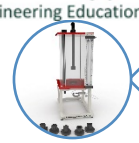


Orifice Discharge (Vertical Flow) Apparatus (SMT-FM-05)

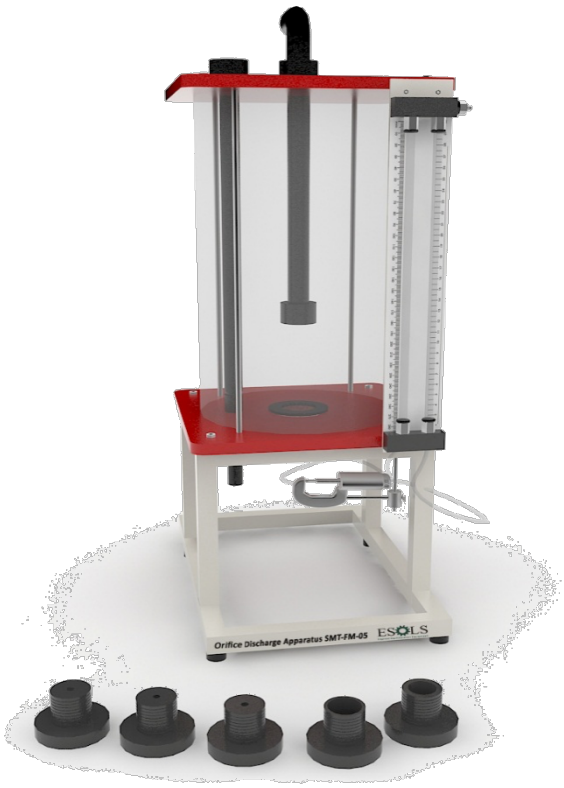
This ESOLS's Apparatus includes a transparent PPI tank, a measuring device as well as a Pitot tube and twin tube manometers. An interchangeable mouthpiece is installed in the tank's water outlet to facilitate the investigation of various openings. Five mouthpieces with different diameters, inlet contours and outlet contours are provided along with the unit.

Pressure losses in the flow from tanks are essentially the result of two processes: the jet deflection upon entry into the opening and the wall friction in the opening. As a result of the pressure losses the real discharge is smaller than the theoretical flow rate. SMT-FM-05 determines these losses at different flow rates. Different diameters as well as inlet and outlet contours of the openings can be studied. Additionally, the contraction coefficient can be determined as a characteristic for different contours. The issued water jet is measured using a measuring device. A Pitot tube detects the total pressure of the flow. The pressure difference (read on the manometer) is used to determine the velocity.

TECHNICAL SPECIFICATIONS

Specifications:

- Transparent PMMA tank.
- PVC Pipe Fittings.
- Study of pressure losses in vertical flows from tanks.
- Direct measurement of total head, head loss and diameter of vertical water jet.
- Determining the contraction coefficient for different contours and diameters.
- Tank with adjustable overflow.
- 5 interchangeable mouthpieces with different contours.
- Measuring device for determining the jet diameter.
- Pitot tube for determining the total pressure.
- Pressure display on twin tube manometers.
- Flow rate determined by SMT-FM-100 base module.
- Water supply using SMT-FM-100 base module or via laboratory supply.



Web: http://www.esolsengineering.com, Email: esolsengineering@gmail.com

Technical Data:

- Tank:
  - Transparent PMMA Cylindrical Tank
  - Capacity: approx. 15l.
  - Overflow height: max. 400mm.
  - Max. Flow rate: 25l/min.
- Mouthpieces:
- Inside diameters: d1=inlet, d2=outlet:
  - 1x cylindrical hole, d=12mm.
  - 1x outlet from the insert: cone. d1=24mm, d2=12mm
  - 1x inlet to the insert: orifice plate. d1=24mm, d2=12mm
  - 1x inlet to the insert: cone. d1=30mm, d2=12mm
  - 1x inlet to the insert: rounded, d=12mm.
- Measuring ranges:
  - Pressure: 500mmws.
  - Jet radius: 0…10mm.
- LxWxH: 500x400x850mm.
- Weight: approx. 28kg.
- Accessories (Included)
- All necessary Flexible pipes and fittings.
- Instruction Manual
- Operating Conditions
- Laboratory Temperature: 5°C to 40°C
- Note:

This product may produce small splashes of water in use, so you must use it at a safe distance from electrical supplies. ESOLS recommends approximately 2.0 m.

Experimental Data:

- Investigation of contraction and velocity coefficients
- Calculation of discharge coefficient
- Investigation of actual discharge coefficient, and comparison with calculated values.
- Investigation determination of flow rate at different discharge heads

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