

FOREWORD

This handbook has been extensively updated for 2002 from the original 1983 publication and includes all of the many changes that have taken place in the industry since the 1990's. We have added many new sections covering variable frequency drives (VFD), direct digital control (DDC) systems, lab hood exhaust balancing, and the latest changes in the balancing equipment and procedures.

All of the system testing, adjusting, and balancing fundamentals that make up the original text has been updated, and all helpful reference tables and charts in the Appendix have been extensively updated.

This handbook will provide any SMACNA contractor already familiar with mechanical system operation basics, with the information necessary to balance most heating, ventilation, and air conditioning (HVAC) systems. Chapters on both air and water side HVAC system adjusting and balancing are included, and the chapters on system controls have been totally rewritten to reflect the trend away from pneumatic controls and towards programmable micro-processor controls.

Most of today's HVAC systems are being designed with many more individually controlled temperature zones to improve occupant comfort, and variable speed fans and pumps are now commonplace to provide the exact amount of heating and cooling system capacity necessary to minimize energy usage. New occupant air ventilation codes are much more restrictive, at the same time building envelopes are becoming much tighter. The combination of constantly changing HVAC flows and increased demand for fresh and filtered ventilation air for all occupants is placing much more emphasis on proper HVAC system operation and balancing.

Any SMACNA contractor wanting to become part of this rapidly growing field is strongly encouraged to read other related SMACNA publications available, and take part in the many training courses offered to become a certified TAB Contractor. The International Training Institute provides a Certified Technician program for journeyman sheet metal workers who already have a basic understanding of system testing and balancing, and many of these courses are available in versions for home study.

The building construction industry is experiencing a major growth in demand for trained and experienced contractors who can balance today's much more complex HVAC systems.

SHEET METAL AND AIR CONDITIONING CONTRACTORS'
NATIONAL ASSOCIATION, INC.

