

DIGITAL HYDRAULIC BENCH

HIF

A mobile, self-contained bench with recirculating water supply. It provides water at different flow rates direct to experiments and includes digital flow display for hydraulic and fluid mechanics experiments.



DIGITAL FLOW DISPLAY

KEY FEATURES

- Electronic flowmeter and digital display for accurate measurements and quicker experiments
- Made of lightweight fibreglass for strength, easier transport and long life
- Lockable wheels for mobility with stability
- Flat top to hold experiment modules from TecQuipment's Fluid Mechanics range
- Self-contained with recirculating water circuit – needs no external water supply and saves mains water
- Pump includes thermal overload protection
- Many of the hydraulics ancillaries work with TecQuipment's optional, free to download Hydraulics Data Management System Software (HDMS)

KEY SPECIFICATIONS

- Digital flow display
- 0.001 L.s⁻¹ and 0.1 L.min⁻¹ resolution
- Electronic flowmeter
- Fibreglass construction
- 160 litres capacity

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DESCRIPTION

This product supplies a controlled flow of water to a wide variety of laboratory experiment modules (available separately). The body of the bench forms a reservoir or 'sump tank' with a submersible pump. Once filled, the bench needs no external water supply.

The top of the bench provides a working surface. This will hold one of a choice of experiment modules from TecEquipment's Fluid Mechanics range. Larger experiments usually stand next to the bench. A rim around the top contains any spilled or excess water. A small recess or 'Trough' in the top works with a removeable Drain Valve to trap a small volume of water. It also catches discharged water from some experiments in the fluid mechanics range.

A hand-operated control valve adjusts the water flow rate from the pump. An electrical box on the side of the bench includes the pump switch, circuit protection and a digital display of flow.

Four wheels allow the user to move the bench around the classroom. Two wheels have foot-operated locks to hold the bench in position.

A sight gauge to the lower side of the bench allows the user to check the water level inside the tank.

An electronic flowmeter measures the outlet flow from the submersible pump. The signals from the flowmeter pass to the digital display to show the flow rate. The viewing angle of the display allows the user to see it clearly from a normal standing position.

If required students can download TecEquipment's Hydraulics Data Management System (HDMS) software onto a suitable computer (not supplied) to aid with entering, evaluating and presenting their data.

STANDARD FEATURES

- Supplied with a comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives
- ISO9001 certified manufacturer



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AVAILABLE EXPERIMENT MODULES

BENCH-MOUNTING:

- Flow Visualisation (FC15)
- Flow Through an Orifice (H4)*
- Bernoulli's Theorem (H5)*
- Discharge Over a Notch (H6)*
- Friction Loss in a Pipe (H7)*
- Impact of a Jet Apparatus (H8)*
- Flow Measurement (H10)*
- Vortex Apparatus (H13)*
- Francis Turbine (H18)*
- Pelton Turbine (H19)*
- Hydraulic Ram Pump (H31)
- Jet Trajectory and Orifice Flow (H33)*
- Pipework Energy Losses (H34)*
- Flow Meter Calibration (H40)*

FREE-STANDING

- Losses in Piping Systems (H16)
- 2.5 Metre Flow Channel (FC50-2.5)*
- Pipe Surge And Water Hammer (H405)
- Fluid Friction Apparatus (H408)*

HDMS

Ancillaries marked '*'

all work with free (optional) HDMS software



SHOWN WITH THE IMPACT OF A JET (H8)



SHOWN WITH THE LOSSES IN PIPING SYSTEMS (H16)

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SPECIFICATIONS

TecQuipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

NETT DIMENSIONS AND WEIGHT:

1250 mm long x 780 mm wide x 950 mm high and 50 kg (no water)

APPROXIMATE PACKED DIMENSIONS AND WEIGHT:

1.4 m³ and 120 kg

SUMP TANK CAPACITY:

100 Litres minimum and 160 litres maximum

MAXIMUM FLOW:

With no experiment module fitted:

50 litres/minute (220V)

47 litres/minute (110V)

MAXIMUM PRESSURE:

450 mbar at working surface height

FLOWMETER DISPLAY:

L.s⁻¹ and L.min⁻¹

RESOLUTION:

0.001 L.s⁻¹ and 0.1 L.min⁻¹

ACCESSORIES (INCLUDED):

- Water additive and datasheet
- All necessary pipes and pipe clips

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

SINGLE-PHASE, EARTHED ELECTRICAL SUPPLY (SPECIFY ON ORDER):

- Single phase, 220 - 240 VAC, 50 Hz, 2.5 Amp **OR**
- Single phase, 110 -120 VAC, 60 Hz, 5 Amp **OR**
- Single phase, 220 - 240 VAC, 60 Hz, 2.5 Amp

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