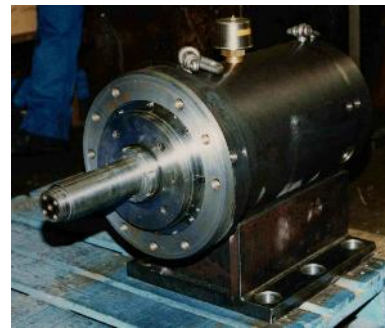




High Speed Mechanical Seal Test Rig

Description

Design & manufacture of a number of high speed gas seal test rigs for export around the world, for high performance and endurance testing of high speed, compressor gas seals, up to approximately 200 mm diameter.



High Speed Module

These operate at speeds up to 30,000 RPM and are driven by an inverter controlled, AC synchronous, 110 kW motor, through a 1.5:1 belt drive and a 6:1 high speed gearbox transmission system. The seals are located in a separate, aligned chamber and are driven via a splined, quill output shaft from the gearbox.

Ancillary equipment includes a 200 Nm torque transducer, a 3 pump water cooling system for the seal chamber and oil lubrication system for the gearbox.

Specification Summary

- Max speed = 24,000 RPM
- Max seal dia = 200 mm
- LabVIEW data acquisition
- Ambient temperature & pressure
- Sub-critical, cantilevered rotor design
- High speed precision SiN angular contact bearings
- $NDm = 2.1E6 \text{ RPM}\cdot\text{mm}$
- Full flow oil lubrication system
- Bearing temperature & vibration monitoring



High Speed Seal Rig

Disciplines Used

- Conceptual & mechanical design, stress FEA, rotordynamics analysis, manufacture, assembly, test & commissioning.