

Acknowledgments

No book can be written without the aid of many people. It takes a great number of individuals to put together the information available about any particular technical field into a book. The field of refrigeration is no exception. Many firms have contributed information, illustrations, and analysis of the book.

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About the Author

Rex Miller was a Professor of Industrial Technology at The State University of New York, College at Buffalo for more than 35 years. He has taught on the technical school, high school, and college level for more than 40 years. He is the author or coauthor of more than 100 textbooks ranging from electronics through carpentry and sheet metal work. He has contributed more than 50 magazine articles over the years to technical publications. He is also the author of seven civil war regimental histories.

Mark Richard Miller finished his B.S. degree in New York and moved on to Ball State University, where he obtained the Master's degree. He went to work in San Antonio. He taught high school and went to graduate school in College Station, Texas, where he finished the Doctorate. He took a position at Texas A&M University in Kingsville, Texas, where he now teaches in the Industrial Technology Department as a Professor and Department Chairman. He has coauthored 11 books and contributed many articles to technical magazines. His hobbies include refinishing a 1970 Plymouth Super Bird and a 1971 Road-Runner.

Edwin P. Anderson was a professional engineer and the author of numerous books for the trades, including air conditioning, sheet metal, home appliance, and electrical.

Introduction

This book has been prepared to assist personnel who are involved with the installation, servicing, and operation of refrigeration equipment. Fundamentally, the principles and physics of refrigeration have not changed to any degree during the many years that we have relied on refrigeration as a means of keeping foods from spoiling.

Household as well as commercial types of refrigeration are covered. Some of the items in this book apply to both household and commercial refrigeration, as the principles are basically the same.

It is not the intent of this book to cover large industrial installations, as this is a separate subject involving refrigerating machines of very large capacity.

The personnel involved in the installation, servicing, and operation of refrigeration equipment must have a firm foundation and knowledge of the principles of refrigeration, including not only the fundamentals of refrigeration but also the laws of physics that govern these fundamentals.

Troubleshooting guides are included as necessary so that you may refer to them for troubles that present themselves in servicing and operating refrigeration equipment.

It is most important to have a thorough understanding of the working parts of both electrically driven and absorption-type refrigeration units. This will include the properties of the various refrigerants used, including some of the obsolete refrigerants, as it is possible that you may come across some of these obsolete refrigerants still in use. Once you have the theory of refrigeration well organized in your mind, troubles in the systems will be much easier to locate.

Some of the information that appears dated has been left for the benefit of those who must still operate and repair these pieces of equipment. As you know, refrigeration equipment is well known for its long life.

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