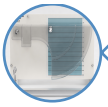


Hydrostatic Pressure & Centre of Pressure Apparatus (SMT-FM-04A)

Hydrostatic pressure refers to the pressure that any fluid in a confined space exerts. If fluid is in a container, there will be some pressure on the wall of that container. The effect of hydrostatic pressure is highly important in many fields of engineering: in shipbuilding, in hydraulic engineering when designing locks and weirs, in sanitation and building services. The SMT-FM-04A experimental unit offers typical experiments to study hydrostatic pressure in liquids at rest.

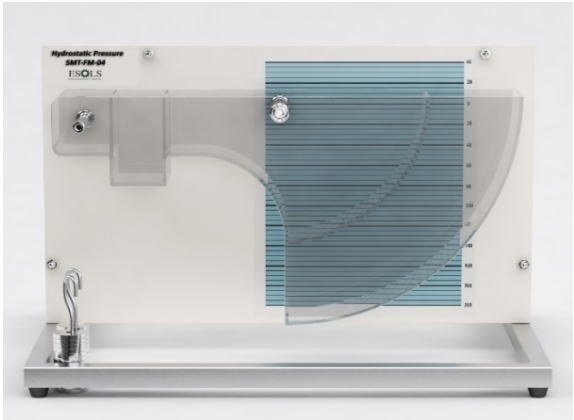
This apparatus consists of a vertical panel that holds a clear plastic quadrant, to which students add water. The quadrant has laser engraved lines to help students keep the plane in a vertical or angled position. The cylindrical sides of the quadrant have their central axis coincidental with the moment measurement axis. The total fluid pressures on these curved surfaces therefore exert no moment about this pivot. Therefore, the moment is only due to the fluid pressure on the plane test surface. Students measure this moment using weights suspended from a level arm. A scale on the panel of the apparatus shows the head of water.

The equipment includes non-toxic water dye colour to help students see the water levels more clearly and a syringe for accurate addition or removal of small amounts of water.

TECHNICAL SPECIFICATIONS

Specifications:

- Simple construction.
- Easy to operate and understand.
- Clear Transparent PMMA Construction.
- Stand-alone apparatus just needs clean water.
- Investigation of the hydrostatic pressure in fluids at rest.
- Tilt able water tank with fill level scale.
- Lever arm with different weights.
- Anti-corrasion structure.
- Have built-in bubble level.
- Have adjustable levelling feet.
- Can be used with Base Water supply ESOLS Hydraulic Bench (SMT-FM-100)



Web: http:// www.esolsengineering.com, Email: esolsengineering@gmail.com

Technical Data:

- Water tank:
  - Transparent PMMA
  - Inclination angle: 0° to 90°.
  - Content: 0 to 1.8L.
  - Scale: 0 to 230mm.
  - Effective area, max. 75x100mm.
- Weights:
  - 2x 0.5N.
  - 4x 1N.
  - 2x 2N.
  - 1x 2.5N.
- LxWxH: 500x450x450 mm.
- Weight: approx. 10kg.

Accessories (Included)

- Water Colouring
- Syringes
- Instruction Manual

Operating Conditions

Laboratory Temperature: 5°C to 40°C

Note:

This product may produce small splashes of water in use, so you must use it at a safe distance from electrical supplies. ESOLS recommends approximately 2.0 m.

Experimental Data:

- Study of the relationship between hydrostatic force and head of water for a fully and partially submerged vertical and inclined plane body.
- Pressure distribution along an effective area in a liquid at rest.
- Determination of the centre of pressure and centre of area.
- Comparison of actual and theoretical hydrostatic force on a fully or partially submerged plane for any given head of water.

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