SECTION 22 11 30 - DOMESTIC WATER PUMPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes all bronze and bronze fitted in-line pumps used in domestic water systems.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include materials of construction, rated capacities, certified performance curves with operating points plotted on curves, operating characteristics, electrical characteristics, and furnished specialties and accessories.

B. Operation and Maintenance Data: For domestic water pumps to include in operation and maintenance manuals.

1.4 QUALITY ASSURANCE

A. The installation shall comply with the requirements of the International Plumbing Code and any applicable local code amendments. Verify the code with requirements with the local code officials before beginning the work.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. UL Compliance: Comply with UL 778 for motor-operated water pumps.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Retain shipping flange protective covers and protective coatings during storage.

B. Protect bearings and couplings against damage.

C. Comply with pump manufacturer's written rigging instructions for handling.

PART 2 - PRODUCTS

2.1 IN-LINE CENTRIFUGAL PUMPS

A. Subject to compliance with requirements, provide pumps manufactured by one of the following:

1. Armstrong Pumps Inc.
2. Bell & Gossett Domestic Pump; ITT Corporation.
3. PACO.

4. TACO Incorporated.

B. Description: Factory-assembled and -tested, in-line, single-stage all bronze centrifugal pumps. Pumps to be suitable for operation at 225 degrees F and a working pressure of 175 psig.

C. Pump Construction:

1. Casing: all bronze.
2. Impeller: cast bronze, statically and dynamically balanced, and keyed to shaft.
3. Shaft and Shaft Sleeve: Steel shaft, with copper-alloy shaft sleeve.
4. Coupling: Flexible.
5. Seal: internal flush mechanical seal, stainless-steel spring, ceramic seat, and Buna bellows and gasket.
6. Bearings: permanently lubricated.
7. Shaft Coupling: Flexible, capable of absorbing torsional vibration and shaft misalignment.

D. Motor: Single speed, with permanently lubricated ball bearings; and mounted to pump casing. Motors to be non-over loading.

E. Pump capacities and operating characteristics are noted on the drawings.

2.2 CONTROLS

A. Connect pumps to the Building Energy Management System.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in of domestic-water-piping system to verify actual locations of connections before pump installation.

3.2 PUMP INSTALLATION

A. Install in-line centrifugal pumps according to the manufacturer’s instructions.

B. Install continuous-thread hanger rods of size required to support pump weight.

C. Install thermostats in hot-water return piping.

D. Install time-delay relays in piping between water heaters and hot-water storage tanks.

3.3 CONNECTIONS

A. Comply with requirements for piping specified in Division 22 Section "Domestic Water Piping." Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to pumps to allow service and maintenance.

C. Connect domestic water piping to pumps. Install suction and discharge piping equal to or greater than size of pump nozzles.

1. Install flexible connectors adjacent to pumps in suction and discharge piping of the pumps.
2. Install shutoff valve and strainer on suction side of each pump, and check, shutoff, and throttling valves on discharge side of each pump. Install valves same size as connected piping.

3. Install pressure gage at suction of each pump and pressure gage at discharge of each pump. Install at integral pressure-gage tappings where provided or install pressure-gage connectors in suction and discharge piping around pumps.

3.4 IDENTIFICATION

A. Comply with requirements for identification specified in Division 22 Section "Identification for Plumbing Piping and Equipment" for identification of pumps.

3.5 STARTUP SERVICE

A. Perform startup service:

1. Complete installation and startup checks according to manufacturer's written instructions.
2. Check piping connections for tightness.
3. Clean strainers on suction piping.
4. Set controls for automatic starting and stopping operation of pumps.
5. Perform the following startup checks for each pump before starting:

    a. Verify that pump is free to rotate by hand and that pump for handling hot liquid is free to rotate with pump hot and cold. If pump is bound or drags, do not operate until cause of trouble is determined and corrected.
    b. Verify that pump is rotating in the correct direction.

6. Prime pump by opening suction valves and closing drains, and prepare pump for operation.
7. Start motor.
8. Open discharge valve slowly.
9. Adjust temperature settings on thermostats.
10. Adjust timer settings.

3.6 ADJUSTING

A. Adjust domestic water pumps to function smoothly, and lubricate as recommended by manufacturer.

B. Adjust initial temperature set points.

END OF SECTION 22 11 30