

**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
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