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Nota di contenuto	Audel Automated Machines and Toolmaking All New 5th Edition; Contents; Acknowledgments; About the Authors; Introduction; Chapter 1: Jigs and Fixtures; Jigs; Fixtures; Summary; Review Questions; Chapter 2: Helix and Spiral Calculations; Milling a Helix; Change Gears; Milling a Spiral; Summary; Review Questions; Chapter 3: Spur Gear Computations; Evolution of Gears; Gear Teeth; Summary; Review Questions; Chapter 4: Gears and Gear Cutting; Development of Gear Teeth; Gear-Cutting Operations; Summary; Review Questions; Chapter 5: Cams and Cam Design; Cam Principles; Cam Design; How to Machine Cams SummaryReview Questions; Chapter 6: Dies and Diemaking; Cutting or Punching Dies; Shaping Dies; Combination Punching and Shaping Dies; Diemaking Operations; Summary; Review Questions; Chapter 7: Grinding; Cylindrical Grinders; Centerless Grinders; Internal Grinding; Surface Grinders; Cutter and Tool Grinding; Barrel Finishing (Abrasive Tumbling); Summary; Review Questions; Chapter 8: Laps and Lapping; Laps; Lapping Operations; Honing; Summary; Review Questions; Chapter 9: Toolmaking Operations; Introduction; Allowances and Tolerances; Layout; Summary; Review Questions Chapter 10: Heat-Treating FurnacesClassification; Types of Furnaces; Controlled Atmosphere; Controlled-Atmosphere Furnaces; Temperature

Control of Heat-Treating Furnaces; Summary; Review Questions; Chapter 11: Annealing, Hardening, and Tempering; Annealing; Hardening; Tempering; Summary; Review Questions; Chapter 12: Principles of Induction Heating; Adjustable Induction Heating Coil; Summary; Review Questions; Chapter 13: High-Frequency Induction Heating; Producing Heat by Resistance; Heating Units; High-Frequency Applications; Summary; Review Questions; Chapter 14: Furnace Brazing Basic Process Holding Assemblies Together; Laying and Pressing Parts Together; Summary; Review Questions; Chapter 15: Cold-Treating Process; Fundamental Principle of Cold Treating; Cold-Treating Procedures; Subzero Chilling; Summary; Review Questions; Chapter 16: Automatic Lathes; Automatic Turret Lathes; Automatic Threading Lathes; Summary; Review Questions; Chapter 17: The Automatic Screw Machine; Classification; Operating Principles; Selection and Use of Tools; Setting Up an Automatic Screw Machine; Dial-Controlled Machines; Summary; Review Questions; Chapter 18: Automated Machine Tools
Basic Principles of Numerical Control Preparation for Numerical Control; Electronic Control of Machine Tools; Transducers; Summary; Review Questions; Chapter 19: Computerized Machining; Numerical Controls; Computer-Operated Machine Tools; CNC Components and Control System; Positioning Formats; Advantages of CNC over NC; CNC Programming; Machining Centers; CAD/CAM; Computer-Integrated Manufacturing (CIM); Summary; Review Questions; Appendix: Reference Materials; Colors and Approximate Temperatures for Carbon Steel; Nominal Dimensions of Hex Bolts and Hex Cap Screws
Nominal Dimensions of Heavy Hex Bolts and Heavy Hex Cap Screws

Sommario/riassunto

Master today's toolmaking equipment Here, fully updated to include new machines and electronic and digital controls, is the ultimate guide to automated machines and toolmaking. Whether you're a professional machinist, an apprentice, or a trade student, this fully illustrated volume helps you work with metal safely, precisely, efficiently using today's tools and techniques. It's packed with review questions for students, and loaded with answers you need on the job.* Understand automated machine fundamentals and work with jigs and fixtures * Learn the basics of spiral and helix mi
