

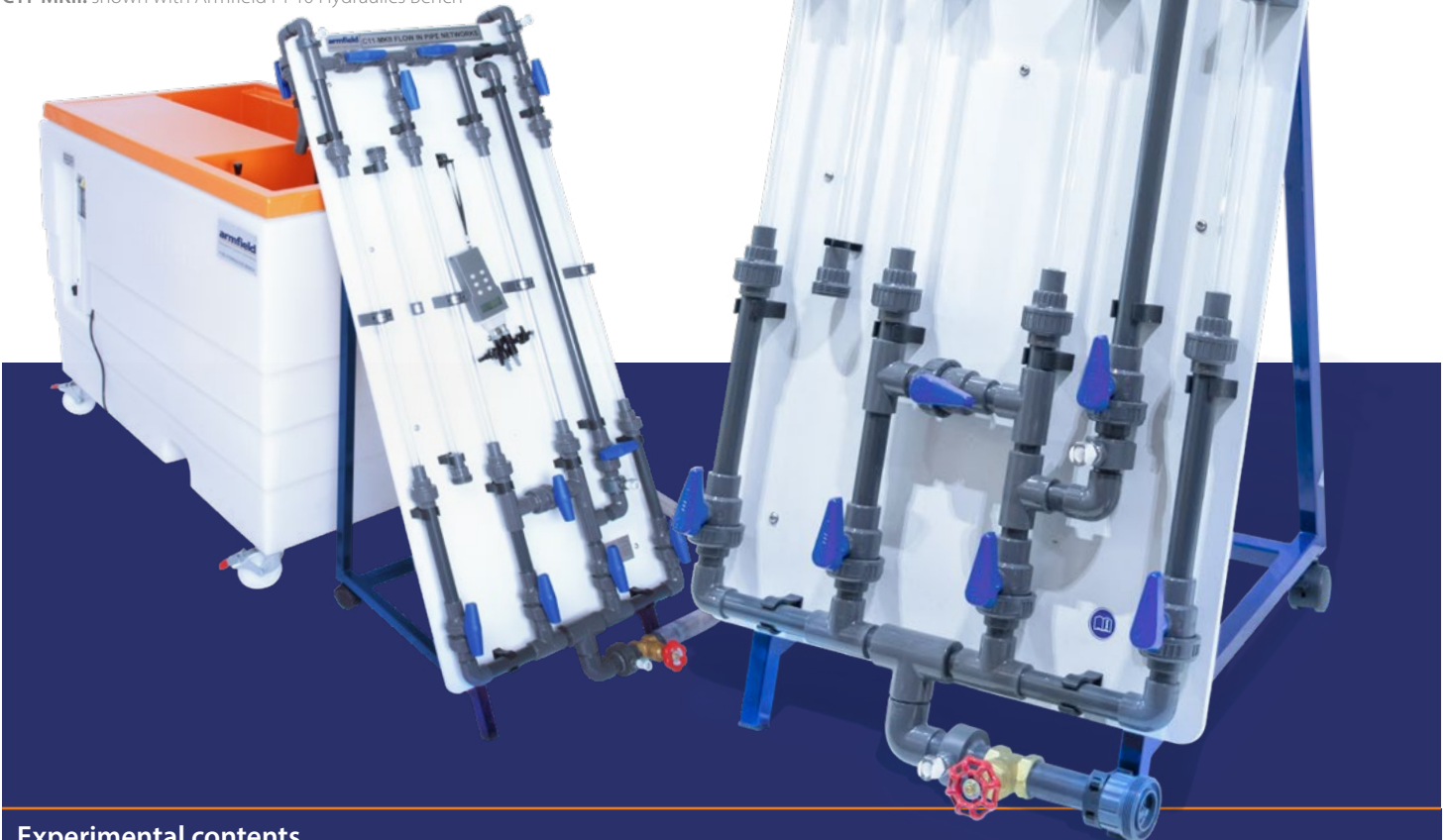
The Pipe Networks is a free-standing accessory to the F1-10 Hydraulics Bench.

Demonstrates the characteristics of flow through different arrangements of pipes and the effect of changes in pipe diameter on the flow through a particular network.



Head loss versus discharge for different sizes of pipes

C11-MKII: shown with Armfield F1-10 Hydraulics Bench



**Experimental contents**

- ▶ Measurement of head loss versus discharge for different sizes of pipes
- ▶ Characteristics of flow through interconnected pipes of different sizes
- ▶ Characteristics of flow through parallel pipe networks
- ▶ Characteristics of flow through series pipe networks
- ▶ Application of doubling pipes on existing networks to increase flow rate
- ▶ Characteristics of flow around a ring main and the effect of changes in supplies and off-takes

## Description

The permanent arrangement of PVC pipes and fittings is mounted on a free-standing support frame designed to stand alongside an F1-10 Hydraulics Bench. Connection to the F1-10 is via a reinforced flexible tube and threaded union with 'O' ring seal, enabling connection to the F1-10 without the use of tools.

Isolating valves enable a wide range of different series, parallel and mixed pipe configurations to be created without draining the system. Flow into the network and flow out from the network at each outlet can be individually varied to change the characteristics of the system.

All clear acrylic test pipes are installed using threaded unions with 'O' ring seals that allow the pipes with different diameters to be repositioned without the use of tools.

Self-sealing quick release fittings at strategic points in the network allow rapid connection of the digital hand-held pressure meter, allowing appropriate differential pressures to be measured.

Flow leaving any of the outlets in the network is measured using the volumetric facility incorporated on the F1-10 Hydraulics Bench.

## Requirements

## Scale



- ▶ Electrical supply: The F1-10 requires an electrical supply, please refer to the F1 data sheet for details.
- ▶ F1-10-A: 220-240V / 1ph / 50Hz / 10A
- ▶ F1-10-B: 110-120V / 1ph / 60Hz / 10A
- ▶ F1-10-G: 220V / 1ph / 60Hz / 10A
- ▶ F1-10-2-A: 220-240V / 1ph / 50Hz / 10A
- ▶ F1-10-2-B: 110-120V / 1ph / 60Hz / 10A
- ▶ F1-10-2-G: 220V / 1ph / 60Hz / 10A

## Technical specifications

Length of pipes	0.70m
Inside diameter of pipes	14mm (1x)
	10mm (1x)
	9mm (2x)
	6mm (1x)
Nominal inside diameter of manifold	22.4mm
Differential pressure measurement	Digital pressure meter (alternative units selectable)
	<b>Range:</b> 0 - 2000cmH <sub>2</sub> O (0 - 2000 mBar)
	<b>Resolution:</b> 1cm H <sub>2</sub> O (1 mBar)

## Overall dimensions

Length	0.785m
Width	0.656m
Height	1.380m
<b>Packed and crated shipping specifications C11-MKII-10</b>	
Volume	1.4m <sup>3</sup>
Gross weight	240Kg

## Complementary products

- C1-MKII: Compressible Flow Unit
- C3-MKII: Multipump Test Rig
- C4-MKII: Multi-purpose Flume
- C6-MKII: Fluid Friction Measurements
- C7-MKII: Pipe Surge and Water Hammer
- C9: Flow Meter Demonstration Unit
- C10: Laminar Flow Table
- F1-18: Energy Losses in Pipes
- F1-21: Flow Meter Demonstration
- F1-22: Energy Losses in Bends and Fittings

## Ordering specification

- ▶ Specifically designed to allow the setting up of a wide range of different pipe arrays (networks)
- ▶ Pipe network mounted on free-standing support frame for use alongside an F1-10 Hydraulics Bench
- ▶ Clear acrylic test pipes are all 0.70m long with inside diameters of 1x 6mm, 2x 9mm, 1x 10mm, 1x 14mm
- ▶ Includes hand-held electronic pressure meter with self-sealing quick-release connections to the pipe network
- ▶ Flows into and out from the appropriate network which can be varied individually



## Ordering codes

C11-MKII-10

Armfield standard warranty applies with this product

## 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.

An ISO 9001:2015 Company



[armfield.co.uk](http://armfield.co.uk)

## Aftercare

Installation  
Commissioning  
Training  
Service and maintenance  
Support: [armfieldassist.com](http://armfieldassist.com)