

The Fluid Science range is an innovative suite of products designed to enable students to gain an understanding of the fundamentals of Fluid Mechanics and Thermo Fluids by the process of learning via hands-on experimentation.

The high precision elements are supplied as modular tray-based systems which operate in conjunction with the Fluid Science service unit, multifunctional work panel and instrumentation enabling the student to conduct their own individual or group experiments.

The experiments are supplied with a highly visual user-friendly operational guide, allowing the students to understand the theory of the subject by the application of practical experimentation.

The Fluid Science U-Tube Manometer tray includes experiments to compare the pressure created with varying flow rates against atmospheric pressure for both ends of a straight pipe.

COST EFFECTIVE MOBILE TEACHING SYSTEM DESIGNED TO INTRODUCE THE BASICS OF MANOMETRY

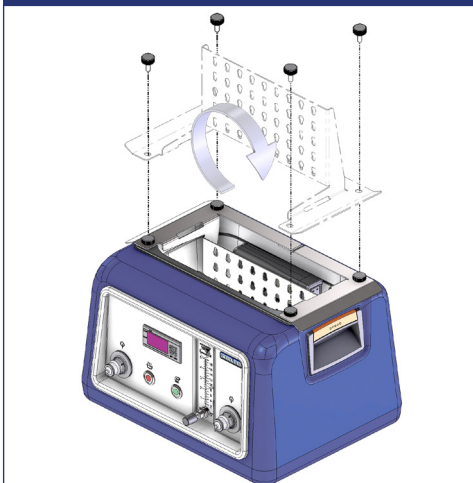
U Tube Manometer Tray FS-2.2



Back plates is easily stored inside the unit

Configurable as hot or cold water supply

Supplied with digital manometer and thermometer



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Issue: 1

URL: <http://www.armfield.co.uk/fs>

Applications

ME ChE CE IP

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Description

The Fluid Science U-Tube Manometer tray includes experiments to compare the pressure created with varying flow rates against atmospheric pressure for both ends of a straight pipe. It also demonstrates how the differential pressure changes as flow rate changes across a straight pipe.

Requirements

Scale



Electrical supply:

- ▶ 100-240V/1 Phase, 50-60Hz
- ▶ Level surface
- ▶ FS experiment trays

Initial fill of 5ltrs water. Drain to empty water away once experiment is complete. During use, water supply or drainage are not required.

Technical specifications

- ▶ Screen printed scale for measuring water height in manometer tubes
- ▶ Tube structure acrylic
- ▶ Plain vertical tube and inclined tube: 6mm ID
- ▶ Stepped tube goes: 6mm ID to 14mm ID to 6mm ID
- ▶ Angle of inclination: 15° from vertical



FS-4.1: Fluidised bed

FS-2.1: Manometer - Inclined

FS-3.3: Cross flow

FS-3.4: Heat Exchanger - Plate

FS-3.1: Heat Exchanger - Shell and Tube

FS-3.2: Heat Exchanger - Tubular

Overall dimensions

Dimensions tray

Length	0.430m
Width	0.312m
Height	0.080m

Dimensions set up (excluding power supply)

Length	0.250m
Width	0.056m
Height	0.353m

Packed and crated shipping specifications

Net weight	2.0Kg
Gross weight	TBC

Experimental content

- ▶ To demonstrate the behaviour of liquid at rest – a liquid with a free surface finds its own level
- ▶ To show that the free surface of a liquid is horizontal and independent of the cross section of the container
- ▶ Comparison of pressure created with varying flow rates against atmospheric pressure for both ends of a straight pipe
- ▶ Differential pressure changes as flow rate changes across a straight pipe

Features

- ▶ Fully mobile solution
- ▶ Each service unit can be used as either a hot or cold-water supply
- ▶ Quick connect couplings for easy connection to experiment modules, self-sealing on supply unit to minimise water loss
- ▶ Digital manometer and thermometer provided with service unit
- ▶ Low voltage within the supply unit to protect users

Benefits

- ▶ Applied student learning via experimentation
- ▶ Common service unit can be used for either hot or cold-water supply
- ▶ Toolless assembly
- ▶ Designed to be highly visual and simple to use
- ▶ Quick setup
- ▶ Suitable for both classroom, laboratory and mobile environments

Related products

Fluid Mechanics Range

- ▶ FS-1.1 Flow Measurement
- ▶ FS-1.2 Energy Losses - Straight pipes
- ▶ FS-1.3 Energy Losses - Bends
- ▶ FS-2.1 Manometer - Inclined
- ▶ FS-3.1 Heat Exchanger - Shell and tube
- ▶ FS-3.2 Heat Exchanger - Tubular
- ▶ FS-3.3 Heat Exchanger - Cross flow
- ▶ FS-3.4 Heat Exchanger - Plate
- ▶ FS-4.1 Fluidised bed

Essential Accessories / Equipment

FS-SU



Ordering codes

FS-SU

FS-2.2

Knowledge base

- > 28 years expertise in research & development technology
- > 50 years providing engaging engineering teaching equipment

Benefit from our experience, just call or email to discuss your laboratory needs, latest project or application.

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