

## SECTION 15540

### HVAC PUMPS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section includes requirements for pumps for HVAC systems. In general, pumping will not be necessary. Where it is, requirements of this section shall be met.

##### 1.2 WARRANTY

- A. Provide three year manufacturers' warranty for pumps.

#### PART 2 PRODUCTS

##### 2.1 MANUFACTURERS

- A. Acceptable Manufacturers: Grundfos, Taco, Armstrong, Bell & Gossett.
- B. Substitutions: None. ANC stocks spare parts for only these manufacturers.

##### 2.2 IN-LINE CIRCULATORS

- A. Type: Horizontal shaft, single stage, direct connected, with resiliently mounted motor for in-line mounting, oil lubricated, for 175 psig maximum working pressure.
- B. Casing: Cast iron, with flanged pump connections.
- C. Impeller: Cadmium plated steel, stamped brass or cast bronze, keyed to shaft.
- D. Bearings: Two, oil lubricated bronze sleeves.
- E. Shaft: Alloy or stainless steel with copper or bronze sleeve, integral thrust collar.
- F. Seal: Carbon rotating against a stationary ceramic seat, 225 degrees maximum continuous operating temperature.
- G. Drive: Flexible coupling.
- H. Performance: Refer to Schedule on Drawings.
- I. Electrical Characteristics:
  - 1. Refer to Schedule on Drawings.
  - 2. Motor: RPM as shown. Refer to Section 15170 - Motors.
  - 3. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Enclose terminal lugs in terminal box sized to NFPA 70.

##### 2.3 VERTICAL IN-LINE PUMPS

- A. Type: Vertical, single stage, close coupled, radially [or horizontally] split casing, for inline mounting, for 175 psig working pressure.
- B. Casing: Pump volute shall be of Class 30 cast iron. Suction and discharge gage port, casing wear ring, seal flush connection, drain plug, flanged suction and discharge.

- C. Internally flushed mechanical shaft seal with ceramic seal seat and carbon seal ring, suitable for continuous operation at 225 degrees F.
- D. Impeller: Cast bronze, enclosed type, dynamically balanced, keyed to the shaft
- E. Shaft: Carbon steel with stainless steel impeller cap screw or nut.
- F. Performance: Refer to Schedule on Drawings.
- G. Electrical Characteristics: Refer to Section 15170 - Motors.
- H. Manufacturers: B&G, Taco, Armstrong, Grundfos.

#### **2.4 BASE MOUNTED PUMPS**

- A. Type: base mounted, single stage, end suction design with a foot mounted volute to allow servicing of the impeller and bearing assembly without disturbing piping connections. Horizontal shaft, single-stage, split casing, for 175 psig maximum working pressure.
- B. Casing: Cast iron case, with suction and discharge gage ports, renewable bronze casing wearing rings, seal flush connection, drain plug, flanged suction and discharge.
- C. Impeller: Bronze, fully enclosed, keyed to shaft.
- D. Bearings: Permanently lubricated roller or ball bearings.
- E. Shaft: Alloy steel with copper, bronze, or stainless steel shaft sleeve.
- F. Seal: Carbon rotating against a stationary ceramic seat, 225 degrees F. maximum continuous operating temperature.
- G. Baseplate: structural steel or fabricated steel channel with fully enclosed sides and ends, and securely welded cross members.
- H. Drive: Flexible coupling with coupling guard.
- I. Performance: Refer to Schedule on Drawings.
- J. Electrical Characteristics: Refer to Section 15170 - Motors.
- K. Manufacturers: B&G, Taco, Armstrong.

#### **2.5 SUCTION DIFFUSER**

- A. Cast or ductile iron, threaded or flanged construction.
- B. Flows straightening diffuser cylinder with 3/16 inch perforations with free area at least 5 times pump opening area and a length at least 2-1/2 times the pump opening area.
- C. 16 mesh throwaway startup strainer.
- D. Support foot fitting.

### **PART 3 EXECUTION - NOT USED**

**END OF SECTION**