

### Orifice and Free Jet Flow - F1-17

A constant head tank is maintained with water supplied from the hydraulics bench.

The orifice (3mm or 6mm) is installed at the base of this tank ensuring a flush inside surface.

The jet trajectory is mapped using 8-point gauges to determine the discharge coefficient.



F1-17: Free Jet Flow Orifice

This equipment permits calibration of two orifices of differing diameter and enables the trajectory of the jet to be plotted.

#### Experimental content

- ▶ Establishing the coefficient of velocity for a small orifice
- ▶ Finding the coefficient of discharge for a small orifice with flow under constant head and flow under varying head
- ▶ Comparing the measured trajectory of a jet with that predicted by simple theory of mechanics
- ▶ Effect of tank level on jet outlet velocity

#### Description

The Orifice & Free Jet Flow accessory incorporates a constant head tank fed with water from the hydraulics bench. The orifice is installed at the base of this tank by means of a special wall fitting which provides a flush inside surface.

The head is maintained at a constant value by an adjustable overflow pipe and is indicated by a level scale. A series of adjustable probes enable the path followed by the jet to be ascertained.

Adjustable feet permit levelling.

#### Technical specifications

|                       |                 |
|-----------------------|-----------------|
| Orifice diameters     | 3.0mm and 6.0mm |
| Jet trajectory probes | 8               |
| Max constant head     | 410mm           |

Requires hydraulics bench service unit F1-10/F1-10-2

#### Overall dimensions

|        |       |
|--------|-------|
| Length | 0.67m |
| Width  | 0.33m |
| Height | 0.60m |

#### Ordering codes

- ▶ F1-17

UK office - email: [sales@armfield.co.uk](mailto:sales@armfield.co.uk) tel: +44 (0) 1425 478781 (for ROW)

USA office - email: [info@armfield.inc](mailto:info@armfield.inc) tel: +1 (609) 208-2800 (USA only)

Service and maintenance support: [armfieldassist.com](http://armfieldassist.com)

Issue: 2

URL: <http://www.armfield.co.uk/f1>

Applications

ChE ME CE IP

We reserve the right to amend these specifications without prior notice. E&OE © 2020 Armfield Ltd. All Rights Reserved