

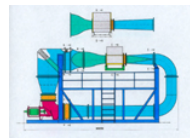
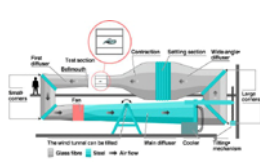
ROLLAB

ROLLAB is a consultant engineering company specialising in wind tunnel technology with a program covering:

- Low and High Speed Wind Tunnels for Education, Free Fall Simulation, Research and Industrial development.
- External and Internal Wind Tunnel Strain Gauge Balances and other ancillary systems (balance and calibration programmes)
- Schlieren Optical Devices with electronic imaging systems for Flow Visualization in Wind- and Water Tunnels.

ROLLAB can offer tailor-made equipment for different Educational levels and for Institutes and Industries working professionally with aeronautical developments.

ROLLAB are able to conduct project studies, e.g. for Environmental Tunnels in the Automotive Engineering Industry, Wind Tunnel Facilities for Building Aerodynamics, Agriculture, Meteorology, etc.

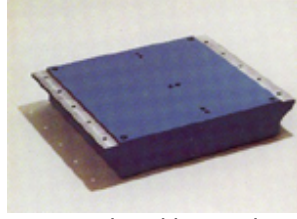


Low Speed Wind Tunnels

Two New Wind Tunnels for studies in the field of Ornithology have recently (September, 1994) been completed at Lund University, Sweden and at the Max Planck Gesellschaft at Andechs near Munic, Germany (September, 1999).

They are both of the closed circuit type with a settling chamber containing five screens and with a contraction ratio of 12,25 : 1, low turbulence, low noise level and low temperature. A device for tilting the tunnel from +8° to -6° in order to simulate gliding and climbing respectively is typical for the Lund version. An Astro-dome and means of simulating different flight altitudes are typical features for the Andechs version.

External and Internal Six-Component Balances



The ROLLAB strain-gauge product line includes external and internal multi-component balances for static measurements on models of complete aircrafts, external stores or subassemblies and balances for dynamic stability testing.

External six-component balances are used in low-speed wind tunnels. They are normally installed in a turntable in the tunnel floor or roof.

Six-component balances for non-aeronautical testing in low-speed wind tunnels.

Internal six-component bending beam type balances are used in low-speed, transonic, supersonic and hypersonic wind tunnels.

Manual as well as semiautomatic Calibration Rigs and programs for calibration and wind tunnel testing are also provided.