

---

# Machine Elements

## By Gustav Niemann

---

MACHINE ELEMENTS : DESIGN AND CALCULATION  
IN MECHANICAL ENGINEERING

Handbook of Practical Gear Design

Indian Books in Print

Official Gazette of the United States Patent Office

FLUCOME '91

Maschinenelemente

Official Gazette of the United States Patent Office

Machine Elements

Machine elements

Wave Optical Simulations of X-ray Nano-focusing  
Optics

The Isabella Stewart Gardner Museum

Impact of Design Research on Industrial Practice

The World of Learning

The History of the Theory of Structures

Development of Gear Technology and Theory of  
Gearing

Flywheel Energy Storage

Copper Plate Photogravure

Bulletin of the Tokyo Institute of Technology.

Series B.

Fundamentals of Machine Design

The Kaiser's Memoirs

The Architecture of the City

Treatment of Dystonia

FLUCOME.

Gear Motor Handbook  
Unconventional Agents and Unclassified Viruses  
Dictionary of German Biography (DGB)  
Machine Elements: Gears  
Handbook of Lapping and Polishing  
International Books in Print  
Paper Machines  
Cost-Efficient Design  
Indian Book Industry  
Machine elements : design and calculation ind  
mechanical engineering  
European Research Index  
American Book Publishing Record Cumulative,  
1950-1977  
Gears  
Liquid Life  
Journal of the Institution of Engineers (India).  
History of McHenry County, Illinois  
IMDC-IST 2021

*Machine Elements By  
Gustav Niemann*      *Downloaded  
from  
[qr.bonide.com](http://qr.bonide.com)  
by guest*

---

**ROJAS CASSANDRA**

---

**MACHINE ELEMENTS  
: DESIGN AND  
CALCULATION IN  
MECHANICAL  
ENGINEERING**

Cambridge University  
Press

"Fundamentals of  
Machine Design" is an  
essential resource for  
designers and  
engineers who wish to  
navigate the complex  
world of machine  
design. This extensive  
work, written by  
subject-matter  
specialists,  
summarises the

theoretical foundations and real-world applications necessary to build reliable and effective machinery. The book "Fundamentals of Machine Design" excels because it emphasises a comprehensive approach to design. The book delves into the wider elements that influence efficient machine design, like cost-effectiveness, manufacturing, and dependability, in addition to the technical aspects. Engineers may create solutions that satisfy performance criteria and are in line with the larger project objectives and restrictions by incorporating these concerns into the design process. Furthermore, the book

discusses current issues and developments that are influencing machine design, such the use of sophisticated materials, the use of computer tools for optimisation, and the integration of sustainable design concepts. Readers who keep up with these advancements will be better prepared to approach the challenges of contemporary machine design with courage and creativity. "Fundamentals of Machine Design" is a vital tool for everyone engaged in the design of machines, whether it is used as a textbook in educational settings or simply as a reference by working engineers. It is a necessary tool for navigating the complex field of

machine design because of its thorough coverage, useful insights, and focus on holistic design concepts.

**Handbook of Practical Gear**

Design Springer Science & Business Media

Das dreibändige Werk Maschinenelemente ist längst zum Standardwerk auf seinem Gebiet geworden. Der vorliegende Band 2 bietet Studenten und Praktikern einen Überblick über das gesamte Wissensgebiet der Zahnradgetriebe. "Sowohl derjenige, der sich mit dem gesamten Wissensgebiet der Zahnradgetriebe beschäftigen oder einen Überblick verschaffen will als auch derjenige, der

eine konkrete Konstruktionsaufgabe zu lösen hat, findet konzentriert und übersichtlich die Zusammenhänge geboten. Konstruktions- und Berechnungsingenieure werden es dankbar begrüßen, daß neben Angaben von Berechnungsgleichungen weitgehend auch die Darstellung in Diagrammform beibehalten wurde, weil auf diese Weise die von der Anschauung her geprägte ingenieurmäßige Arbeitsweise berücksichtigt wird und ein rascher Überblick über die Größenordnungen und Zusammenhänge möglich ist. Der Vielfalt des Gebietes der Zahnradgetriebe Rechnung tragend,

konnte man ein umfangreiches Kollektiv namhafter Fachleute für die Darstellung von Teilgebieten gewinnen."

(Maschinenbautechnik)  
Indian Books in Print  
 Universitätsverlag  
 Göttingen

"This book takes you through the collection gallery by gallery, illuminating the art and installations in each room"--From preface.

*Official Gazette of the United States Patent Office* Academic Guru Publishing House

This book explores the geometric and kinematic design of the various types of gears most commonly used in practical applications, also considering the problems concerning their cutting processes. The cylindrical spur

and helical gears are first considered, determining their main geometric quantities in the light of interference and undercut problems, as well as the related kinematic parameters. Particular attention is paid to the profile shift of these types of gears either generated by rack-type cutter or by pinion-rack cutter. Among other things, profile-shifted toothing allows to obtain teeth shapes capable of greater strength and more balanced specific sliding, as well as to reduce the number of teeth below the minimum one to avoid the operating interference or undercut. These very important aspects of geometric-kinematic design of cylindrical spur and helical gears

are then generalized and extended to the other examined types of gears most commonly used in practical applications, such as straight bevel gears; crossed helical gears; worm gears; spiral bevel and hypoid gears. Finally, ordinary gear trains, planetary gear trains and face gear drives are discussed. This is the most advanced reference guide to the state of the art in gear engineering. Topics are addressed from a theoretical standpoint, but in such a way as not to lose sight of the physical phenomena that characterize the various types of gears which are examined. The analytical and numerical solutions are formulated so as to be of interest not only to academics, but also to

designers who deal with actual engineering problems concerning the gears

**FLUCOME '91** John Wiley & Sons

Among unconventional agents and unclassified viruses the contributions to this volume focused on prion-related diseases, with special emphasis on bovine spongiform encephalopathy and human spongiform encephalopathies, and Borna disease virus, an agent known since long time to be pathogenic for horses and sheep, which is now discussed as a potential pathogen for humans. Additionally, the volume contains articles about newly discovered viruses like porcine respiratory and reproductive syndrome virus and viruses that are classified only

provisionally like African swine fever virus, hepatitis C and E viruses, or the arteriviruses.

### **Maschinenelemente**

Library of Alexandria  
Lapping and polishing are currently the most precise surface finishing processes for mechanical and electronic components. Unfortunately, most improvements in either methods or understanding of the physical processes involved are closely guarded as proprietary information. The Handbook of Lapping and Polishing is the first source in English to bring Official Gazette of the United States Patent Office MIT Press Prince Bismarck's greatness as a statesman and his imperishable services

to Prussia and Germany are historical facts of such tremendous significance that there is doubtless no man in existence, whatever his party affiliations, who would dare to place them in question. For this very reason alone it is stupid to accuse me of not having recognized the greatness of Prince Bismarck. The opposite is the truth. I revered and idolized him. Nor could it be otherwise. It should be borne in mind with what generation I grew up—the generation of the devotees of Bismarck. He was the creator of the German Empire, the paladin of my grandfather, and all of us considered him the greatest statesman of his day and were proud that he was a

German. Bismarck was the idol in my temple, whom I worshiped. But monarchs also are human beings of flesh and blood, hence they, too, are exposed to the influences emanating from the conduct of others; therefore, looking at the matter from a human point of view, one will understand how Prince Bismarck, by his fight against me, himself destroyed, with heavy blows, the idol of which I have spoken. But my reverence for Bismarck, the great statesman, remained unaltered. While I was still Prince of Prussia I often thought to myself: "I hope that the great Chancellor will live for many years yet, since I should be safe if I could govern with him." But my reverence for the great

statesman was not such as to make me take upon my own shoulders, when I became Emperor, political plans or actions of the Prince which I considered mistakes. Even the Congress of Berlin in 1878 was, to my way of thinking, a mistake, likewise the "Kulturkampf." Moreover, the constitution of the Empire was drawn up so as to fit in with Bismarck's extraordinary preponderance as a statesman; the big cuirassier boots did not fit every man. Then came the labor-protective legislation. I most deeply deplored the dispute which grew out of this, but, at that time, it was necessary for me to take the road to compromise, which



has generally been my road both on domestic and foreign politics. For this reason I could not wage the open warfare against the Social Democrats which the Prince desired. Nevertheless, this quarrel about political measures cannot lessen my admiration for the greatness of Bismarck as a statesman; he remains the creator of the German Empire, and surely no one man need have done more for his country than that. Owing to the fact that the great matter of unifying the Empire was always before my eyes, I did not allow myself to be influenced by the agitations which were the commonplaces of those days. In like manner, the fact that Bismarck was called

the majordomo of the Hohenzollerns could not shake my trust in the Prince, although he, perhaps, had thoughts of a political tradition for his family. As evidence of this, he felt unhappy, for instance, that his son Bill felt no interest in politics and wished to pass on his power to Herbert.

*Machine Elements* Yale University Press

This book presents recent developments in the theory of gearing and the modifications in gear geometry necessary to improve the conditions of meshing. Highlighted are low-noise gear drives that have a stable contact during meshing and a predesigned parabolic transmission error function that can handle misalignment

during operation without sacrificing the low-noise aspects of operation. This book also provides a comprehensive history of the development of the theory of gearing through biographies of major contributors to this field. The author's unique historical perspective was achieved by assiduous research into the lives of courageous, talented, and creative men who made significant contributions to the field of gearing.

#### Machine elements

Springer Nature

This book contains the proceedings of the Second International Conference on Integrated Sciences and Technologies (IMDC-IST-2021). Where held on 7th–9th Sep 2021 in Sakarya,

Turkey. This conference was organized by University of Bradford, UK and Southern Technical University, Iraq. The papers in this conference were collected in a proceedings book entitled: Proceedings of the second edition of the International Multi-Disciplinary Conference Theme: “Integrated Sciences and Technologies” (IMDC-IST-2021). The presentation of such a multi-discipline conference provides a lot of exciting insights and new understanding on recent issues in terms of Green Energy, Digital Health, Blended Learning, Big Data, Meta-material, Artificial-Intelligence powered applications, Cognitive Communications,

Image Processing, Health Technologies, 5G Communications. Referring to the argument, this conference would serve as a valuable reference for future relevant research activities. The committee acknowledges that the success of this conference are closely intertwined by the contributions from various stakeholders. As being such, we would like to express our heartfelt appreciation to the keynote speakers, invited speakers, paper presenters, and participants for their enthusiastic support in joining the second edition of the International Multi-Disciplinary Conference Theme: "Integrated Sciences

and Technologies" (IMDC-IST-2021). We are convinced that the contents of the study from various papers are not only encouraged productive discussion among presenters and participants but also motivate further research in the relevant subject. We appreciate for your enthusiasm to attend our conference and share your knowledge and experience. Your input was important in ensuring the success of our conference. Finally, we hope that this conference serves as a forum for learning in building togetherness and academic networks. Therefore, we expect to see you all at the next IMDC-IST.  
*Wave Optical Simulations of X-ray*

*Nano-focusing Optics*

Springer

Our understanding of dystonia is advancing rapidly. This comprehensive reference work provides an effective guide to this challenging group of disorders, offering an overview of the current and emerging treatment options for all manifestations.

Treatments for the many forms of dystonia differ substantially in pediatrics and adults - both are covered in detail in this book.

Approaches include botulinum toxin therapy, deep brain stimulation, oral drug applications, rehabilitation, and behavioral and experimental therapies. Special emphasis is also given to combining different

treatment modalities in order to achieve optimal effect.

Treatment of Dystonia brings together peer-reviewed articles, written by experts and based on work presented at international conferences. By enabling the physician to select and combine the best therapies, it is an essential resource for neurologists, neurosurgeons and physical therapists.

**The Isabella Stewart Gardner Museum**

CRC Press

If we lived in a liquid world, the concept of a "machine" would make no sense. Liquid life is metaphor and apparatus that discusses the consequences of thinking, working, and living through liquids. It is an irreducible,

paradoxical, parallel, planetary-scale material condition, unevenly distributed spatially, but temporally continuous. It is what remains when logical explanations can no longer account for the experiences that we recognize as part of "being alive." Liquid Life references a third-millennial understanding of matter that seeks to restore the agency of the liquid soul for an ecological era, which has been banished by reductionist, "brute" materialist discourses and mechanical models of life. Offering an alternative worldview of the living realm through a "new materialist" and "liquid" study of matter, Armstrong conjures forth

examples of creatures that do not obey mechanistic concepts like predictability, efficiency, and rationality. With the advent of molecular science, an increasingly persuasive ontology of liquid technologies can be identified. Through the lens of lifelike dynamic droplets, the agency for these systems exists at the interfaces between different fields of matter/energy that respond to highly local effects, with no need for a central organizing system. Liquid Life seeks an alternative partnership between humanity and the natural world. It provokes a re-invention of the languages of the living realm to open up alternative spaces for exploration, including

contributor Rolf Hughes' "angelology" of language, which explores the transformative invocations of prose poetry, and Simone Ferracina's graphical notations that help shape our concepts of metabolism, upcycling, and designing with fluids. A conceptual and practical toolset for thinking and designing, liquid life reunites us with the irreducible "soul substance" of living things, which will neither be simply "solved," nor go away.

#### Impact of Design

#### Research on Industrial Practice CRC Press

Storing energy is one of the most important challenges of our time. Energy storage systems are not only essential for switching to renewable energy

sources, but also for all mobile applications. Electro-mechanical flywheel energy storage systems (FESS) can be used in hybrid vehicles as an alternative to chemical batteries or capacitors and have enormous development potential. In the first part of the book, the Supersystem Analysis, FESS is placed in a global context using a holistic approach. External influences such as the vehicle, driver and operating strategy, including socio-psychological aspects, are analyzed with regard to their interaction with the memory. From this, optimal application scenarios are derived and the development goals relevant for market success are defined. In the second

part, the consideration of the subsystem, those critical components in the FESS are identified which are responsible for the achievement of the technical target properties. From the point of view of maximum cost reduction, specific solutions for the design of the key components are presented and their suitability is validated through empirical studies on the housing, bearing and rotor as well as through overall prototypes. This book is a translation of the original German 1st edition *Schwungradspeicher in der Fahrzeugtechnik* by Armin Buchroithner published by Springer Fachmedien Wiesbaden GmbH, part of Springer Nature in 2019.

**The World of Learning** Springer Nature  
Why the card catalog—a “paper machine” with rearrangeable elements—can be regarded as a precursor of the computer. Today on almost every desk in every office sits a computer. Eighty years ago, desktops were equipped with a nonelectronic data processing machine: a card file. In *Paper Machines*, Markus Krajewski traces the evolution of this proto-computer of rearrangeable parts (file cards) that became ubiquitous in offices between the world wars. The story begins with Konrad Gessner, a sixteenth-century Swiss polymath who

described a new method of processing data: to cut up a sheet of handwritten notes into slips of paper, with one fact or topic per slip, and arrange as desired. In the late eighteenth century, the card catalog became the librarian's answer to the threat of information overload. Then, at the turn of the twentieth century, business adopted the technology of the card catalog as a bookkeeping tool. Krajewski explores this conceptual development and casts the card file as a "universal paper machine" that accomplishes the basic operations of Turing's universal discrete machine: storing, processing, and transferring data. In telling his story,

Krajewski takes the reader on a number of illuminating detours, telling us, for example, that the card catalog and the numbered street address emerged at the same time in the same city (Vienna), and that Harvard University's home-grown cataloging system grew out of a librarian's laziness; and that Melvil Dewey (originator of the Dewey Decimal System) helped bring about the technology transfer of card files to business.

### **The History of the Theory of Structures**

CRC Press

Focusing on how a machine "feels" and behaves while operating, *Machine Elements: Life and Design* seeks to impart both intellectual and emotional



comprehension regarding the "life" of a machine. It presents a detailed description of how machines elements function, seeking to form a sympathetic attitude toward the machine and to ensure its wellbeing

*Development of Gear Technology and Theory of Gearing* Springer Science & Business Media

Curved x-ray multilayer mirrors focus synchrotron beams down to tens of nano metres. A wave-optical theory describing propagation of two waves in an elliptically curved focusing multilayer mirror is developed in this thesis. Using numerical integration, the layer shapes can be optimised for reflectivity and

aberrations. Within this framework, performance of both existing and currently upgraded synchrotron beamlines is simulated. Using a more theoretical model case, limits of the theory are studied. A significant part of this work is dedicated to partial spatial coherence, modelled using the method of stochastic superpositions. Coherence propagation and filtering by x-ray waveguides is shown analytically and numerically. This comprehensive model is put forward that shall help in development and testing of new algorithms for a variety of imaging techniques using coherent x-ray beams. Advanced simulations accounting for real structure

effects are compared to experimental data obtained at the GINIX instrument at the coherence beamline P10 at PETRA III, DESY. This thesis presents results of a collaboration between the Georg-August-Universität Göttingen and the European Synchrotron Radiation Facility (ESRF) Grenoble.

Flywheel Energy Storage Springer

Aldo Rossi was a practicing architect and leader of the Italian architectural movement La Tendenza and one of the most influential theorists of the twentieth century. The Architecture of the City is his major work of architectural and urban theory. In part a protest against functionalism and the

Modern Movement, in part an attempt to restore the craft of architecture to its position as the only valid object of architectural study, and in part an analysis of the rules and forms of the city's construction, the book has become immensely popular among architects and design students.

Copper Plate

Photogravure European Alliance for Innovation  
Copper Plate  
Photogravure describes in comprehensive detail the technique of traditional copper plate photogravure as would be practiced by visual artists using normally available facilities and materials. Attention is paid to step-by-step guidance through the many stages of the process. A detailed

manual of technique, Copper Plate Photogravure also offers the history of the medium and reference to past alternative methods of practice. Copper Plate Photogravure: Demystifying the Process is part of the current revitalization of one of the most satisfyingly beautiful image-making processes. The range of ink color and paper quality possibilities is endless. The potential for handwork and alteration of the copper plate provides yet another realm of expressive variation. The subject matter and the treatment are as variable and broad as photography itself. This book's purpose is to demystify and clarify what is a complex but altogether "do-able"

photomechanical process using currently available materials. With Copper Plate Photogravure, you will learn how to: · produce a full-scale film positive from a photographic negative · sensitize the gravure tissue to prepare it for exposure to the positive · prepare the plate and develop the gelatin resist prior to etching · prepare the various strengths of etching solutions and etch the plate to achieve a full tonal scale · rework the plate using printmaking tools to correct flaws or to adjust the image for aesthetic reasons · use the appropriate printing inks, ink additives, quality papers, and printshop equipment to produce a high quality print A historical survey and

appendices of detailed technical information, charts, and tables are included, as well as a list of suppliers and sources for the materials required, some of which are highly specialized. A comprehensive glossary introduces the non-photographer or non-printmaker to many of the terms particular to those fields and associated with this process.

Bulletin of the Tokyo Institute of Technology.

Series B. Springer Science & Business Media

Zehn Jahre nach der 1. Auflage in englischer Sprache legt der Autor sein Buch *The History of the Theory of Structures* in wesentlich erweiterter Form vor, nunmehr mit dem Untertitel *Searching for*

*Equilibrium*. Mit dem vorliegenden Buch lädt der Verfasser seine Leser zur Suche nach dem Gleichgewicht von Tragwerken auf Zeitreisen ein. Die Zeitreisen setzen mit der Entstehung der Statik und Festigkeitslehre eines Leonardo und Galilei ein und erreichen ihren ersten Höhepunkt mit den baustatischen Theorien über den Balken, Erddruck und das Gewölbe von Coulomb am Ende des 18. Jahrhunderts. Im folgenden Jahrhundert formiert sich die Baustatik mit Navier, Culmann, Maxwell, Rankine, Mohr, Castigliano und Müller-Breslau zu einer technikwissenschaftlichen Grundlagendisziplin, die im 20. Jahrhundert in Gestalt der modernen

Strukturmechanik bei der Herausbildung der konstruktiven Sprache des Stahl-, Stahlbeton-, Flugzeug-, Automobil- und des Schiffbaus eine tragende Rolle spielt. Dabei setzt der Autor den inhaltlichen Schwerpunkt auf die Formierung und Entwicklung moderner numerischer Ingenieurmethoden wie der Finite-Elemente-Methode und beschreibt ihre disziplinäre Integration in der Computational Mechanics. Kurze, durch historische Skizzen unterstützte Einblicke in gängige Berechnungsverfahren erleichtern den Zugang zur Geschichte der Strukturmechanik und Erddrucktheorie vom heutigen Stand der Ingenieurpraxis und stellen einen auch einen wichtigen Beitrag

zur Ingenieurpädagogik dar. Dem Autor gelingt es, die Unterschiedlichkeit der Akteure hinsichtlich ihres technisch-wissenschaftlichen Profils und ihrer Persönlichkeit plastisch zu schildern und das Verständnis für den gesellschaftlichen Kontext zu erzeugen. So werden in 260 Kurzbiografien die subjektive Dimension der Baustatik und der Strukturmechanik von der frühen Neuzeit bis heute entfaltet. Dabei werden die wesentlichen Beiträge der Protagonisten der Baustatik besprochen und in die nachfolgende Bibliografie integriert. Berücksichtigt wurden nicht nur Bauingenieure und Architekten, sondern auch Mathematiker,

Physiker, Maschinenbauer sowie Flugzeug- und Schiffbauer. Neben den bekannten Persönlichkeiten der Baustatik, wie Coulomb, Culmann, Maxwell, Mohr, Müller-Breslau, Navier, Rankine, Saint-Venant, Timoshenko und Westergaard, wurden u. a. auch G. Green, A. N. Krylov, G. Li, A. J. S. Pippard, W. Prager, H. A. Schade, A. W. Skempton, C. A. Truesdell, J. A. L. Waddell und H. Wagner berücksichtigt. Den Wegbereitern der Moderne in der Baustatik J. H. Argyris, R. W. Clough, Th. v. Kármán, M. J. Turner und O. C. Zienkiewicz wurden umfangreiche Biografien gewidmet. Eine ca. 4500 Titel umfassende Bibliografie rundet das Werk ab. Neue Inhalte der 2. Auflage sind: Erddrucktheorie, Traglastverfahren, historische Lehrbuchanalyse, Stahlbrückenbau, Leichtbau, Platten- und Schalentheorie, Greensche Funktion, Computerstatik, FEM, Computergestützte Graphostatik und Historische Technikwissenschaft. Gegenüber der 1., englischen Ausgabe wurde der Seitenumfang um 50 % auf nunmehr etwas über 1200 Druckseiten gesteigert. Das vorliegende Buch ist die erste zusammenfassende historische Gesamtdarstellung der Baustatik vom 16. Jahrhundert bis heute. Über die Reihe edition Bautechnikgeschichte: Mit erstaunlicher

Dynamik hat sich die Bautechnikgeschichte in den vergangenen Jahrzehnten zu einer höchst lebendigen, international vernetzten und viel beachteten eigenständigen Disziplin entwickelt. Auch wenn die nationalen Forschungszugänge unterschiedliche Akzente setzen, eint sie doch das Bewusstsein, dass gerade die inhaltliche und methodische Vielfalt und das damit verbundene synthetische Potenzial die Stärke des neuen Forschungsfeldes ausmachen. Bautechnikgeschichte erschließt neue Formen des Verstehens von Bauen zwischen Ingenieurwesen und Architektur, zwischen Bau- und Kunst-,

Technik- und Wissenschaftsgeschichte. Mit der edition Bautechnikgeschichte erhält die neue Disziplin erstmals einen Ort für die Publikation wichtiger Arbeiten auf angemessenem Niveau in hochwertiger Gestaltung. Die Bücher erscheinen in deutscher oder englischer Sprache. Beide Hauptrichtungen der Bautechnikgeschichte, der eher konstruktionsgeschichtlich und der eher theoriegeschichtlich geleitete Zugang, finden Berücksichtigung; das Spektrum der Bände reicht von Überblickswerken über Monographien zu Einzelaspekten oder -bauten bis hin zu Biographien

bedeutender  
Ingenieurpersönlichkeit  
en. Ein international  
besetzter  
Wissenschaftlicher  
Beirat unterstützt die  
Herausgeber in der  
Umsetzung des  
Konzepts.

### **Fundamentals of Machine Design**

Springer-Verlag  
Comprehensive guide  
to research  
establishments in  
Western and Eastern  
Europe, as well as all  
international bodies  
with headquarters in  
Europe. Arranged by  
countries in  
alphabetical order.  
Organizations (except  
industrial firms) and  
place names are given  
in English. Index of  
original language titles,  
Index of English  
language titles, and  
Index of key-word  
subjects.

*The Kaiser's Memoirs*

CRC Press  
In these years of  
constant growth and  
further development  
for our company,  
research and  
development has  
become more and  
more important, and  
has allowed us to be at  
the forefront in our  
business sector, where  
innovation is the  
obvious and decisive  
factor. It has therefore  
been consistent with  
our everyday business  
philosophy to involve  
ourselves deeply in  
writing and printing  
this handbook, which is  
designed to recognize  
the capacity and hard  
work of all employees  
working successfully in  
the Bonfiglioli Group.  
The book is intended to  
be a concrete  
contribution by  
Bonfiglioli Riduttori  
S.p.A. to the  
development and



application of power transmissions. The book is addressed to all who have technical dealings with power transmissions, from university students to engineers active in the workplace. For this reason we have invited the cooperation of four prestigious professionals - Darle W. Dudley, Jacques Sprengers, Dierk

SchrOder, and Hajime Yamashina - in the knowledge that only through the cooperation of the leading specialists in the field of power transmissions could we develop a truly useful and helpful handbook. It has been hard work, but we are sure the reader's appreciation will amply reward our efforts.