

## Description:-

When Water Flows Through A Pipe System, The Flow Resistances Causes Pressure Losses To Occur At Pipe Fittings And Valves And Fittings.

The unit Can Be Used To Investigate And Visualise The Pressure Losses In Pipe Elements. The Experimental Unit Can Be Used To Assess How Different Pipe Geometries Affect The Flow.

The experimental Unit Comprises A Pipe Section Containing Several Pipe Elements With Different Flow Resistances, As Well As A Contraction And Enlargement Piece. There Is Also A Ball Valve Integrated In The Pipe. There Are Pressure Measuring Points With Annular Chambers Upstream And Downstream Of The Pipe Elements, Which Ensure Accurate Pressure Measurement.

The Pressure Measuring Points Can Be Connected In Pairs To A 6 Tube Manometers In Order To Determine The Pressure Loss Of A Pipe Element.
The Experimental Unit Is Positioned Easily And Securely On The Work Surface Of The base Module. The Pump Draws In Water From The Tank On The Base Module. The Flow Rate Is Determined Volumetrically By Flowing Back Into The Measuring Tank

## Learning Objectives/Experiments:-

- Investigate Pressure Losses At Segment Bend And Bends
- Investigate Pressure Loss At Contraction And Enlargement
- Pressure Loss At A Ball Valve And Determination Of A Simple Valve Characteristic


## Specification

- Investigation Of The Pressure Loss In Flow Through Pipe Fittings And In The Ball Valve

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TM
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Energy losses in piping elements

- Sudden Contraction And Sudden Enlargement, Pipe Bend, Segment Bend, Pipe Angle And Ball Valve As Measurement Objects
- Annular Chambers Allow Precise Measurement Of Pressure
- 6 Tube Manometers For Displaying The Pressures
- Bourdon Tube Pressure Gauge For Pressure Measurement
- Flow Rate Determined By Base Module for Experiments In Fluid Mechanics
- Water Supply Via base Module For Experiments In Fluid Mechanics


## Technical Data:-

- Pipe, Pvc
- Inner Diameter: 17mm
- Pipe Elements, PVC
- Inner Diameter: D
- Sudden Contraction: From $\mathrm{D}=17$ To $\mathrm{D}=9,2 \mathrm{~mm}$
- Sudden Enlargement: From $D=9,2$ To $D=17 \mathrm{~mm}$
- Segment Bend: $D=17 \mathrm{~mm}, 90^{\circ}$
- Pipe Angle: $\mathrm{D}=17 \mathrm{~mm}, 90^{\circ}$
- Narrow Pipe Bend: $\mathrm{D}=17 \mathrm{~mm}, \mathrm{R}=40 \mathrm{~mm}, 90^{\circ}$
- Wide Pipe Bend: $\mathrm{D}=17 \mathrm{~mm}, \mathrm{R}=100 \mathrm{~mm}, 90^{\circ}$
- Measuring Ranges: Pressure 1x 0...1,6Bar; 6x 0...0,03Bar


## Required For Operation

- Base Module For Experiments In Fluid Mechanics


[^0]:    Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.

