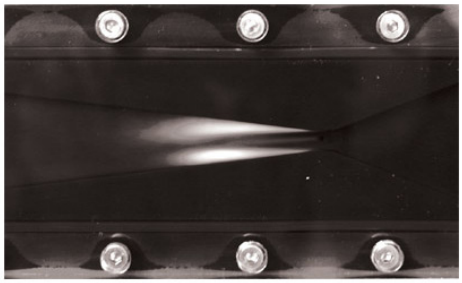
H400

CAVITATION IN A VENTURI

Shows the causes and effects of cavitation, and how the Venturi meter works



CAVITATION IN THE VENTURI

- Mobile unit that shows students the causes and effect of cavitation
- Also allows practical and effective study of flow and pressure in a Venturi meter
- Ideal for classroom demonstrations and student experiments
- Fully self-contained recirculating apparatus – no additional water supply needed
- Includes full instrumentation, including pressure, flow and temperature measurement
- Supplied fully assembled – minimal installation needed

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TECQUIPMENT

H400

CAVITATION IN A VENTURI

DESCRIPTION

The causes and effects of cavitation are one of the most important subjects in any course on fluid mechanics. In severe cases, cavitation will damage machines and hydraulic systems. Designers and engineers must be aware of cavitation when they create a new design or installation.

TecQuipment's Cavitation Demonstration Unit is a purpose-designed teaching unit which enables efficient and effective investigations into the causes and effects of cavitation. It also allows students to understand the Venturi by studying upstream and throat pressures.

The Cavitation Demonstration Unit offers a clear and easy-to-understand display of cavitation. Students create clearly visible cavitation in a Venturi (which has a transparent window) and take measurements of flow and pressure. Students use theory and practical experiments to learn how to predict the onset of cavitation. They gain practical experience of using the continuity equation and Bernoulli's equation. They use these to calculate flow and pressure, different methods of creating cavitation and causes of error.

The apparatus is a self-contained, mobile unit. It consists of a robust frame which holds a water tank (or reservoir), an electric pump, a flow-control valve, a flow meter and a Venturi. The frame includes a handy worktop for student paperwork.

Pressure gauges show the pressure upstream of the Venturi and the pressure at the Venturi throat. A thermometer shows the temperature of the water in the tank.

The pump includes electrical protection and the water tank includes a splash cover to prevent water spillage.

TecQuipment offers an optional stroboscope. This can improve the image of the cavitation.

STANDARD FEATURES

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

RECOMMENDED ANCILLARIES

- Stroboscope (ST1)

LEARNING OUTCOMES

Investigations into cavitation and the Venturi, including:

- Flow and pressure in the Venturi
- Demonstrations of cavitation
- How to predict the onset of cavitation

ESSENTIAL SERVICES

ELECTRICAL SUPPLY:

Single-phase earthed electrical supply, 230 VAC, 50 Hz, 4.5 A or 110 VAC, 60 Hz, 9 A (specify on order)

FLOOR SPACE NEEDED:

Approximately 1 m x 1.5 m of solid, level floor

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

SPECIFICATIONS

DIMENSIONS:

Nett: Length 1280 mm, width 600 mm, height 1840 mm, packed for export: 2 m^3

WEIGHT (DRY):

Nett: 100 kg, packed for export: 189 kg

MAXIMUM APPARATUS FLOW RATE:

Approximately 45 $L.min^{-1}$

MAXIMUM PUMP POWER:

1 kW

WATER TANK CAPACITY (MAXIMUM):

80 L

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