

1. Record Nr.	UNINA9910983353003321
Autore	Radzevich S. P (Stepan Pavlovich)
Titolo	Gear Accuracy : A Treatise on Gear Noise Excitation, Vibration Generation, and Dynamics of Operation
Pubbl/distr/stampa	Cham : , : Springer, , 2025 ©2025
ISBN	9783031747984 9783031747977
Edizione	[1st ed.]
Descrizione fisica	1 online resource (377 pages)
Collana	Mechanical Engineering Series
Disciplina	621.833
Soggetti	TECHNOLOGY & ENGINEERING / Chemical & Biochemical TECHNOLOGY & ENGINEERING / Industrial Design / General TECHNOLOGY & ENGINEERING / Power Resources / General
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	This book provides a comprehensive profile the range of developments in gear science and gear engineering mainly those related to noise emission and vibration generation. The problem of noise emission and vibration generation is a challenging one. This scientific and engineering problem requires efforts of gear experts of different areas, and it got no satisfactory solution yet. Gear experts of different countries (USA, Israel, Poland, and Ukraine) have contributed to this volume. The latest accomplishments in scientific theory of gearing, gear design, production, inspection, and application are covered by this volume. The readers' attention is focused mainly on the achievements in the field that lead to a significant reduction of gear noise excitation and vibration generation in gearing of all designs, namely, in parallel-axes gearing, in intersected-axes gearing, and in crossed-axes gearing. The concept of geometrically-accurate gearing (parallel-axes gearing, intersected-axes gearing, and crossed-axes gearing) is lays in the foundation of the undertaken research on gear noise emission and vibration generation. To the best possible extent, the kinematical and geometrical components of the problem under consideration are

outlined at the beginning of this volume of the book when the accuracy of gears are discussed. The illustration of the various aspects of the problem is provided in the rest sections of the book volume. In particular, the readers' attention is focused here also on the key problems, the poor knowledge of the scientific theory of gearing may lead to. This latter issue arouses even in leading gear manufacturing companies. The bottom line is as follows: In order to succeed in solving the noise excitation, and the vibration generation problem in gearing, high level of proficiency in the scientific theory of gearing is a must, as this theory provides the user with an in-depth understanding of meshing of the gear teeth, as well as with powerful tools to solve gear problems of this sort in cases when something goes wrong.
