PIPE NETWORK APPARATUS – C11

MEASUREMENT CAPABILITIES

> *calibration of system components - head loss versus discharge*

> *characteristics of parallel pipe networks*

> *characteristics of series pipe networks*

> *applications of doubling pipes*

> *characteristics of ring main*

Pipe Network Apparatus - C11 shown complete with manometers H12-2 and H12-3 and stand supplied as standard.

A common problem in pipeline hydraulics is the determination of the pressures and flows in a system of interconnected pipes, often known as a 'pipe network'. Such networks range from a single pipe to complex systems involving many pipes of different lengths and diameters, incorporating distributed off-takes and supply points. A town water supply is a good example of a very complex network. A good understanding of the behaviour of pipe networks and the ability to predict flow and pressure distributions are essential in the design of systems for the transportation of fluids.

The Armfield Pipe Network Apparatus is specifically designed to allow the setting up of a wide range of pipe arrays and the measurement of the flows and pressures using water as the fluid.

DESCRIPTION

The bench comprises upper and lower plastic mouldings designed for durability and freedom from maintenance. The lower moulding incorporates a water storage sump tank from which a self-priming pump delivers water to the system.

The upper moulding incorporates a volumetric measuring tank which is stepped to allow the measurement of high and low flow rates, the water level being indicated by a remote sight tube and scale on the bench front. A stilling baffle reduces disturbance in the volumetric tank and a dump valve in the base returns the measured water to the sump tank for recycling.

The top of the bench is fitted with a metal supporting frame for the pipe networks and the inlet manifold. Five pipe lengths in three diameters are supplied.

A wide range of series, parallel and mixed configurations is possible using the interconnecting fittings supplied. Fittings are readily assembled.

Pressure differences between points in the system are measured with the U tube manometers - mercury for the higher differences and water for the lower. A digital option exists replacing the mercury manometer.

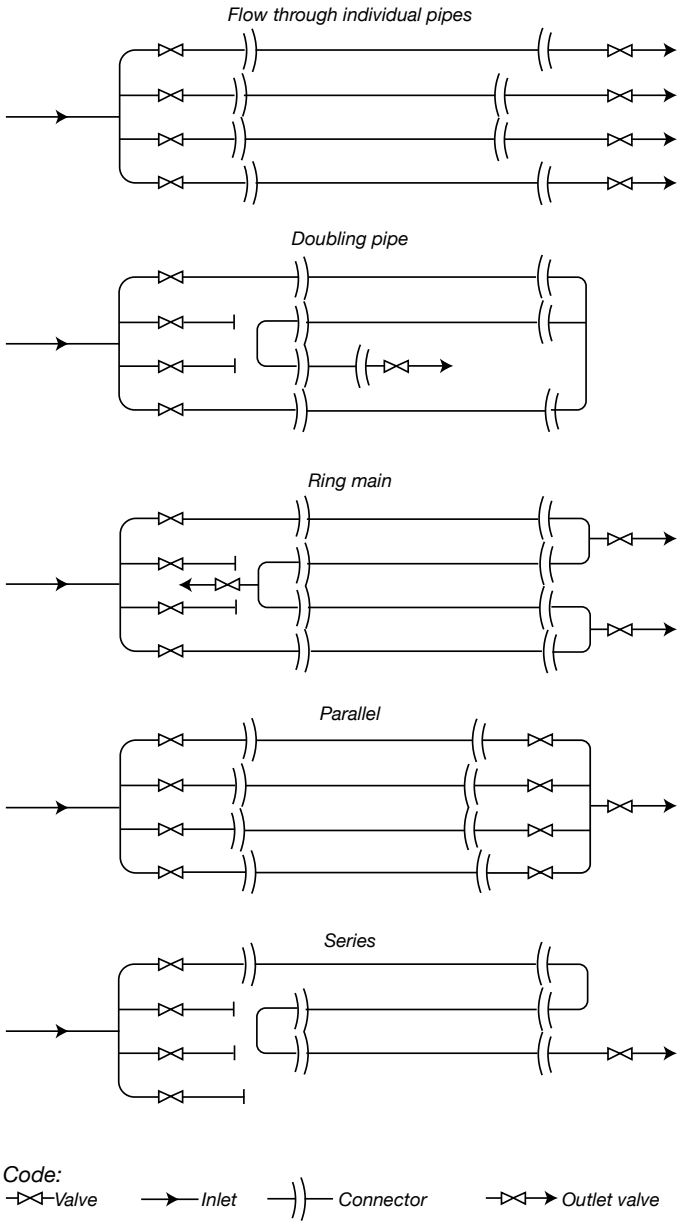
Self sealing pressure tapping points are provided in the fittings to which connection is made via probes and flexible tubes.

The interchangeable lengths of pipe and interconnecting fittings are stored on a board attached to one end of the bench.

TECHNICAL DETAILS

Test pipes:	*1 off 22.5mm I/D* *2 off 17.7mm I/D* *2 off 13.0mm I/D* *Common length = 0.7m*
Pump:	*Submersible type* *Power 0.55kW, 2800rpm*
Volumetric range:	*0-6L low flow* *0-40L high flow*
Manometers:	*1m pressurised water* *1m mercury* *(stand supplied)* *(digital option available)*
Manometer connections:	*Remote probes with air bleed via vented ball valve*
Manifolds:	*Various with self-sealing pressure tappings where applicable*

SCHEMATIC DIAGRAMS OF TYPICAL PIPE NETWORK ARRANGEMENTS



Manometers H12-2 and H12-3 shown with stand (supplied as standard).

OPTIONAL ACCESSORIES

Consequent to its hazardous nature many technicians prefer not to use mercury or its use may be prohibited in the laboratory. With this in mind Armfield offers a hand held, portable, battery operated pressure meter (H12-8) which is capable of measuring pressures of air or water from 0-2000mBar (0-1500mm Hg).

Optional hand held pressure meter H12-8

A full description and ordering specification is provided in data sheet:

H SERIES:
H12: Manometers and Pressure Meters.

RECOMMENDED INSTRUMENTS AND ACCESSORIES

Stopwatch

REQUIREMENTS

Electrical supply:
C11-A: 220-240v/1ph/50Hz
C11-B: 120v/1ph/60Hz
C11-G: 220v/1ph/60Hz

OVERALL DIMENSIONS

Length:	*1.30m*
Width:	*0.78m*
Height:	*2.00m*

SHIPPING SPECIFICATION

Volume	*2m³*
Gross weight	*350kg*

ORDERING SPECIFICATION

- *A pipe network specifically designed to allow the setting up of a wide range of pipe arrays and the measurement of the flows and pressures using water as the fluid. A self-contained water supply and volumetric measurement module provides the base for pipe assemblies.*
- *Test pipes:*
  off 22.5mm ID;
  2 off 17.5mm ID;
  2 off 13.0mm ID;
  common length 0.7m.
- *Circulating pump: 0.55kW (0.75 HP) centrifugal.*
- *Differential pressure measurements:*
  1m pressurised water manometer;
  1m mercury manometer (digital option available).
- *Volumetric flow measurement range: 0-6 litres and 0-40 litres with level indication on remote sight gauge.*

TOXIC MATERIALS
Due to international restrictions limiting the transport of toxic materials, we do not include mercury in our supply.

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