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Nota di contenuto	Cover (Machinery's Handbook Guide) -- Title Page -- Copyright -- Table of Contents -- The Purpose of This Book -- Dimensions and Areas of Circles and Spheres -- Area of Square Inscribed in Circle -- Spheres -- Practice Exercises for Section 1 -- Chords, Segments, and Hole Circles -- Lengths of Chords -- Use of the Table of Segments of Circles-Handbook page 79 -- Hole Circle Coordinates -- Practice Exercises for Section 2 -- Formulas and Their Rearrangement -- Omitting Multiplication Signs in Formulas -- Rearrangement of Formulas -- Fundamental Laws Governing Rearrangement -- Solving Equations or Formulas by Trial -- Derivation of Formulas -- Empirical Formulas -- Parentheses -- Constants -- Mathematical Signs and Abbreviations -- Conversion Tables -- Practice Exercises for Section 3 -- Spreadsheet Calculations -- Basic Spreadsheet Concepts -- Advanced Spreadsheet Concepts -- Practice Exercises for Section 4 -- Calculations Involving Logarithms -- Principles Governing the Application of Logarithms -- Finding the Logarithms of Numbers -- Sample Numbers and Their Characteristics -- Obtaining More Accurate Values than Given Directly by Tables -- Changing Form of Logarithm Having Negative Characteristic -- Cologarithms -- Practice Exercises for Section 5 -- Dimensions, Areas, and Volumes of Figures -- Practice Exercises for Section 6 -- Geometrical Propositions and Constructions

-- Practice Exercises for Section 7 -- Trigonometry: Functions of Angles -- Functions of Angles and Use of Trigonometric Tables -- Finding Angle Equivalent to Given Function -- How to Find More Accurate Functions and Angles than Those Given in the Table -- Trigonometric Functions of Angles Greater than 90 Degrees -- Use of Functions for Laying Out Angles -- Tables of Functions Used in Conjunction with Formulas -- Practice Exercises for Section 8. Solution of Right-Angle Triangles -- Helix Angles of Screw Threads, Hobs, and Helical Gears -- Practice Exercises for Section 9 -- Solution of Oblique Triangles -- Use of Formulas for Oblique Triangles -- When Angles Have Negative Values -- When Either of Two Triangles Conforms to the Given Dimensions -- Practice Exercises for Section 10 -- Figuring Tapers -- Table for Converting Taper per Foot to Degrees -- Tapers for Machine-Tool Spindles -- Practice Exercises for Section 11 -- Tolerances and Allowances for Machine Parts -- Meanings of "Limit," "Tolerance," and "Allowance" -- Relation of Tolerances to Limiting Dimensions and How Basic Size Is Determined -- When Allowance Provides Clearance Between Mating Parts -- When Interference of Metal Is the Result of Allowance -- Obtaining Allowance by Selection of Mating Parts -- Dimensioning Drawings to Ensure Obtaining Required Tolerances -- Violations of Rules for Dimensioning -- Practice Exercises for Section 12 -- Using Standards Data and Information -- Important Objectives of Standardization -- Standardization Technique -- Standards Information in the Handbook -- "Soft" Conversion of Inch to Metric Dimensions -- "Hard" Metric or Inch Standard Systems -- Interchangeability of Parts Made to Revised Standards -- Practice Exercises for Section 13 -- Standard Screw and Pipe Threads -- Width of Flat End of Unified Screw Thread and American Standard Acme Screw Thread Tools -- Practice Exercises for Section 14 -- Problems in Mechanics -- The Moment of a Force -- The Principle of Moments in Mechanics -- The Principle of Work in Mechanics -- Efficiency of a Machine or Mechanism -- Force Required to Turn a Screw Used for Elevating or Lowering Loads -- Coefficients of Friction for Screws and Their Efficiency -- Angles and Angular Velocity Expressed in Radians -- Practice Exercises for Section 15. Strength of Materials -- Finding Diameter of a Bar to Resist Safely Under a Given Load -- Diameter of a Bar to Resist Compression -- Diameter of a Pin to Resist Shearing Stress -- Beams and Stresses to Which They Are Subjected -- Beam Formulas -- Strength in Plastic and Polymer Composite Parts -- Sustainability Considerations -- Practice Exercises for Section 16 -- Design of Shafts and Keys for Power Transmission -- Shafts Subjected to Combined Stresses -- Design of Shafts to Resist Torsional Deflection -- Selection of Key Size Based on Shaft Size -- Keys Proportioned According to Transmitted Torque -- Set-Screws Used to Transmit Torque -- Practice Exercises for Section 17 -- Splines -- Specifying Spline Data on Drawings -- Practice Exercises for Section 18 -- Designing and Cutting Gears -- Calculating Gear Speeds -- Diametral Pitch of a Gear -- Power-Transmitting Capacity of Bevel Gears -- Dimensions and Angles Required in Producing Gears -- Proportioning Spur Gears When Center Distance Is Fixed -- Dimensions in Generated Bevel Gears -- Dimensions of Milled Bevel Gears -- Selection of Formed Cutters for Bevel Gears -- Pitch of Hob for Helical Gears -- Determining Contact Ratio -- Dimensions Required When Using Enlarged Fine-Pitch Pinions -- End Thrust of Helical Gears Applied to Parallel Shafts -- Dimensions of Wormgear Blank and the Gashing Angle -- Change Gear Ratio for Diametral-Pitch Worms -- Bearing Loads Produced by Bevel Gears -- Gear Strength Calculations -- Practice Exercises for Section 19 -- Speeds, Feeds, and

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Sommario/riassunto

The 'Guide to the Machinery’s Handbook, 32nd Edition' is a comprehensive manual designed to enhance the use of the Machinery's Handbook, a key resource in manufacturing and metalworking. This guide offers detailed discussions, examples, exercises, and questions to address common problems in these fields. It includes cross-references to both the print and digital editions of the Handbook to facilitate efficient use. The guide is a valuable tool for students and professionals in engineering, trade schools, and home study courses, aiming to improve comprehension and application of technical data, tables, and formulas.