

**Product Name :**  
Pipe Surge & Water Hammer Apparatus

**Product Code :**  
NEGEMG128

**Description :**

**Pipe Surge & Water Hammer Apparatus**

The apparatus is designed to generate and visualise water hammers in pipes and to demonstrate how a surge chamber works. The trainer contains a pipe section with a surge pipe, solenoid valve & ball valve. In the first experiment a pipe surge is produced by rapidly closing the solenoid valve. The sudden deceleration of the water mass releases kinetic energy, which is converted into potential energy in the surge pipe. The resulting pressure oscillations are measured by a pressure sensor in the pipe. The oscillations are plotted on a strip chart recorder. The oscillation can also be seen as pendulum movement of the water level in the surge chamber. In the second experiment the valve at base of surge pipe is closed so that the rapid closing of the solenoid valve in the pipe section produces a strong water hammer. The water's kinetic energy is converted into pressure energy. The water hammer and the subsequent oscillations are detected by the pressure sensor in the pipe section and plotted on the strip chart recorder.

**EXPERIMENTAL CAPABILITIES:**

- To demonstrate water surge in pipe & study effect of water level on surge magnitude.
- To demonstrate water hammer in pipe.

#### TECHNICAL SPECIFICATIONS:

- Water reservoir: 250 mm x 250 mm x 1000 mm (H) • Sump Tank: 100 Ltrs,  
PVC Tank • Pump: Centrifugal Pump, 230 VAC , Flow 30 LPM, Max. Head 20  
m. • Surge Pipe: Acrylic Pipe, 1" Diameter, 1 m • Pressure Sensor for  
Surge Pressure Measurement
- Solenoid Valve: Electrically Actuated Solenoid Valve • Strip Chart Recorder

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