

**Description:-**

Low Speed Sub Sonic Wind Tunnel is a Educational wind tunnel providing a complete subsonic facility for the study of basic aerodynamics. This is a open circuit Wind Tunnel provides a region of controlled air flow into which models can be fitted at test section. Wind Tunnel consists of bell mouth shaped entry to guide the air smoothly into settling chamber and stabilizes the air flow. This stabilized air passes the test section where various models can be tested. Test section is open able from two sides. Instrumentation has been done to measure the pressure head, velocity and other parameters.

**Technical Specifications:-**

- Air Velocity Range : 0 to 40 m/s (In the test section), motor with power between 2kW to 4Kw.
- Pitot tube : Will be provided to measure the speed with Differtial pressure transmitter.
- Body kit : Body kit for aerodynamic resistance tests.
- Profile kit : an aerodynamic profile kit.
- Smoke gerantore : Will be provided.
- MOC : Stainless steel
- Test Section Size : 500x310x600mm
- Test Section : Test section is open able from two sides
- Flow Characteristics : Free stream turbulence intensity less than 2%  
: Flow angularity test section will be less than 2.50 Mean  
flow Velocity Variation will not exceed  $\pm 2.5\%$
- Axial Fan : Made of Metal/PAG
- Fan Speed : VFD Controlled (20 % to 100%)

*Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.*



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- Motor : Three Phase 415 volt compatible with Axial fan and VFD drive.
- Screen : 03 No's Made of Stainless Steel 304 grade
- Honeycomb grid : Square L/D=8 for flow straightening.
- Diffuser : Cone shaped designed with appropriate angle to prevent flow separation.
  
- Three axis load cell : Profile Inclination angle :  $\pm 1800$   
: Lifting force:  $\pm 4N$  to  $\pm 100N$   
: Drag Force:  $\pm 4N$  to  $\pm 50N$   
: Pitch moment:  $\pm 0.5N$  to  $\pm 10N$
- Data Acquisition system : Will be provided.
  - Model : A cylinder model with pressure distribution 360 degree conditioning.
  - Manometer bench : Analogue & digital differential manometer bench with sensor 0 to 600mm from 13 to 32 tubes fixed and/ or tilt-able 300 .
  - Sound level : Some mechanism will be provided to control the sound between 70 to 90 dB
- Total wind tunnel dimension : 3785mmx1060x1930mm (approx).
- An ENGLISH instruction manual consisting of experimental procedures, block diagram etc. will be provided along with the Apparatus.
- The whole set-up is well designed and arranged on a rigid structure painted with industrial PU Paint.

**Utilities Required:-**

- Electricity supply: Three phase, 415V AC, 50 Hz, 32 Amp. with earth connection.  
Earth resistance should be less than 1 ohm

**Experimentation/Learning Objectives:-**

- To plot speed curve for wind tunnel.
- To study the air distribution on aerofoil and Cylinder Models.
- To study the flow visualization.
- To study the boundary layer.

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