

Unique Wing-Pitching Test Section

Airfoils or wings models are mounted within a test section that facilitates rotation to produce pitch or a combination of pitch and plunge. The models are mounted on one or both Plexiglas windows that are connected to aluminum rings. Each ring runs on a system of four bearings and is driven by a 1.5kW servo-motor via a system of belt drives to produce a 150:1 gear ratio. Measured deviations in angle-of-attack resulting from the dynamically varying mechanical and aerodynamic loads acting on the belt drive system do not exceed 0.2° . The floor and ceiling of the test section are made of Plexiglas to provide access for a wide range of optical measurement techniques. The instantaneous wind tunnel speed within the test section is monitored by means of hot-wire anemometers and rapid-response pitot-static probes.

