armfield

F SERIES

SOFTWARE INCLUDED WITH ALL F1-10 BENCH'S AS STANDARD

Hydrostatic Pressure – F1-12-MKII

The Hydrostatic Pressure accessory has been designed to determine the static thrust exerted by a fluid on a submerged surface and enables comparison of the measured magnitude and position of this force with simple theory.

A fabricated quadrant is mounted on a balance arm which pivots on knife edges. The knife edges coincide with the centre of the arc of the quadrant. This means that when the quadrant is immersed, the only force that gives rise to a moment about the knife edges is the hydrostatic force acting on the end face of the quadrant.

The balance arm incorporates a hanger for the weights supplied and an adjustable counterbalance.

This assembly is mounted on top of an acrylic tank which may be levelled by adjusting screwed feet. Correct alignment is indicated on a circular spirit level mounted on the base of the tank.

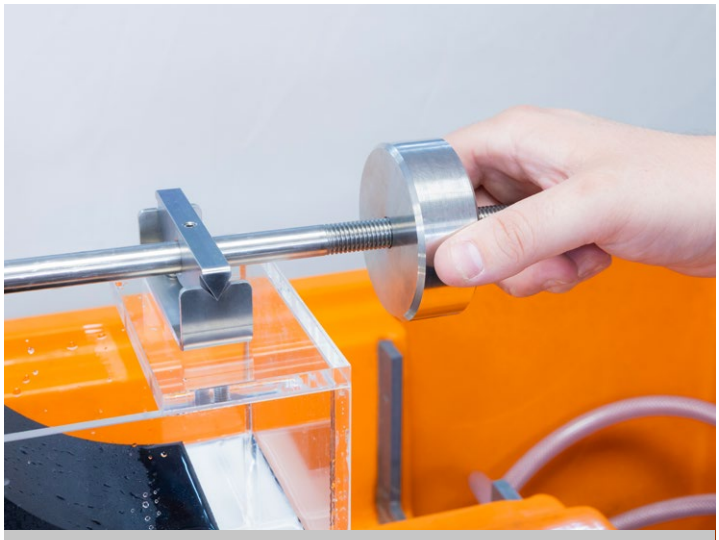
An indicator attached to the side of the tank shows when the balance arm is horizontal. Water is added to the tank via a supplied jug and may be drained through a valve in the side of the tank. The water level is indicated on a scale on the side of the quadrant.

Experimental content

- To determine the hydrostatic thrust acting on a plane surface immersed in water when the surface is partially submerged or fully submerged
- To determine the position of the line of action of the thrust and to compare the position determined by experiment with the theoretical position

Technical specifications

Tank capacity	5.5l
Distance between suspended mass and fulcrum	0.266m
Cross-sectional area of quadrant (toroid)	7.5 x $10^{-3}m^2$
Total depth of completely immersed quadrant	170mm
Height of fulcrum above quadrant	100mm
Overall dimensions	
Length	0.417m
Width	0.230m
Height	0.302m



Ordering codes

- F1-12-MKII

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Issue: 3
URL: http://www.armfield.co.uk/f1
Applications: ChE ME CE IP