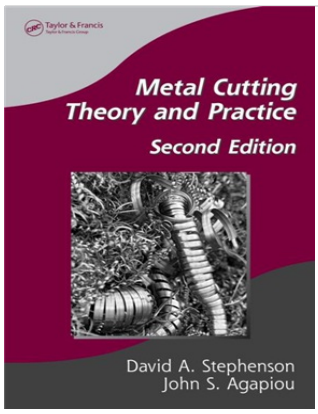
Book Information Sheet



Metal Cutting Theory and Practice, 2/e

David A. Stephenson & John S. Agapiou

2005 | 864 pp | Hardback | ISBN: 9780824758882 | Price: 8,586.00

About the Book

Metal cutting applications span the entire range from mass production to mass customization to high-precision, fully customized designs. The careful balance between precision and efficiency is maintained only through intimate knowledge of the physical processes, material characteristics, and technological capabilities of the equipment and workpieces involved. The best-selling first edition of Metal Cutting Theory and Practice provided such knowledge, integrating timely research with current industry practice. This brilliant reference enters its second edition with fully updated coverage, new sections, and the inclusion of examples and problems.

Supplying complete, up-to-date information on machine tools, tooling, and workholding technologies, this second edition stresses a physical understanding of machining processes including forces, temperatures, and surface finish. This provides a practical basis for troubleshooting and evaluating vendor claims. In addition to updates in all chapters, the book features three new chapters on cutting fluids, agile and high-throughput machining, and design for machining. The authors also added examples and problems for additional hands-on insight. Rounding out the treatment, an entire chapter is devoted to machining economics and optimization.

Endowing you with practical knowledge and a fundamental understanding of underlying physical concepts, Metal Cutting Theory and Practice, Second Edition is a necessity for designing, evaluating, purchasing, and using machine tools.

Salient Features

Contains complete, updated information on machine tool, tooling, and workholding technologies

Provides an overview of computer analysis methods for process design along with industrial application examples

Includes troubleshooting charts for tool life and quality issues in milling, turning, boring, and drilling

Presents basic machinability data on a variety of engineering materials

Contains three new chapters on cutting fluids, agile and high-throughput machining, and design for machining

Table of Contents

INTRODUCTION
METAL CUTTING OPERATIONS
MACHINE TOOLS
CUTTING TOOLS
TOOLHOLDERS AND WORKHOLDERS
MECHANICS OF CUTTING
CUTTING TEMPERATURES
MACHINING PROCESS ANALYSIS
TOOL WEAR AND TOOL LIFE
SURFACE FINISH AND INTEGRITY
MACHINABILITY OF MATERIALS
MACHINING DYNAMICS
MACHINING ECONOMICS AND OPTIMIZATION
CUTTING FLUIDS
HIGH THROUGHPUT AND AGILE MACHINING
DESIGN FOR MACHINING