TE86

WATER HAMMER APPARATUS

A compact unit that shows the water hammer effect

- Shows the propagation of shock waves at sonic velocity in water
- Shows how to calibrate an electronic pressure transducer
- Includes electric valve to stop flow instantly
- Contains over 60 m of pipe in one compact unit to save space
- Includes mechanical and electronic pressure measurement
- Includes connectors for extra (optional) equipment for transient measurements

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DESCRIPTION

The apparatus is made up of a coil of copper pipe 60 m long. The inlet connects to your water supply and the discharge end has a solenoid valve.

An electronic pressure transducer near to the valve measures the pressure fluctuations in the pipe when the solenoid valve shuts.

A bypass valve discharges to waste at the inlet end of the pipe. A second adjustable valve is at the discharge from the pipe, downstream of the solenoid valve. This regulates the mean pressure in the pipe before the solenoid valve shuts.

A Bourdon pressure gauge fitted between the solenoid valve and the downstream control valve shows the pressure in the system. It also allows students to calibrate the pressure transducer.

STANDARD FEATURES

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

ESSENTIAL ANCILLARY

- Two channel Oscilloscope (H405a) – Dual-trace (two channel) oscilloscope with storage

LEARNING OUTCOMES

- Water hammer
- Propagation of shock waves in water
- Velocity of sound in a water filled pipe
- Transducer calibration

ESSENTIAL SERVICES

ELECTRICAL SUPPLY:

Single-phase, 110 VAC or 240 VAC, 50Hz to 60 Hz (specify on order)

WATER SUPPLY:

Minimum 5 $L.min^{-1}$ at 3 bar

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:

700 mm x 950 mm x 1000 mm

PACKED DIMENSIONS:

0.84m^3 and 121 kg