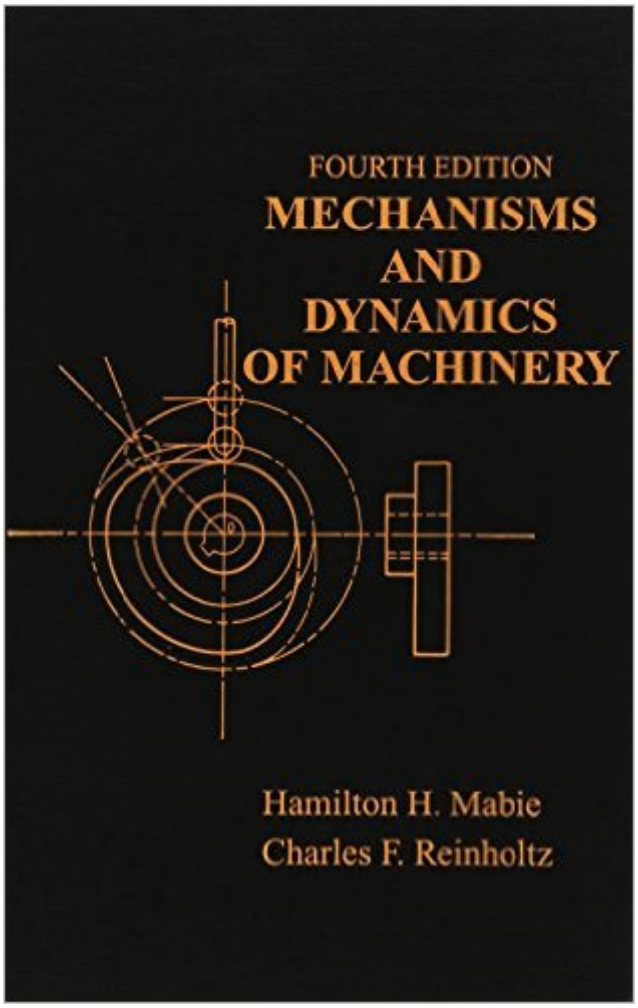
Mechanisms And Dynamics Of Machinery



Synopsis

This fourth edition has been totally revised and updated with many additions and major changes. The material has been reorganized to match better the sequence of topics typically covered in an undergraduate course on kinematics. Text includes the use of iterative methods for linkage position analysis and matrix methods for force analysis. BASIC-language computer programs have been added throughout the book to demonstrate the simplicity and power of computer methods. All BASIC programs listed in the text have also been coded in FORTRAN. Major revisions in this edition include: a new section on mobility; updated section on constant-velocity joints; advanced methods of cam-motion specification; latest AGMA standards for U.S. and metric gears; a new section on methods of force analysis; new section on tasks of kinematic synthesis; and a new chapter covering spatial mechanisms and robotics.

Book Information

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Customer Reviews

This book offers excellent development of kinematics, largely using the polar(complex number) method where an individual joint or pin is an origin and the end of its attached rod is given coordinates relative to this origin. Rod positions for other rods on the chain are then found by vector or coordinate addition when position is needed from another origin. In this way once certain pins are chosen to be fixed and a (driver)rod is given an angular position relative to its fixed origin, all other positions of joints and rods are determined, hence velocities and accelerations, linear and angular , too. All this involves little more sophistication than the law of cosines from high school trigonometry. Graphical means are also given but largely as a check on coordinate methods. In this age of the pc,

coordinate methods are preferred.Once accelerations are found, the inverse or dynamics problem is explored. Accelerations having been determined by kinematics, forces or reactions on joints are found. The center of mass of any rod in the chain accelerates due to the reaction forces at its joints. A similar though more involved statement applies to torques. Ultimately a system of these linear equations is found where reactions are then determined by Cramer's rule. Unfortunately this procedure may have to be repeated for each position-not a problem in the computer age.This gives the gist of a significant portion of the book. As other reviewers have remarked, it is clear and easy to follow. Only thing I didn't like was occasionally a formula was given with a reference instead of a derivation. In particular, the universal joint annoyed me but it involves spherical trigonometry and I found it in Shigley's Kinematic Analysis. Still you're given the background to understand Shigley. Highly recommended for any mechanical engineering student or mechanical engineer.

is an excellent professor and researcher, and his book on Kinematics reflects this as it is clear and usable. Of all the engineering books I had to buy in college, this was one of the easiest to understand - excellent diagrams. You will be happy with this book, although, I highly recommend taking Dr. Reinholtz's Kinematics class in addtion to reading this book.

It's a very good book, I used in my grad school and that how I learnt most of the mechanics of gears.

It's one of the most beautiful books of mechanisms I have ever read!

Very complete book. I recommend it, specially as a textbook for schools. I bougt it from Anybook which sent it to my in a very way.

Book in good condition

(The Oxford Series in Electrical and Computer Engineering) Flow-Induced Pulsation and Vibration in Hydroelectric Machinery: Engineer's Guidebook for Planning, Design and Troubleshooting Electric Machinery and Power System Fundamentals Rotating Electric Machinery and Transformer Technology Practical Plant Failure Analysis: A Guide to Understanding Machinery Deterioration and Improving Equipment Reliability (Mechanical Engineering) Machinery's Handbook 25 : A Reference Book for the Mechanical Engineer, Designer, Manufacturing Engineer, Draftsman, Toolmaker, and Machinist Design of Machinery with Student Resource DVD (McGraw-Hill Series in Mechanical Engineering) Dynamic Simulations of Electric Machinery: Using MATLAB/SIMULINK Machinery's Handbook, Toolbox Edition Machinery's Handbook, Large Print Machinery's Handbook Machinery's Handbook, Pocket Companion Design of Machinery with Student Resource DVD Machinery's Handbook, 29th IEC 60204-1 Ed. 5.0 b:2005, Safety of machinery - Electrical equipment of machines - Part 1: General requirements