

## John Crane Seal Selection Guide

The Jan. 1956 issue includes Fluid power engineering index, 1931-55.

With this 13th in the series of International Conferences on Fluid Sealing these meetings move into their third decade. To be precise it is now thirty-one years since BHRA, as it then was, convened, with no little trepidation, the first of these Conferences in Ashford, England. The massive set of proceedings now occupies a considerable length of shelf in my bookcase and represents a tremendous technological resource - over 400 separate papers. It is interesting that I seem to refer most often to the earlier volumes, probably most of all to the very first. Perhaps this is because this volume marks the beginning of "historic times", AD 0, for fluid sealing technology. There were of course important publications in this field even before 1961. A notable example is the seminal work of my predecessor at BHRA, Dr D. F. Denny, whose researches on reciprocating fluid power seals, "The sealing mechanism of flexible packings", was published in 1947 by a long since defunct government department, the Ministry of Supply. Another notable source is the Proceedings of the Institution of Mechanical Engineers' 1957 Conference on Lubrication and Wear. However, there is more to fluid sealing technology than just tribology, as we must now call lubrication and wear, interest in static seals has really come to the fore in recent years - witness the large batch of papers dealing with this subject in the present Conference.

The first medical specialty selection guide written by residents for students! Provides an inside look at the issues surrounding medical specialty selection, blending first-hand knowledge with useful facts and statistics, such as salary information, employment data, and match statistics. Focuses

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on all the major specialties and features firsthand portrayals of each by current residents. Also includes a guide to personality characteristics that are predominate with practitioners of each specialty. "A terrific mixture of objective information as well as factual data make this book an easy, informative, and interesting read." --Review from a 4th year Medical Student

**THE DEFINITIVE GUIDE TO SELECTING, OPERATING, AND MAINTAINING POWER PLANT EQUIPMENT** Power Plant Equipment Operation and Maintenance Guide provides detailed coverage of different types of power plants such as modern co-generation, combined-cycle, and integrated gasification combined cycle (IGCC) plants. The book describes the design, selection, operation, maintenance, and economics of all these power plants. The best available power enhancement options are discussed, including duct burners, evaporative cooling, inlet-air chilling, absorption chilling, steam and water injection, and peak firing. This in-depth resource addresses the sizing, selection, calculations, operation, diagnostic testing, troubleshooting, maintenance, and refurbishment of all power plant equipment, including steam turbines, steam generators, boilers, condensers, heat exchangers, gas turbines, compressors, pumps, advanced sealing mechanisms, magnetic bearings, and advanced generators. Coverage includes: Methods for enhancing the reliability and maintainability of all power plants Economic analysis of modern co-generation and combined-cycle plants Selection of the best emission-reduction method for power plants Preventive and predictive maintenance required for power plants Gas turbine applications in power plants, protective systems, and tests

**Centrifugal Pumps: Design and Application, Second Edition** focuses on the design of chemical pumps,

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composite materials, manufacturing techniques employed in nonmetallic pump applications, mechanical seals, and hydraulic design. The publication first offers information on the elements of pump design, specific speed and modeling laws, and impeller design. Discussions focus on shape of head capacity curve, pump speed, viscosity, specific gravity, correction for impeller trim, model law, and design suggestions. The book then takes a look at general pump design, volute design, and design of multi-stage casing. The manuscript examines double-suction pumps and side-suction design, net positive suction head, and vertical pumps. Topics include configurations, design features, pump vibration, effect of viscosity, suction piping, high speed pumps, and side suction and suction nozzle layout. The publication also ponders on high speed pumps, double-case pumps, hydraulic power recovery turbines, and shaft design and axial thrust. The book is a valuable source of data for pump designers, students, and rotating equipment engineers.

A Complete overview of theory, selection, design, operation, and maintenance This text offers a thorough overview of the operating characteristics, efficiencies, design features, troubleshooting, and maintenance of dynamic and positive displacement process gas compressors. The author examines a wide spectrum of compressors used in heavy process industries, with an emphasis on improving reliability and avoiding failure. Readers learn both the theory underlying compressors as well as the myriad day-to-day practical issues and challenges that chemical engineers and plant

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operation personnel must address. The text features:

- Latest design and manufacturing details of dynamic and positive displacement process gas compressors
- Examination of the full range of machines available for the heavy process industries
- Thorough presentation of the arrangements, material composition, and basic laws governing the design of all important process gas compressors
- Guidance on selecting optimum compressor configurations, controls, components, and auxiliaries to maximize reliability
- Monitoring and performance analysis for optimal machinery condition
- Systematic methods to avoid failure through the application of field-tested reliability enhancement concepts
- Fluid instability and externally pressurized bearings
- Reliability-driven asset management strategies for compressors
- Upstream separator and filter issues

The text's structure is carefully designed to build knowledge and skills by starting with key principles and then moving to more advanced material. Hundreds of photos depicting various types of compressors, components, and processes are provided throughout. Compressors often represent a multi-million dollar investment for such applications as petrochemical processing and refining, refrigeration, pipeline transport, and turbochargers and superchargers for internal combustion engines. This text enables the broad range of engineers and plant managers who work with these compressors to make the most of the investment by leading them to the best decisions for selecting, operating, upgrading, maintaining, and troubleshooting.

Fluids -- Heat transfer -- Thermodynamics --

Mechanical seals -- Pumps and compressors -- Drivers -- Gears -- Bearings -- Piping and pressure vessels -- Tribology -- Vibration -- Materials -- Stress and strain -- Fatigue -- Instrumentation -- Engineering economics.

The renowned reference work is a practical guide to the selection and design of the components of machines and to their lubrication. It has been completely revised for this second edition by leading experts in the area.

Just published in its updated fourth edition, this highly regarded text explains in clear terms how and why the best-of-class pump users are consistently achieving superior run lengths, low maintenance expenditures, and unexcelled safety and reliability. Written by practicing engineers whose working careers were marked by involvement in all facets of pumping technology, operation, assessment, upgrading and cost management, this book endeavors to describe in detail how you, too, can accomplish optimum pump performance and low life cycle cost. A new chapter on breaking the cycle of pump repairs examines the cost of failures and the defined operating range of pumps. The authors also explore mechanical issues, deviations from best available technology, and preventing problems with oil rings and constant level lubricators. Additional topics include bearing housing protector seals, best lube application practices, lubrication and bearing distress, and paying for value.

Examines the fundamentals and practice of both the

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design and operation of face seals, ranging from washing machines to rocket engine turbopumps. Topics include materials, tribology, heat transfer and solid mechanics. A variety of simple and complex models are proposed and evaluated and specific problems such as heat checking, blistering and instability are considered. Offers 64 tables and 364 references plus useful recommendations regarding the future of seal design.

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