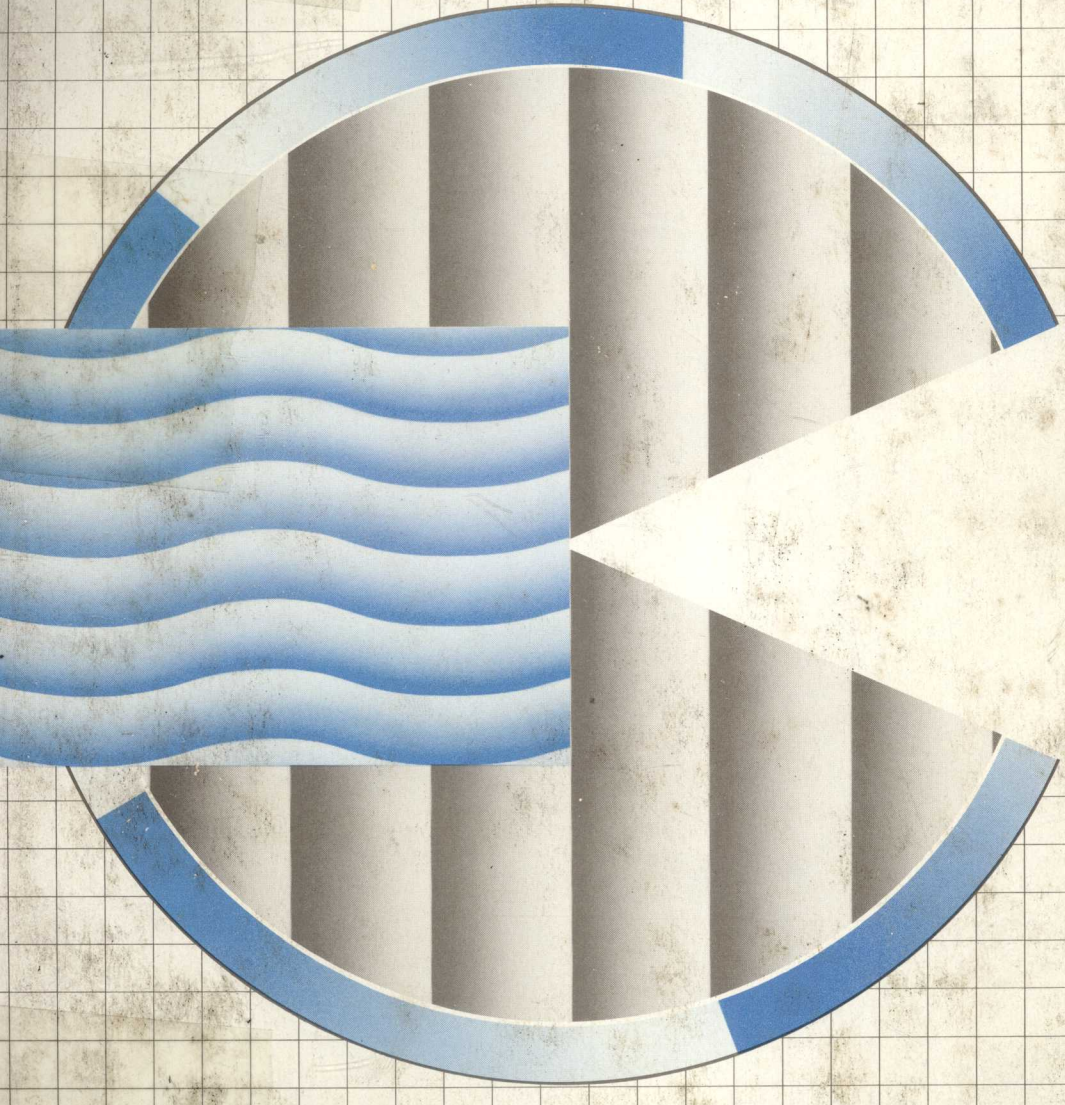
REFRIGERATION AND AIR CONDITIONING



WILBERT F. STOECKER
JEROLD W. JONES

REFRIGERATION AND AIR CONDITIONING

Second Edition

W. F. Stoecker
Professor of Mechanical Engineering
University of Illinois at Urbana-Champaign

J. W. Jones
Associate Professor of Mechanical Engineering
University of Texas at Austin

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PREFACE

There are conventional as well as special reasons for writing a second edition of "Refrigeration and Air Conditioning." The conventional reason is that in the 24 years since the appearance of the first edition some of the equipment and systems have slipped to lesser importance while new products and concepts have emerged. An updating is therefore timely. A special reason for a new edition is the impact that energy effectiveness now exerts on heating and cooling systems. Energy consciousness has perceptibly changed the equipment and design concepts in refrigeration and air conditioning. Also, since most engineers predict that the days of low-cost energy will never return, energy-conservative strategies are now permanent.

The second edition differs from the first in the following major ways. A heavier presentation of air-conditioning *systems* is provided, but the technical emphasis on vapor-compression systems is not only maintained but strengthened. The new material directed toward the air conditioning of buildings replaces several chapters (cryogenics, steam jet, and air-cycle) which are of admitted importance, but the engineering of these systems in professional practice is normally handled by other engineers than those working in comfort air conditioning and industrial refrigeration and air conditioning. The digital computer is now a standard tool of engineers, and where appropriate calculations and problems use the computer.

Some sections and particularly the style of the first edition have been maintained. The first edition achieved a certain degree of acceptance throughout the world and apparently meets the need of those seeking a technical book that goes beyond pure descriptions into quantitative treatment of the subjects. At the same time the second edition attempts to maintain an emphasis on qualitative evaluations and trends, yet introducing no additional complexity unless there is a payoff of improved understanding.

The authors are indebted to numerous professional associates whose views have influenced the topic selection, emphases, and technical presentations in this book. Special thanks are due the following colleagues: Larry G. Berglund, John B. Pierce Foundation; John C. Chato, University of Illinois at Urbana-Champaign; Arthur M. Clausing, University of Illinois at Urbana-Champaign; James E. Shahan, Transco, Inc.; Gary C. Vliet, University of Texas at Austin; and James E. Woods, Iowa State University.

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