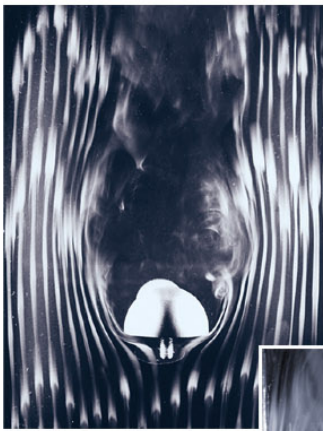




## ≡ FLOW VISUALISATION WIND TUNNEL

### AF80

A vertical suction-type wind tunnel that uses smoke trails to demonstrate air flow around differently shaped models, for understanding boundary layers, separation and rotational flow.



SMOKE TRAILS AROUND  
A HEMISPHERE MODEL  
(INCLUDED)



SMOKE TRAILS AROUND THE  
HEAT EXCHANGER MODEL FROM  
THE AF80B SET



### KEY FEATURES

- High quality, vertical wind tunnel that helps students understand air flow around different shaped objects
- Ideal for small group experiments or classroom demonstrations
- Includes smoke generator and lighting to show flow clearly
- Variable air speed
- Includes a set of models
- Additional model set available separately



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AF80

## DESCRIPTION

A vertical, suction-type wind tunnel with smoke visualisation. Allows demonstrations and student investigations into the flow of air around a wide variety of differently shaped models.

Ideal for small group experiments or classroom demonstrations, the apparatus is floor standing. A variable-speed fan mounted on top of the wind tunnel produces the air flow through the working section. Air flow is vertically upwards.

A smoke generator connects to a comb mounted in the wind tunnel below the working section. Students can move the comb from side to side to aid investigations into the aerodynamic properties of a test model. Smoke is produced by the vaporisation of a high-quality food-grade oil. A filter helps provide uniform air flow. The smoke is non toxic.

The front wall of the working section of the wind tunnel is transparent and removable. This enables users to easily and quickly attach the optional models to the back of the working section. It also allows a clear view of the smoke trails. The wind tunnel includes a set of models, with an additional set available separately (AF80b). Lamps illuminate the working section from both sides to improve the visibility of the smoke.

The wind tunnel is held on a metal frame fitted with castors for mobility. A control unit on the frame contains the controls for the fan speed.

## STANDARD FEATURES

- Supplied with comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives
- An ISO 9001 certified company

## RECOMMENDED ANCILLARIES

Additional Model Set (AF80b), including:

- Bend
- Cascade corner
- Plain corner
- Heat exchanger tube bank

## LEARNING OUTCOMES

- Boundary layers
- Separation
- Rotational flow



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## ESSENTIAL SERVICES

### ELECTRICAL SUPPLY (SPECIFY ON ORDER):

Single Phase, 230 VAC, 50/60 Hz, 6A  
or:

Single Phase, 110 VAC, 60 Hz, 10A

### SITING:

Needs a floor space of 600 mm x 700 mm.

The apparatus is 1950 mm high. It must be used in a well-ventilated room with at least 1 m clearance from the top of the apparatus.

### EXHAUST

The apparatus needs to be sited near a suitable 150mm (6") diameter opening to atmosphere or laboratory exhaust extractor to remove the smoke.

### COMPRESSED CARBON DIOXIDE:

The smoke generator has a gas bottle, which is shipped empty to obey transport laws.

The gas bottle must be filled with compressed carbon dioxide before using the wind tunnel.

## OPERATING CONDITIONS

### OPERATING ENVIRONMENT:

Well ventilated 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

## SPECIFICATIONS

TecQuipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

### NETT DIMENSIONS AND WEIGHT:

700 mm x 600 mm x 1950 mm

Main unit 34 kg, smoke generator 17 kg

Total net weight 51 kg

### PACKED DIMENSIONS AND WEIGHT:

1.03 m<sup>3</sup> and 159 kg

### WORKING SECTION:

Width 180 mm x depth 100 mm x height 240 mm

### AIR VELOCITY:

0 to 5 m.s<sup>-1</sup>

### COMB:

23 smoke filaments with 7 mm spacing

### SOUND LEVELS:

Lower than 70 dB(A)

## STANDARD MODEL SET (INCLUDED)

- Aerofoil
- Circular cylinder
- Slotted orifice
- Disc
- Circular orifice
- Two hemispheres (can make a complete sphere)
- Wing tip
- ISA nozzle
- Model car and van