



Technical Details

- Venturi meter : Body Material Acrylic, compatible to 1" Dia. Pipe.
- Orifice meter : Body Material Acrylic, compatible to 1" Dia. Pipe.
Orifice plate made of Stainless Steel.
- Rotameter : Glass Tube Rotameter.
- Water Circulation : ½ HP Pump, Crompton/Standard Make.
- Flow Measurement : Using Measuring Tank with piezometer Capacity 25 Ltrs.
- Sump Tank : Capacity 50 Ltrs.
- Stop Watch : Electronic
- Pressure measurement : By Pressurized differential pressure manometer
- Control Panel Comprises of : Standard make On/Off Switch, Mains Indicator, etc.
- Tanks will be made of Stainless Steel.
- An ENGLISH instruction manual consisting of experimental procedures, block diagram etc. will be provided along with the Apparatus.
- The whole set-up is well designed and arranged on a rigid structure painted with industrial PU Paint.

Description

The present set-up is designed to study three type of flow measuring devices. These are orifice meter, Venturi meter and rotameter. The set-up also facilitates the end user to calculate fluid discharge through these devices. By determining the co-efficient of discharge of venturi meter and orifice meter, these devices can be used as a direct flow meter and can be installed in a fluid line. Rotameter is provided with a pre-calibrated scale. By passing a known flow of fluid through the rotameter and comparing this to provided scale reading, end user can re-calibrate the rotameter.

The apparatus consists of three pipe lines emerging out from a common manifold. All three pipe line has been installed with a test section. One has venturi meter, second has an orifice meter and third one is having a rotameter. The Venturi meter, Orifice meter and Rotameter are connected in parallel and any one of them can be put in operation by operating valves provided at the downstream. Pressure taping from venturi meter and orifice meter are taken out to pressurized differential pressure manometer.

Present set-up is self-contained water re-circulating unit, provided with a sump tank, centrifugal pump etc. Water is pumped by means of centrifugal pump and passing through the test sections, it returns back to the sump which make the system re-circulating type. Flow of water is diverted either to measuring tank or sump tank with the means of a flow diverter, when needed. Flow control valve and by-pass valve are fitted in water line to conduct the experiment on different flow rates. Flow rate of water is measured with the help of measuring tank with piezometer and stopwatch. The supplied set-up is complete in all respect. Only water supply and electricity supply is to be provided by the end user for running the set-up.

Experimentation/Learning Objectives

- To determine the co-efficient of discharged through Venturi meter and orifice meter.
- To measure discharge through Venturi meter, Orifice meter and Rotameter
- To calibrate the Rotameter.

Utilities Required

- Electricity supply: Single Phase, 220 V AC, 50 Hz, 5-15 Amp. combined socket with earth connection. Earth voltage should not be more than 5 Volts.
- Water Supply (Initial Fill).
- Floor Drain required.
- Floor Area Required: 2 m x 0.75 m.

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

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