

**SECTION 22 11 23  
DOMESTIC WATER PUMPS****PART 1 - GENERAL****1.1 DESCRIPTION**

- A. Cold and hot water recirculation pump for potable and non-potable domestic water systems.

**1.2 RELATED WORK**

- A. Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.
- B. Section 22 05 12, GENERAL MOTOR REQUIREMENTS FOR PLUMBING EQUIPMENT.
- C. SECTION 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS: Requirements for commissioning, systems readiness checklist, and training.
- D. Section 26 29 11, MOTOR CONTROLLERS.

**1.3 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
  - 1. Pump:
    - a. Manufacturer and model.
    - b. Operating speed.
    - c. Capacity.
    - d. Characteristic performance curves.
  - 2. Motor:
    - a. Manufacturer.
    - b. Speed.
    - c. Current Characteristics.
    - d. Efficiency.
- C. Certified copies of all the factory and construction site test data sheets and reports.
- D. Complete operating and maintenance manuals including technical data sheets and information for ordering replaceable parts:
  - 1. Include complete list indicating all components of the systems.
- E. Completed System Readiness Checklist provided by the Commissioning Agent and completed by the contractor, signed by a qualified technician and dated on the date of completion, in accordance with the requirements of Section 22 08 00 COMMISSIONING OF PLUMBING SYSTEMS.

**1.4 APPLICABLE PUBLICATIONS**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the

basic designation only.

- B. National Electrical Manufacturers Association (NEMA):  
ICS6-93 (R2011).....Industrial Control and Systems Enclosures  
250-14.....Enclosures for Electrical Equipment (1000 Volts  
Maximum)
- C. American Society of Mechanical Engineers (ASME):  
Boiler and Pressure Vessel Code: 2013  
Section VIII.....Pressure Vessels, Division I and II
- D. International Code Council (ICC)  
ICC IPC (2012).....International Plumbing Code
- E. NSF International (NSF)  
NSF/ANSI 61 (2014).....Drinking Water System Components - Health  
Effects  
NSF/ANSI 372 (2011).....Drinking Water System Components - Lead Content
- F. Underwriters' Laboratories, Inc. (UL):  
508-99 (R2008)..... Standards for Industrial Control Equipment

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. Material or equipment containing a weighted average of greater than 0.25 percent lead shall not be used in any potable water system intended for human consumption, and shall be certified in accordance with NSF/ANSI 61 or NSF 372.

### **2.2 INLINE POTABLE AND NON-POTABLE COLD AND HOT WATER RECIRCULATING PUMP AND TEMPERED WATER RECIRCULATING PUMP - TYPE J**

- A. All bronze, centrifugal, in-line horizontal, oil lubricated pump with flexible coupling designed for quiet operation and 862 kPa (125 psi).
- B. Bronze body construction, stainless steel shaft, cupro-nickel shaft sleeve, mechanical seal, oil lubricated sleeve bearings.
- C. Pump shall be non-overloading at any point on the pump curve.
- D. Pump controlled from on/off aquastat located at pump. In addition, the pump shall be provided with "on-off" switch for shut down. In the inlet and outlet piping of the pump shutoff valves shall be installed to permit service to the pump without draining the system. A check valve shall be installed in the pump discharge piping immediately downstream of the pump.
- E. Wet-Rotor circulating type pumps are not allowed.

## **PART 3 - EXECUTION**

### **3.1 STARTUP AND TESTING**

- A. Make tests as recommended by product manufacturer and listed standards

and under actual or simulated operating conditions and prove full compliance with design and specified requirements. Tests of the various items of equipment shall be performed simultaneously with the system of which each item is an integral part.

- B. System Test: After installation is completed provide an operational test of the completed system including flow rates, pressure compliance, alarms and all control functions.
- C. When any defects are detected, correct defects and repeat test.
- D. The Commissioning Agent will observe startup and contractor testing of selected equipment. Coordinate the startup and contractor testing schedules with the Contracting Officer's Representative and Commissioning Agent. Provide a minimum of 7 days prior to notice.

### **3.2 SUBMERSIBLE SEWAGE PUMP - TYPE N**

- A. Install in accordance with manufacturer's instructions and recommendations.
- B. Arrange control so that either pump may start first, the other to be cut in automatically if the first pump fails to start or cannot handle the load.
- C. Install silent check valve in pump discharge.
- D. Hard wire pumps to Controller. Coordinate with Division 26, Electrical.

### **3.3 COMMISSIONING**

- A. Provide Commissioning Documentation accordance with the requirements of Section 22 08 00 - COMMISSIONING OF PLUMBING SYSTEMS for all inspection, startup, and contractor testing required above and required by the System Readiness Checklist provided by the Commissioning Agent.
- B. Components provided under this Section of the specification will be tested as part of a larger system. Refer to Section 22 08 00 - COMMISSIONING OF PLUMBING SYSTEMS and related sections for contractor responsibilities for system commissioning.

### **3.4 DEMONSTRATION AND TRAINING**

- A. Provide services of manufacturer's technical representative for four hours to instruct VA Personnel in operation and maintenance of units.
- B. Submit training plans and instructor qualifications in accordance with the requirements of Section 22 08 00 COMMISSIONING OF PLUMBING SYSTEMS.

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