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## Lubrication Fundamentals

Third Edition, Revised and Expanded

Don M. Pirro | Martin Webster | Ekkehard Daschner



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## Review

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?Robert M. Gresham, Society of Tribologists and Lubrication Engineers

"This book is of great value for those working in industries where effective lubrication is a key factor for obtaining solutions with a high reliability. The book gives an excellent description of the lubrication mechanisms and the impact of lubricant selection on performance. The authors have done a great job in compiling lubrication knowledge of so many applications in a single book."

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"...an intensely practical and thorough reference resource, both for those involved in the practical side of lubricants and lubrication such as designers, lubricant salespersons and service engineers, and also for researchers who should know more about lubricants and lubricated machines. I heartily recommend it."

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## About the Author

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Careful selection of the right lubricant(s) is required to keep a machine running smoothly. Lubrication Fundamentals, Third Edition, Revised and Expanded describes the need and design for the many specialized oils and greases used to lubricate machine elements and builds on the tribology and lubrication basics discussed in previous editions.

Utilizing knowledge from leading experts in the field, the third edition covers new lubrication requirements, crude oil composition and selection, base stock manufacture, lubricant formulation and evaluation, machinery and lubrication fundamentals, and environmental stewardship. The book combines lubrication theory with practical knowledge, and provides many useful illustrations to highlight key industrial, commercial, marine, aviation, and automotive lubricant applications and concepts. All previous edition chapters have been updated to include new technologies, applications, and specifications that have been introduced in the past 15 years.

What's New in the Third Edition:

- Adds three new chapters on the growing renewable energy application of wind turbines, the impact of lubricants on energy efficiency, and best practice guidelines on establishing an in-service lubricant analysis program
- Updates API, SAE, and ACEA engine oil specifications, descriptions of new engine oil tests, impact of engine and fuel technology trends on engine oil
- Includes the latest environmental lubricant tests, definitions, and labelling programs
- Compiles expert information from ExxonMobil publications and the foremost international equipment builders and industry associations
- Covers key influences impacting lubricant formulations and technology
- Offers data on global energy demand and interesting statistics such as the worldwide population of nuclear reactors, wind turbines, and output of hydraulic turbines
- Presents new sections on the history of synthetic lubricants and hazardous chemical labeling for lubricants

Whether used as a training guide for industry novices, a textbook for students to understand lubrication principles, or a technical reference for experienced lubrication and tribology professionals, Lubrication Fundamentals, Third Edition, Revised and Expanded is a "must read" for maintenance professionals, lubricant formulators and marketers, chemists, and lubrication, surface, chemical, mechanical, and automotive engineers.

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