armfield

F SERIES: BASIC FLUID MECHANICS

Complete Fluid Mechanics Laboratory – F1

Pitot Tube Demonstrator – F1-33



The pitot tube can be moved across the cross-section of the pipe in order to measure the dynamic head profile.



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Experimental content

- Demonstrating the use of a pitot-static tube to measure the dynamic head produced by water flowing inside a pipe using a pressurised water manometer to measure the difference between the static head and the total head
- Demonstrating the relationship between static head, total head and ► dynamic head
- Demonstrating how a pitot-static tube can be used to determine the ► velocity of a fluid
- Demonstrating how the dynamic head of a fluid flowing inside a pipe ► varies with radius due to the development of a boundary layer at the wall of the pipe
- Demonstrating how the dynamic head profile varies at the entrance ► to a pipe downstream of a 90 degree bend with undeveloped flow

Description

The pitot tube can be moved across the cross-section of the pipe in order to measure the dynamic head profile.

The position of the measuring tip relative to the wall of the pipe can be read on a scale.

The pitot tube is connected to a pressurised water manometer to measure the differential head across the pitot static tube.

UK office - email: sales@armfield.co.uk tel: +44 (0) 1425 478781 (for ROW) USA office - email: info@armfield.inc tel: +1 (609) 208-2800 (USA only)

F1-33 Pitot tube mounting base

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Inside diameter of test pipe	27mm			
Pitot-static tube outside diameter	6mm			
Pitot-static tube inside diameter	3.2mm			
Scale length of manometer tubes	500mm			
Cross section of manometer tubes	5.6mm diameter			
Range of pitot-static tube traverse	21mm with 3mm scale increments			
Requires Hydraulics Bench Service unit F1-10/F1-10-2				
Overall dimensions				
Length	1.00m			
Width	0.35m			
Height	0.52m			
Ordering codes				
► F1-33				

Issue: 2 Applica				ations
URL: http://www.armfield.co.uk/f1	ChE	ME	CE	IP
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