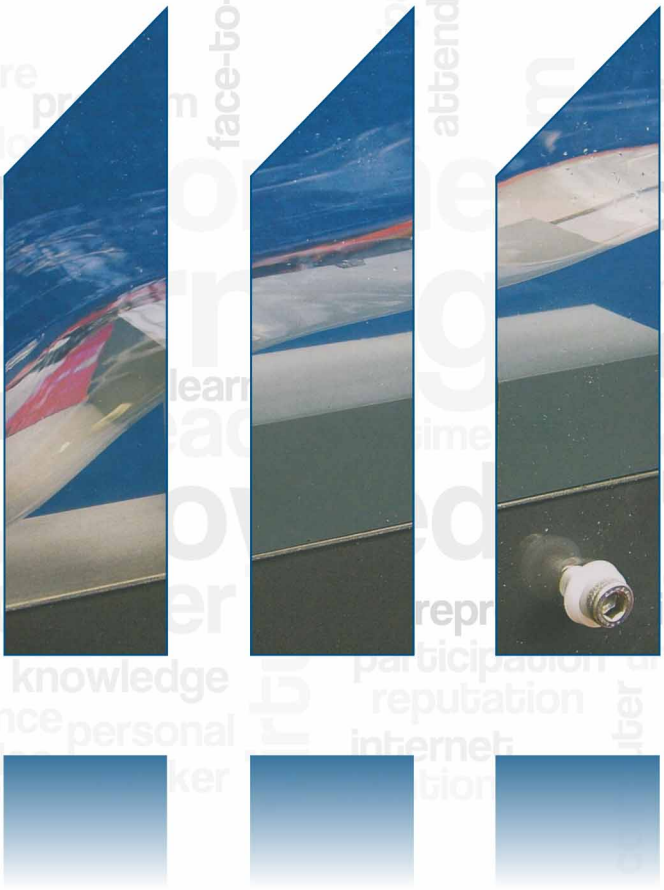

Fluid Mechanics

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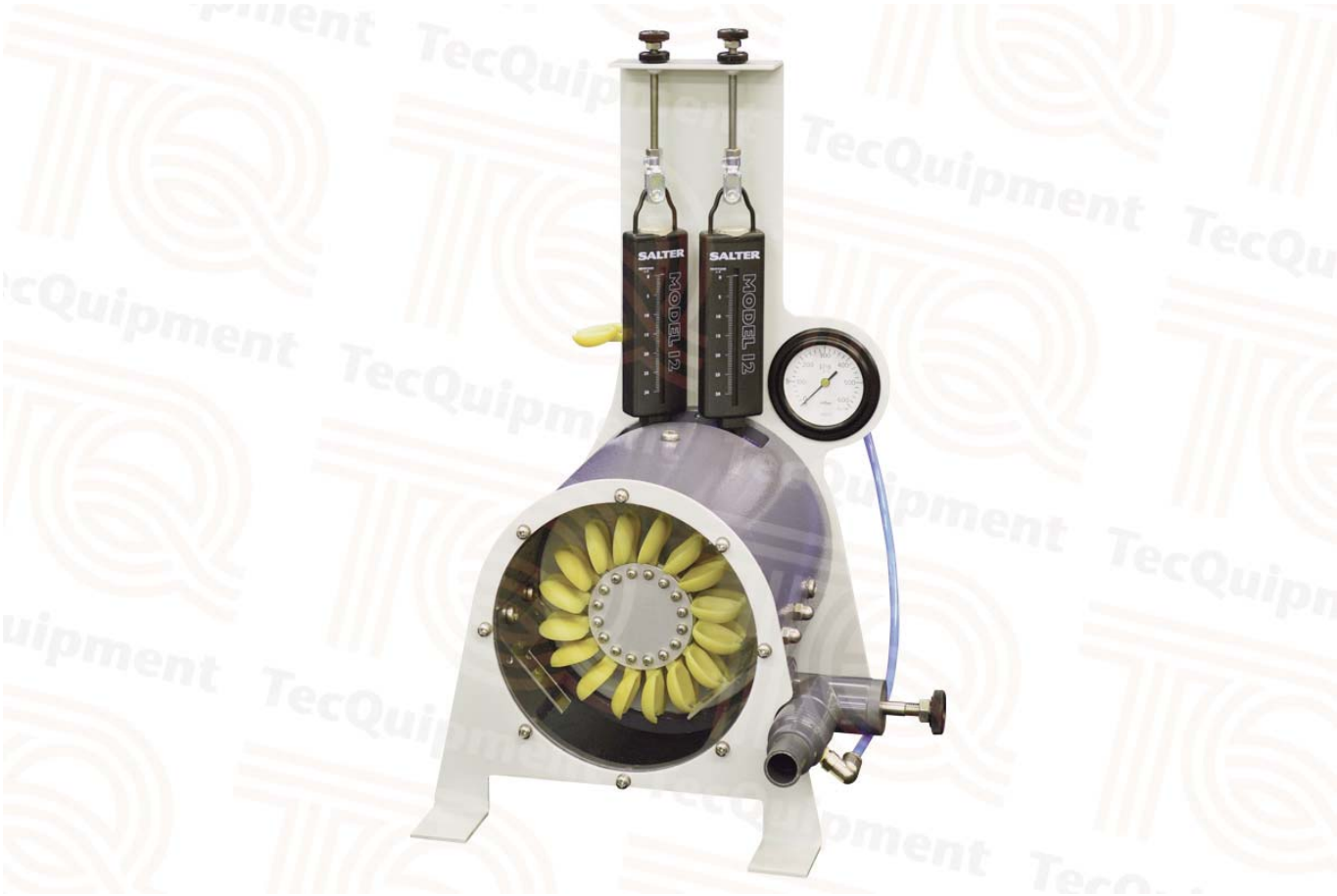
H19

Pelton Turbine

A compact unit for demonstrations and performance tests on a Pelton turbine



- Works with TecQuipment's Volumetric Hydraulic Bench for easy installation
- Transparent window so students can see the Pelton wheel working
- Includes dynamometer to load the turbine and help find the power absorbed (needs an optional tachometer to find speed)
- Low bearing resistance for accurate results
- Includes inlet pressure gauge
- Screw-controlled spear valve for precise inlet flow control
- Range of performance tests

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An ISO 9001 certified company

TecQuipment

H19 Pelton Turbine

Description

Shows students how an impulse (Pelton) turbine works and tests its performance. The Pelton wheel is an important and efficient fluid power machine, used in many applications.

The unit consists of a Pelton wheel mounted in a corrosion-resistant enclosure. A transparent front panel allows students to see the turbine working. An optional Stroboscope (ST1, available separately) can 'freeze' the image of the turbine to help students better understand how it works.

An adjustable spear valve directs a jet of water through a nozzle to the buckets of the Pelton wheel to make it turn. Manual adjustment of the spear valve controls the water jet from the nozzle.

The turbine includes all pipes and fittings to connect it to TecQuipment's Volumetric Hydraulic Bench (H1D, available separately). The hydraulic bench also measures flow rate.

The Optical Tachometer (OT1, available separately) can measure the speed of rotation of the turbine.

A simple mechanical brake and spring balance assembly attached to the shaft of the Pelton wheel applies a variable mechanical load (torque). Students use this with the speed (from the optional tachometer) to find power absorbed by the turbine. A gauge measures inlet pressure.

Students adjust the spear valve and measure inlet pressure, flow rate and torque (and speed with the optional tachometer). They plot these values to find the turbine performance.

Shown fitted to TecQuipment's Volumetric Hydraulic Bench (H1D) – available separately

Experiments

- Performance charts of power, speed, torque and efficiency.
- The effect of spear valve position.

Essential Base Unit

- Volumetric Hydraulic Bench (H1D)

Essential Ancillaries

- Optical Tachometer (OT1)

Recommended Ancillaries

- Stroboscope (ST1)

Standard Features

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

Essential Services

Water supply:
From the Hydraulic Bench (H1d)

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

Operating relative humidity range:
80% at temperatures < 31°C decreasing linearly to 50% at 40°C

Specification

Nett dimensions:
470 mm x 300 mm x 330 mm and 5.5 kg

Packed dimensions and weight:
0.07 m^3 and 10 kg (approximate weight)

Maximum speed:
Approximately 1000 $rev.min^{-1}$

Maximum brake power:
Typically 3.5 W at 500 $rev.min^{-1}$

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infoWERK is a leading expert in the development of eLearning courseware, learning system solutions, teaching and AV equipment.

Furthermore infoWERK is the representative and system integrator of "TecQuipment".

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