



Hydraulic Bench (SMT-FM-100)

This ESOLS Engineering product used in Fluid Mechanics Lab and Water supply related laboratories to supply controlled flow of water to a wide variety of laboratory experiment modules (available separately). This Bench has a large base tank to supply water to the modules and the closed water circuit consists of the underlying storage tank with a powerful pump and the measuring tank arranged above, in which the returning water is collected.

Main Frame is of steel finished in powder coated paint which increases resistance to wear, scratches and corrosion. Upper tub is made of fiberglass and lower tank is made of stainless steel. It has a hand-operated water control valve adjusts the water flow rate from the pump. An electrical box on the side of the bench includes the electronic pump switch, circuit protection and a digital LCD display of flow rate or direct reading flowmeter. System has optional software for Monitoring and Control of water circulation.

TECHNICAL SPECIFICATIONS

Specifications:

- Base module for supplying experimental units in fluid mechanics.
- Electronics flow meter and LCD Display for better display and accurate results.
- Closed water circuit with storage tank, pump and measuring tank.
- Measuring tank divided in two for volumetric flow rate measurements.
- Measuring beaker with scale for very small volumetric flow rates.
- Measurement of volumetric flow rates by using a stopwatch.
- Work surface with integrated flume for experiments with weirs.
- Work surface with inside edge for safe placement of the accessory and for collecting the dripping water.
- Storage tank made of stainless steel and measuring tank made of GRP.
- Lockable wheels for mobility with stability



Technical Data:

- Pump:
 - Power consumption: 370W.
 - Max. flow rate: 50L/min.
 - Max. head: 35m.
 - Max Pressure: 500mBar
- Storage tank:
 - Capacity: 180L.
- Measuring tank:
 - At large volumetric flow rates: 40L.
 - At small volumetric flow rates: 10L.
- Flume:
 - LxWxH: 530x150x180mm.
- Measuring beaker with scale for very small volumetric Measurement.
- Flow rate Measurement:
 - Electronic sensor and LCD Display
 - Display: L/min
 - Resolution: 0.1L/min
- Stopwatch.
 - Measuring range: 0...9h 59min 59sec.
- 230V, 50Hz, 1 phase.
- 230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase.
- UL/CSA optional.
- LxWxH: 1230x790x1070mm.
- Weight: approx. 70kg.
- Accessories (Included)
 - All necessary Flexible pipes and fittings.
 - Stop Watch
 - Beakers 1000mL QTY=02
 - 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.

Available Optional Modules:

- Bernoulli Theorem (SMT-FM-01)
- Metacentric Height SMT-FM-02)
- Energy Losses in Bends and Fittings (SMT-FM-03)
- Hydrostatic Pressure (SMT-FM-04)
- Orifice Discharge Apparatus (SMT-FM-05)
- Impact of Jet (SMT-FM-06)
- Flow Over Weirs and Notches (SMT-FM-07A)
- Pipe Friction Apparatus (SMT-FM-08)
- Osborne Reynolds Demonstration Vertical Tube (SMT-FM-09A)
- Osborne Reynolds Demonstration Horizontal Tube (SMT-FM-09B)
- Hydraulic Ram Pump (SMT-FM-10)
- Orifice and Jet flow Apparatus (SMT-FM-11)
- Flow Visualisation Apparatus (SMT-FM-12)
- Free and Forced Vortex (SMT-FM-13)
- Demonstration Pelton Turbine (SMT-FM-14)
- Demonstration Francis Turbine (SMT-FM-15)
- Demonstration Kaplan Turbine (SMT-FM-16)
- Demonstration Reaction Turbine (SMT-FM-17)
- Pitot Tube Apparatus (SMT-FM-19)
- Flow Measurement Apparatus (SMT-FM-20)
- Fluid Friction Measurement Apparatus (SMT-FM-24)
- Pipe Surge and Water Hammer Apparatus (SMT-FM-27)
- Cavitation Apparatus (SMT-FM-29)