

# Closed Circuit Wind Tunnel



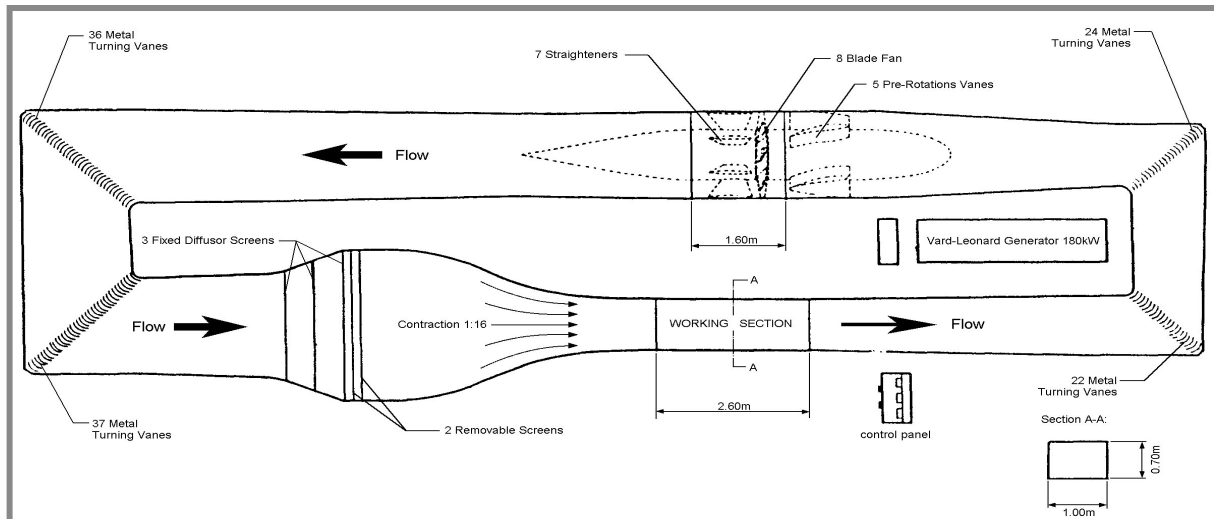
*Outside view on the testing section of the Closed Circuit Wind Tunnel (CCWT)*

FORCE Technology's Closed Circuit Wind Tunnel (CCWT) is mainly used to perform experiments in uniform flow at high flow velocity of up to 80 m/s.

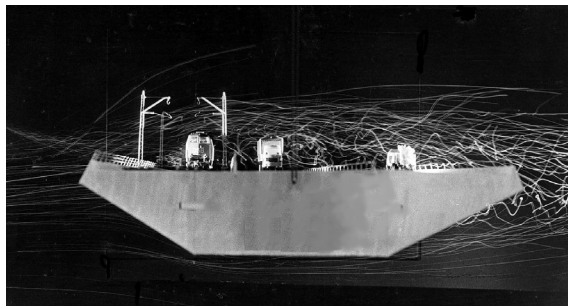
By installing special grids upstream of the working section, varying turbulence intensities can be created in the initially laminar flow.

The large velocity range allows for investigation of rounded structures or structural elements at high Reynolds number.

Main Dimensions of Test Section		
<b>Length:</b>	<b>2.6</b>	<b>m</b>
<b>Width:</b>	<b>1.0</b>	<b>m</b>
<b>Height:</b>	<b>0.7</b>	<b>m</b>



Sketch of the Closed Circuit Wind Tunnel (CCWT)

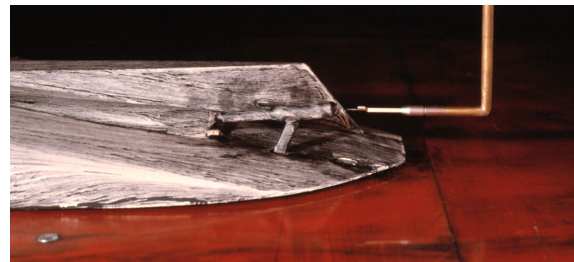


Visualisation of flow across bridge deck section

The handy size of the testing section facilitates the study of local flow phenomena both visually and quantitatively by measurements.

Small-scale models, section models or details of ships, buildings or bridges, are tested to identify design forces or surface pressures or to observe the flow field around the respective body.

The working section is completely exchangeable and a number of different types are available. One remarkable application is the visualisation of surface streamlines on the underwater part of ships to investigate or improve the water flow to the propeller.



Visualisation of surface streamlines with oil paint

Purpose	Equipment
Wind Pressure	Differential pressure scanning system PSI 8400 with in-house developed acquisition software PT-PSI for high frequency measurements.
Wind Load	Six-component force balance for direct measurement of integrated wind load; Three-component force balance for section models mounted across the working section.
Airflow Measurement	High-frequent hot-wire anemometry; Differential pressure equipment.
Airflow Visualisation	Neutral buoyant bubble illumination technique; Smoke visualisation.
Surface Streamline Visualisation	Oil paint method.



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