

1. Record Nr.	UNINA9910465506103321
Autore	Waldron Kenneth J.
Titolo	Kinematics, dynamics, and design of machinery // Kenneth J. Waldron, Gary L. Kinzel, Sunil K. Agrawal
Pubbl/distr/stampa	Chichester, West Sussex, England : , : Wiley, , 2016 ©2016
ISBN	1-118-93333-8 1-118-93332-X
Edizione	[Third edition.]
Descrizione fisica	1 online resource (1283 p.)
Disciplina	621.81
Soggetti	Machinery, Kinematics of Machinery, Dynamics of Machine design Electronic books.
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 at the end of each chapters and index.
Nota di contenuto	About the Companion Website; Title Page; Copyright; Preface; Chapter 1: Introduction; 1.1 Historical Perspective; 1.2 Kinematics; 1.3 Design: Analysis and Synthesis; 1.4 Mechanisms; 1.5 Planar Linkages; 1.6 Visualization; 1.7 Constraint Analysis; 1.8 Constraint Analysis of Spatial Linkages; 1.9 Idle Degrees of Freedom; 1.10 Overconstrained Linkages; 1.11 Uses of the Mobility Criterion; 1.12 Inversion; 1.13 Reference Frames; 1.14 Motion Limits; 1.15 Continuously Rotatable Joints; 1.16 Coupler-Driven Linkages; 1.17 Motion Limits for Slider-Crank Mechanisms; 1.18 Interference 1.19 Practical Design ConsiderationsReferences; Problems; Chapter 2: Techniques in Geometric Constraint Programming; 2.1 Introduction; 2.2 Geometric Constraint Programming; 2.3 Constraints and Program Structure; 2.4 Initial Setup for a GCP Session; 2.5 Drawing a Basic Linkage Using GCP; 2.6 Troubleshooting Graphical Programs Developed Using GCP; References; Problems; Appendix 2A Drawing Slider Lines, Pin Bushings, and Ground Pivots; Appendix 2B Useful Constructions When Equation Constraints are Not Available; Chapter 3: Planar Linkage

Design; 3.1 Introduction
3.2 Two-Position Double-Rocker Design
3.3 Synthesis of Crank-Rocker Linkages for Specified Rocker Amplitude; 3.4 Motion Generation; 3.5 Path Synthesis; References; Problems; Chapter 4: Graphical Position, Velocity, and Acceleration Analysis for Mechanisms with Revolute Joints or Fixed Slides; 4.1 Introduction; 4.2 Graphical Position Analysis; 4.3 Planar Velocity Polygons; 4.4 Graphical Acceleration Analysis; 4.5 Graphical Analysis of a Four-Bar Mechanism; 4.6 Graphical Analysis of a Slider-Crank Mechanism; 4.7 Velocity Image Theorem; 4.8 Acceleration Image Theorem
4.9 Solution by Geometric Constraint Programming
References; Problems; Chapter 5: Linkages with Rolling and Sliding Contacts, and Joints on Moving Sliders; 5.1 Introduction; 5.2 Reference Frames; 5.3 General Velocity and Acceleration Equations; 5.4 Special Cases for the Velocity and Acceleration Equations; 5.5 Linkages with Rotating Sliding Joints; 5.6 Rolling Contact; 5.7 Cam Contact; 5.8 General Coincident Points; 5.9 Solution by Geometric Constraint Programming; Problems; Chapter 6: Instant Centers of Velocity; 6.1 Introduction; 6.2 Definition; 6.3 Existence Proof
6.4 Location of an Instant Center from the Directions of Two Velocities
6.5 Instant Center at a Revolute Joint; 6.6 Instant Center of a Curved Slider; 6.7 Instant Center of a Prismatic Joint; 6.8 Instant Center of a Rolling Contact Pair; 6.9 Instant Center of a General Cam-Pair Contact; 6.10 Centrodes; 6.11 The Kennedy-Aronhold Theorem; 6.12 Circle Diagram as a Strategy for Finding Instant Centers; 6.13 Using Instant Centers to Find Velocities: The Rotating-Radius Method; 6.14 Finding Instant Centers Using Geometric Constraint Programming; References; Problems
Chapter 7: Computational Analysis of Linkages
