
FOREWORD

The Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACNA) in keeping with its policy of disseminating information and providing standards of design and construction, offers this third manual of the HVAC Systems Library entitled "HVAC Systems-Applications", as part of the continuing effort to upgrade the heating, ventilating and air conditioning (HVAC) industry.

The "HVAC Systems-Application" manual was developed to present the latest available information and data on the application of specific types of HVAC systems, both air and hydronic, for the "design and build" SMACNA Contractor, the HVAC system designer, testing, adjusting and balancing contractors, and any one else concerned with commercial or institutional building HVAC systems. The basic types of specific systems will be discussed, such as multizone systems, induction air systems, etc., for air; and two-pipe systems, three-pipe systems, etc., for hydronic. Most larger buildings have installations made of combinations of the basic HVAC systems. So in any existing or proposed large building complex, each basic system can be separated and analyzed for its individual contribution to the areas served. Some so-called obsolete systems are included to assist contractors doing energy management and retrofit work. Cautions about excessive energy use have been included.

After Chapters I and II which contain a general discussion of basic central HVAC system and equipment installations, electric and pneumatic control systems are covered in depth in Chapter III. The characteristics of individual types of air systems or air-water systems are discussed in Chapters IV through VIII. Special types of air systems (clean room, dehumidification, laboratory exhaust and smoke control) may be found in Chapter IX.

Chapters X through XIII contain general and special information on hydronic and refrigeration systems. The engineering tables and charts in Chapter XIV are followed by a substantive, in-depth HVAC systems glossary and a cross-referenced index. All of the above is well documented by the eight page Table of Contents found on page V. The ASHRAE Handbooks and the NEBB "Environmental Systems Technology" were major sources of materials found in this publication.

The SMACNA Duct Design Committee recognizes that in the future, this state-of-the-art type manual must be expanded and/or updated. As need arises, manuals on related subjects may be developed. Continuing effort will be made to provide the industry with a compilation of the latest construction methods and engineering data from recognized industry sources, supplemented by SMACNA research and the services of SMACNA Chapters and SMACNA Contractors.

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