



## TRIGONOMETRY TABLES AND INVOLUTE FUNCTIONS

### ORDER NO.: BK-ASH

3" x 6" Pocket Size, 72 pgs.

Carry this handy "Pocket" book around with you – always have the answers at your fingertips.

#### Table of Contents:

Trigonometry Table • Natural Functions, Sines • Cosines • Tangents • Cotangents • Secants • Cosecants • Involute Functions - Tables and Formulas for Spur and Helical Gears, General Formulas, The Involute Functions, Rolling for Size with Master, Block (span) Measurement, Tooth Caliper Measurement, How to Measure over Pins or Ball, and much more.



## INVOLUTOMETRY AND TRIGONOMETRY

ORDER NO.: BK-V100 (hard cover)  
ORDER NO.: BK-V200 (soft cover)

By Werner F. Vogel, Dr. Eng.,  
1980, 321 pgs., illus.

This book of tables is designed for practical everyday use wherever trigonometric or involutometric functions are needed. With its special Gear Appendix and its appendices on related subjects, it is designed to meet the needs of the gear, gear tool, and other affiliated industries.

This book contains a Main Table and three appendices. The Main Table is a complete table for trigonometry as well as for involutometry. This double purpose does not impair its convenience or simplicity, indeed, it is more complete and more conveniently arranged than most of the existing trigonometric tables. We have seven place tables of natural functions for every hundredth of the degree of the 90° quadrant with a computer system of conversion tables and miscellaneous mathematical tables particularly adaptable to gear calculations.

#### Table of Contents:

Main Table • Auxiliary Interpolation Table • Explanation, Definitions, Constants • Graphical Characteristics of Involutometry and Trigonometry • Conversion Table • Polygon Tables • Trigonometric Conversion Formulas • Involutometric Conversion Formulas • Derivatives of Involutometry • Integrals • Sectors • Involute Helicoid • Involute and Cycloid Tracing Tables • Gears of Any Tooth Profile • Gear Standards • Involute Gears • Definitions • Plane Involutometry • Solid Involutometry • Extended Involutometry • New Terms



## METAL CUTTING TOOL HANDBOOK Seventh Edition

ORDER NO.: BK-1177

By United States Cutting Tool Institute, 1989,  
900 pgs. (approx.), illus. ISBN 0-8311-1177-1

Current and comprehensive, this classic reference completely covers advances in technology, tooling, materials and designs.

#### Features:

- Provides up-to-the-minute information on twist drills, reamers, counterbores, taps, dies, milling cutters, hobs and gear shaper and shaving cutters.

- Reflects the experience of specialists continually exposed to industry problems in everyday manufacturing operations in the cutting tool field.
- Supplies useful table and formulas on gears, spindle noses and arbors, tapers and angles, milling shanks and much more in an inclusive engineering data chapter.
- Includes dozens of readable charts containing standards produced by the United States Cutting Tool Institute.

#### Table of Contents:

Drill Section • Reamer Section • Counterbore Section • Tap and Die Section • Milling Cutter Section • Hob Section • Gear Shaving Cutter Section • Engineering Data Section • Index



## GEAR DESIGN, MANUFACTURING AND INSPECTION MANUAL

### ORDER NO.: BK-006

1990, Over 500 figures and graphs.  
ISBN 1-56091-006-2, 656 pgs., 4 Sections,  
49 Papers, Hardbound

An essential reference for both novice and expert gear designers.

Throughout the last decade, significant technological advancements have virtually revolutionized the gear engineering industry. In one complete volume, this authoritative publication details technologies and applications in the design, manufacture and inspection of gears. Individual, comprehensive sections on design, manufacture and inspection are included, as well as an extensive appendix complete with a glossary of terms, listings of related standards, sources for educational and technical information, and much more. An essential reference for the mobility engineer needing a single source to current concepts and techniques for gear design and its applications.

#### Table of Contents:

- Fundamentals of Gear Stress/Strength Relationships - Materials
- Design Guidelines for High-Capacity Bevel Gear Systems
- The Application of Graphics Engineering to Gear Design
- GODA5 (Gear Optimization and Design Analysis 5)
- How to Design Quiet Transmissions
- Computer Aided Design (CAD) of Forging and Extrusion Dies for the Production of Gears by Forming
- Roto Flo Metric/Inch - Spline and Serration Standards
- Hard Gear Finishing
- The Process of Gear Shaving
- Carbonitriding and Hard Shot Peening for High-Strength Gears
- On-line Diagnostics of Rear Axle Transmission Errors
- Gear Inspection and Chart Interpretation
- Pitch and Index Errors
- Functional Gear Checking
- Gear Teeth Span Measurement, and more!



## TECHNICAL SHOP MATHEMATICS Second Edition

### ORDER NO.: BK-A453

By John G. Anderson, 1983, 500 pgs.,  
ISBN 0-8311-11453

Suitable for home study, classroom use or as a superior reference guide for the shop professional, this practical text presents a review and introduction to basic shop mathematics in a straightforward manner.

(con't. on next page)

(con't. from previous page)

**Features:**

- Offers a slowly paced exposition of the basic principles of the subject necessary to machinist, toolmakers, patternmakers and other persons in the mechanical trades.
- Logically progresses from arithmetical operations through measurement systems to basic algebra for shop-formula solving skills, practical geometry with shop examples and applications, and trigonometry to emphasize its valuable use in the shop and trades.
- Provides numerous shop-related problems requiring practical application of principles, as well as worked-out examples reinforcing concepts.
- Includes answers to the odd numbered study problems.
- Uses actual part detail - gages, plugs, templates - for each practical application of geometric and trigonometric principles.
- Features practical explanations of the relation of SI systems to the common English system.
- Highlights the use of precision gage blocks.

**Table of Contents:**

The Number System • Fractions and Mixed Numbers • Decimals and Decimal Fractions • Exponents, Powers, Roots and Percentages • Measurements - English and Metric (SI) Units • Fundamentals of Algebra • Ratio and Proportion - Gear Ratios • Shop Formulas • Tapers and Related Tooling Calculations • Geometry - Lines, Angles and Plane Figures • Geometry - Axioms, Postulates and Propositions • Geometry - Triangles and Quadrilaterals • Geometry - The Circle • Geometry - Surface Areas and Volumes of Solids • Right-Angle Trigonometry • Shop Trigonometry



## BLUEPRINT READING BASICS

ORDER NO.: BK-H186

*By Warren Hammer, 1980, 200 pgs. (approx.), illus., ISBN 0-8311-1186-0*

Written in a non-technical and easy-to-understand manner, this practical guide combines blueprint reading theory with industry applications. It is appropriate for anyone wanting to learn how to read blueprints or needing additional information on the subject. This includes machinists, mechanics, technicians, inspectors, personnel in maintenance and repair service industries as well as students taking blueprint reading, machine shop or tool and die courses.

**Features:**

- Provides an introduction, a detailed review of a specific topic, illustrations, exercises and review questions within each chapter.
- Uses illustrations and examples to assist readers in visualizing the drawing.
- Contains copies of industrial blueprints and industry practices and standards throughout the text.
- Keeps discussions on related subjects such as mathematics, engineering theories, drafting techniques and machine shop practices to a minimum.
- Includes no exercises requiring special skills such as free hand drawing.
- Does not require a technical background to understand the subject.

**Table of Contents:**

The Basics of Blueprints • The Reading of Blueprints • The Lines and Views of Blueprints • The Total Blueprint • Dimensions • Tolerances • Surface Texture • Threads • Fasteners • Gears • Machine Terms and Holes • Machining Requirements • Geometric Dimensioning and Tolerancing • Types of Blueprints and Computer-Aided Design • Measuring Tools

**APPLICATION OF METAL****CUTTING THEORY**

ORDER NO.: BK-G176

*By Fryderyk E. Gorczyca, 1987, 275 pgs., illus.  
ISBN 0-8311-1176-3*

Combines theory with application to explain basic scientific and economic concepts of the subject. Intended for everyone involved in or having an interest in metal cutting, this unique hands-on reference is written in an easy-to-follow and readable manner.

**Features:**

- Explains how to intelligently select the most economical cutting tools and materials.
- Supplies all unknowns to consider before making cutting decisions.
- Increases analytical skill through application of the scientific method.
- Contains 106 illustrative example problems, 27 technical data tables, and 125 end-of-chapter problems.

**Table of Contents:**

Economic Considerations • The Cutting Process • Cutting Tool Materials • Mechanics of the Cutting Process • Tool Wear and Affiliated Production Costs

**MACHINE SHOP TRAINING****COURSE Fifth Edition**

ORDER NO.: BK-J039 VOL. I

ORDER NO.: BK-J040 VOL. II

*By Franklin D. Jones, Vol. I 1964, 570 pgs.,  
ISBN 0-8311-1039-2; Vol. II 1964, 566 pgs.,  
ISBN 0-8311-1040-6*

These valuable combination texts and reference guides include everything from underlying principles, to standards, to calculations for every specific task in shop training.

**Features:**

- Presents an outstanding treatise on machine shop practice that includes fundamental principles and methods of adjusting and using different types of machine tools.
- Provides typical examples of work-measuring instruments and gauges, cutting screw threads by different processes, thread grinding, gear cutting, precision toolmaking methods, typical shop problems with solutions, miscellaneous facts relating to the art of machine construction, and much more.

**MACHINE SHOP PRACTICE****Second Edition**

ORDER NO.: BK-M126 VOL. I

ORDER NO.: BK-M132 VOL. II

*By Karl H. Moltrecht, Vol. I 1981, 496 pgs.,  
ISBN 0-8311-1126-7; Vol. II 1981, 517 pgs.,  
ISBN 0-8311-1132-1*

Everything the apprentice or on-the-job professional needs to know about the intelligent and efficient operation of machine tools is here.

**Features:**

- Now offers sections on numerical control, grinding wheels, single point cutting tools and tool wear, basic drilling machine setups and formulas for estimating the power required for planning.

(con't. on next page)

(con't. from previous page)

- Gives greater attention to methods of setting up the workpiece on milling machines, horizontal boring machines, planners and shapers.
- Includes more than 760 illustrations and 70 tables.

**MANUAL OF GEAR DESIGN****ORDER NO.: BK-B100 VOL. I****ORDER NO.: BK-B200 VOL. II****ORDER NO.: BK-B300 VOL. III**

*By Earle Buckingham and Elliot K. Buckingham, 1981, 447 pgs., illus. #B2 #S1, Vol. I, 161 pgs., #S2, Section Two: 149 pgs., #S3, Section Three, 151 pgs., Plastic Comb Binding*

For over 45 years, The MANUAL OF GEAR DESIGN has been a standard reference work for engineers. With the advent of pocket calculators and mini-computers, the need for some of the tabular material has diminished, and in revising this work, the sections on gear tooth loads have been revised and expanded, particularly concerning dynamic gear tooth loads. Material on Recess Action Gearing has been added.

**Volume I: Gear Ration & Mathematical Tables:**

Trigonometric Tables • Minutes into Decimals of a Degree • Involute Functions • Circular Measure - Degrees and Radians • Brocot's Tables of Gear Ratios • Factor of Numbers (1 - 600)

**Volume II: Spur and Internal Gears**

Terms & Symbols • Plane Geometry • Involute Trigonometry • Design of Spur Gear Teeth • Design of Internal Gears • Differential & Planetary Drives • Design of Gear Drives for Extreme Conditions • How Design Errors Influence the Functioning of Gear Trains • Accelerated Life Tests

**Volume III: Helical & Spur Gears:**

Helical Gear Mathematics • Design of Helical Gear Teeth, Parallel Shafts • Recess Action Gears • Internal Helical Gear Drives • Planetary Gears • End Thrust and Bearing Loads • Backlash • Helical Gear Tooth Loads • Spiral Gears • Spiral Gear Mathematics • Design of Spiral Gears • Load Carrying Capacity of Spiral Gears

**TABLES FOR RECESS ACTION GEARS****ORDER NO.: BK-B400**

*By E.K. Buckingham, 1964, 94 pgs., Plastic Comb Binding*

Recess Action Gears may be used whenever one gear is a driver and the other a follower to provide better gear tooth action, longer life and less noise than standard form gears. Includes tables showing the necessary data for the design and manufacture of recess action gears for both 20° and 25° PA. All values in the tables are for 1 DP performing all basic gear calculation, for 1 DP generally results in simpler calculations, reduces chances for error and the interpretation of the numbers derived in terms of geometry of the gear form is more easily visualized. An article on Recess Action Gearing has been included for clarification purposes.

**THE METALS BLACK BOOK****Volume I: FERROUS EDITION****ORDER NO.: BK-6428**

1992, 492 pgs., 22 Chapters, Paperbound  
ISBN 0-9696428-0-6

The culmination of over 10 years of collecting and organizing metal data. The Metals Black Book contains over 100,000 pieces of practical, up-to-date metals data in a convenient, pocket-size format. This book will be a valuable reference tool for anyone working in an industry that uses metals or anyone teaching or studying metals - related courses, regardless of their application or level of experience.

**HANDBOOK OF DIMENSIONAL****MEASUREMENT****Second Edition****ORDER NO.: BK-F136**

*By Francis T. Farago, 1982, 524 pgs., illus., ISBN 0-8311-1136-4*

A readable, comprehensive guide to all the know-how for advanced dimensional measurement technology. Its wealth of practical data and thorough coverage of methods make it an indispensable handbook for engineers and technicians engaged in the various stages of industrial production.

**Features:**

- Provides 19 chapters filled with authorized treatments of all aspects of dimensional measurement technology for industry. Contains four new chapters – Screw Thread Gaging and Measurement, Measurement of Gears, Process Control Gaging and Automated Dimensional Measurements.

**Table of Contents:**

Introduction • Line-Graduated Measuring Instruments • Fixed Gages • Gage Blocks • Comparative Length Measurements with Mechanical Indicators • Pneumatic Gaging • Electronic Gages • Engineering Microscopes • Optical Projectors • Angle Measurements • The Systems and Applications of Measuring Machines • Profile Measurements • The Measurement of Roundness and Circular Contours • Surface Texture Measurements • Screw Thread Gaging and Measurement • Measurement of Gears • Process Control Gaging • Automated Dimensional Measurements

**DESIGN OF WORM AND SPIRAL GEARS****ORDER NO.: BK-B500**

*By Earle Buckingham and Henry H. Fyffel, 1981, 447 pgs., illus.*

This book does not present the conventional practices for the design of worm gear drives; these are already covered in the many texts on elements of machine design, handbooks, and the catalogs of gear manufacturers. It has been written primarily for those persons who want to improve upon the results they are now obtaining from their worm gear units both as regards life and load-carrying ability.

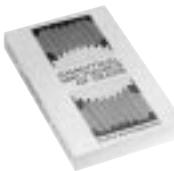
(con't. on next page)

(con't. from previous page)

This book does two jobs: (1) It provides a step-by-step guide to the design of worm and spiral gear drives with all-recess action and (2) it presents certain basic principles and practices which enter into the successful design and manufacture of gears and drives of all types.

**Table of Contents:**

Introduction: Worm Gear Geometry, Contact Conditions and Nature of Action • 14-1/2° Linear Pitch Worms • 20° Linear Pitch Worms • 25° Linear Pitch Worms • Selection and Design of Worms • Design of Reduction Drives • Design of Worms for Step-Up Drives • Diametral Pitch Worms • Design of Spiral Gears • Fine Pitch Worm and Spiral Gears • Contact Analysis, Screw Helicoid • Contact Analysis, Involute Helicoid • Lubrication, Friction and Wear • Dynamic Loads on Spiral Gears • Dynamic Loads on Worm Gear Drives • Beam Strength of Teeth • Limiting Wear Loads for Spiral and Worm Gears • Tooth and Bearing Loads • Analytical Design of a Worm Gear Drive • Analytical Design of a Spiral Gear Drive



## ANALYTICAL MECHANICS OF GEARS

**ORDER NO.: BK-B600**

*By Earle Buckingham, 1963, 542 pgs., illus., Paperback*

This important work will provide a solid foundation upon which logical design practices and design data can be constructed. Its chief aim is to give a clear understanding of the nature of the action and contact between the contracting teeth of the different types of gears, an understanding that is absolutely necessary if designs are to exploit the full possibilities of these mechanical elements.

The first part of the book presents an analysis of conjugate gear-tooth action, nature of the contact and resulting gear-tooth profiles of the several types of gear: spur, internal, helical, spiral, worm, bevel and hypoid or skew bevel gears. The later chapters examine gear teeth in action. These discuss frictional heat of operation and its dissipation, friction losses and efficiencies, dynamic loads in operation, beam strength or resistance of the teeth to breakage and fatigue, surface-endurance limits of materials, and the limiting wear loads or the potential resistance to surface disintegration and excessive wear.

Familiarity with this book is still regarded as a necessary prerequisite to work in modern gear manufacturing; an indispensable book for practicing engineers concerned with gear production and the problems of tooth geometry, manufacturing accuracies, loading and general design.

**Table of Contents:**

Conjugate Action on Spur Gears • Internal Gears • Trochoids, Tooth Fillets, and Undercut • The Involute Curve and Its Properties • Involutometry of Spur Gears and Internal Gears • Conjugate Action on Helical Gears • Involutometry of Helical Gears and Spiral Gear Helicoid Sections • Contact on and Design of Worm-gear Drives • Hourglass-worm Drives • Conjugate Tooth Action on Bevel Gears • The Octoid Form on Bevel Gears • Spiral Bevel Gears • Hypoid Gears • Gear Teeth in Action • Efficiencies of Gears • Analysis of Dynamic Loads on Spur-gear Teeth • Beam Strength of Gear Teeth • Surface-endurance Limits of Materials • Limiting Loads for Wear on Gears

**GEAR DESIGN SIMPLIFIED****Third Edition****ORDER NO.: BK-J159**

*By Franklin D. Jones and Henry H. Ryffel, 1961, 151 pgs., illus. ISBN 0-8311-1159-3*

Contains a series of simply diagrammed gear-designing charts, illustrating solutions to practical problems. Presents all of the rules, formulas and examples applying to all types of gears. Aids design engineers and manufacturers involved in the production of gears.

**Table of Contents:**

Standard Gear-tooth Forms and Dimensions, Spur Gears • Full Depth Teeth & Stub Teeth, Internal Gears, Bevel Gears • Right-angle Drives, Straight-tooth Bevel Gears, Spiral Bevel Gears • Gleason Systems, Bevel Gears of Parallel-depth Type, Helical Gears, Herringbone Gears, Worm Gearing, Gearing Ratios and Speeds, Power-transmitting Capacity of Gears, Definitions of Gear Terms, Table for Checking Spur Gear Sizes, Steels for Industrial Gearing, Preparation of Gear Drawing, Calculating Replacement • Gear Dimensions from Easily Made Measurements, Fine-pitch Spur, Helical, Worm and Bevel Gears



## BASIC MACHINING REFERENCE HANDBOOK

**ORDER NO.: BK-M174**

*By Arthur R. Meyers and Thomas Slattery, 1988, 281 pgs., illus. ISBN 0-8311-1174-7*

A complete and easy-to-use hands-on source for experienced machinists as well as programmers, tool designers, cost estimators and others not directly involved with performing specific machining steps. Its aim is to present the principles of basic machining.

**Features:**

- Shows the reader how to determine speeds and feeds of metals based on chemical compositions.
- Explains how to select the appropriate cutting tools and their configurations.
- Provides an extensive checklist of tools and tooling, instruments and accessories and attachments.
- Uses projects to illustrate manual and NC and CNC machining.
- Discusses all grinding procedures and measurement standards used.
- Presents brief historical summaries of the development of basic machine tools.
- Progresses in a logical sequence from the machining process to the basic machining operations.

**THE ISO 9000 HANDBOOK****Third Edition****ORDER NO.: BK-9000**

*Edited by Robert W. Peach, 1997, 1008 pgs., illus. ISBN 0-7863-0786-2*

To succeed in global markets, today's organizations must meet or exceed the requirements of ISO 9000. Now you can get complete information and reliable, up-to-date guidance to achieve registration. In one easy-to-use manual, you will find hundreds of tips and techniques to implement these management systems standards.

(con't. on next page)

(con't. from previous page)

Fully updated and expanded, *The ISO 9000 Handbook, Third Edition* provides comprehensive analyses of the ISO 9000, QS-9000 and ISO 14000 standards – along with practical implementation strategies. All new chapters written by today's leading quality systems experts will help you:

- Understand the requirements of ISO 9000, QS-9000 and ISO 14000.
- Successfully integrate implementation throughout your organization.
- Effectively screen and select the best ISO 9000 registrars for your needs.
- Expertly conduct an internal quality audit.
- Document your quality system – and use the documentation against legal liability.
- Apply ISO 9000 standards to specific industry segments: service, construction, software, chemicals and more.

Edited by renowned quality systems expert Robert Peach, *The ISO 9000 Handbook, Third Edition* features several charts, tables and checklists that make the principles of quality systems standards easier to understand and apply. You'll also find an invaluable reference section that directs you straight to trainers, consultants, Internet resources, and several other organizations that can help make your registration a reality.



## GEAR GEOMETRY AND APPLIED THEORY

### ORDER NO.: BK-L095

*By Faydor L. Litvin, Published by PTR Prentice Hall and Distributed by SAE, 1994, 741 pgs., 25 Sections, Hardbound. ISBN 0-13-211095-4*

This comprehensive edition offers, in a single volume, the modern theory of gearing and the geometry of various types of gear drives. Based on over 40 years of intensive research by the author, *Gear Geometry and Applied Theory* provides thorough grounding in underlying principles and covers important new topics, such as generation of gears with new surface topology by application of CNG machines, minimization of deviations of real-tooth surfaces, and generation of new types of gears.

#### Contents Include:

Coordinate Transformation • Relative Velocity • Gengrodes, Axodes, Operating Pitch Surfaces • Planar Curves • Surfaces • Conjugate Surfaces and Curves • Curvatures of Surfaces and Curves • Mating Surfaces • Curvature Relations, Contact Ellipse • Computerized Simulation of Meshing and Contact • External Involute Gears • Internal Involute Gears • Noncircular Gears • Cycloidal Gearing • Involute Helical Gears with Parallel Axes • Helical Involute Gears with Crossed Axes • Face-Gear Drives • Hypoid Gears • Design of Flyblades • Coordinate Measurements and Minimization of Deviations



## DESIGN GUIDE FOR INVOLUTE SPLINES

### ORDER NO.: BK-C583

*By Robert W. Cedoz, 1994, 35 pgs., Paperbound ISBN 1-56091-583-8*

This guide will assist design engineers in understanding the design, manufacture, and operation of splined shaft connections.

(con't. on next page)

(con't. from previous page)

#### Contents Include:

Purpose • Scope • Reference • Spline Terms and Definitions • Applications • Operation • Dimensioning • Manufacture • Bibliography

The guide also features tables on:

- Maximum allowable compressive stress
- Wear life factor
- Spline overload factor
- Misalignment
- Maximum allowable shear stress
- Fatigue life factor
- Equation for spline dimensions, tolerances and stresses



## INVOLUTE SPLINES AND INSPECTION

### ORDER NO.: BK-1970

*Sponsored by The Society of Automotive Engineers Inc. and American Society of Mechanical Engineers, 154 pgs., Standards ANSI B92.1-1996*

This ANSI B92.1-1996 standard is the result of a joint effort by SAE Involute Splines, Serrations and Inspection Committee and ANSI Standards Committee B92, Involute Splines and Inspection, to update ASA B5.15-1960.

ASA B5.15-1960 was essentially a revision and consolidation of ASA B5.15-1950, ASA B5.26-1950 and ASA B5.31-1953.

Most of the features of the 1960 standard are retained; plus the addition of three tolerance classes, for a total of four. The standard includes involute splines with 30°, 37-1/2°, and 45° pressure angle and tables for these splines. Detailed inspection data is included. All dimensions, listed in this standard, are for the finished part.

This publication is approved by the American National Standards Institute.



## METRIC MODULE INVOLUTE SPLINES

### ORDER NO.: BK-1980

*Standard ANSI B92.2M-1980 (R1989) Includes B92.2MA-1984, 257 pgs., SAE*

This B92.2M-1989 involute spline standard presented in hard metric form is the American National Standards Institute (ANSI) version of the International Standards Organization (ISO) involute spline standard ISO 4156. This is not a "soft metric" conversion of any previous inch-based spline standard. This publication is divided into three parts.

Parts I and II cover spline generalities and dimensions. Part III covers spline inspection. The ISO 4156 standard, from which this document is derived, is the result of a cooperative effort between the ANSI B92 Committee and other members of the ISO/TC 14-2 Involute Spline Committee.

Many of the features of the previous ANSI B92.1-1970 standard have been retained, such as 30°, 37-1/2° and 45° pressure angles; flat root and fillet root side fits; the four tolerance classes 4, 5, 6 and 7; tables for a single fit class; and the effective fit concept.

Among the major differences are: use of the module in place of pitch; dimensions are in millimeters rather than inches; the "basic rack," removal of the major diameter fit; and use of the ISO symbols in place of those previously used. Provision has been made for calculating three defined clearance fits, although tables for these fits are not included. All dimensions listed in this standard are for the finished part.



## MACHINERY'S HANDBOOK

### 25th Edition

ORDER NO.: **BK-2575** (tool box size)

ORDER NO.: **BK-2595** (jumbo size)

ORDER NO.: **BK-2599** (guide)

ORDER NO.: **BK-2575CD** (CD)

*By Erik Oberg, Franklin D. Jones, Holbrook L. Horton and Henry H. Ryffel. Edited by Robert Green. 1996, 2,547 pgs., Tool Box Edition ISBN 0-8311-2575-6, 5" x 7" with thumb tabs*

The 25th edition of the metalworking industry's unmatched reference work is here. *The Machinery Handbook* provides a wealth of information on basic math, mechanics, materials, measuring, tooling, machining processes, fasteners, threads, gearing, bearings, engineering and shop standards, illustrations, formulas and hundred of readable tables and graphs. As a ready-to-use reference, the Handbook provides step-by-step, worked-out examples illustrating the application of formulas arranged in the best sequence for use with a calculator or computer. The text is written in easy-to-understand language with specific recommendations for most manufacturing processes.

#### Now available in CD-ROM and large-print editions.

The Jumbo edition is bigger in every dimension. This enlarged version contains all the valuable information as the standard version. Each page (and every letter and figure) is a full 40% larger than the standard edition.

#### Features:

- Heavier cover
- Sturdier paper
- Thumb tabs for easy reference

The CD-ROM adds state-of-the-art electronic features to the complete text of the *Bible of the Mechanical Industries*.

#### Features:

- Boolean and proximity searches
- Complete text and key word search
- Extensive support for bookmarking, journaling and annotation
- Inter-links leading to related topics and examples
- Zoom features for detailed viewing of figures and graphs
- Cut and paste capabilities for inserting text and figures into other documents and programs
- Expandable table of contents that provides instant access to text, tables and illustration

Besides the complete 25th Edition, this CD-ROM also contains material from earlier editions of the *Machinery's Handbook*. Extensive cross-referencing between the CD-ROM and Handbook make them ideal complements and the COMBO SPECIALS a great value.



## MACHINERY'S HANDBOOK

### GUIDE For 25th Edition

ORDER NO.: **BK-2599** (guide)

*By John M. Amiss, Franklin D. Jones and Henry H. Ryffel, 1996, 249 pgs., illus. ISBN 0-8311-2599-3*

This edition of *Machinery's Handbook Guide* should be used in conjunction with the 25th Edition of *Machinery's Handbook*.

This guide is designed to aid in the most efficient use of the Handbook and to reinforce the extensive information that it provides. Hundreds of examples and test questions with answer keys on the use of tables, formulas, and general data in *Machinery's Handbook*, selected especially for engineering and trade schools, apprenticeship and home-study courses, are provided.



## LUBRICANTS AND THEIR APPLICATIONS

ORDER NO.: **BK-M922**

*By Robert W. Miller, 1993, 193 pgs., illus., ISBN 0-07-041992-2*

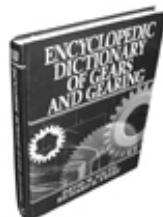
Lubricants, the "lifeblood" of all machines, are the key to efficient, uninterrupted industrial operations. If you are an engineer or maintenance professional responsible for maximizing the performance of industrial machinery, you know that poor or improper maintenance can mean costly downtime – even disaster for your company's bottom line.

Here's the first complete guide to improving machine maintenance and availability through the proper selection and use of industrial lubricants. Comprehensive in scope, the book provides a solid understanding of the full range of lubricants available today – including engine oils, automotive and industrial gear oils, transmission fluids, mobile and industrial hydraulics, greases, machine tool lubricants, compressor lubricants and cutting fluids and rust preventatives. Practical in approach, the guide shows exactly how to evaluate and choose the correct lubricants for specific applications.

This essential resource offers proven tools and methods for establishing an efficient maintenance system and enhancing machine productivity. You'll find job-tested guidelines for:

- Testing products on-site and in the laboratory
- Consolidating products to minimize purchasing, stocking and handling requirements
- Reclaiming and reusing multipurpose lubricants
- Evaluating the cost-effectiveness of various lubricants
- Substituting products in emergency situations, and much more

In addition, you'll find valuable information on the components and formulations of lubricants...the performance of various lubricants under different operating conditions...troubleshooting equipment problems...and establishing effective relationships with suppliers. The guide also includes an easy-access glossary of terms and a wealth of data on viscosity, temperature conversions, and lubricant grading systems.



## ENCYCLOPEDIA OF GEARS AND GEARING

ORDER NO.: **BK-796-0**

*By David South and Richard Ewert, 416 pgs., 250 illus., ISBN 059796-0*

Don't let the explosion of gear terms, trade names, and technologies delay orders, confuse specs or force plant down time. David South and Richard Ewert's *Encyclopedia of Gears and Gearing* compiles and standardizes all the terms you need to design, select, fabricate, maintain, lubricate, troubleshoot, test and inspect gears of every type, size, make and material. Over 2,600 A-to-Z entries plus 250 detailed illustrations quickly clear up questions on gears.

#### Contents:

Geometry • Types • Materials and Heat Treatments • Load Rating • Design • Drive Selection • Inspection and Testing • Tooth Wear and Failure • Drive Lubrication • Splines • Cutting Tools • Manufacturing Equipment and Methods, plus much more.