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Product Name :	**Product Code :**
Water Hammer Demonstration Unit	Machine0008

Description :

Water Hammer Demonstration Unit

Technical Specification :

Water Hammer Demonstration Unit

The apparatus is designed to demonstrate
shock waves in water at sonic velocity. Closing the pneumatic valve causes the pressure to rapidly attain a theoretical value and remain practically constant as the shock wave travels the length of the pipe, returning to the transducer as a negative pressure wave.

The time required for the positive pressure wave to travel through the pipe is used to calculate the speed of sound in water. When the pressure attains the vapour pressure of the water in the conduit, it causes cavitation.

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Teaching objectives

- Demonstration of the phenomenon of water hammer.
- Demonstration of cavitation.
- Calculation of the velocity of sound in water.
- Investigation of damping phenomena in pipes.
- Shock wave propagation.
- Studies of the elasticity of the pipe walls.

Technical specifications

The Water Hammer Demonstration Unit comprises:

- 11 m length coil in stainless steel tubing.
- 1 pneumatic valve.
- 1 pressure transducer upstream and 1 pressure transducer downstream of the coil.
- 1 flowmeter with adjustment valve.
- 1 Bourdon gauge.
- 1 control cabinet.
- 1 water tank with drain valve.
- 1 pump.
- 1 bypass valve.
- 1 connection to a vertical tube with a bleed valve to atmospheric pressure for controlling entrapped air volume.

Dimensions and weight

- 1350 x 650 x 2150 mm
- Weight : about 100 Kg

Essential requirements

- 220 V single phase, 50 Hz.
- Compressed air supply.
- Digital Memory-type oscilloscope.

Option

- A compressor can be supplied

Electrical and Electronics

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