

**SECTION 22 11 23**  
**DOMESTIC WATER PUMPS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

Hot water circulating pump and domestic water pressure booster system.

**1.2 RELATED WORK**

- A. Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.
- B. Section 26 29 11, LOW-VOLTAGE MOTOR STARTERS.

**1.3 QUALITY ASSURANCE**

- A. Domestic Water Pressure Booster System:
  - 1. Components shall be furnished by a single manufacturer and the system shall be the standard cataloged product of the manufacturer.
  - 2. Shop Test: Water booster unit and its component parts shall undergo a thorough electric and hydraulic operating test prior to shipment. Tests shall include a system operating flow test from zero to 100 percent of design flow rate under specified suction and system pressure conditions. Certified performance curves shall be furnished.

**1.4 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, frame and type.
- b. Speed.
- c. Current Characteristics and W (HP).
- d. Efficiency.

D. Certified copies of all the factory and construction site test data sheets and reports.

E. Complete operating and maintenance manuals including wiring diagrams, technical data sheets and information for ordering replaceable parts:

- 1. Include complete connection which indicates all components of the system.
- 2. Include complete diagrams of the internal wiring for each item of equipment.
- 3. Diagrams shall have their terminals identified to facilitate installation, operation and maintenance.

**1.5 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 (R2001) .....Industrial Control and Systems Enclosures

250-03 .....Enclosures for Electrical Equipment (1000 Volts Maximum)

C. American Society of Mechanical Engineers (ASME):

Boiler and Pressure Vessel Code: 2002

Section VIII .....Pressure Vessels, Division I and II.

D. Underwriters' Laboratories, Inc. (UL):

508-99 (R2002) .....Safety Industrial Control Equipment

## **PART 2 - PRODUCTS**

### **2.1 CIRCULATING PUMP**

- A. Use for hot water and therapeutic pool systems. Pump for hot water system shall be designed for 65 degrees C (150 degrees F) water service. Centrifugal, single stage, two stage, constructed to prevent contact of water with metal other than nonferrous. Driver shall be electric motor, close coupled or connected by flexible coupling or connected by magnetic coupling.
- B. Mounting shall be either of the following:
  - 1. In-line mounted.
  - 2. Floor mounted set on common bed plate with drip lip.
- C. Casings: Epoxy coated cast iron, bronze, stainless steel, vertically or horizontally split.
- D. Impeller: High grade, cast brass or bronze, accurately machined and properly balanced.
- E. Motors: Maximum 40 degrees C ambient temperature rise, dripproof, for operation with current of voltage, phase and cycle shown in schedule on Electrical drawings, conforming to NEMA 250-Type 4. Capacity to be such to operate pump without overloading. In-line pump motors shall not exceed 1800 rpm and shall be provided with spring mountings or other devices to assure quiet operation. Motors shall be equipped with thermal overload protection. When motor has cooled down it shall re-start automatically if the control has been left on.
- F. Pump shall operate continuously 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.
- G. A check valve shall be installed nearby in the piping upstream of the circulating pump.

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