



Fluid Mechanics

H1

Gravimetric Hydraulic Bench

Provides a controlled recirculating water supply and accurate gravimetric measuring system for hydraulic and fluid mechanics experiments



- Self-contained and fully mobile unit
- Made of plastics and corrosion-resistant parts
- Has flat bench top for experiments
- Includes accurate, fundamental gravimetric (weighing) flow measurement system
- Has recirculating water supply to save mains water
- Separate sump tank outlet facility

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- An ISO 9001 certified company

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Gravimetric Hydraulic Bench

Description

The TecEquipment Gravimetric Hydraulic Bench supplies a controlled flow of water to a wide variety of laboratory experiments (available separately). The bench is a sump tank with a submersible pump, gravimetric weighing system and working surface. All parts are made of 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 TecEquipment's Fluid Mechanics range conveniently mount. A rim around the working surface contains any spilled or excess water. Larger experiments usually stand next to the hydraulic bench. A control valve adjusts flow rate.

The gravimetric weighing system is a small inner tank on a pivot arm, counter-balanced by weights (included). To measure flow rate, the user directs the water flow into the small inner tank. When the pivot arm becomes horizontal, students start timing using a stopwatch (included). At the same time, they add weights to a hanger at the end of the pivot arm which moves the arm downwards. When the mass of water collected balances the mass of the weights and hanger, the beam returns to the horizontal position and students stop timing. Because the mass of water collected is several times greater than the mass on the hanger, students find an accurate mass flow rate.

The power supply in the Gravimetric Hydraulic Bench includes overload and under-voltage protection.

Standard Features

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



The Gravimetric Hydraulic Bench shown with the Discharge Over a Notch (H6) experiment module

Available Experiment Modules

- Flow Through an Orifice (H4)
- Venturi Meter (H5)
- Discharge Over a Notch (H6)
- Friction Loss In a Pipe (H7)
- Impact Of a Jet Apparatus (H8)
- Flow Measurement (H10)
- Vortex Apparatus (H13)
- Losses in Piping Systems (H16)
- Series and Parallel Pump Test Set (H32)
- Jet Trajectory and Orifice Flow (H33)
- Pipework Energy Losses (H34)
- Flow Meter Calibration (H40)
- Fluid Friction Apparatus (H408)

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:
220 VAC to 240 VAC, 50 Hz
or 110 VAC to 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. TecEquipment recommend roughly 2.4 m.

Specification

Nett dimensions: 1200 mm x 760 mm x 1100 mm
Packed dimensions and weight: 1.65 m³ and 158 kg

Other parts:
Sump tank capacity: 160 litres
Weigh tank capacity: 40 litres
Hanger weights: six weights, each 2 kg
Pump capacity: 0 to 60 litres/minute at 1.5 m head

Accessories (included):

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

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