

SECTION 221123 - DOMESTIC WATER PUMPS

PART 1 - GENERAL

1.1 SUBMITTAL REQUIREMENTS

- A. Product Data:
 - 1. Provide product datasheets for all products specified under this section. Include rated capacities, operating characteristics, furnished specialties, and accessories.

1.2 GENERAL REQUIREMENTS:

- A. Design point on pump curve shall yield a minimum tangential slope of -1:1.
- B. The impeller curve shall be continuously rising throughout the range contained within its efficiency curve
- C. The peak of the impeller curve at maximum total head shall be a minimum of 10% above the scheduled total design head.

PART 2 - PRODUCTS

2.1 IN-LINE, WET ROTOR PUMPS

- A. Manufacturers: Subject to compliance with requirements, manufacturers offering pumps which may be incorporated in the work include the following:
 - 1. Armstrong Pumps Inc.
 - 2. Bell & Gossett.
 - 3. Grundfos.
 - 4. TACO Inc.
- B. Description: Factory-assembled and -tested, in-line, wet rotor, system lubricated, canned-motor pumps.
- C. Pump Construction:
 - 1. Pump and Motor Assembly: Self-lubricating, replaceable-cartridge type and designed for horizontal installation.
 - 2. Casing: Stainless steel.
 - 3. Impellor: Plastic
 - 4. Shaft: Ceramic
 - 5. Bearings: Carbon
- D. Capacities and Characteristics:

1. Minimum Working Pressure: 125 psig.
2. Maximum Continuous Operating Temperature: 220 deg. F.
3. Pump Control: Thermostat .

2.2 CONTROLS

- A. Thermostats: Electric; adjustable for control of hot-water circulation.
 1. Type: Surface mounted temperature sensor, for installation on hot water recirculating piping.
 2. Type: Water-immersion temperature sensor, for installation in an interlocked storage tank.
 3. Range: 40 to 180 deg F.
 4. Enclosure: Weatherproof enclosure.
 5. Operation of Pump: On or off.
 6. Power Requirement: Line voltage.
 7. Settings:
 - a. For 140 deg F hot water systems, start pump at 135 deg F and stop pump at 140 deg F.
 8. Provide equal to Honeywell L4006H

PART 3 - EXECUTION

3.1 PUMP INSTALLATION

- A. Examine roughing-in of domestic-water-piping system to verify actual locations of connections before pump installation.
- B. Install equipment and all accessories in accordance with manufacturer's installation instructions.
- C. Comply with HI 1.4.
- D. Install in-line, sealless centrifugal pumps with shaft horizontal unless otherwise indicated.
- E. Install thermostats in hot-water return piping.

3.2 CONNECTIONS

- A. Install piping adjacent to pumps to allow service and maintenance.
- B. Connect domestic water piping to pumps.

1. Provide unions and shutoff valves on each side of the pump. Provide check and balancing valves. Provide strainer upstream of the pump and downstream of the shutoff valve.
 2. Install pressure and temperature gage connectors at suction and discharge of each pump.
- C. Connect thermostats, to pumps that they control.

3.3 ADJUSTING

- A. Adjust domestic water pumps to function smoothly and lubricate as recommended by manufacturer.
- B. Adjust initial temperature set points.
- C. Set field-adjustable switches and circuit-breaker trip ranges as indicated.

END OF SECTION 221123