



# Maintenance Books

FROM MAINTENANCE TO LUBRICATION TO DESIGN LUBRIGARD PROVIDES THE BOOKS THAT CAN TEACH YOU TO TRANSFORM REACTIVE MAINTENANCE TO PROACTIVE MAINTENANCE.



## FEATURE BOOK



### **MACHINERY'S HANDBOOK, 27th Edition, Toolbox Edition**

*By Oberg, Jones, Horton, Ryffel, McCauley, Heald and Hussain*  
Hardcover (5"X7"), 2704 pages, Illustrated

**\$88.25**

#### **FEATURES**

- A new more usable organization...every section has been reformatted so that you will never have to search outside of that area for information on the topic you are exploring.
- 30% **MORE** math coverage...from the basic to the advanced, you'll find fractions, positive and negative numbers, derivatives and integrals, analytical geometry, circular segments, matrices and engineering economics.
- New or revised material on...cutting tools, screw threads, symbols and abbreviations, threads and threading, disc springs, properties and materials, sine bars, and sheet metal.
- Updated Standards.
- New individual indices for standards, materials, and interactive equations.

#### **CONTENTS**

Mathematics	Threads and Threading
Mechanics and Strength of Materials	Gears, Splines, and Cams
Properties, Treatment, and Testing of Materials	Machine Elements
Dimensioning, Gaging, and Measuring	Measuring Units
Tooling and Toolmaking	Index
Machining Operations	Index of Standards
Manufacturing Processes	Index of Interactive Equations
Fasteners	Index of Materials



PROACTIVE LUBRICATION MANAGEMENT



**TOTAL PRODUCTIVE MAINTENANCE, Second Edition**  
 By Terry Wireman  
 Hardcover (6"X9"), 224 pages, Illustrated  
**\$48.25**

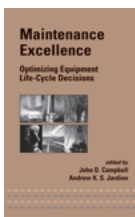
- Various case studies that show how to explain the value of OEE to everyone in the organization, from the senior executive to the shop floor personnel.
- OEE discussions showing how to "dollarize" results and present the financial terms to executive financial personnel.
- A clarification of the goals and objectives of TPM, allowing TPM Champions to clearly present a TPM business case to their organizations.
- Explanations of the pitfalls that may be encountered during TPM implementation and how to avoid or correct these problems.



**RELIABILITY-CENTERED MAINTENANCE, Second Edition**  
 By John Moubray  
 Hardcover (6"X9"), 448 pages  
**\$65.75**

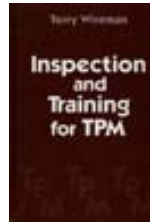
*Written by an expert in the field who has helped users apply RCM and its more modern derivative, RCM2, at more than 600 sites in 32 countries. The second edition includes more than 100 pages of new material on:*

- condition monitoring
- the analysis of functions and failures
- human error
- the management risk
- failure finding
- the measurement maintenance performance



**MAINTENANCE EXCELLENCE**  
 By John D. Campbell, Andrew Jardine  
 Hardcover, 536 pages  
**\$99.75**

*Considering maintenance from a proactive, rather than reactive, perspective, Maintenance Excellence details the strategies, tools, and solutions for maximizing the productivity of physical assets—focusing on profitability potential! Addresses contemporary concerns, key terms, data requirements, critical methodologies, and essential mathematical needs! Presenting maintenance in a business context and reviewing planning, measurement, feedback, and techniques related to cost, efficiency, and results.*



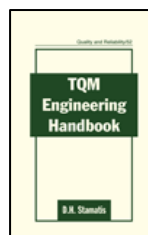
**INSPECTION AND TRAINING FOR TPM**  
 By Terry Wireman  
 Hardcover (6" X 9"), 256 pages  
**\$46.85**

- Provides the basic technical information necessary for operators to maintain and repair their equipment.
- Presents maintenance apprentices with a program to increase their effectiveness.
- Improves maintenance technicians by providing information they require to refresh their knowledge and skills.
- Supplies managers with a clear guide for developing an efficient preventive maintenance program.



**OVERALL EQUIPMENT EFFECTIVENESS (OEE): A Powerful Production/Maintenance Tool for Increased Profits**  
 By Robert C. Hansen  
 Hardcover (6" X 9"), 256 pages  
**\$51.00**

- Develops a minimum set of definitions, a practice application, including three methods of computation, and reconciliation of OEE and various losses.
- Provides the platform and reasons for maintenance and production to work synergistically.
- Helps to identify the "hidden factory" that exists within the current system in order to begin leveraging its' potential into real bottom line results.
- Integrates the famous "Theory of Constraints" aspects into an easy to understand shutdown strategy example.
- Contains many practical examples throughout to illustrate techniques and methods in a way everyone can easily understand.



**TQM ENGINEERING HANDBOOK**  
 By D.H. Stamatis  
 Hardcover, 608 pages, Illustrated  
**\$175.00**

*Establishes a sound rationale for the continuation of Total Quality Management (TQM) in all organizations, offering a model, an implementation strategy, as well as traditional and nontraditional methods for the successful enhancement and maintenance of quality. Considers leading quality-related topics such as unusual charts, supplier-organization-customer relationships, customer needs and expectations, instructional design, adult learning, advanced quality planning, and reliability!*



**MANAGING FACTORY MAINTENANCE, Second Edition**

By Joel Levitt  
Hardcover (6"X9"), 320 pages, Illustrated  
**\$50.50**

*Tap into Joel Levitt's vast array of experience and learn how to improve almost any aspect of your maintenance organization (including your own abilities)! This new edition of a classic first educates readers about the globalization of production and the changing of the guard of maintenance leadership, and then gives them real usable ideas to aid in these areas. Completely reorganized so that material is presented within the context of major sections, the second edition tells the story of maintenance management in factory settings. It provides coverage of potential problems and new opportunities, what bosses really want, specifics for improvement of maintenance and production, World Class Maintenance Management revisited and revised, quality improvement, complete coverage of current maintenance practices, processes, process aids, interfaces and strategies, as well as personal and personnel development strategies.*



**MANAGING MAINTENANCE SHUTDOWNS AND OUTAGES**

By Joel Levitt  
Hardcover (6"X9"), 208 pages, Illustrated  
**\$50.50**

- Brings together the issues of maintenance planning, project management, logistics, contracting, and accounting for shutdowns.
- Includes hundreds of shutdown ideas gleaned from experts worldwide.
- Contains procedures and strategies that will improve your current shutdown planning and execution.
- Offers examples to illustrate the major points.



**SUCCESSFULLY MANAGING CHANGE IN ORGANIZATIONS: A User's Guide**

By Stephen J. Thomas  
Hardcover (6"X9"), 256 pages, Illustrated, Includes CD-ROM.  
**\$50.50**

- Draws on the author's wealth of practical experience and emphasizes that the elements of change are interrelated, that they constitute a "Web of Change": change one element and you must see what the impact will be on the others.
- Identifies and explains eight key elements of change.
- A way to measure change in each element and its affect on the others is presented on paper and through a computer program on an enclosed disk.



**ASSET MAINTENANCE MANAGEMENT: A Guide to Developing Strategy and Improving Performance**

By Alan Wilson  
Hardcover (7"x10"), 824 pages, Illustrated  
**\$71.50**

- Reviews the eight major "policy sectors"—Activities Development, People Development, Planning, Contracting, Control, Computer System Solutions, Asset Management Tools, and Auditing.
- Demonstrates the necessity of and a methodology for developing asset maintenance management strategies to meet defined targets and commitments.
- Describes proven best practices based on actual experience.
- Provides options for how asset maintenance managers can implement their strategies and obtain the involvement and support of other key players in their organizations.
- Assists managers in determining how the implementation of new maintenance strategies will bring performance improvements to the company overall and the specific individuals affected.



**BENCHMARKING BEST PRACTICES IN MAINTENANCE MANAGEMENT**

By Terry Wireman  
Hardcover (6" X 9"), 228 pages, Illustrated  
**\$50.50**

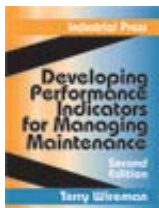
- Provides a clear, concise benchmarking methodology
- Clearly explains and interprets the most current maintenance benchmarks.
- Contains a benchmarking database from more than 100 companies.
- Features current maintenance/asset management philosophies.
- Includes a new chapter on benchmarking theory.
- Offers more information on self-analysis.



**MAINTENANCE PLANNING, SCHEDULING & COORDINATION**

By Don Nyman and Joel Levitt  
Hardcover (6"X9"), 320 pages, Illustrated  
**\$50.50**

- Addresses maintenance management, performance, and control.
- Clarifies the scope, responsibilities and contributions of the Planner/Scheduler function and the support of other functions to Job Preparation, Execution, and Completion.
- Covers the basics commonly contained within world-class programs for effective execution of maintenance work: planning, parts acquisition, work measurement, coordination and scheduling.
- Aids organizations that pursue "Maintenance Excellence"— that state of maintenance management and performance that effectively applies the leading edge policies, procedures, systems, structures, methods, and technologies to maintenance.



**DEVELOPING PERFORMANCE INDICATORS FOR MANAGING MAINTENANCE, Second Edition**

By Terry Wireman  
Hardcover, 288 pages, Illustrated

**\$50.50**

While the previous edition concentrated on the basic indicators for managing maintenance and how to link them to a company's financials, the second edition addresses further advancements in the management of maintenance. As one of only a few comprehensive collections of performance indicators for managing maintenance in print today, *Developing Performance Indicators for Managing Maintenance* utilizes techniques based on other management measurement systems, such as the balanced scorecard. What's more it presents a maturing of measurement technique for maintenance and asset maintenance and development techniques that will allow companies to be competitive into the future. It is a necessary reference for any company that has a maintenance organization to effectively measure and manage the entire spectrum of maintenance activities.



**COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEMS, Second Edition**

By Terry Wireman  
Hardcover (8"X10"), 202 pages, Illustrated

**\$48.25**

Provides the information needed to successfully evaluate, select and implement a system. Enables readers unfamiliar with the earlier book to discover how progressive companies are using computer programs to achieve cost reduction and control the maintenance of any facility



**EFFECTIVE MAINTENANCE MANAGEMENT: Risk and Reliability Strategies for Optimizing Performance**

By V. Narayan  
Hardcover (6"X9"), 246 pages, Illustrated

**\$53.85**

- Addresses the philosophical question of **why** we need to do maintenance and what is the value added by doing it.
- Shows readers how to determine **what** tasks are required and **when** they need to be done to achieve optimum performance.
- Provides a risk reduction model which links maintenance to these risks.
- Enables readers to make the link between maintenance on one hand and safety, profitability, and asset life on the other.
- Examines risks faced during the life cycle of a process plant.
- Discusses how to manage risks faced during a high cost, high downtime maintenance activity, namely plant shutdowns.
- Provides an in-depth look at qualitative and quantitative risks.
- Includes a table of fixed format codes that can be used directly or adapted for use in most maintenance management systems.
- Keeps mathematics to a minimum.
- Includes chapter previews and summaries, a list of acronyms, and a glossary of terms.



**INTERNET GUIDE FOR MAINTENANCE MANAGEMENT**

By Joel Levitt  
Softcover (6"X9"), 160 pages

**\$29.50**

Shows how to use the Internet in solving maintenance problems, researching maintenance issues and quickly finding answers or additional resources. Each chapter covers a general maintenance area and includes sections that highlight maintenance community needs, what to look for in useful sites, and a carefully chosen sampling of resource sites. Enables readers to quickly locate the information they need through 11 brief accessible chapters that are written in an easy-to-follow style. Helps less experienced users learn the essential skills needed for mastering the Internet.



**THE MAINTENANCE SCORECARD**

By Daryl Mather  
Hardcover (6"X9"), 320 pages, Illustrated

**\$53.85**

This is the first book to seriously tackle the subject of bringing Asset Management into line with other areas of corporate activity. Through a unique adaptation of the balanced scorecard approach to asset management, it provides a structured approach for both the development of strategy and its implementation. Additionally, readers will find a catalogue of indicators along with their uses and weaknesses, a definitive guide to measuring the success of RCM programs, and a logical format that leads them from start to finish with information and hints on each phase of the maintenance scorecard approach. If you or your company need to manage physical assets, you need this book!



**HANDBOOK OF MAINTENANCE MANAGEMENT**

By Joel Levitt  
Hardcover (6"X9"), 477 pages

**\$71.50**

Offers a complete survey of the field, an introduction to maintenance and a review of maintenance management. Provides a manual for cost reduction and a primer for the stockroom. Includes a training regime for new supervisors, managers and planners.

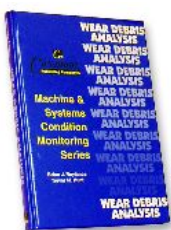


**COMPLETE GUIDE TO PREDICTIVE AND PREVENTIVE MAINTENANCE**

By Joel Levitt  
Hardcover (6"X9"), 256 pages, Illustrated

**\$48.25**

- Includes check sheets, history of PM, stories, photographs, and case histories.
- Contains a glossary of terms.
- Provides sample task lists for a variety of equipment with some of the logic behind each task.
- Offers templates for developing your own tasking.
- Includes protocols for detailed economic analysis with examples.



**WEAR DEBRIS ANALYSIS**

Brian J. Roylance and Trevor M. Hunt  
Hardcover, 130 pages

**\$85.00**

An ideal - and affordable - text for engineers and maintenance professional with an interest in wear debris analysis. This title does not attempt to baffle with the technology, but introduces it at an understandable level, touching on the basic theory and concepts, available equipment and practical issues relevant to the engineer as well as highlighting several case studies with which the reader can relate. Other books in this twelve title series focus on corrosion, vibration, vibration, noise, ultrasonics and oil analysis. The full series will be published before the end of the year 2000.



**MECHANICAL WEAR PREDICTION AND PREVENTION**

By Raymond G. Bayer  
Hardcover, 402 pages

**\$185.00**

Written by a tribological expert with more than thirty years of experience in the field, this **Second Edition** compiles an extensive range of graphs, tables, micrographs, and drawings to illustrate wear, friction, and lubrication behavior in modern engineering applications—promoting a clear understanding of wear testing methodologies for avoidance and resolution of deterioration and weakening in specific engineering designs.

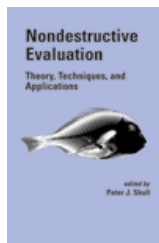


**OIL ANALYSIS HANDBOOK**

By Trevor Hunt, John Evans  
Hardcover, 150 pages

**\$85.00**

An ideal - and affordable - text for engineers and maintenance professional with an interest in oil analysis. This title does not attempt to baffle with the technology, but introduces it at an understandable level, touching on the basic theory and concepts, available equipment and practical issues relevant to the engineer as well as highlighting several case studies with which the reader can relate. Other books in this twelve title series focus on thermography, wear debris analysis, load monitoring, vibration, level, leakage and flow, ultrasonics and noise and acoustic analysis.



**NONDESTRUCTIVE EVALUATION: Theory, Techniques, and Applications**

By Peter J. Shull  
Hardcover, 848 pages, Illustrated

**\$195.00**

This comprehensive textbook/reference details both conventional and forthcoming NDE technologies and instructs on current practices, common techniques and equipment applications, and the potentials and limitations of current NDE methods. Describes the NDE issues associated with real-world applications. Each chapter of Nondestructive Evaluation details a different NDE method and includes; an overview of the NDE method, an explanation of the fundamental physical laws governing the method, the inspection techniques and typical equipment used in the method's application, final system integration of transducers, supporting instrumentation, and commonly practiced procedures necessary for viable NDE inspection, examples of how the method can be applied, and end-of-chapter problems.



**ULTRASONICS: Fundamentals, Technology, Applications, Second Edition**

By D. Ensminger  
Hardcover, 600 pages, Illustrated

**\$195.00**

Intended for engineering students and practitioners with some experience. Contents: explanation of significant developments in data processing and storage techniques; basic elements of ultrasonic technology including wave propagation, equations and transducer design; ultrasonic applications in both industry and medicine.



**THERMOGRAPHY MONITORING HANDBOOK**

By Roderick Thomas  
Hardcover, 190 Pages

**\$85.00**

An ideal - and affordable - text for engineers and maintenance professional with an interest in thermography/infrared monitoring. This title does not attempt to baffle with the technology, but introduces it at an understandable level, touching on the basic theory and concepts, available equipment and practical issues relevant to the engineer as well as highlighting several case studies with which the reader can relate. Other books in this twelve title series focus on corrosion, wear debris analysis, vibration, noise, ultrasonics and oil analysis. The full series will be published before the end of the year 2000.



**NOISE AND ACOUSTIC MONITORING HANDBOOK**

By Bob Peters  
Hardcover, 150 Pages

**\$85.00**

An ideal - and affordable - text for engineers and maintenance professional with an interest in noise + acoustic monitoring. This title does not attempt to baffle with the technology, but introduces it at an understandable level, touching on the basic theory and concepts, available equipment and practical issues relevant to the engineer as well as highlighting several case studies with which the reader can relate. Other books in this twelve title series focus on thermography, wear debris analysis, vibration, level, leakage and flow, ultrasonics and oil analysis.



**CORROSION MONITORING HANDBOOK**

By Neil Rothwell  
Hardcover, 190 Pages

**\$85.00**

An ideal - and affordable - text for engineers and maintenance professional with an interest in corrosion monitoring. This title does not attempt to baffle with the technology, but introduces it at an understandable level, touching on the basic theory and concepts, available equipment and practical issues relevant to the engineer as well as highlighting several case studies with which the reader can relate. Other books in this twelve title series focus on thermography, wear debris analysis, vibration, noise, ultrasonics and oil analysis. The full series will be published before the end of the year 2000.



**VIBRATION SPECTRUM ANALYSIS, Second Edition**

By Steve Goldman  
Hardcover (6"X9"), 272 pages, Illustrated

**\$65.75**

- Offers new information on current instrumentation as well as additional appendixes, case histories and practice questions.
- Explains how to use instrumentation to monitor and interpret vibration signature.
- Provides information needed to identify potential problems before they cause machine failure.
- Emphasizes practical matters of developing an intuitive understanding of the nature of vibration, giving the reader the ability to attack any problem with a good chance of success.

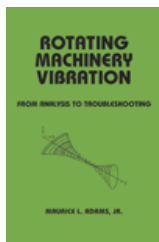


**THE VIBRATION MONITORING HANDBOOK**

By Charles W. Reeves  
Hardcover, 170+ Pages

**\$85.00**

An ideal - and affordable - text for engineers and maintenance professional with an interest in vibration monitoring. This title does not attempt to baffle with the technology, but introduces it at an understandable level, touching on the basic theory and concepts, available equipment and practical issues relevant to the engineer as well as highlighting several case studies with which the reader can relate. Other books in this twelve title series focus on corrosion, wear debris analysis, thermography, noise, ultrasonics and oil analysis.



**ROTATING MACHINERY VIBRATION: From Analysis to Troubleshooting**

By Maurice Adams  
Hardcover, 376 pages, Illustrated

**\$150.00**

This comprehensive reference/text provides a thorough grounding in the fundamentals of rotating machinery vibration—treating computer model building, sources and types of vibration, and machine vibration signal analysis. Presents case studies and troubleshooting techniques gleaned from the author's extensive industrial experience! Illustrating turbomachinery, vibration severity levels, condition monitoring, and rotor vibration cause identification, *Rotating Machinery Vibration*; provides a primer on vibration fundamentals, highlights calculation of rotor unbalance response and rotor self-excited vibration, demonstrates calculation of rotor balancing weights, furnishes PC codes for lateral rotor vibration analyses treats bearing, seal, impeller, and blade effects on rotor vibration, describes modes, excitation, and stability of computer models, and includes extensive PC data coefficient files on bearing dynamics.



**ACOUSTIC EMISSION AND ULTRASONIC MONITORING HANDBOOK**

By Trevor Holroyd  
Hardcover, 180 pages

**\$85.00**

An ideal - and affordable - text for engineers and maintenance professional with an interest in acoustic emission and ultrasonic monitoring. This title does not attempt to baffle with the technology, but introduces it at an understandable level, touching on the basic theory and concepts, available equipment and practical issues relevant to the engineer as well as highlighting several case studies with which the reader can relate. Other books in this twelve title series focus on vibration, wear debris analysis, corrosion, noise, thermography and oil analysis.



**LEVEL, LEAKAGE AND FLOW MONITORING HANDBOOK**

By Trevor Hunt  
Hardcover, 210 Pages

**\$85.00**

An ideal - and affordable - text for engineers and maintenance professional with an interest in level, leakage and flow monitoring. This title does not attempt to baffle with the technology, but introduces it at an understandable level, touching on the basic theory and concepts, available equipment and practical issues relevant to the engineer as well as highlighting several case studies with which the reader can relate. Other books in this twelve title series focus on thermography, wear debris analysis, vibration, noise, ultrasonics and oil analysis.

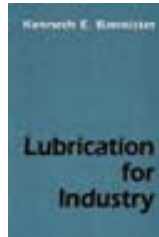


**LOAD MONITORING HANDBOOK**

By Michael Scott  
Hardcover, 124 Pages

**\$85.00**

An ideal - and affordable - text for engineers and maintenance professional with an interest in oil analysis. This title does not attempt to baffle with the technology, but introduces it at an understandable level, touching on the basic theory and concepts, available equipment and practical issues relevant to the engineer as well as highlighting several case studies with which the reader can relate. Other books in this twelve title series focus on thermography, wear debris analysis, oil analysis, vibration, level, leakage and flow, ultrasonics and noise and acoustic analysis.



**LUBRICATION FOR INDUSTRY**

By Kenneth E. Bannister  
Hardcover (6"X9"), 200 pages, Illustrated

**\$39.25**

- Focuses on the practical daily aspects of lubrication that impact productivity.
- Covers, in detail, failure analysis, costing techniques, modes of friction, generations of lubricants, oil and grease classifications and evaluations (including animal/vegetable, mineral, and synthetic), viscosity and other oil and grease standards and characteristics, lubricant compatibility guidelines, how to calculate bearing and other lubrication requirements, preventive maintenance including wear particle analysis, and filter rating and classifications.
- Provides ten case studies drawn from the author's consulting experiences that emphasize the importance of developing and implementing effective, long-term solutions for lubrication, maintenance engineering, and maintenance management.



**LUBRICATION FUNDAMENTALS, Second Edition**

By D.M. Pirro, A.A. Wessol  
Hardcover, 523 pages

**\$125.00**

This newly revised and expanded reference discusses product basics, machine elements that require lubrication, methods of application, lubrication, lubricant storage and handling, and lubricant conservation. The Second Edition emphasizes the need for lubrication and careful lubricant selection.

Thoroughly updated and rewritten since the previous edition reached its 10th printing, the Second Edition of Lubrication Fundamentals contains a new chapter dedicated to the refining process, highlighting the latest technology and detailed descriptions of base stocks ... coverage of hydraulic systems, novel environmental lubricants, and current lubricant testing methods ... an examination of the latest lubrication requirements, petroleum crude selection, and product formulation and evaluation.



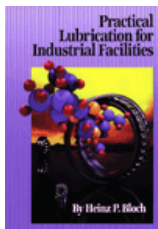
**LUBRICANT ADDITIVES**

By Leslie R. Rudnick  
Hardcover, 760 pages, Includes CD-ROM

**\$250.00**

This book examines the mechanisms, functions, advantages, and limitations of lubricant additives such as antioxidants, anti wear agents, detergents and dispersants, friction modifiers, and metalworking fluids for decreased wear, rust, breakdown, swelling, and deposits in machinery and engines - detailing the design of cost-effective, environmentally friendly lubricant technologies and components for the automotive, industrial, manufacturing, and aerospace industries.

Contains a CD-ROM with links to current Internet resources for the lubricant industry.



## PRACTICAL LUBRICATION FOR INDUSTRIAL FACILITIES

By Heinz P. Bloch  
Hardcover, 640 pages, Illustrated

**\$150.00**

This superb reference provides a thorough understanding of lubricant-related manufacturing problems and procedures, from specification, selection, substitution, application, and analysis to replacement, in-situ purification, consolidation, handling, and storage.

Compares lubrication strategies for electric motor bearings; closed and open and large and small gears; compressors and gas engines; and steam and gas turbines—highlighting machine components that require proper lubrication for long-term, satisfactory, and economical operation! Presenting comprehensive introductory material that emphasizes the four lubricant categories and the significance of a lubricant's parameter, *Practical Lubrication for Industrial Facilities* discusses; applications essential for lube oil conservation and consolidation projects, heavy duty hydraulic oil requirements, mineral and synthetic food-grade oils, the merits of the most important synthetic hydrocarbon oils, appropriate lubricants for forest products and paper machinery, the characteristics of competitive lubricating greases, the benefits and pitfalls of particular pastes, waxes, and tribosystems, and lubricant delivery systems, including centralized grease and fully automated oil mist lubrication systems.



## FUNDAMENTALS OF FLUID FILM LUBRICATION

By Bernard J. Hamrock, Steven R. Schmid,  
Bo O. Jacobson

Hardcover, 750 pages, Illustrated

**\$165.00**

Specifically focusing on fluid film, hydrodynamic, and elastohydrodynamic lubrication, this Second Edition studies the most important principles of fluid film lubrication for the correct design of bearings, gears, and rolling operations and the prevention of friction and wear in engineering designs—thoroughly explaining various theories, procedures, and equations for improved solutions to machining challenges.

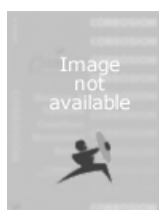


## SYNTHETIC LUBRICANTS AND HIGH-PERFORMANCE FUNCTIONAL FLUIDS

By Leslie R. Rudnick, Ronald Shubkin  
Hardcover, 904 pages, Illustrated

**\$250.00**

Fully updated to reflect the latest innovations in the field, this unique single-source reference offers state-of-the-art information on all the major synthetic fluids—the established products and some highly promising experimental fluids with commercial potential. This Second Edition contains new chapters on: polyinternalolefins, polyphenyl ethers, polymer esters, highly refined mineral oils, refrigeration lubes, automotive gear oils, industrial gear oils. Describing specific applications of synthetic fluids for lubrication, heat transfer, power transmission, electrical insulation, and corrosion inhibition, among other uses, *Synthetic Lubricants and High-Performance Functional Fluids, Second Edition* discusses; historical development and chemistry, property and performance characteristics, manufacturing, marketing, and economics, comparative performance data, current practice, long-range trends, and future developments, environmental impact, conservation, toxicity, and biodegradability.



## METALWORKING FLUIDS

By J.P. Byers  
Hardcover, 504 pages, Illustrated

**\$165.00**

Providing concise introductory material on metallurgy for the novice, this practical reference presents the state of the art in metalworking fluid technology—detailing its history, formulation, application, maintenance, testing, and governmental regulation. Contains a valuable troubleshooting section on the causes of and cures for common industrial problems related to metalworking fluids! Covering all important operational aspects of fluids in metalworking, *Metalworking Fluids*; surveys standard laboratory techniques, including American Society for Testing and Materials' tests, to evaluate the quality and performance of metalworking fluids, examines cutting, grinding, stamping, drawing, and forming operations, analyzes chemical and nonchemical methods to control microorganisms in metalworking fluids, including Environmental Protection Agency approved agents, summarizes recent studies on how metalworking fluid components affect waste treatment and bioreistance, describes procedures to prolong the use of metal-working fluids and reduce their environmental impact, addresses the skin care and general health concerns of machine operators handling metalworking fluids, furnishes a comprehensive glossary of useful metalworking and manufacturing industry terms.



## MECHANICAL RELIABILITY IMPROVEMENT: Probability and Statistics for Experimental Design

By R.E. Little

Hardcover, 672 pages, Illustrated, Includes CD-ROM

**\$185.00**

*Mechanical Reliability Improvement provides; probability and statistical concepts developed using pseudorandom numbers, enumeration-, simulation-, and randomization-based statistical analyses for comparison of the test performance of alternative designs, as well as simulation- and randomization-based tests for examination of the credibility of statistical presumptions and discusses centroid and moment of inertia analogies for mean and variance, and the organization structure of completely randomized, randomized complete block, and split spot experiment test programs. Contains a compact disc with nearly 200 microcomputer programs illustrating a wide range of reliability and statistical analyses!*



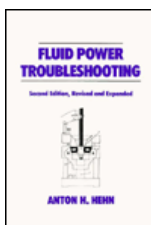
## RELIABILITY BASED MECHANICAL DESIGN

By Thomas A. Cruse

Hardcover, 352 pages, Illustrated, Includes floppy-disk

**\$145.00**

*Discusses the modern tools that support designs based on product reliability-focusing on the classical techniques of reliability analysis as well as state-of-the-art response surface modeling and physics-based reliability prediction methods. Makes extensive use of readily available personal computer tools that permit a host of application examples and contains an IBM-compatible disk that illustrates-with concrete examples-immediately applicable software that facilitates reliability modeling in mechanical design.*



## FLUID POWER TROUBLESHOOTING, Second Edition

By A. Hehn

Hardcover, 664 pages, Illustrated

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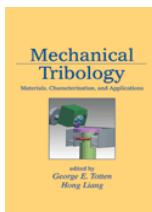
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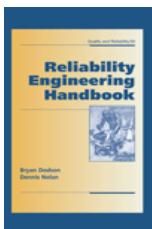
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