



Structural Dynamics of Turbo-machines

By Abdulla S. Rangwala

New Academic Science Ltd. Hardback. Book Condition: new. BRAND NEW, Structural Dynamics of Turbo-machines, Abdulla S. Rangwala, STRUCTURAL DYNAMICS OF TURBO-MACHINES presents a detailed and comprehensive treatment of structural vibration evaluation of turbo-machines. Starting with fundamentals of the theory of vibration as related to various aspects of rotating machines, the dynamic analysis procedures of a broad spectrum of turbo-machines is covered. An in-depth procedure for analyzing the torsional and flexural oscillations of the components and of the rotor-bearing system is presented. The latest trends in design and analysis are presented, chief among them: * Blade and coupled disk-blade modes of vibration * Dynamic instability, non-linear phenomena, their causes and consequences * Methods to control rotor-to-stator clearance and improving operating efficiency * Experimental techniques and analytical correlation with variables ranging from blade flutter to bearing orbital trajectory * Fatigue failures arising from thermal ratcheting and cyclical operating loads * Material characteristics and requirements Growth in machine operating parameters and user expectations require exacting consideration of dynamic characteristics. State-of-the-art technology is required to understand blade dynamics and rotating system vibrations. Vibration measurement is an important tool in diagnostics. This book develops methods to understand vibrations and correct major causes of related problems...



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