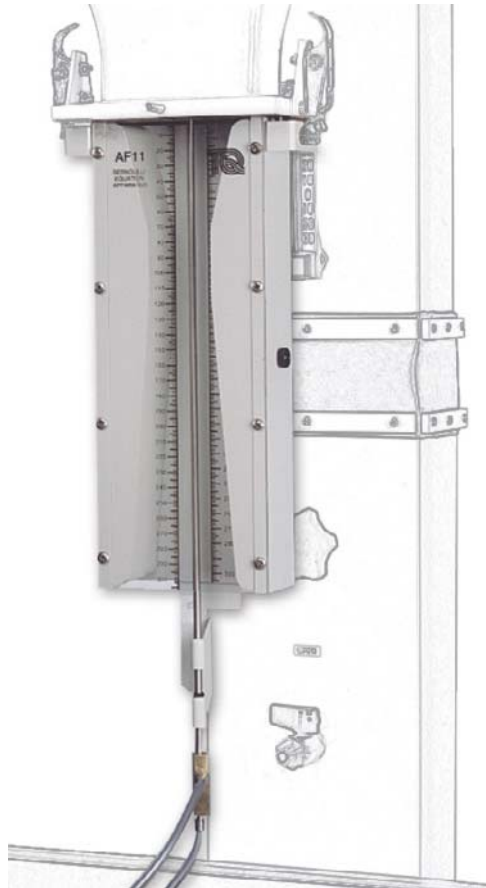




AF11

## BERNOULLI'S EQUATION

Allows students to measure the pressure distribution in a convergent-divergent duct



- One of a series of eight experiment modules that fits to the Modular Air Flow Bench (AF10)
- Quickly and simply illustrates Bernoulli's equation for air, and its limitations due to boundary layer effects
- Toggle clamp connections to the Modular Air Flow Bench contraction for quick and easy fitment
- Quick-release couplings for rapid and reliable pressure connections to the AF10a Manometer
- Transparent front to the duct so that the profile of the test nozzle and the position of the Pitot static tube can be seen clearly

# BERNOULLI'S EQUATION

## DESCRIPTION

This experiment module illustrates Bernoulli's equation as applied to a convergent-divergent duct. A Pitot static tube measures both the total pressure and the static pressure independently. The tube traverses along the axis of the duct and connects to the AF10a Manometer (ancillary) via flexible tubes fitted with quick-release couplings.

A clear scale printed on the duct helps to show the probe position. Students confirm the constant total pressure while observing the rise and fall of the static pressure. They compare the velocity-area ratio as calculated from Bernoulli's equation to the experimental results.

## STANDARD FEATURES

- Supplied with a comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives

## ESSENTIAL BASE UNIT

- Modular Air Flow Bench (AF10)

## ESSENTIAL ANCILLARIES

- Multitube Manometer (AF10a)

## LEARNING OUTCOMES

- Confirmation of Bernoulli's equation
- The use of a Pitot static tube and water manometer

## SPECIFICATIONS

### PACKED DIMENSIONS AND WEIGHT:

0.2 m<sup>3</sup>; 10 kg  
100 mm x 50 mm transparent duct

## OPERATING CONDITIONS

### OPERATING ENVIRONMENT:

Laboratory

### STORAGE TEMPERATURE RANGE:

-25°C to +55°C (when packed for transport)

### OPERATING TEMPERATURE RANGE:

+5°C to +40°C

### OPERATING RELATIVE HUMIDITY RANGE:

80% at temperatures < 31°C decreasing linearly to 50% at 40°C