

Orifice & Mouthpieces Apparatus



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Model: MSORIMOU11SWISS

The **Orifice & Mouthpieces Apparatus** is a versatile setup designed to determine the coefficient of discharge (C_d) for orifices and mouthpieces. It is widely used for experimental studies in fluid mechanics and hydraulics. The apparatus provides a practical understanding of fluid flow measurement through orifices and mouthpieces, enabling accurate calculations of discharge rates.

Description

- **Orifice:**

An orifice is an opening in the side or bottom of a tank, typically with a closed perimeter, that allows fluid to discharge.

- **Mouthpiece:**

A mouthpiece is a short tube fitted to a circular opening in a tank, facilitating controlled fluid discharge.

- **Functionality:**

This apparatus is designed to experimentally determine the coefficient of discharge for both orifices and mouthpieces. It is equipped with mechanisms to measure discharge rates and other related parameters.

Features

1. **Comprehensive Design:**

Includes a supply tank, a universal fixture for mounting orifices or mouthpieces, and a measuring tank for precise data collection.

2. High-Performance Pump:

A 0.5 HP centrifugal pump ensures continuous water supply to the supply tank, with flow control managed via a bypass valve.

3. Jet Measurement:

Equipped with an X-Y gauge for measuring the coordinates of the jet, allowing accurate determination of the velocity coefficient (C_v) for the orifice.

4. Versatile Mounting Options:

Universal fixtures for mounting various types of orifices and mouthpieces, including:

- Orifices of 8 mm and 10 mm diameter
- Mouthpieces:
 - LID = 4
 - LID = 1
 - Borda's Mouthpiece
 - Convergent Mouthpiece

5. Measuring Options:

- Measuring tank with a suitable capacity or a calibrated water flow meter.
- Sump tank for water collection and recirculation.

Salient Features & Specifications

Component	Specifications
Supply Tank Dimensions	0.4 m × 0.3 m × 0.5 m (H)
Orifice Sizes	8 mm, 10 mm
Mouthpiece Types	LID = 4, LID = 1, Borda's, Convergent
Pump	0.5 HP with bypass valve
Measuring Tank	Suitable capacity or calibrated flow meter
Jet Measurement Gauge	X-Y coordinate system
Sump Tank	Suitable capacity

Applications

- Determination of the coefficient of discharge (C_d) for orifices and mouthpieces.
- Analysis of fluid flow rates and velocity coefficients (C_v).
- Practical study of orifice and mouthpiece hydraulics in academic and industrial research.

Why Choose the MSSIMFOMA11S Apparatus?

1. Accurate Measurement Tools:

Includes precision gauges and calibrated tanks to ensure high accuracy in results.

2. Versatility:

Accommodates multiple types and sizes of orifices and mouthpieces for varied experimental setups.

3. Robust Build:

Durable construction ensures long-term reliability and performance.

4. Ease of Use:

Simple setup with clear measurement mechanisms makes it suitable for both students and professionals. This apparatus is an ideal choice for laboratories in academic institutions, research facilities, and industrial training centers.