1. Record Nr. UNINA9910814839603321

Autore	Poli C. <1935->
Titolo	Design for manufacturing : a structured approach / / Corrado Poli
Pubbl/distr/stampa	Boston, : Butterworth-Heinemann, c2001
ISBN	1-283-28136-8 9786613281364 0-08-050394-2
Edizione	[1st ed.]
Descrizione fisica	1 online resource (409 p.)
Disciplina	620/.0042 21 670 620.0042
Soggetti	Engineering design Industrial design
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Design for Manufacturing: A Structured Approach; Copyright Page; Contents; List of Figures; List of Tables; Preface; Acknowledgments; Responsibilities of Users; Chapter 1. Introduction; 1.1 Manufacturing, Design, and Design for Manufacturing; 1.2 Functional Designed Objects; 1.3 The Product Realization Process; 1.4 Industrial (or Product) Design; 1.5 Engineering Design; 1.6 Production Design; 1.7 Scope of the Book; 1.8 Summary; References; Questions and Problems; Chapter 2. Tolerances, Mechanical Properties, Physical Properties-A Review; 2.1 Interchangeability of Parts 2.2 Tolerances2.3 Mechanical and Physical Properties; 2.4 Physical Properties of Materials; 2.5 Summary; References; Questions and Problems; Chapter 3. Polymer Processing; 3.1 The Processes; 3.2 Materials Used in Polymer Processing; 3.3 Injection Molding; 3.4 Compression Molding; 3.5 Transfer Molding; 3.6 Extrusion; 3.7 Extrusion Blow Molding; 3.8 Other Polymer Processes; 3.9 Qualitative DFM Guidelines for Injection Molding, Compression Molding, and Transfer Molding; 3.10 Summary; References; Questions and Problems; Chapter 4. Injection Molding: Relative Tooling Cost; 4.1 Introduction 4.2 Estimating Relative Tooling Costs for Injection-Molded Parts4.3

Determining Relative Tooling Construction Costs Due to Basic Part Complexity (Cb); 4.4 Determining Cs; 4.5 Determining Ct; 4.6 Using the Part Coding System to Determine Cb, Cs, and Ct; 4.7 Total Relative Tooling Construction Cost; 4.8 Relative Mold Material Cost; 4.9 Multiple Cavity Molds; 4.10 Example 1-Relative Tooling Cost for a Simple Part; 4.11 Example 2-Relative Tooling Cost for a Complex Part; 4.12 Worksheet for Relative Tooling Cost; 4.13 Summary; References; Questions and Problems
Appendix 4.A Notes for Figures 4.1 and 4.19, and Tables 4.1 and 4.2
Appendix 4.B Worksheet for Relative Tooling Costs- Injection Molding; Chapter 5. Injection Molding: Total Relative Part Cost; 5.1 Injection Molded Part Costs; 5.2 Determining Total Relative Cycle Time (tr) for Injection-Molded Parts-Overview; 5.3 Determining the Basic Part Type: The First Digit; 5.4 Partitioning Partitionable Parts; 5.5 Non-Partitionable Parts; 5.6 Other Features Needed to Determine the First Digit; 5.7 Wall Thickness-The Second Digit; 5.8 Inserts and Internal Threadsn-The Third Digit
5.9 Surface Requirements and TolerancesmThe Fourth and Fifth Digits5.10 Using the Coding System--Overview; 5.11 Effect of Materials on Relative Cycle Time; 5.12 Example 5.1-Determination of Relative Cycle Time for a Partitionable Part; 5.13 Example 5.2-Determination of Relative Cycle Time for a Partitionable Part; 5.14 Example 5.3-Determination of Relative Cycle Time for a Non-Partitionable Part; 5.15 Relative Processing Cost; 5.16 Relative Material Cost; 5.17 Total Relative Part Cost; 5.18 Example 5.4--Determination of the Total Relative Part Cost
5.19 Worksheet for Relative Processing Cost and Total Relative Part Cost

Sommario/riassunto

Design for Manufacturing assists anyone not familiar with various manufacturing processes in better visualizing and understanding the relationship between part design and the ease or difficulty of producing the part.Decisions made during the early conceptual stages of design have a great effect on subsequent stages. In fact, quite often more than 70% of the manufacturing cost of a product is determined at this conceptual stage, yet manufacturing is not involved. Through this book, designers will gain insight that will allow them to assess the impact of their proposed design on manufac