H1D

Volumetric Hydraulic Bench

Provides a controlled recirculating water supply and accurate volumetric measuring system to hydraulic and fluid mechanics experiments

- Self-contained and fully mobile
- Plastic and non-ferrous construction
- Bench top providing ample working area
- Range of experiments available for a complete course
- Only service required is a single-phase electricity supply
- Separate sump tank outlet facility
- Ideal service unit for student projects

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TecQuipment

H1D Volumetric Hydraulic Bench

Description

The TecQuipment Volumetric Hydraulic Bench supplies a controlled flow of water to a wide variety of laboratory experiments (available separately).

The bench consists of a sump tank with a submersible pump, volumetric weighing system and working surface. All parts are manufactured in corrosion-resistant material. The sump outlets allow the bench to be used on almost any hydraulic circuit. Once filled, the bench needs no external water supply.

The top of the sump tank provides the working surface, on which many of the experiments in TecQuipment's Fluid Mechanics range conveniently mount. A rim around the working surface contains any spilled or excess water. The bench top also incorporates an open channel for experiments investigating flow measurement with weirs (sets of different weirs are available separately – see H1D/a and H1D/b). Larger experiments usually stand next to the hydraulic bench.

Students use a control valve to regulate the pump and so adjust flow rate. The volumetric measuring system simply consists of a small inner tank with a level indicator. The level indicator is accurately calibrated in litres. TecQuipment individually calibrates the level indicator for each bench to ensure linearity.

To measure flow rate, students direct the water flow into the small inner tank and start timing using a stopwatch (included). The measurement technique is simply to record the time taken to collect a given amount of water, read off the level indicator. Students divide the volume collected by the time taken to obtain the flow rate in litres per second. From this they can, if necessary, derive the mass flow rate. The power supply in the hydraulic bench includes overload and under-voltage protection.

Standard Features

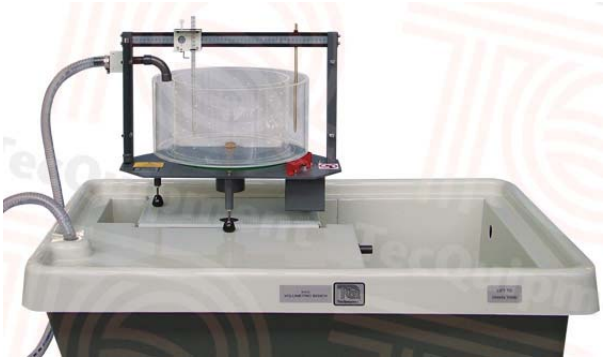
- Supplied with comprehensive user guide
- Five-year warranty
- Made in accordance with the latest European Union directives

Available Experiment Modules

- Set of Weirs (H1D/a)
- Advanced Set of Weirs (H1D/b)
- Flow Through an Orifice (H4)
- Venturi Meter (H5)
- Friction Loss In a Pipe (H7)
- Impact Of a Jet Apparatus (H8)
- Flow Measurement (H10)
- Vortex Apparatus (H13)
- Losses in Piping Systems (H16)
- Francis Turbine (H18)
- Pelton Turbine (H19)
- 2.5 Metre Flow Channel (H23)
- Hydraulic Ram Pump (H31)
- Series and Parallel Pump Test Set (H32)
- Jet Trajectory and Orifice Flow (H33)
- Pipework Energy Losses (H34)
- Flow Meter Calibration (H40)
- Pipe Surge And Water Hammer (H405)
- Fluid Friction Apparatus (H408)

Recommended Ancillaries

- Set of Weirs (H1D/a)
- Advanced Set of Weirs (H1D/b)



H1D shown supporting the Vortex Apparatus (H13)

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Operating Conditions

Operating environment:
Laboratory

Storage temperature range:
–25°C to +55°C (when packed for transport)

Operating temperature range:
+5°C to +40°C

Essential Services

Electrical supply:
Single-phase earthed electrical supply,

220/240 VAC, 50 Hz

or 110/120 VAC, 60 Hz

or 220 VAC 60 Hz

(specify on order)

Floor space needed:
Approximately 2.5 m x 1.5 m of solid, level floor.

Note: This product may produce small splashes of water in use, so you must use it at a safe distance from electrical supplies. TecQuipment recommend roughly 2.4 m.

Specifications

Nett dimensions:

1200 mm x 760 mm x 1100 mm

Packed dimensions:

1.65 m^3 and 141 kg

Sump tank capacity:

160 litres

Volumetric tank capacity:

35 litres

Pump capacity:

0 to 60 litres/minute at 1.5 m head

Accessories (included):

- Water additive and datasheet
- Drain valve assembly and cover
- Stopwatch