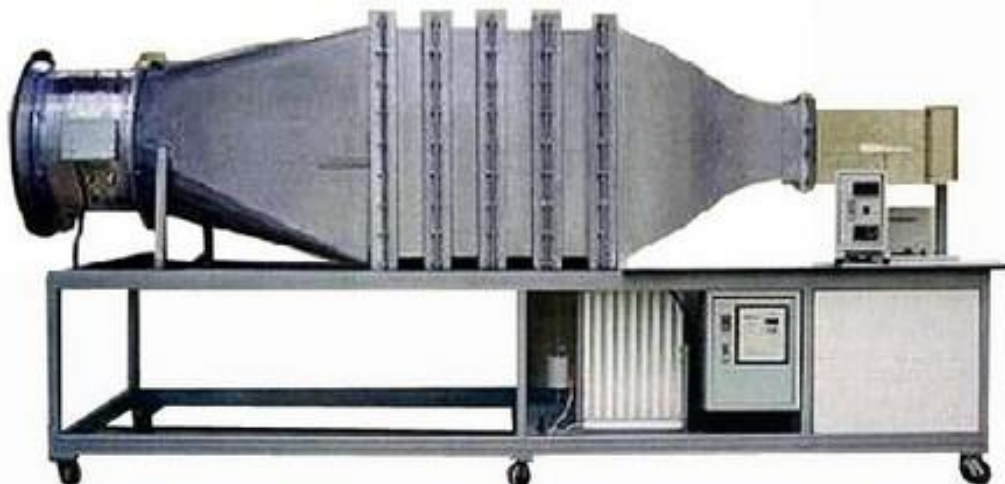


MP 330UH SUBSONIC WIND TUNNEL, Upstream Fan, High Speed



GENERAL DESCRIPTION

The wind tunnel is an open circuit upstream fan type, designed for studying the subsonic aerodynamics. It is to be used with optional accessories and models below.

A dual axial flow fans delivers air through a diffuser, aluminum tube flow straightener, three wire mesh screens and a high contraction ratio section to ensure uniform velocity across the transparent test section. The diffuser and contraction sections have a high quality internal finish to minimize the boundary effects. The fan impeller blades are of an aerofoil design cast aluminum to ensure maximum aerodynamic efficiency and minimum turbulence. The fan speed is adjustable by an inverter.

Four equally spaced static pressure taps are connected to a manifold to minimize effects from a model and air speed is indicated by an inclined manometer and a calibration graph. Models are mounted on two component load cell support with digital display for measurement of drag and lift. Model holder can be rotated to allow quick change on the angle of incidence, this angle is indicated on an angular scale.

The wind tunnel is mounted on a steel table on wheels.

Instruction manual is also included.

EXPERIMENT CAPABILITIES

- Pressure and velocity measurement.
- Estimation of drag coefficients of various bodies, e.g. sphere, hemisphere, disc, plate, streamlined shape etc.
- Estimation of drag lift and pitching coefficients of an aerofoil.
- Pressure distribution around an aerofoil or a cylinder.
- Effects of instability of a "flutter Wing".
- Investigation of boundary layer at a flat plate by measuring total head distribution.
- Stream lines visualization using a smoke generator.
- Wakes behind models.

TECHNICAL DATA

- Fan:
 - Diameter : 630 mm
 - Impeller : Single stage, aerofoil aluminum blade
- Contraction area ratio : 7:1
- Test Section : 300 mm x 300 mm x 600 mm long, transparent on three sides
- Maximum air velocity : Over 60 m/s
- Measuring instruments
 - Water manometer : Twin type
 - Wind velocity : Contraction section differential pressure with inclined water manometer and velocity calibration graph (to be used with inclined water manometer above)
 - Sensors with digital display
 - Lift and drag : Two component balance with model holder for measurement of lift and drag
- Software for data display and analysis by computer (separately supplied).
- Power supply : 380 V, 3 Ph, 50 Hz. Other power supply is available on request.

OPTIONAL ACCESSORIES

- MP 100-011M Multi port differential pressure digital display, 0-450 mm water instead of inclined water manometer.
- MP 330-003A Three component balance with digital display and model holder for measurement of lift, drag, and pitching instead of two component balance.

OPTIONAL MEASURING ACCESSORIES

- MP 330-005 Velocity (differential pressure) digital display.
- MP 330-110 Anemometer for velocity measurement, telescopic handle
- MP 330-111 Angle digital display for model angular position.
- MP 330-114 Multitube inclined water manometer
- MP 330-114D 16 points differential pressure sensor with sequential readings (To be used with computer)
- MP 330-121 Pitot-static probe, stainless steel
- MP 330-122 Yaw probe, three tube type with clamp
- MP 330-125 Wake survey rake
- MP 330-130 Smoke generator set
- Additional smoke fluid

OPTIONAL MODELS FOR LIFT AND DRAG

Models For A Study Of Lift, Drag And Pitching Include:

- MP 330-011 Sphere, plastics
- MP 330-012 Hemisphere, plastics
- MP 330-013 Circular disc, plastics
- MP 330-014 Circular ring, plastics
- MP 330-015 Square plate, plastics
- MP 330-016 Vane, plastics
- MP 330-017 Cylinder, plastics
- MP 330-018 Streamlined shape, plastics
- MP 330-019 Aerofoil, aluminium
- MP 330-019L Aerofoil, long, aluminium
- MP 330-025 Model air plane, plastics
- MP 330-026 Model automobile, plastics
- MP 330-030 Aerofoil with slot and flap, aluminium
- MP 330-030L Aerofoil with slot and flap, long

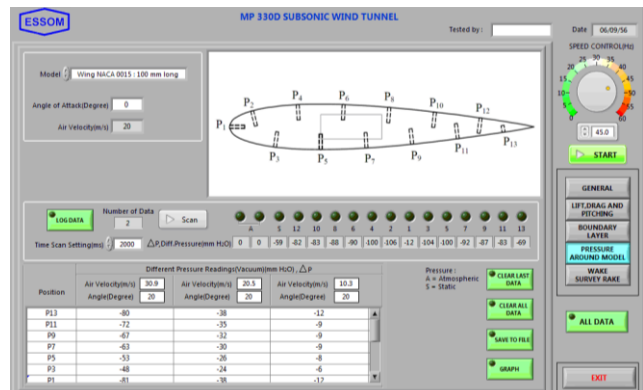
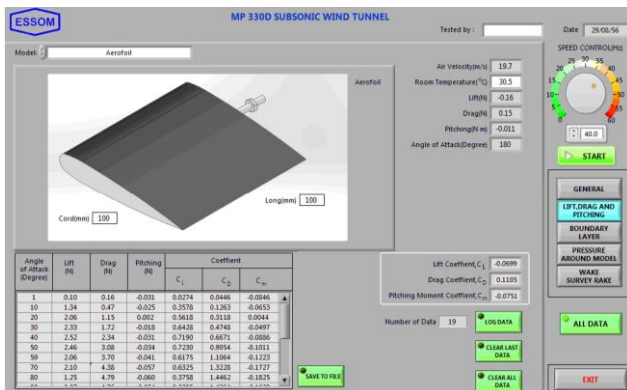
OPTIONAL MODELS AND ACCESSORIES FOR INDIVIDUAL STUDY

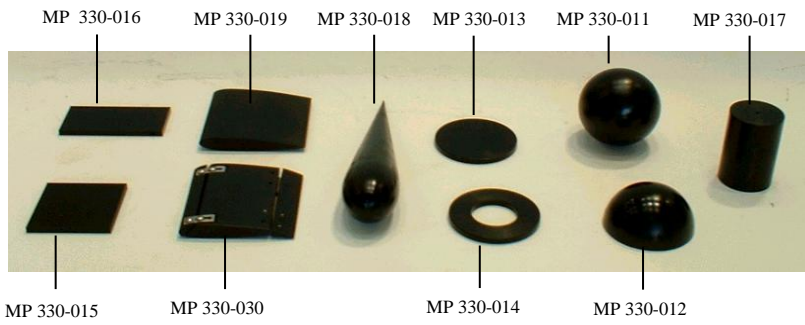
- MP 330-050 Flutter wing, aluminium aerofoil on steel frame
- MP 330-053 Pressure wing, aluminium
- MP 330-055 Pressure cylinder, plastics
- MP 330-057 Boundary layer plate with probe.
- MP 330-150 Computer Interface

Sensors with computer interface unit for key data acquisition instead of analog data measuring instruments.

This consists of a computer (separately supplied), computer interface unit, pressure sensor, rotary encoder and multiport differential pressure sensors for:

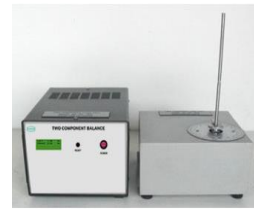
- Control of wind velocity
- Display of:
 - Wind velocity, lift, drag, pitching moment, and angle of attack
 - Coefficient of lift, drag, and pitching moment
 - Pressure distribution





MP 330-016 MP 330-019 MP 330-018 MP 330-013 MP 330-011 MP 330-017

MP 330-015 MP 330-030 MP 330-014 MP 330-012



Two component balance with indicators



MP 330-003



MP 330-050



MP 330-053



MP 330-055



MP 330-057



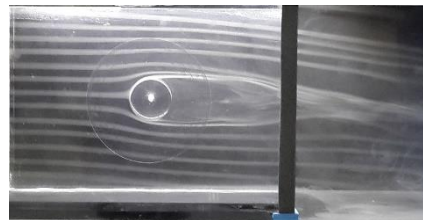
MP 330-114



MP 330-114D



MP 330-122



MP 330-130



MP 330-125



Net (unpacked) shipping dimensions WxLxH : 95x 385 x 130 cm
Net weight : Approx. 650 kg

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