

SECTION 23 01 00

OPERATION AND MAINTENANCE OF HVAC SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Related Documents: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Work Included:
 - 1. To aid the continued instruction of operating and maintenance personnel, and to provide a source of information regarding the products incorporated into the work, furnish and deliver the data described in this section and in pertinent other sections of these specifications.
- C. Related Sections:
 - 1. Section 23 00 10 – HVAC General Requirements
 - 2. Section 23 05 00 – Common Work Results for HVAC
 - 3. Section 23 20 00 – HVAC Piping and Pumps
 - 4. Section 23 30 00 – HVAC Air Distribution
 - 5. Section 23 70 00 – Central HVAC Equipment
 - 6. Section 23 80 00 – Decentralized HVAC Equipment

1.2 SUBMITTALS

- A. Unless otherwise directed in other sections, or in writing by the Engineer, submit three copies of the final manual to the Engineer for approval prior to indoctrination of operation and maintenance personnel.
- B. Operation and Maintenance manual(s) shall be submitted in accordance with Division 1 and shall include a complete product index in each volume, installation and maintenance data, sequence of controls, parts lists, a copy of all approved shop drawings and the name, address and telephone number of supplier or nearest representative. All mechanical devices, equipment and systems marked [O/M] in these specifications shall be included and all other such mechanical items that will require servicing before the duration of its useful life has been reached. Motor driven equipment shall include data for the motor. Manual(s) shall be presented to the Engineer for review and transmittal to the Owner before final payment is recommended.

1.3 QUALITY ASSURANCE

- A. In preparing data required by this section, use only personnel who are thoroughly trained and experienced in the operation and maintenance of the described items, completely familiar with the requirements of this section, and skilled communicating the essential data.

PART 2 - PRODUCTS

2.1 INSTRUCTION MANUALS

- A. Where instruction manuals are required to be submitted under other sections of these specifications, prepare in accordance with the provisions of this section.
- B. Format:
 - 1. Hard Copy
 - a. Size: 8-1/2" x 11"
 - b. Paper: White bond, at least 20 lb. weight.
 - c. Text: Typed (Hand printed or written is not acceptable)
 - d. Drawings: 11" x 8-1/2" preferable; bind in with text; foldouts are acceptable; larger drawings are acceptable if folded to fit within the manual and provide a drawing pocket inside rear cover or bind in with text.
 - e. Fly Sheets: Separate each portion of the manual with neatly prepared Fly Sheets or tabbed index sheets briefly describing the contents of the ensuing portion. Fly sheets or index tabs may be in color.
 - f. Binding: Use heavy-duty plastic covers with binding mechanism concealed inside the manual; 3-ring binders are required. All binding is subject to the Engineer's approval.
 - 2. Electronic
 - a. A single PDF file shall be provided for the entirety of Division 23. Individual PDF files of each section are not acceptable and will not be reviewed.
 - b. All submissions must be provided with a digital table of contents with linked bookmarks to allow for quick access to each section. Table of Contents shall be ordered by specification section. Bookmarks shall be linked to the fly sheets of the corresponding section.
 - c. All PDF's must be searchable utilizing the standard search function of a PDF viewer.
 - d. Where native PDF files are available from a vendor, those shall be used. Scanned versions of these documents are not acceptable.
 - e. Fly Sheets: Separate each portion of the manual with neatly prepared digital Fly Sheets briefly describing the contents of the ensuing portion. Fly sheets shall include the equipment type, applicable specification section, and

address and telephone number of equipment supplier or nearest representative. Table of contents bookmarks shall point to the related fly sheet.

- C. Provide front and back covers for each manual, using durable plastic material approved by the A.E, and clearly identified on the front cover with at least the following information:

OPERATING AND MAINTENANCE INSTRUCTIONS

FOR

(Item/system name and description)

(Name and address of Contractor and sub-contractor)

(General subject of this manual)

(Name and address of Engineer)

(Engineer's approval and date approved)

- E. Contents:

Neatly prepared and typewritten detailed table of contents.

Complete instructions regarding operation and maintenance of all equipment involved including lubrication, disassembly, and reassembly.

Complete nomenclature of all parts of all equipment.

Complete nomenclature and part number of all replaceable parts, name and address of nearest vendor, and all other data pertinent to procurement procedures.

Copy of all guarantees and warranties issued.

Manufacturer's bulletin, cuts, and descriptive data, where pertinent, clearly indicating the precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturers' data with which this installation is not concerned.

Such other data as required in pertinent sections of these specifications.

PART 3 - EXECUTION

3.1 INSTRUCTION MANUALS

- A. Revisions:

1. Following the indoctrination and instruction of operation and maintenance personnel, review all proposed revisions of the Manual with the Engineer.

END OF SECTION 23 01 00

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