

Lm2500 To Lm2500 Die Gas Turbine Combined Cycle Plant

Volume II of the manual that has been absolutely indispensable to the ship's engineer for over forty years was completely updated by a team of practicing marine engineers in 1991. Chapters on obsolete equipment were deleted; those on systems that are still current were updated; and new chapters were written to cover the innovations in materials, machines, and operating practices that evolved recently.

Vols. for 1977- include a section: Turbomachinery world news, called v. 1- This book focuses on the development of novel combustion approaches and burner designs for clean power generation in gas turbines. It shows the reader how to control the release of pollutants to the environment in an effort to reduce global warming. After an introduction to global warming issues and clean power production for gas turbine applications, subsequent chapters address premixed combustion, burner designs for clean power generation, gas turbine performance, and insights on gas turbine operability. Given its scope, the book can be used as a textbook for graduate-level courses on clean combustion, or as a reference book to accompany compact courses for mechanical engineers and young researchers around the world.

Advanced Gas Turbine Cycles

Operational Experience, Fundamental Mechanisms and Modeling Power

Gas Turbines for Electric Power Generation

Pounder's Marine Diesel Engines

Combustion Instabilities in Gas Turbine Engines

Higher operating efficiencies, fewer pollutant emissions, and low capital investment have made gas turbines a dominant technology for new power generating capacity in the U.S. and worldwide. This book offers gas turbine users and manufacturers a valuable resource to help them sort through issues associated with combustion instabilities. In the last ten years, substantial efforts have been made in the industrial, governmental, and academic communities to understand the unique issues associated with combustion instabilities in low-emission gas turbines. The objective of this book is to compile these results into a series of chapters that address the various facets of the problem. The Case Studies section speaks to specific manufacturer and user experiences with combustion instabilities in the development stage and in fielded turbine engines. The book then goes on to examine The Fundamental Mechanisms, The Combustor Modeling, and Control Approaches. The Federal Government of Nigeria has adopted an ambitious strategy to make Nigeria the world's 20th largest economy by

2020. This book analyzes options for Nigeria to achieve these development objectives and pursue low-carbon development in the sectors agriculture and land use, oil and gas, power, and transport.

Primarily this book describes the thermodynamics of gas turbine cycles. The search for high gas turbine efficiency has produced many variations on the simple "open circuit" plant, involving the use of heat exchangers, reheating and intercooling, water and steam injection, cogeneration and combined cycle plants. These are described fully in the text. A review of recent proposals for a number of novel gas turbine cycles is also included. In the past few years work has been directed towards developing gas turbines which produce less carbon dioxide, or plants from which the CO₂ can be disposed of; the implications of a carbon tax on electricity pricing are considered. In presenting this wide survey of gas turbine cycles for power generation the author calls on both his academic experience (at Cambridge and Liverpool Universities, the Gas Turbine Laboratory at MIT and Penn State University) and his industrial work (primarily with Rolls Royce, plc.) The book will be essential reading for final year and masters students in mechanical engineering, and for practising engineers.

Gas Turbine Performance

Proceedings of the ASME Turbo Expo 2002

34th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit

Presented at the 2002 ASME Turbo Expo, June 3-6, 2002,

Amsterdam, the Netherlands

FUNDAMENTALS OF HEAT AND MASS TRANSFER

Falco Peregrinus Anatum

The Federal Government of Nigeria has adopted an ambitious strategy to make Nigeria the world's 20th largest economy by 2020. Sustaining such a pace of growth will entail rapid expansion of the level of activity in key carbon-emitting sectors, such as power, oil and gas, agriculture and transport. In the absence of policies to accompany economic growth with a reduced carbon foot-print, emissions of greenhouse gases could more than double in the next two decades. This study finds that there are several options for Nigeria to achieve the development objectives of vision 20:2020 and beyond, but stabilizing emissions at 2010 levels, and with domestic benefits in the order of 2 percent of GDP. These benefits include cheaper and more diversified electricity sources; more efficient operation of the oil and gas industry; more productive and climate -resilient agriculture; and better transport services, resulting in fuel economies, better air quality, and reduced congestion. The study outlines several actions that the Federal Government could undertake to facilitate the transition towards a low carbon economy, including enhanced governance for climate action, integration of climate consideration in the Agriculture Transformation

Agenda, promotion of energy efficiency programs, scale-up of low carbon technologies in power generation (such as renewables and combined cycle gas turbines), and enhance vehicle fuel efficiency.

Industrial Gas Turbines: Performance and Operability explains important aspects of gas turbine performance such as performance deterioration, service life and engine emissions. Traditionally, gas turbine performance has been taught from a design perspective with insufficient attention paid to the operational issues of a specific site. Operators are not always sufficiently familiar with engine performance issues to resolve operational problems and optimise performance. Industrial Gas Turbines: Performance and Operability discusses the key factors determining the performance of compressors, turbines, combustion and engine controls. An accompanying engine simulator CD illustrates gas turbine performance from the perspective of the operator, building on the concepts discussed in the text. The simulator is effectively a virtual engine and can be subjected to operating conditions that would be dangerous and damaging to an engine in real-life conditions. It also deals with issues of engine deterioration, emissions and turbine life. The combined use of text and simulators is designed to allow the reader to better understand and optimise gas turbine operation. Discusses the key factors in determining the performance of compressors, turbines, combustion and engine controls Explains important aspects of gas and turbine performance such as service life and engine emissions Accompanied by CD illustrating gas turbine performance, building on the concepts discussed in the text

Pounder's Marine Diesel Engines and Gas Turbines, Tenth Edition, gives engineering cadets, marine engineers, ship operators and managers insights into currently available engines and auxiliary equipment and trends for the future. This new edition introduces new engine models that will be most commonly installed in ships over the next decade, as well as the latest legislation and pollutant emissions procedures. Since publication of the last edition in 2009, a number of emission control areas (ECAs) have been established by the International Maritime Organization (IMO) in which exhaust emissions are subject to even more stringent controls. In addition, there are now rules that affect new ships and their emission of CO₂ measured as a product of cargo carried. Provides the latest emission control technologies, such as SCR and water scrubbers Contains complete updates of legislation and pollutant emission procedures Includes the latest emission control technologies and expands upon remote monitoring and control of engines

A Brief Review of Power Generation Thermodynamics

Proceedings of a Workshop

Principles and Practices

Turbomachinery International

Pounder's Marine Diesel Engines and Gas Turbines

Gas Turbine Engineering Handbook

"This comprehensive text on the basics of heat and mass transfer provides a well-balanced

treatment of theory and mathematical and empirical methods used for solving a variety of engineering problems. The book helps students develop an intuitive and practical understanding of the processes by emphasizing the underlying physical phenomena involved. Focusing on the requirement to clearly explain the essential fundamentals and impart the art of problem-solving, the text is written to meet the needs of undergraduate students in mechanical engineering, production engineering, industrial engineering, auto-mobile engineering, aeronautical engineering, chemical engineering, and biotechnology.

The Federal Government of Nigeria has adopted Vision 20: 2020—an ambitious strategy to make Nigeria the world's 20th largest economy by 2020. In the absence of policies to accompany economic growth in key carbon-emitting sectors with a reduced carbon footprint, emission of greenhouse gases could more than double in the next two decades. To evaluate how to achieve the objectives of Vision 20: 2020 with reduced carbon emissions, the Federal Government of Nigeria and the World Bank undertook a multiyear program of analytical work. The summary results of this program are contained in a separate book (published in the World Bank's "Directions in Development" series) entitled *Low-Carbon Development: Opportunities for Nigeria*, which concludes that Nigeria can achieve its development objectives, while stabilizing emissions at 2010 levels and providing domestic benefit on the order of 2 percent of GDP. This volume is a collection of the background technical reports on the four sectors of inquiry: agriculture and land use, oil and gas, power, and transport. It contains details on the data, methodology, and assumptions used throughout the analysis. For agriculture and land use, the study team developed an agriculture production growth model, which permits the evaluation of sector emissions in both a reference and a low-carbon scenario. The study finds that low-carbon practices have significant potential to make the sector more productive and more climate-resilient. For the oil and gas sector, the analysis assesses the potential of accelerated phase-out of gas flaring, reduction of leakages, and increased energy efficiency in the operation of facilities, to both reduce the sector's emissions and contribute to the industry's net revenues and growth. The analysis of the power sector shows how the country can expand power generation and broaden access to electricity while reducing associated emissions, through renewable energy, energy efficiency, and lower-carbon technologies in thermal power generation. Finally, this analysis assesses the expected growth in CO₂ emissions from on-road transport under a normal business development scenario up to the year 2035, and it identifies actions at national and local levels that would reduce this growth, resulting in fuel economies, better air quality, and reduced congestion. *Assessing Low-Carbon Development in Nigeria: An Analysis of Four Sectors* outlines several actions that the Nigerian government could undertake to facilitate the transition to a low-carbon economy.

Everything you wanted to know about industrial gas turbines for electric power generation in one source with hard-to-find, hands-on technical information.

Petrominer

Gas Turbine Combustion

Performance and Operability

Process Plant Machinery

Peregrine Falcon

Shipping World & Shipbuilder

This book comprises research studies of novel work on combustion for sustainable energy development. It offers an insight into a few viable novel technologies for improved, efficient and sustainable utilization of combustion-based energy production using both fossil and bio fuels. Special emphasis is placed on micro-scale combustion systems that offer new challenges and opportunities. The book is divided into five sections, with chapters from 3-4 leading experts forming the core of each section. The book should prove useful to a variety of readers, including students, researchers, and professionals.

A significant addition to the literature on gas turbine technology, the second edition of Gas Turbine Performance is a lengthy text covering product advances and technological developments. Including extensive figures, charts, tables and formulae, this book will interest everyone concerned with gas turbine technology, whether they are designers, marketing staff or users.

Annotation This is Volume 1 of five volumes that comprise the proceedings of the June 2002 conference, sponsored by the International Gas Turbine Institute (IGTI), a technical institute of the American Society of Mechanical Engineers. The purpose of the conference was to facilitate international exchange and development of educational and technical information related to the design, application, manufacture, operation, maintenance, and environmental impact of all types of gas engines. With an emphasis upon the need for more efficient, cleaner, and more reliable gas turbines, the approximately 130 articles cover various technical aspects of aircraft engines; coal, biomass, and alternative fuels; combustion and fuels; education; electric power; and vehicular and small turbomachines. There is no subject index. Annotation c. Book News, Inc., Portland, OR (booknews.com).

Modern Marine Engineer's Manual

Petroleum, Mining & Energy

Naval Research Reviews

Low-Carbon Development

The Gas Turbine Handbook

Technology Report and Product Directory, Land, Sea & Air

*Since its first appearance in 1950, Pounder's Marine Diesel Engines has served seagoing engineers, students of the Certificates of Competency examinations and the marine engineering industry throughout the world. Each new edition has noted the changes in engine design and the influence of new technology and economic needs on the marine diesel engine. This eighth edition retains the directness of approach and attention to essential detail that characterized its predecessors. There are new chapters on monitoring control systems and governor systems, gas turbines and safety aspects of engine operation. Important developments such as the latest diesel-electric LNG carriers that will soon be in operation. After experience as a seagoing engineer with the British India Steam Navigation Company, Doug Woodyard held editorial positions with the Institution of Mechanical Engineers and the Institute of Marine Engineers. He subsequently edited The Motor Ship journal for eight years before becoming a freelance editor specializing in shipping, shipbuilding and marine engineering. He is currently technical editor of Seatrade, a contributing editor to Speed at Sea, Shipping World and Shipbuilder and a technical press consultant to Rolls-Royce Commercial Marine. * Designed to reflect the recent changes to SQA/Marine and Coastguard Agency Certificate of Competency exams. Careful organisation of the new edition enables readers to access the information they require * Brand new chapters focus on monitoring control systems and governor systems, gas turbines and safety aspects of engine operation * High*

quality, clearly labelled illustrations and figures

*Since its first appearance in 1950, Pounder's Marine Diesel Engines has served seagoing engineers, students of the Certificates of Competency examinations and the marine engineering industry throughout the world. Each new edition has noted the changes in engine design and the influence of new technology and economic needs on the marine diesel engine. Now in its ninth edition, Pounder's retains the directness of approach and attention to essential detail that characterized its predecessors. There are new chapters on monitoring control and HiMSEN engines as well as information on developments in electronic-controlled fuel injection. It is fully updated to cover new legislation including that on emissions and provides details on enhancing overall efficiency and cutting CO2 emissions. After experience as a seagoing engineer with the British India Steam Navigation Company, Doug Woodyard held editorial positions with the Institution of Mechanical Engineers and the Institute of Marine Engineers. He subsequently edited The Motor Ship journal for eight years before becoming a freelance editor specializing in shipping, shipbuilding and marine engineering. He is currently technical editor of Marine Propulsion and Auxiliary Machinery, a contributing editor to Speed at Sea, Shipping World and Shipbuilder and a technical press consultant to Rolls-Royce Commercial Marine. * Helps engineers to understand the latest changes to marine diesel engines * Careful organisation of the new edition enables readers to access the information they require * Brand new chapters focus on monitoring control systems and HiMSEN engines. * Over 270 high quality, clearly labelled illustrations and figures to aid understanding and help engineers quickly identify what they need to know.*

Process Plant Machinery provides the mechanical, chemical or plant engineer with the information needed to choose equipment best suited for a particular process, to determine optimum efficiency, and to conduct basic troubleshooting and maintenance procedures. Process Plant Machinery is a unique single-source reference for engineers, managers and technical personnel who need to acquire an understanding of the machinery used in modern process plants: prime movers and power transmission machines; pumping equipment; gas compression machinery; and mixing, conveying, and separation equipment. Starting with an overview of each class, the book quickly leads the reader through practical applications and size considerations into profusely illustrated component descriptions. Where necessary, standard theory is expertly explained in shortcut formulas and graphs. Maintainability and vulnerability concerns are dealt with as well. Fully updated with all new equipment available Comprehensive Coverage Multi-industry relevance

Novel Combustion Concepts for Sustainable Energy Development

Assessing Low-Carbon Development in Nigeria

India Power

Turbomachinery International Handbook

Paper

Marine Engineers Review

Reflecting the developments in gas turbine combustion technology that have occurred in the last decade, *Gas Turbine Combustion: Alternative Fuels and Emissions, Third Edition* provides an up-to-date design manual and research reference on the design, manufacture, and operation of gas turbine combustors in applications ranging from aeronautical to power generation. Essentially self-contained, the book only requires a moderate amount of prior knowledge of physics and chemistry. In response to the fluctuating cost and environmental effects of petroleum fuel, this third edition includes a new chapter on alternative fuels. This chapter presents the physical and chemical properties of conventional (petroleum-based) liquid and gaseous fuels for gas turbines; reviews the properties of alternative (synthetic) fuels and conventional-alternative fuel blends; and describes the influence of these different fuels and their blends on combustor performance, design, and emissions. It also discusses the special requirements of aircraft fuels and the problems encountered with fuels for industrial gas turbines. In the updated chapter on emissions, the authors highlight the quest for higher fuel efficiency and reducing carbon dioxide emissions as well as the regulations involved. Continuing to offer detailed coverage of multifuel capabilities, flame flashback, high off-design combustion efficiency, and liner failure studies, this best-selling book is the premier guide to gas turbine combustion technology. This edition retains the style that made its predecessors so popular while updating the material to reflect the technology of the twenty-first century. This book aims to be the reference book in the area of oxyfuel combustion, covering the fundamentals, design considerations and current challenges in the field. Its first part provides an overview of the greenhouse gas emission problem and the current carbon capture and sequestration technologies. The second part introduces oxy-fuel combustion technologies with emphasis on system efficiency, combustion and emission characteristics, applications and related challenges. The third part focuses on the recent developments in ion transport membranes and their performance in both oxygen separation units and oxygen transport reactors (OTRs). The fourth part presents novel approaches for clean combustion in gas turbines and boilers. Computational modelling and optimization of combustion in gas turbine combustors and boiler furnaces are presented in the fifth part with some numerical results and detailed analyses.

This comprehensive, best-selling reference provides the fundamental information you'll need to understand both the operation and proper application of all types of gas turbines. The full spectrum of hardware, as well as typical application scenarios are fully explored, along with operating parameters, controls, inlet treatments, inspection, troubleshooting, and more. The second edition adds a new chapter on gas turbine noise control, as well as an expanded section on use of inlet cooling for power augmentation and NO_x control. The author has provided many helpful tips that will enable diagnosis of problems in their early stages and analysis of failures to prevent their recurrence. Also treated are the effects of the external environment on gas turbine operation and life, as well as the impact of the gas turbine on its surrounding environment.

and Gas Turbines

The Motor Ship

Approaches for Clean Combustion in Gas Turbines

Opportunities for Nigeria

Alternative Fuels and Emissions, Third Edition

Power Engineering

The Gas Turbine Engineering Handbook has been the standard for engineers involved in the design, selection, and operation of gas turbines. This revision includes new case histories, the latest techniques, and new designs to comply with recently passed legislation. By keeping the book up to date with new, emerging topics, Boyce ensures that this book will remain the standard and most widely used book in this field. The new Third Edition of the Gas Turbine Engineering Hand Book updates the book to cover the new generation of Advanced gas Turbines. It examines the benefit and some of the major problems that have been encountered by these new turbines. The book keeps abreast of the environmental changes and the industries answer to these new regulations. A new chapter on case histories has been added to enable the engineer in the field to keep abreast of problems that are being encountered and the solutions that have resulted in solving them. Comprehensive treatment of Gas Turbines from Design to Operation and Maintenance. In depth treatment of Compressors with emphasis on surge, rotating stall, and choke; Combustors with emphasis on Dry Low NOx Combustors; and Turbines with emphasis on Metallurgy and new cooling schemes. An excellent introductory book for the student and field engineers A special maintenance section dealing with the advanced gas turbines, and special diagnostic charts have been provided that will enable the reader to troubleshoot problems he encounters in the field The third edition consists of many Case Histories of Gas Turbine problems. This should enable the field engineer to avoid some of these same generic problems

IGTI Technology Report and Product Directory, Land, Sea & Air

Progress in Astronautics and Aeronautics

Industry-Wide Workshop on Computational Turbulence Modeling

Industrial Gas Turbines

Oxyfuel Combustion for Clean Energy Applications

ASME Technical Papers