



AF1125

BENCH-TOP SUBSONIC WIND TUNNEL

Open-circuit subsonic wind tunnel for a wide range of investigations into aerodynamics



KEY FEATURES

- Selection of models included for studies of drag and pressure profiles
- Saves time and money compared to full-scale wind-tunnels or airborne laboratories
- Two-component balance with digital display for lift and drag measurement
- Compact, open-circuit suction design
- Transparent Working Section for a full view of the test area
- Electronic controller for variable air velocity

LEARNING OUTCOMES

A wide variety of subsonic aerodynamics experiments, including:

- Flow past bluff and streamlined bodies
- Pressure distribution around a cylinder
- Lift and drag forces

KEY SPECIFICATIONS

- 35 m.s⁻¹ air velocity
- Two-component balance included
- Selection of models included

BENCH-TOP SUBSONIC WIND TUNNEL

DESCRIPTION

The Bench-Top Wind Tunnel offers a complete system ready for aerodynamic experimentation. A range of models and all necessary instrumentation are included to provide accurate results, suitable for undergraduate study and research projects.

Pitot tubes attach to the working section and connect to a liquid manometer so students can analyse pressure at different positions and calculate air speed.

TecEquipment supplies a two-component balance with the Wind Tunnel. It uses an electronic force sensor to measure the lift or drag forces on models fitted to the Working Section. It has a clear digital display giving a direct reading of the measured force value, for real-time data collection.

A bench-mounting metal frame holds all parts of the wind tunnel in one compact unit.

Air enters the tunnel through an aerodynamically designed effuser (inlet cone) and honeycomb flow straightener that accelerates the air linearly. It then enters the working section and passes through a grille before moving through a diffuser and then to a variable-speed fan. The grille protects the fan from damage by loose objects. The air leaves the fan, passes up through a silencer unit and then back out to atmosphere.

A controller with an electronic drive allows the user to vary the fan speed (and air velocity) accurately from zero to full speed. The electronic drive keeps the chosen speed constant.

The working section of the tunnel has a square section of removable transparent sides with fixing points to support the wind tunnel models.

STANDARD FEATURES

- Supplied with a comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives
- ISO9001 certified manufacturer

EXPERIMENT MODELS INCLUDED

- Drag models
- Cylinder with pressure tapping
- NACA 0020 Aerofoil

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

DETAILED SPECIFICATION

TecEquipment 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 (ASSEMBLED):

1850 mm long x 560 mm wide x 1040 mm high and 80 kg

WORKING SECTION:

125 mm x 125 mm

MAXIMUM AIR VELOCITY:

35 m.s⁻¹