

HYDRAULICS BENCH ACCESSORIES

This apparatus is to be used with Hydraulics Bench such as HB100 or HB100N (both are separately supplied) for a water supply and flow measurement. Instruction manual is also included.

HB 024H OSBORNE REYNOLDS APPARATUS, Horizontal Test Pipe



ESSOM HB 024H OSBORNE REYNOLDS APPARATUS, Horizontal Test Pipe Tested by Essom.th Date 30/9/2561

Measuring cup

Key in Pipe inside diameter, d(mm) 13.0
Water temperature (°C) 30
Volume, V(l) 1.0
Time, t(s) 25.00

Flow rate, Q (l/min) 2.400
Flow rate, Q (x10³ m³/s) 40.000
Velocity, V (m/s) 0.301
Density, ρ (kg/m³) 999.700
Dynamic viscosity, μ (x10⁻³ N-s/m²) 0.801
Reynolds number, Re 4870

Phenomena Turbulent

Select Data Sample Data

Description & Theory

LOG DATA

CLEAR LAST DATA

CLEAR ALL DATA

SAVE TO FILE

EXIT

Testing No.	Volume V (l)	Time, t (s)	Inlet flow rate, Q (l/min)	Inlet flow rate, Q (x10 ³ m ³ /s)	Velocity, v (m/s)	Reynolds number, Re	Phenomena
1	0.2	106.43	0.113	1.879	0.014	229	Laminar
2	0.2	35.50	0.338	5.634	0.027	429	Laminar
3	0.2	45.25	0.265	4.420	0.033	538	Laminar
4	0.2	37.37	0.311	5.352	0.040	652	Laminar
5	0.2	30.50	0.393	6.557	0.048	798	Laminar

GENERAL DESCRIPTION:

This equipment provides laminar, transitional, and turbulent flow as predicted by Osborne Reynolds. It is to be used with Hydraulics Bench i.e. HB100 or HB100N (separately supplied).

It consists of a removable clear acrylic tank which is partitioned in half. Water is admitted at the bottom of one half through a diffuser and stilling material. The other half of the tank has an adjustable over flow pipe with a discharge at the bottom. Water from the tank is admitted into a clear horizontal shell inside which is a bell entry with a test pipe. Flow through the test pipe is controlled by a discharge valve. A dye injection system needle discharges the dye to the bell mouth and flow pattern in the test pipe can be observed.

EXPERIMENT CAPABILITIES:

- Visualization of laminar, transition and turbulent flow
- Determination of the critical Reynolds number

TECHNICAL DATA:

- Length of test pipe : 720 mm
- Dye reservoir : 1 ea.
- Measuring cup : 1 L
- Software for data display and analysis by computer (separately supplied).

Net (unassembled) Shipping Dimensions WxLxH : 40 x 120 x 25 cm
Net Weight : Approx. 13 kg

