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Product Name :
Bernoulli Apparatus

Product Code :
LBNY-0005-1610008



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Description :

The apparatus is designed to be used on the working surface of the basic Air Flow Bench and connected by convoluted hose to the 70 mm dia. blown experiment duct on the fan outlet. However, it may be used as a standalone unit by connecting it to any suitable fan with an air supply of approximately 500 litre/sec. at 600 Pascals and by utilising appropriate manometers. A pitot static tube is fitted at the outlet end of the venturi duct and this can be traversed longitudinally along the centre line to enable its measuring tip to be positioned at various points. The apparatus comprises an acrylic duct with the upper and lower surfaces in opaque material and the sides clear. The whole unit forms a 60 x 50 mm rectangular cross section converging to a 20 x 50 mm throat area then diverging back to 60 x 50 mm section at the exit plane. Measured positions are obtained against two scales positioned on opposite sides of the duct to avoid parallax errors. A plot of typical results which can be obtained is shown in the graph. The scales are marked in millimetres but are reversible to show imperial measurements.

Introduction:

In carrying out the experiment the student is able to verify Bernoulli's Theorem which, in its wider form, states that: At any point in a tube through which a fluid is flowing, the sum of pressure energy, potential energy and kinetic energy is constant.

Bernoulli's Apparatus is designed to demonstrate visually the interchange between static and dynamic pressure as air flows through a duct of variable cross sectional area.

Technical Specification :

Experimental Capability:

Static pressure subtraction from the total pressure

Graphs plotting of total pressure, static pressure and velocity head against duct position
Multipoint pressure analysis to obtain the Beornullis effect Static pressure points.



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