Hydraulic Components Volume A

Hydraulic Sealing Elements

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ISBN: 978-0-9977634-9-2

Printed in the United States of America
First Published by August 2018
Revised January 2019

3850 Scenic Way, Franksville, WI, 53126 USA.

www.compudraulic.com

Disclaimer

It is always advisable to review the relevant standards and the recommendations from the system manufacturer. However, the content of this book provides guidelines based on the author's experience.

Any portion of information presented in this book might not be suitable for some applications due to various reasons. Since errors can occur in circuits, tables, and text, the author/publisher assumes no liability for the safe and/or satisfactory operation of any system designed based on the information in this book.

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PREFACE

This book provides a knowledge base for fluid power users to become familiar with commonly used seals in hydraulic components. This book presents an overview of hydraulic sealing elements including seal functions, classifications, and materials. This book also presents 15 various properties of hydraulic seals and relevant standard test methods. This book introduces best practices for hydraulic seals selection, installation and storage. This book provides a thorough analysis for failures of hydraulic seals including 26 failure modes with examples and demonstrative pictures. The following table shows some interesting statistics about the book.

Chapters	Pages	Lines	Words	Characters	Figures	Tables	Equations
11	167	1008	23795	133001	182	13	3

ACKNOWLEDGEMENT

The author likes to thank Mr. Thomas Wanke, CFPE Director of the Fluid Power Industrial Consortium at Milwaukee School of Engineering (MSOE), for his effective effort in reviewing the presented technical information.

The author also thanks the administration at Milwaukee School of Engineering and his supervisors who supported the effort to develop this book.

The author thanks the following companies (listed alphabetically) for permitting him to use portions of their copyrighted literatures in this book.

- American High-Performance Seals.
- ASSOFLUID
- Bar Hydraulics
- EPM Seals.
- Ecoseal Co. Ltd.
- Gates Corporation.
- Hallite Seals.
- Hydraulic Specialist Study Manual by IFPS
- MFP Seals.
- Parker Hannifin.
- System Seals Inc.
- Trelleborg.

Lastly, the author extends his thanks to the following sources of public information used to enrich the contents of the book.

- applerubber.com
- astonseals.com
- Caterpillar
- ecosealthailand.com
- hydrapakseals.com
- marcorubber.com
- mnrubber.com
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- o-ring-lab.com
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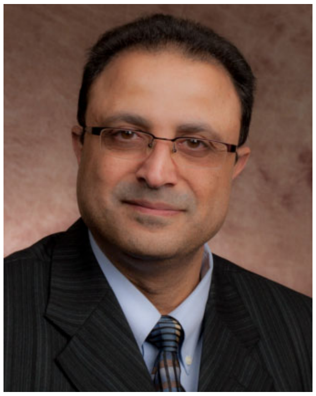

Medhat Khalil, Ph.D., Director of Professional Education & Research Development at the Applied Technology Center, Milwaukee School of Engineering, Milwaukee, WI, USA. Medhat got his bachelor's degree in mechanical engineering from Military Technical College (MTC), Cairo, Egypt. He got his master's degree in Mechanical Engineering from Cairo University, Cairo, Egypt. Medhat has been granted his Ph.D. in Mechanical Engineering and Post-Doctoral Industrial Research Fellowship from Concordia University in Montreal, Quebec, Canada. Medhat, published several fluid power textbooks. He participated in many technical conferences, published several reviewed technical papers, and is in the process of registering a number of patents. Medhat has been certified by the International Fluid Power Society (IFPS) as: Certified Fluid Power Hydraulic Specialist (CFPHS) and Certified Fluid Power Accredited Instructor (CFPAI). Medhat is a member of many grand institutions such as Center for Compact and Efficient Fluid Power Engineering Research Center (CCEFP), listed Fluid Power Consultant by the National Fluid Power Association (NFPA) and listed professional instructor by the American Society of Mechanical Engineers (ASME) and National American Die Casting Association (NADCA). Medhat has been assigned as the chair of the education committee for the International Fluid Power Exposition (IFPE 2017 and 2020). Medhat developed and taught various courses for industry professionals. He has a balanced academic and industrial experience. Medhat has a deep working experience in the field of Mechanical Engineering; more specifically in fluid power and motion control. Medhat had worked for several world-wide recognized industrial organizations such as Rexroth in Germany and CAE in Canada. Medhat has designed several hydraulic systems and developed analytical and educational software. Medhat also has vast experience in modeling and simulation of dynamic systems using Matlab-Simulink. Medhat was the designer and founder of the Universal Fluid Power Trainers. Medhat was the recipient of the "Otto Maha Pioneers in Fluid Power" award in 2012.