DOVER®
PRECISION COMPONENTS

Engineer Confidence Into Every Component

ADVANCED PRODUCT AND MATERIAL TESTING SERVICES

BPI® BearingsPlus · COOK® COMPRESSION · ML FW MURPHY® PRODUCTION CONTROLS · INPRO/SEAL® · WB® WAUKESHA BEARINGS

WHEN YOUR REPUTATION IS BUILT ON PRECISION, RELIABILITY, AND PERFORMANCE, TRUST DOVER PRECISION COMPONENTS TO DELIVER WORLD-CLASS TESTING AND MATERIAL DEVELOPMENT SERVICES.

Our state-of-the-art labs support design and new product development engineers in validating components, optimizing designs, and accelerating market launches with confidence.

- Prototype validation
- Failure mode analysis
- Accelerated lifecycle testing
- Regulatory and compliance testing
- Custom test rigs for proprietary assemblies

BEARING TESTING CAPABILITIES

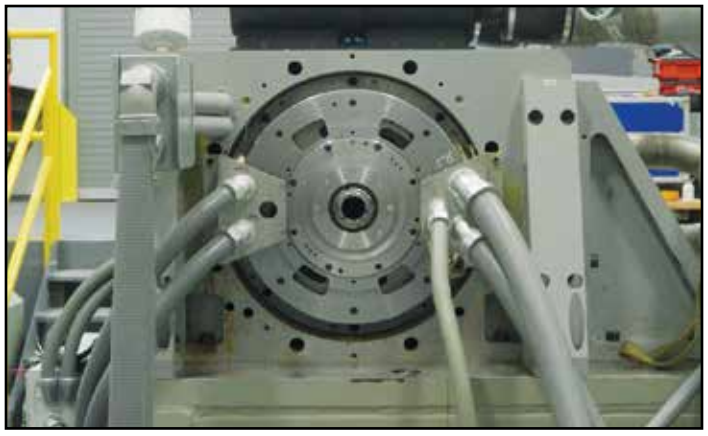
Precision Testing for Fluid Film and Magnetic Bearings

Our facilities feature advanced fluid film bearing test rigs, including large and small horizontal and vertical thrust and journal rigs, capable of evaluating performance under diverse conditions.

The Red Rig, the world's premier magnetic bearing test stand, simulates high-speed, high-power turbomachinery environments. The rig has a 1.5-ton flexible rotor levitated by active magnetic bearings. It runs up to 8,000 rpm and can reproduce critical aspects a system will experience in high-speed, high-power turbomachinery.

KEY TESTING SERVICES:

- **Static Performance:** Validate power loss, temperatures, and lubricant conditions (ISO VG 32, water, water/glycol) under various speeds and loads.
- **Dynamic Response:** Measure stiffness, damping, and inertia coefficients for fluid film and magnetic bearings.
- **Ultimate Load:** Test bearings at 2x design load to confirm capacity limits.
- **Duration Testing:** Assess long-term performance (100–700 hours) for material and lubricant validation.
- **Aeration and Start-Stop:** Simulate multi-phase fluids and startup loads.
- **Measurements:** Lubricant/pad temperatures, flow rate, load, speed, vibrations, wear, film thickness, and more.
- **Consulting Services:** Root cause analysis, rotodynamic analysis, reverse engineering, and new product development (NPD).



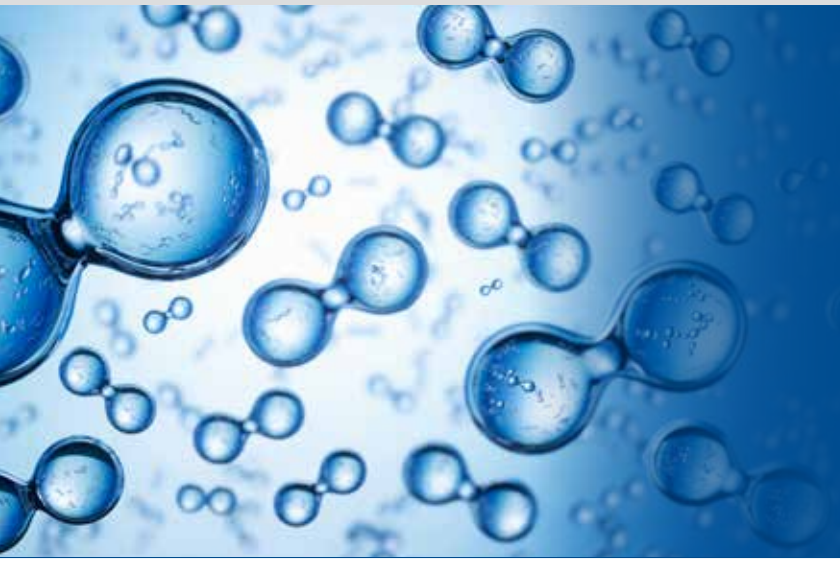
COMPRESSION TESTING CAPABILITIES

Optimize Reciprocating Compressor Components

Located next to our Houston manufacturing facility, the Dover Precision Components Innovation Lab houses advanced reciprocating compressor test rigs, including a large two-stroke compressor, a high-speed frame, and specialized setups for component-level testing. These capabilities are designed to validate and refine compression components under real-world conditions.

KEY TESTING SERVICES:

- **Valve Performance:** Evaluate flow dynamics, leakage rates, and dynamic response under varying speeds, pressures, and gas conditions.
- **Packing Performance:** Test pressure packing and packing cases with nitrogen (up to 4,500 psi) or custom gas mixtures, measuring lube rates, temperatures, pressures, and vent leakage.
- **Material Durability:** Assess wear resistance and impact resiliency for valve plates, piston rings, and rod rings.
- **Lifecycle Testing:** Validate component life and performance for long-term reliability.



SUPPORTING THE HYDROGEN ECONOMY

The hydrogen economy demands robust and reliable components. Our state-of-the-art tribometer directly addresses the critical challenge of sliding wear in high-pressure hydrogen environments. By accurately simulating real-world conditions (up to 100 bar pressure and 2 m/s sliding speed), it empowers you to develop durable and safe hydrogen-compatible materials for applications across generation, storage, transportation, and dispensing. Its compact design and comprehensive safety features minimize risk and maximize operational confidence.

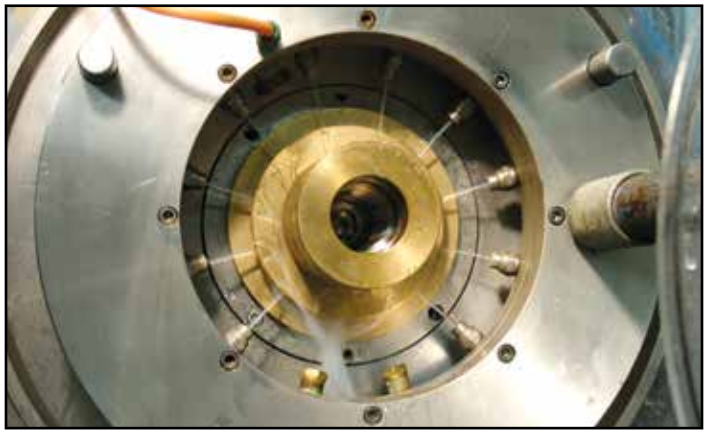
SEALING TESTING CAPABILITIES

Validate Bearing Isolators and Shaft Seals for Peak Performance

Our Rock Island, IL, lab specializes in testing bearing isolators and shaft seals for industrial rotating equipment, ensuring reliability in demanding environments. Our cutting-edge equipment evaluates oil retention, ingress protection, and axial movement under real-world conditions.

KEY TESTING SERVICES:

- **Oil Retention:** Test bearing isolators in splash or flooded conditions (up to 3,600 rpm, 3–6” shaft sizes, 15 GPM oil flow).
- **Ingress Protection:** Assess liquid and dust protection in static and dynamic conditions.
- **Axial Movement:** Validate performance under axial shaft movement (up to 0.025”) in flooded and non-flooded conditions.
- **Functional Testing:** Proof-of-concept for bearing isolators and seals, measuring leakage, temperature, and wear.
- **Measurements:** Leak/no-leak, pass/fail, temperature, wear rate, noise level, and IP ratings.
- **Additional Services:** Material analysis, dimensional inspection (CMM), and consulting for root cause analysis and NPD.



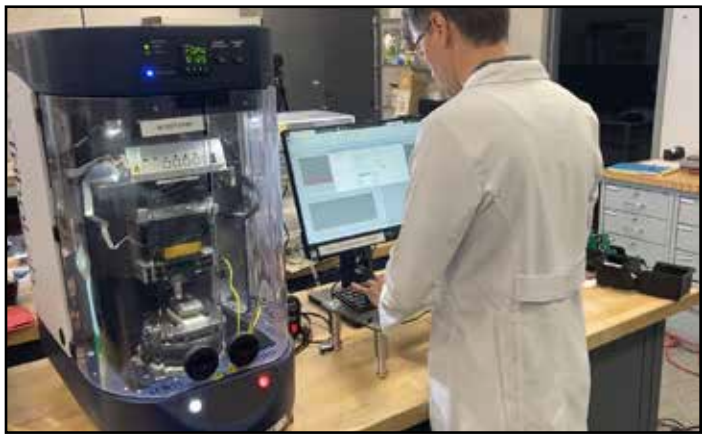
MATERIAL TESTING CAPABILITIES

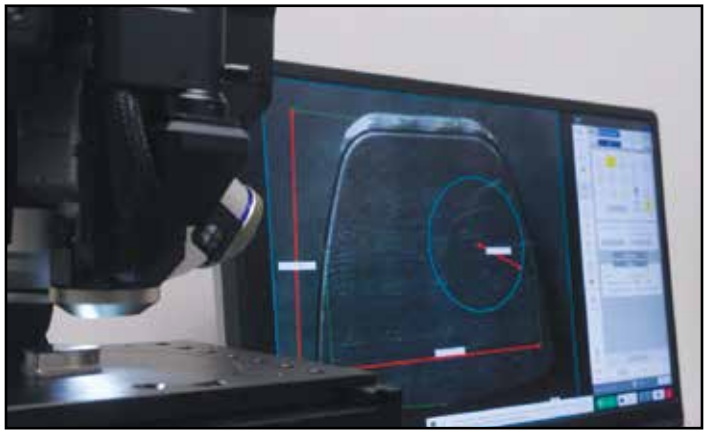
Testing Formulations for Optimum Performance

The Dover Precision Components Materials Technology program integrates materials research with extensive engineering resources, more than a century of practical experience, and cutting-edge test equipment to develop and test the next generation of polymeric materials suited for the next generation of machinery.

KEY TESTING SERVICES:

- **Wear Testing:** Measure the specific wear rate and friction coefficient on polymer-based composites in a wide range of pressures, speeds, temperatures, and environments, including hydrogen, air or nitrogen.
- **Failure Analysis:** Produce a data-based root cause analysis of failure, including material validation.
- **Mechanical Characterization:** Test uniaxial tensile and compression following ASTM D638, ASTM D695, and ASTM D5550.
- **Thermal Characterization:** Evaluate changes in material properties with varying temperatures. Testing includes, differential scanning calorimetry, thermogravimetry, thermoelectrical conductivity, and dynamic mechanical analysis.
- **Fatigue Testing:** Design a custom, dynamic fatigue test for a specific application, accommodating a variety of materials and load cycle characteristics.
- **Creep Testing:** Design a custom creep test for a specific application, accommodating a variety of materials, load conditions and temperatures.





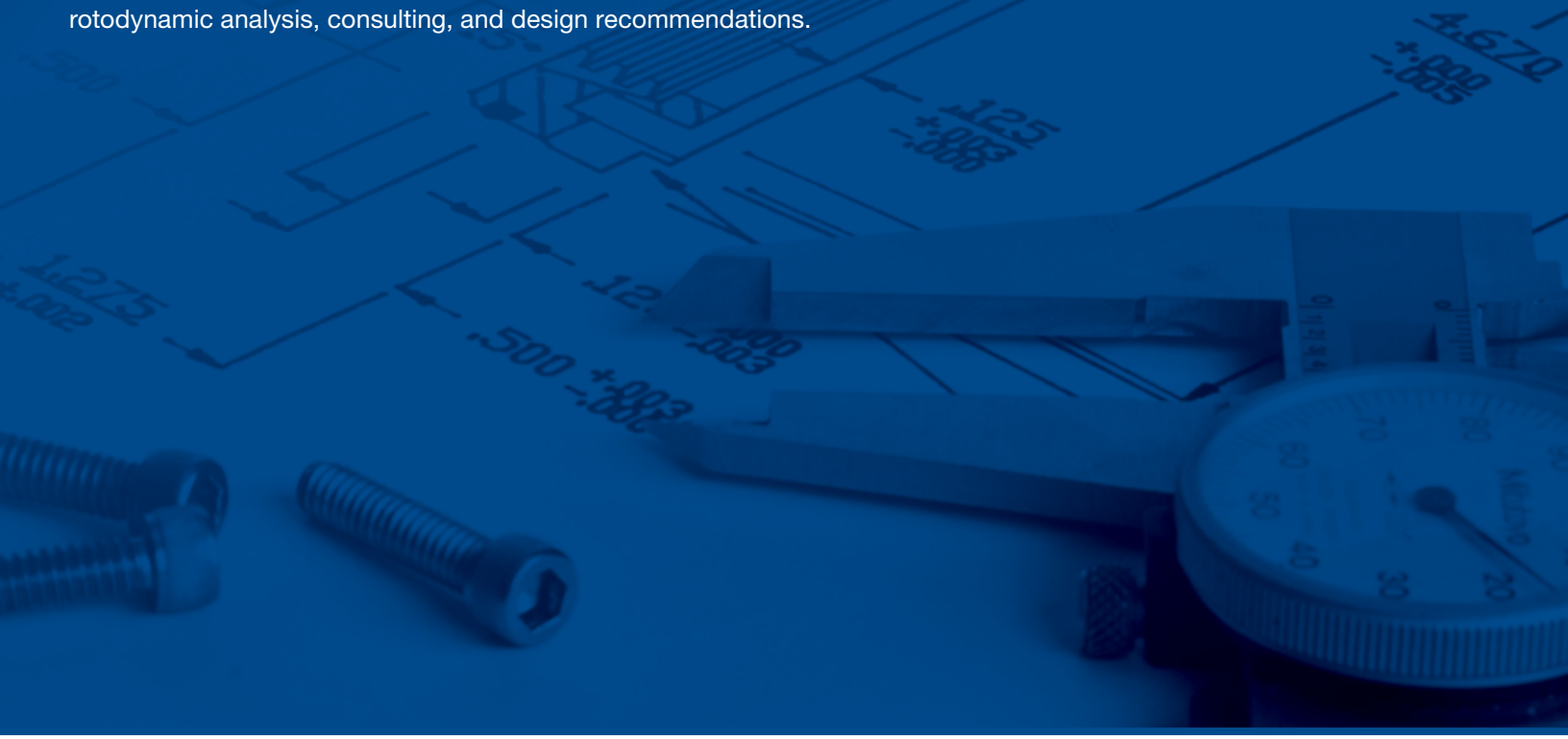
LET US BE AN EXTENSION OF YOUR ENGINEERING TEAM, DELIVERING CLARITY, CONFIDENCE, AND A COMPETITIVE EDGE ONE COMPONENT AT A TIME.

WHY CHOOSE DOVER PRECISION COMPONENTS?

At Dover Precision Components, we understand the complexities and nuances of designing industrial components. We've built a global network of testing facilities in Houston, TX; Rock Island, IL; Worthing, UK; and Bangalore, India, equipped with advanced testing technologies to support every stage of your product development cycle. From bearings to compression systems and other industrial equipment, we provide actionable data to refine prototypes, validate performance, and ensure operational integrity.

WHAT SETS US APART:

- Tailored Testing: Customized simulations to replicate real-world conditions.
- Expert Collaboration: A team of engineers, technicians, and PhD-level material scientists.
- Global Facilities: Strategically located around the world and equipped with the latest technologies for analytical, mechanical, thermal, and environmental testing.
- Comprehensive Insights: Beyond simple data, we offer root cause analysis, rotodynamic analysis, consulting, and design recommendations.



WHO WE ARE

Comprising the Bearings Plus®, Cook Compression®, FW Murphy®, Inpro/Seal®, and Waukesha Bearings® brands, the Dover Precision Components portfolio includes hydrodynamic bearings, active magnetic bearings, system and bearing protection, and reciprocating compressor components. Each solution is custom-engineered to provide optimum efficiency, reliability and productivity, and backed by comprehensive aftermarket services.

Dover Precision Components serves its global customer base through facilities in North America, Europe, Asia and the Middle East, as well as technical sales representatives around the world.

READY TO GET STARTED?

Scan Now.

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lab-services@doverprecision.com

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