calculation in pipes that generally have different diameters, lengths and are interconnected; these systems of pipes (in series, parallel or meshed) can complicate the pressure and flow calculation. These pipes interconnections are known as flow networks.

For example, a water-supply network of a town or the fire-protection system in a building can be considered as flow networks.

With this module, students can perform experiments that can simulate the behavior of the flow network in different conditions. The module is made of some transparent tubes with different diameters, and it includes a number of valves placed in specific points of the network.

The quick couplings used in this system enable fast and easy exchange of pipes creating therefore several network configurations. The flow measurements can be done using the volumetric reservoir of the hydraulic bench (required and not included in this item) and it allows also the study of the relationship between pressure drop and fluid velocity.

PERFORMABLE EXPERIMENTS

- Piping network modeling to design and calibrate every component to predict the flow rate through each pipe section.
- Measurement and testing of load losses of different pipe networks in series connection.
- Calculation and testing of flow distribution through several piping systems in parallel connection.
- Calculation and testing of distribution of flows and their directions in meshed piping system.
- Analysis of the system behavior when another pipe in parallel is installed.



FLUID MECHANICS



TECHNICAL DATA

Pipe sections

- 1x pipe: 700mm \varnothing 14mm
- 1x pipe: 700mm \varnothing 10mm
- 2x pipes: 700mm \varnothing 9mm
- 1x pipe: 700mm \varnothing 14mm

Manometric measuring points

- The equipment has 12 pressure measuring points.
- In every piping segment the pressure measuring point is 40mm away from three pieces joint.

Manometer

- Electronic differential pressure gauge (\pm 7000mbar)

Requirements:

Hydraulic bench DL DKL014, not included in this item.