



AERODYN

Providers of high quality
instrumentation services
& products worldwide



WELCOME

Aerodyn are suppliers of instrumentation services and products, predominantly used in the development of turbomachinery for aerospace, power generation and industrial applications.

We offer global coverage through our facilities located worldwide and our global network of representatives.

World class, high precision, turnkey instrumentation, manufacturing, design and analysis, assembly and test

Specialists in:

Design and Analysis

Precision Manufacturing

Instrumentation

Assembly

Slip Rings

Component & Subsystem Test

In-house and On-site Validation
and Test Support

Our facilities include:

State of the art Instrumentation Labs

Machine Shops

In-house Test Capabilities

ABOUT US

04
LOCATIONS
WORLDWIDE

04
GLOBAL
REPRESENTATIVES



100K^{SQ.FT}
COMBINED SPACE

100+
EMPLOYEES

\$25M
TURNOVER

LOCATIONS

Expert capabilities across 4 locations

Consultancy

Design

Analysis

Project Management

Instrumentation

Manufacturing

Slip Rings

Subsystem Test

Flight Test Support

Rig Assembly

Gas Stand Testing

Turbocharger and Compressor Testing

Flow Calibration

**Aerodyn
Engineering LLC**
Indianapolis, IN, USA



**Aerodyn Testing &
Technology Centre**
Whitestown, IN, USA



Aerodyn Ltd.
Derby, UK



Aerodyn Canada Inc.
Montreal, Canada



AERODYN

OUR VALUED CUSTOMERS

Aerospace

Power Generation

Industrial

Space

Defence

Automotive



WHY WE'RE DIFFERENT

Turnkey solutions for all your Instrumentation and Testing needs...



ONE COMPANY...ONE SOURCE

PRODUCT & PROCESS DEVELOPMENT

Highly Experienced Engineering Support

Requirements / Specification
Project Management
Design
Analysis
Instrumentation
Manufacturing
Flight Test Support



Innovative technical
solutions providing cost
saving manufacturing,
repairs and installations

New Product
Introduction
(NPI)

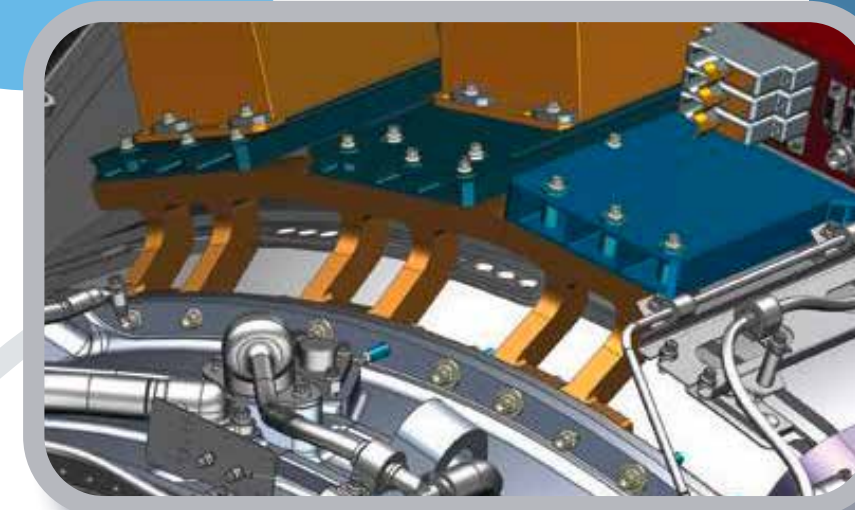
Reverse
Engineering

Concurrent
Engineering
and First Article
Programs

Tooling &
Fixtures Design
and Analysis

Design for
Manufacture
(DFM)

Prototype, Development
and Low Rate Production
Programs



TOOLS

- › Siemens NX
- › Solidworks
- › ANSYS
- › Pro-E
- › Autocad
- › Gagemap
- › MastercamX-9
- › Calypso
- › Open Mind



OUR CAPABILITIES

INSTRUMENTATION

MEASUREMENT EXPERTISE

Temperature (Thermocouple, RTDs, Thermistors)

Pressure (Steady State and Dynamic)

Strain (up to 2000F) – Epoxy, Cement, Rokide Applications

Acceleration

Proximity

Flow and Level

Capacitance

Tip Clearance Probes

UCTS – Certified Platinum Installer



DESIGN

Sensor Applications

Associated Hardware
Reworks

MANUFACTURE & REWORK

Supporting Fixtures
and Brackets

Component Features
to Install and Lead-out
Instrumentation

DATA ACQUISITION

Hardware and Software
Necessary

Custom User Interfaces

Rent or Purchase of Systems

APPLICATION

In-house Laboratories

Global On-site Support

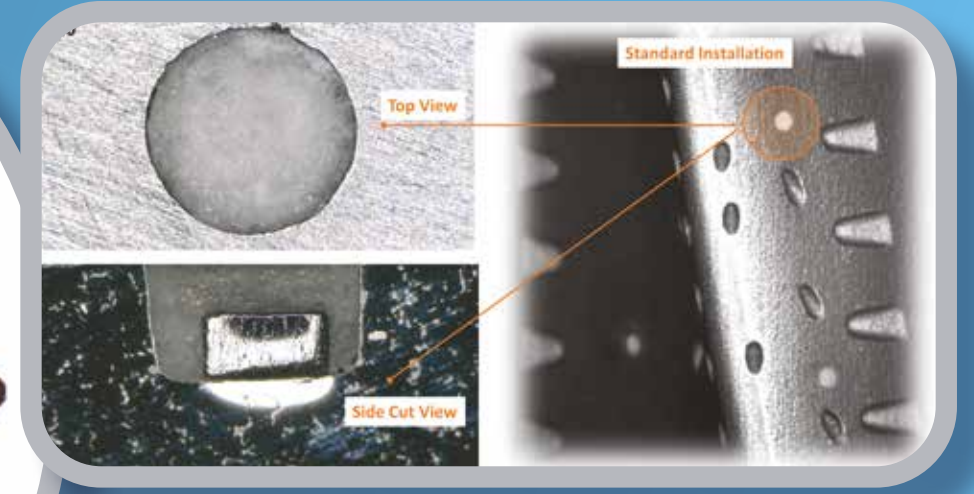
CALIBRATION

Load

Proximity

Pressure

Temperature



COMPLETE SERVICE | VERSATILE | BESPOKE SOLUTIONS

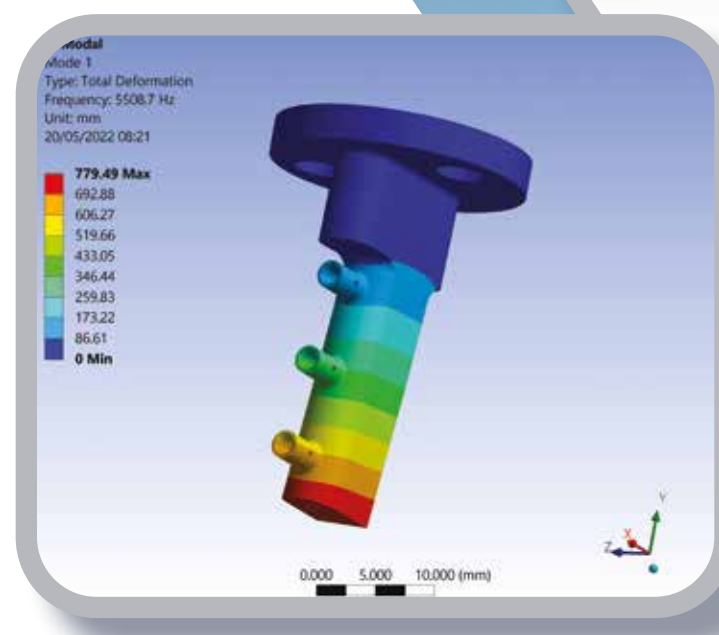
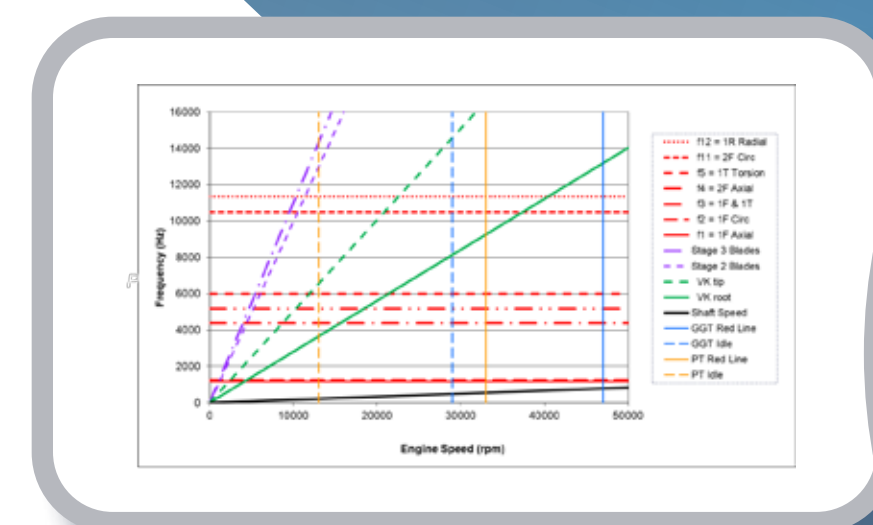
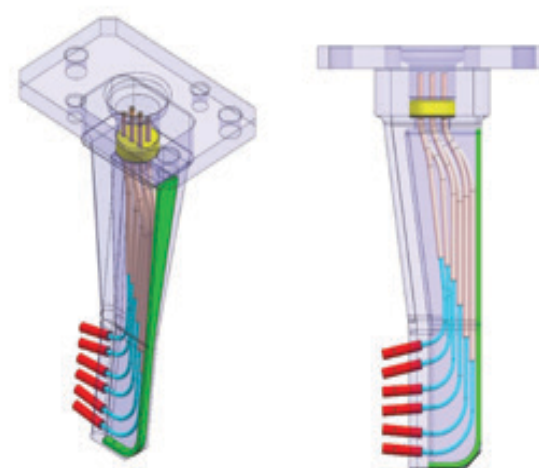
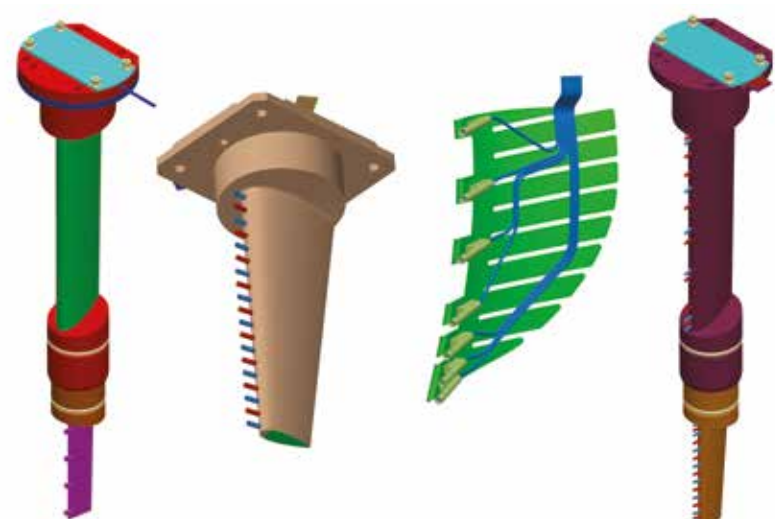
RAKES & PROBES

ENGINEERING

- Design
- Strength and Dynamics Analysis
- Fabrication
- Assembly
- Refurbishment
- Hot and Cold Flow Calibration
- Installation
- Data Acquisition
- Data Reduction

MEASUREMENTS

- Total Temperature
- Total Pressure
- Flow Angle
- Velocity
- Mass flow
- Temperature Environments up to 3000F
- Integral Kiel Heads
- Vane Leading Edge



BESPOKE DESIGNS | MANUFACTURE | TEST | CALIBRATION

TRAVERSE SYSTEMS

Standard Systems

Bespoke Designs

Radial, Circumferential and Area

Yaw Options for Probes

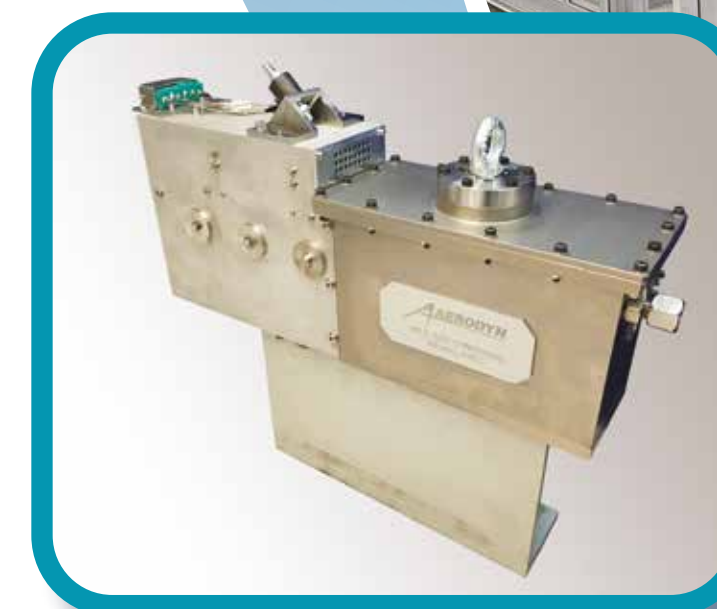
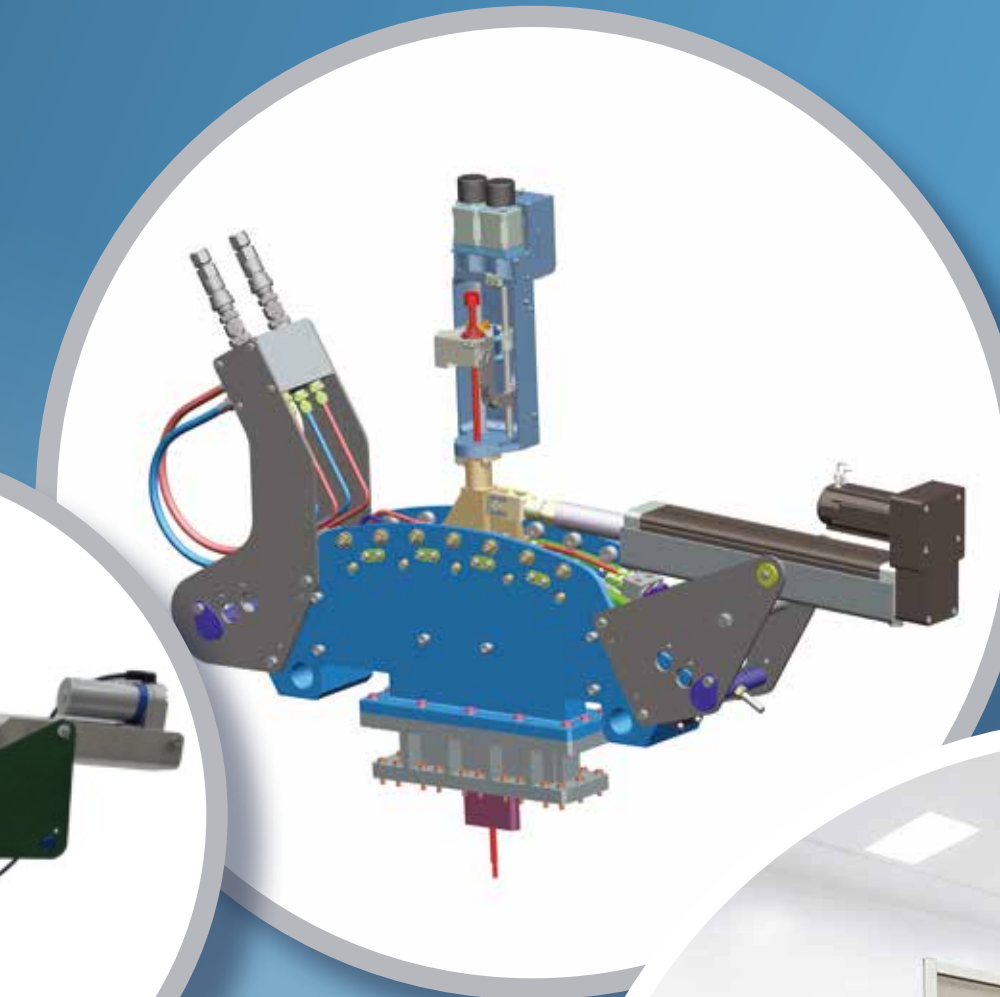
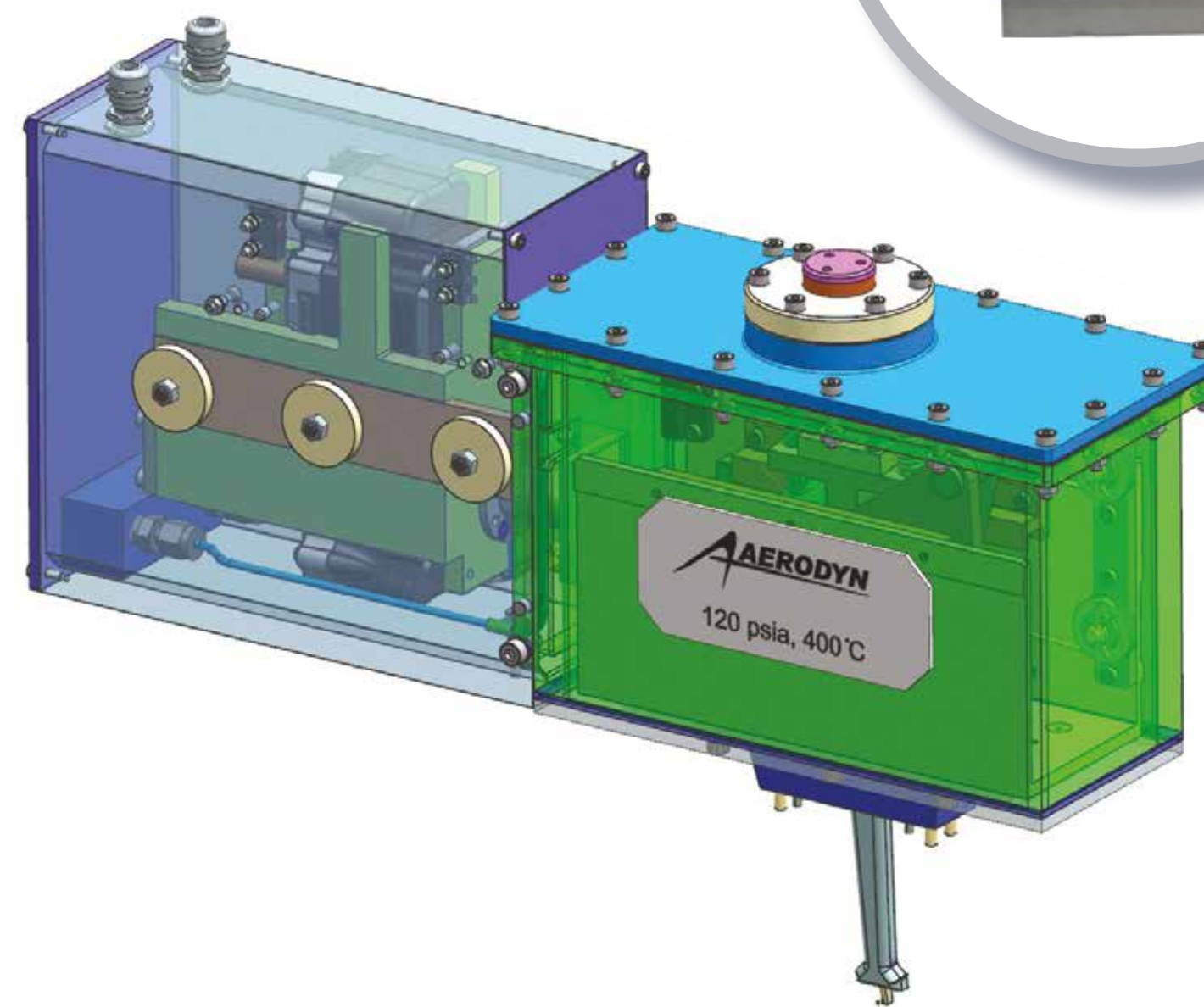
Probe Design – 3 hole, 5 hole, multi-hole

Pressure, Temperature, Hot Wire and
Gas Sampling Measurements

Calibration

High Temperature and High Pressure

Cooling Solutions



BESPOKE DESIGNS | MANUFACTURE | TEST | INSTALLATION & ON-SITE TEST SUPPORT

SLIP RINGS & ROTARY UNIONS

STANDARD SIZES

16 Contacts to 744 Contacts

OPERATING SPEEDS

Up to 150,000 rpm

SIGNAL TRANSMISSION

Thermocouple

Strain Gauge (static and dynamic)

Pressure Transducer

RTD

Digital Signal

AC or DC Power

High Voltage

High Current

HIGH DURABILITY

LOW NOISE SIGNAL TRANSFER

<250 microvolts pk-pk noise
at any discrete frequency
(25mA drive current)

BESPOKE DESIGNS

Pancake, Through Bore and Nosecone

2 Contacts to 1000 Contacts

Signal to High Power (1000+ Amps)

High Voltage (up to 100,000 Volts
ring to ring)

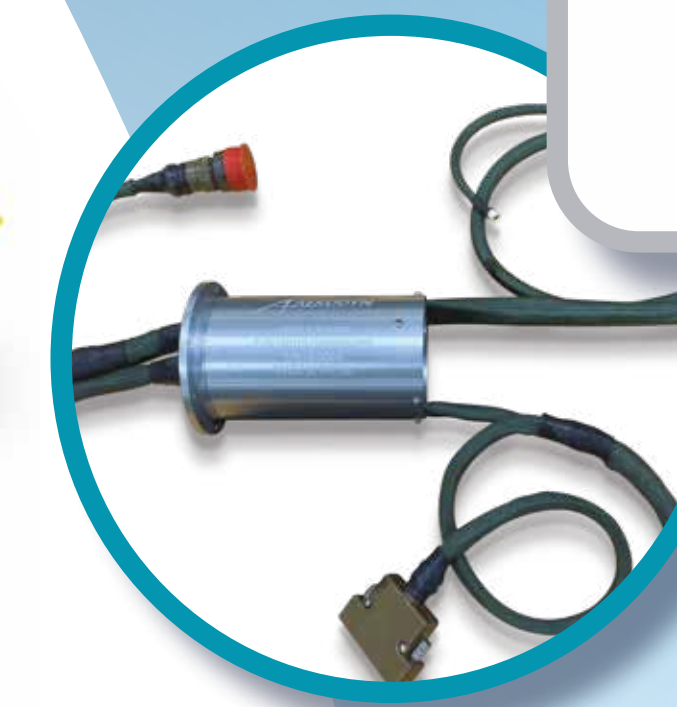
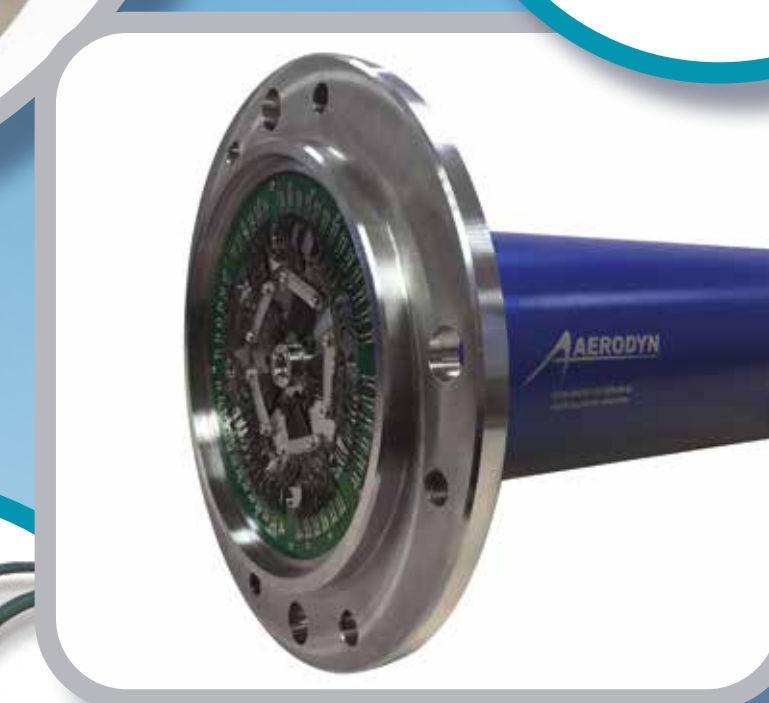
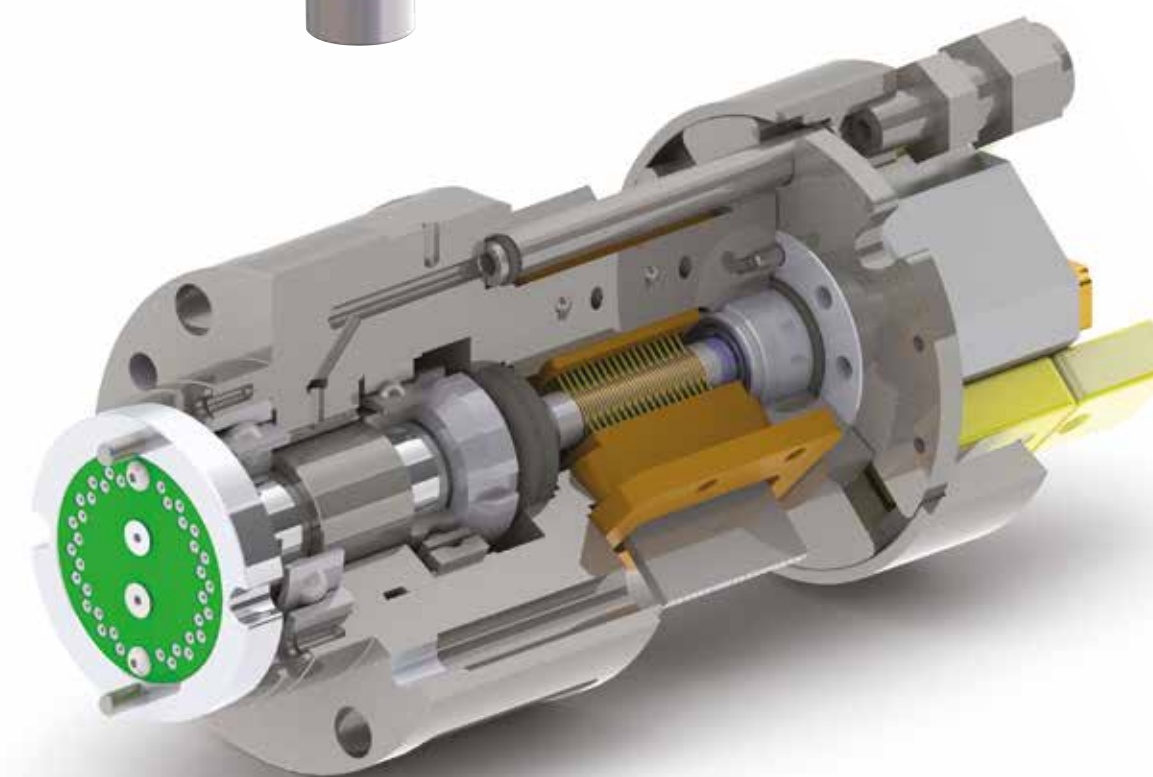
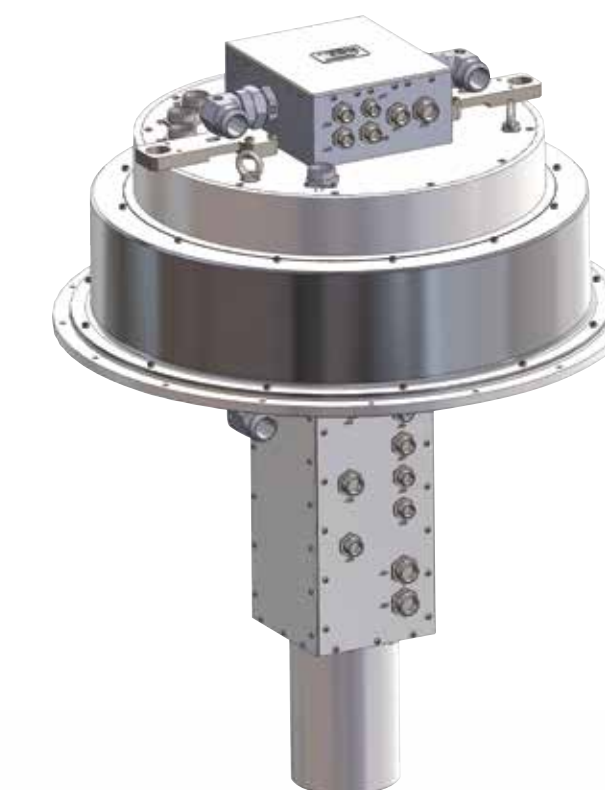
Intergrated Rotary Union

Fibre Optics, RF or HF Union
as required

Ethernet and Data Protocols

NOISE MONITORING SYSTEMS

SPIN TEST SERVICES



DESIGN | MANUFACTURE | TEST | INSTALLATION & ON-SITE SUPPORT

CAPACITANCE PROBES

Proximity Measurements

Blade Tip Clearance Measurements

Probe Design

Probe Installation Design

Probe Component Manufacture

Probe Assembly

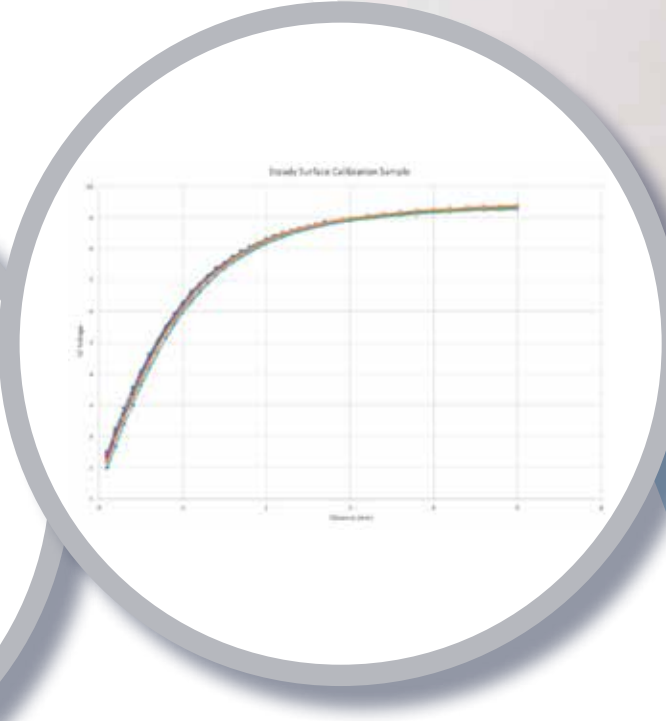
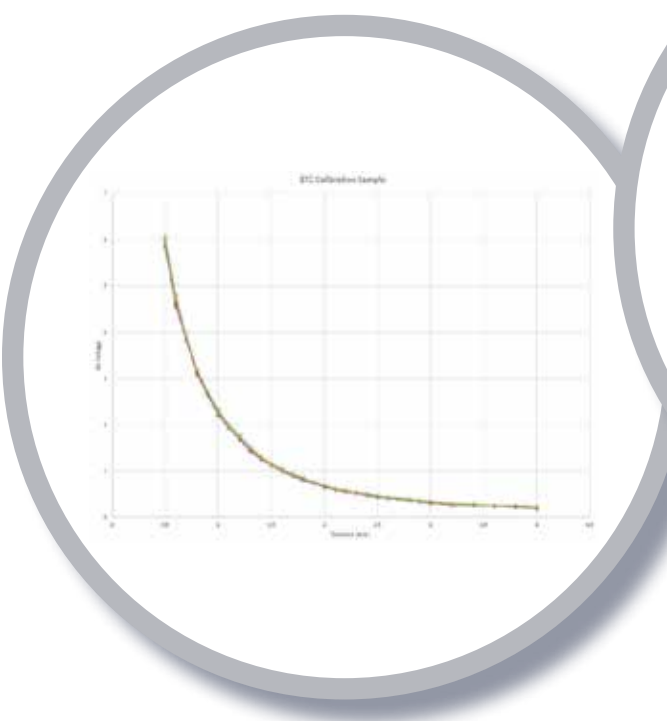
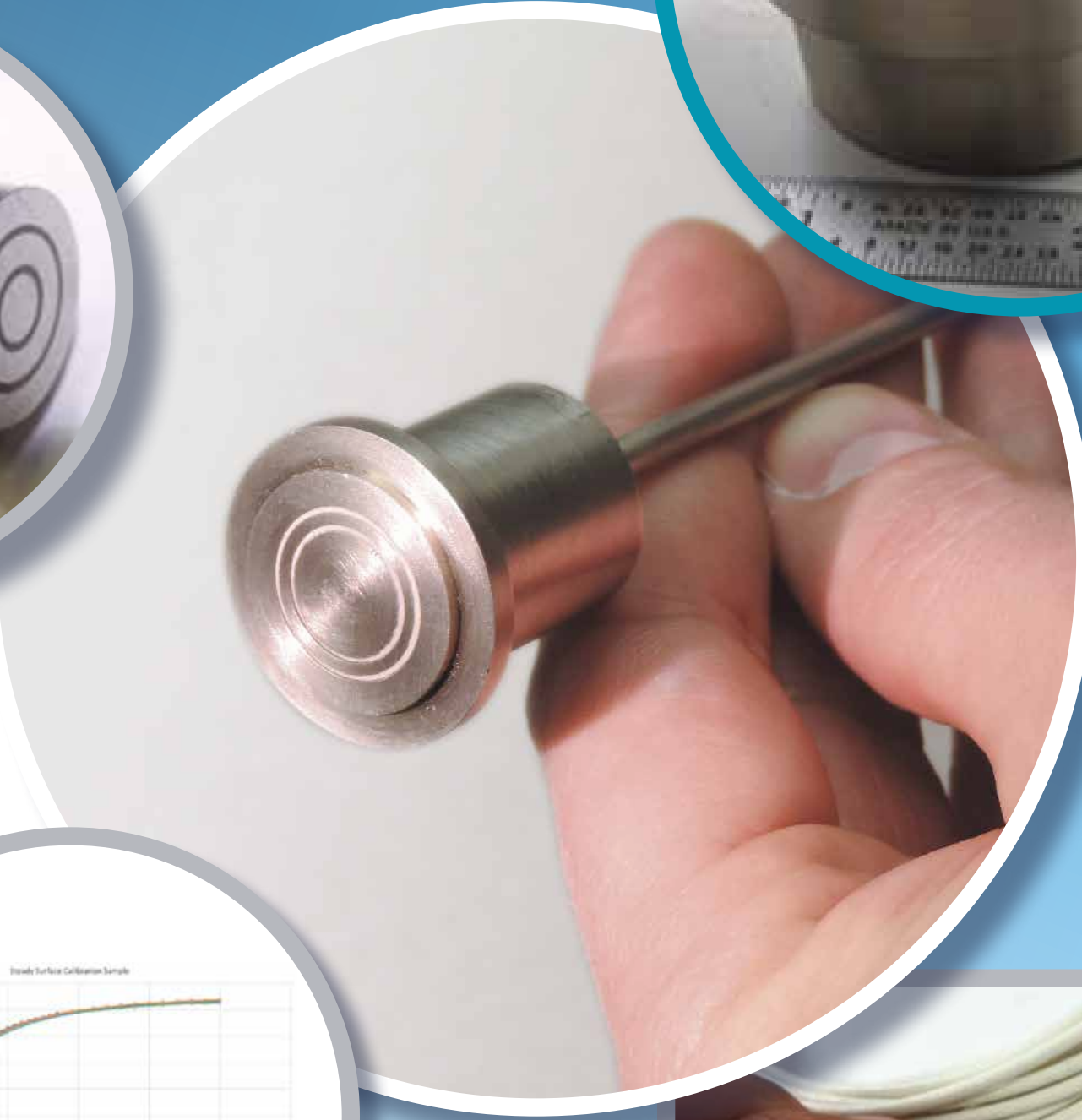
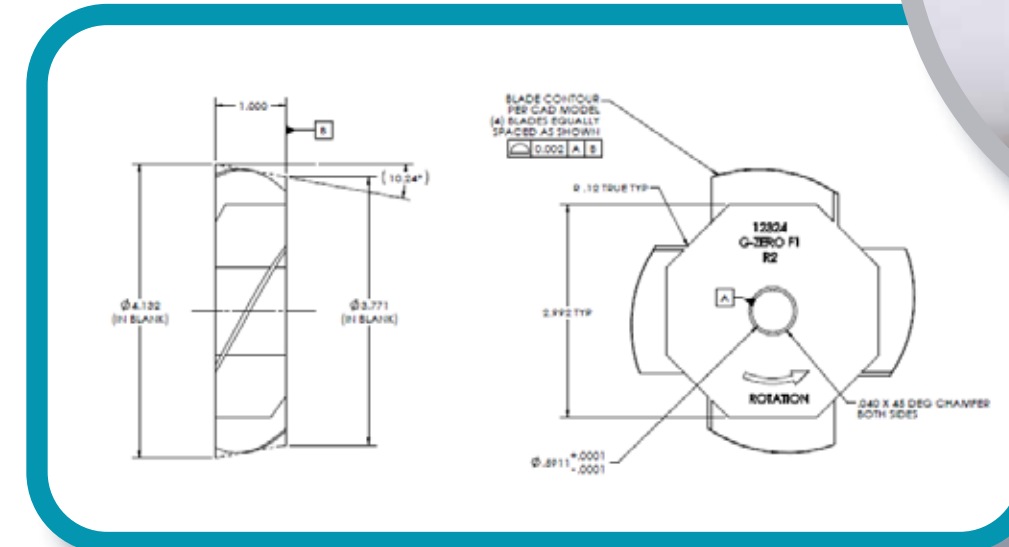
Design and Manufacture of Calibration Discs

Probe Calibration

Modification of Customer Hardware

Signaling Conditioning Systems for rent or purchase

Data Acquisition System Software and/or Hardware for rent or purchase



RIG SUPPORT

CONSULTANCY

Requirements Scoping
Measurement Consultancy
Test Consultancy

MANUFACTURE & REWORK

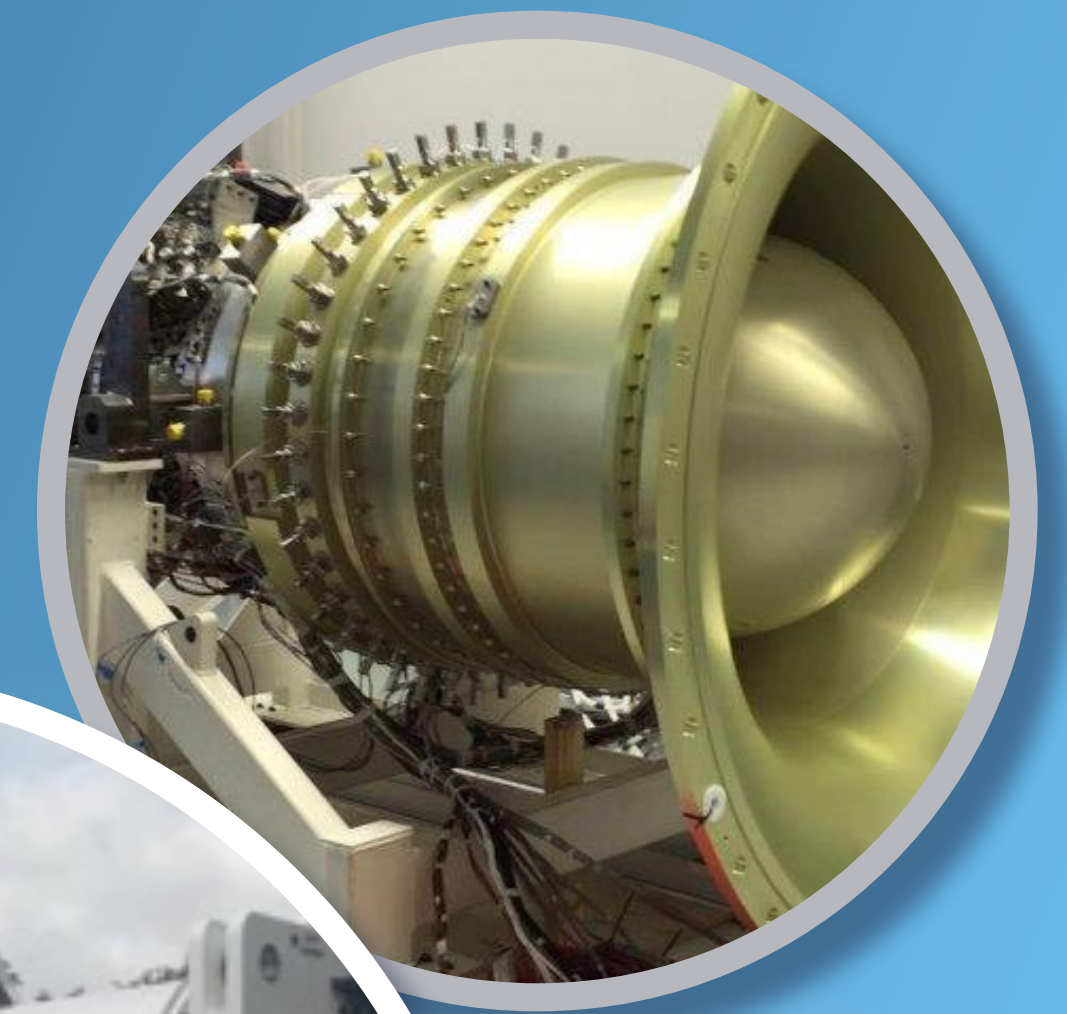
Instrumentation
Component Rework
Tooling
Test Stands

DESIGN

Instrumentation
Rig Hardware
Component Rework
Lead-out and Sealing Solutions
Tooling
Test Stands

APPLICATION & ASSEMBLY SUPPORT

In-house Laboratories
Global On-site Support



DESIGN | DEVELOPMENT | MANUFACTURE | FABRICATION | ASSEMBLY

TESTING

TEST CAPABILITIES

LCF/Durability Testing of Turbo Chargers
Turbocharger and Compressor Performance Mapping
Pressure Cycle (EGR, CAC)
Thermal Cycle (EGR, CAC)
Burst and Containment Testing
Pressure Testing
Hot and Cold Rake and Probe Aero Calibration
Hot and Cold Spin Testing with Instrumentation
Performance Mapping of Pumps
Flow Testing and Leakage Testing
Optical Probe Testing
Bellows Testing
Manifold Testing
Performance Measurement with Dyno
Abradable Coating Test

VIBRATION TESTING

MIL-STD-810
RTCA/CO-160
Sinusoidal
Random on Random
Classical Shock
Shock Response Spectrum
Blade Fatigue
Blade Characterization
Random
Sine on Random
Combined Temperature and Vibration Exposure
Resonance Search and Dwell



FACILITIES

- › 7 Test Cells with hot gas capability of up to 7kg/s
- › 4 Natural Gas compression with pressures to 200psi
- › 4 Water Carts with flow capabilities of 900gpm at 75 psi
- › 4 Oil supply systems with flow capabilities of 40 gpm at 80 psi
- › 2 Megawatt heat rejection capability
- › 3 Electro dynamic shakers with slip tables (5 – 3000Hz)
- › 24,000, 15,400 and 6,000 lbs force
- › 3 Piezoelectric shaker systems (up to 30,000 Hz)
- › Signal conditioning for 100 data channels at each shaker
- › Hot air supply available at 900°C and 5 kg/s at shaker

DURABILITY | PERFORMANCE | PRESSURE/THERMAL CYCLE | AERO CALIBRATION | VIBRATION | ABRADABLE COATINGS

ADVANCED MANUFACTURING

CNC MACHINING

Multi Axis Vertical Machining Centres
Multi Axis Horizontal Machining Centres
Grinding
Blue Arc™ Machining Technology

EDM MACHINING

Wire
Sinker
Fast Hole

WELDING

TIG
MIG
Laser
Plasma (AWS D17.1 Certified)

INSPECTION

Zeiss Accura CMM
Zeiss Contura CMM
Master3DGage Portable CMM with Verisurf
Konica Minolta Blue Light 3D Digital Scanning System
GOM White Light 3D Scanning Systems



PRECISION MANUFACTURING | FABRICATION | ASSEMBLIES | OEM | MRO

QUALITY

EXCELLENT QUALITY

Zeiss Accura CMM (X-Y-Z: 80' x 118' x 60')

Zeiss Contura CMM

Master3DGage Portable CMM with Verisurf

Konica Minolta 3D Digital Scanning System

GOM White Light 3D Scanning Systems

First Article Inspection

Process Control and Inspection Personnel integrated throughout the Production Cycle

CMM Programmers and Operators

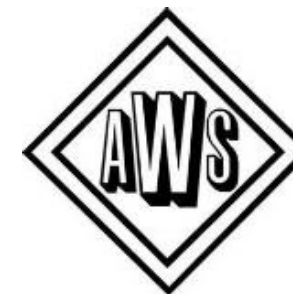
Controlled and Precise Work Instructions

Lean and 6-Sigma Capabilities Studies

Statistical Process Control (SPC)

Integrated Active On-machine Probing

CERTIFICATIONS



CMM | 3D SCANNING | FAIR | 6-SIGMA



THANK YOU

We'd love the opportunity to discuss your next project



aerodyn-global.com