

SECTION 232125 - PUMPS, HORIZONTAL BASE MOUNTED END SUCTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work of this section.

1.2 SCOPE

- A. Provide single stage, end suction, vertically split case centrifugal pumps as specified herein and /or shown on the drawings.

1.3 RELATION TO OTHER WORK

- A. Refer to the section, "General Mechanical Provisions", for related requirements. Refer to other sections of Division-23 and to all other applicable portions of the Drawings and Specifications. Coordinate, where applicable, with variable speed drive systems.

1.4 SHOP DRAWINGS

- A. Refer to Section entitled "General Mechanical Provisions". Include data on: materials of construction dimensions; weights; curves; brake horsepower requirements; motor horsepower; drive couplings; efficiencies; coupling guards; and operating and maintenance instruction. Pump curves shall be clearly marked to show pump performance at scheduled points and, where pumps must operate in parallel, both single and parallel operating points. Where pumps are specified with variable speed drives, provide operating curves at fifty (50) rpm increments throughout the specified operating range.

1.5 SELECTION AND CAPACITY

- A. Each scheduled pump has been selected near its point of maximum efficiency. Pumps which may be proposed which are other than those used as a design basis must be selected with the same considerations of efficiency, impeller diameter and other characteristics to be capable of providing the capacity intended.
- B. Pumps and motors shall be selected to provide a non-overloading assembly regardless of pressures and flow rates which may be actually encountered in the system.
- C. Impeller Selection: Selected to operate efficiently at the scheduled points and shall be neither the largest nor smallest impeller for the selected pump casting.
- D. Motor horsepower scheduled have been selected to be non-overloading at any point on the pump curve of the scheduled pump and this condition must hold true of any pump proposed for this service.

1.6 MANUFACTURER

A. Products listed in this Section or on the plans are based on a specific manufacturer to establish the desired style, quality and type. Equivalent products, complying with the requirements of this Section and the installation requirements of the plans, by the following manufacturers are acceptable:

1. Allis Chalmers
2. Buffalo
3. Chicago
4. Taco
5. Peerless
6. Paco
7. Aurora
8. Bell & Gossett
9. Weinman
10. Mueller
11. Amtrol
12. Crane
13. Armstrong
14. Patterson

PART 2 - PRODUCTS

2.1 GENERAL

- A. Pumps: Horizontal mount, vertically split case, single stage, end suction, centrifugal pumps of the quantity, size and capacity indicated.
- B. Casing: Split on the vertical axis. Close grained cast iron. Casing shall be designed for 175 psi working pressure and shall be hydrostatically tested at 150% of the maximum working pressure. Suction and discharge flanges shall be drilled to ANSI Standards.
- C. Impeller: Cast bronze. Keyed to the shaft and securely retained in an axial position by positive mechanical means.
- D. Drive: Motor's horsepower scheduled have been selected to be non-overloading at any point on the pump curve of the schedule pump. Pumps proposed must comply with this condition.
- E. Mechanical Seals: Designed for operation in 225°F liquid and mounted in one piece cast construction stuffing boxes. Stuffing boxes shall include provision to flush the seal faces.
- F. Bearings: Radial and thrust bearings shall be single row ball, grease lubricated, self-aligning type mounted in cast iron cartridges. Sized for 20,000 hours B-10 life which is 100,000 hours average life. Removable without disassembling the pump.
- G. Coupling Guard: Provide coupling guard for each pump.
- H. Base: Steel drip rim base for each pump unit. Pump and drive unit carefully aligned and bolted in place prior to factory shipment.
- I. Motors: Open drip proof with greaseable ball bearings. Motors installed outdoors, in unprotected areas, or subject to exposure to moisture shall be TEFC type. Where variable

frequency drives are employed, or as otherwise directed, provide motor of high efficiency type; coordinate with variable frequency drives.

PART 3 - EXECUTION

3.1 GENERAL

- A. Install pumps where indicated, in accordance with manufacturer's published installation instructions, with recommended clearances provided for service and maintenance. Pump placement shall be essentially as shown on drawings; however, actual location shall be verified using field measurements and data relating to actual pumps and adjacent equipment as actually approved for installation on this project.

3.2 PIPING AND ACCESSORIES

- A. Provide piping, accessories, hangers, supports, and anchors; valves; meters and gages; vibration isolation; and equipment supports; as indicated for complete installation.
- B. Provide all necessary unions and/or flanges on all appropriate items so that all items (strainer, flexible connection, suction diffuser, pump, balancing cock, check valve, etc.) between suction side gate valve and discharge side gate valve can be easily replaced and/or serviced without disturbing any other portions of the system.

END OF SECTION 232125