

U14325 Pressure propagation device for liquids

Operating instructions

1/03 ALF



The pressure propagation device for liquids is used to demonstrate the equal distribution of pressure in all directions in a liquid.

1. Safety instructions

- Handle the glass vessel carefully to avoid breakage and resulting injury.
- Exercise particular caution when taking out the piston in order to avoid breakage.
- Be careful when using coloured water not to let it splash on your clothes, for example.

2. Description, technical data

The pressure propagation device consists of a piston in a long glass cylinder which merges at one end into a glass sphere to which 7 spray nozzles have been fused.

Total length: Approximately 450 mm
Glass sphere: Approximately 80 mm Ø
Glass cylinder: Approximately 35 mm Ø

3. Procedure

- Immerse the pressure propagation device fully in a

bucket of water. Push the piston forward to expel any air bubbles from the glass sphere. If necessary, turn the device to get rid of the air.

- Pull the piston back slowly to fill the glass sphere with water.
- Hold the pressure propagation device about 1 m above a large surface (for instance, the floor)
- Ensure that the nozzles are in a horizontal position.
- Push the piston forward to exert pressure on the liquid.
- Mark the points at which the water impinges on the surface.
- These points form a semicircle whose center is located beneath the middle of the glass sphere, providing evidence that the pressure inside a liquid is propagated equally in all directions.

For a more precise demonstration:

- Fill the glass sphere with coloured water (see above).
- Cover the experimentation table with paper or cellulose.
- Clamp the pressure propagation device carefully on a tripod.
- Exert a light and uniform pressure on the piston.
- Measure the coloured straight lines drawn by the emitted water.