

**Pitot Tube Demonstrator – F1-33**

The pitot tube can be moved across the cross-section of the pipe in order to measure the dynamic head profile.



F1-33 Pitot tube mounting base

**Experimental content**

- ▶ Demonstrating the use of a pitot-static tube to measure the dynamic head produced by water flowing inside a pipe using a pressurised water manometer to measure the difference between the static head and the total head
- ▶ Demonstrating the relationship between static head, total head and dynamic head
- ▶ Demonstrating how a pitot-static tube can be used to determine the velocity of a fluid
- ▶ Demonstrating how the dynamic head of a fluid flowing inside a pipe varies with radius due to the development of a boundary layer at the wall of the pipe
- ▶ Demonstrating how the dynamic head profile varies at the entrance to a pipe downstream of a 90 degree bend with undeveloped flow

**Description**

The pitot tube can be moved across the cross-section of the pipe in order to measure the dynamic head profile.  
The position of the measuring tip relative to the wall of the pipe can be read on a scale.  
The pitot tube is connected to a pressurised water manometer to measure the differential head across the pitot static tube.

**Technical specifications**

|                                     |                                |
|-------------------------------------|--------------------------------|
| Inside diameter of test pipe        | 27mm                           |
| Pitot-static tube outside diameter  | 6mm                            |
| Pitot-static tube inside diameter   | 3.2mm                          |
| Scale length of manometer tubes     | 500mm                          |
| Cross section of manometer tubes    | 5.6mm diameter                 |
| Range of pitot-static tube traverse | 21mm with 3mm scale increments |

Requires Hydraulics Bench Service unit F1-10/F1-10-2

**Overall dimensions**

|        |       |
|--------|-------|
| Length | 1.00m |
| Width  | 0.35m |
| Height | 0.52m |

**Ordering codes**

- ▶ F1-33