

SECTION 15185 – HYDRONIC PUMPS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. This Section governs the materials and installation of closed hydronic systems associated with building heating and cooling. The following systems, where applicable, shall be installed as specified herein.
 - 1. Hot Water Heating System
 - 2. Chilled Water Cooling System
 - 3. Dual Temperature Water System
 - 4. Heat Pump Circulating System
 - 5. Closed Circuit Cooling Tower System
 - 6. Run-Around Heat Recovery System

1.2 EQUIPMENT SUBSTITUTION

- A. Most items in this DIVISION are eligible for substitution in accordance with the General Conditions and Supplements thereto. Where a proprietary specification is written for a particular item, then only that item may be used. All items eligible for substitution require submission of request for substitution 10 days prior to bid date. This submittal shall include specific models and capacities of equipment and not just manufacturer's literature. Only those manufacturers listed and those receiving written prior approval communicated via addendum shall be considered for review. Verbal approvals will not be given.

1.3 TESTING & APPROVING AGENCIES

- A. Where items of equipment are required to be provided with compliance to U.L., A.G.A., or other testing and approving agencies, the contractor may submit a written certification from any nationally recognized testing agency, adequately equipped and competent to perform such services, that the item of equipment has been tested and conforms to the same method of test as the listed agency would conduct.

1.4 SUBMITTAL DATA

- A. See Section 01300 for general submittal requirements.
- B. Provide manufacturer's literature for all products specified in this Section, which will be installed under this project.
- C. Provide performance curves for all pumps. Plot the specified operating point for each pump on its respective curve.
- D. Provide complete literature for all components of packaged systems. These include pump performance, heat exchanger calculations, expansion tank capacity, data for all accessories and valves and complete wiring diagrams specific to the exact unit to be supplied. The wiring diagram shall indicate all required field and factory wiring.

PART 2 - PRODUCTS

2.1 PUMPS

A. Vertical Close Coupled Pumps.

1. Pumps shall be Taco Model 1900 Series. The pumps shall be single stage horizontal in-line design. The seal shall be serviceable without disturbing the piping connections. The capacities and characteristics shall be as called for in the plans/schedules.
2. Pump shall be constructed of ASTM A48 class 30 cast iron. The pump casing shall be drilled and tapped for gauge ports on both the suction and discharge connections.
3. All casings shall be flanged connections.
4. The impeller shall be ASTM C87500 or C89833 bronze and hydraulically balanced. The impeller shall be dynamically balanced to ANSI Grade G6.3 and shall be fitted with a holding taper and left handed 431 series stainless steel bolt. The impeller shall be cast by the hydraulically efficient lost foam technique to ensure repeatability of high quality.
5. The pump shall incorporate a dry shaft design to prevent the circulating fluid from contacting the shaft. The pump shaft shall be AISI 1045 carbon steel with field replaceable copper nickel 90-10 shaft sleeve. In order to improve serviceability and reduce the cost of ownership the shaft sleeve must be slip on (press on not allowable) and must be easily replaced in the field.
6. The pump shall be fitted with a single mechanical seal, with EPT elastomers and Carbon/Ceramic faces, rated up to 250°F. The pump shall be coupled to a NEMA 56C face motor with threaded on shaft extension.
7. In order to both simplify and reduce the total cost of ownership, the manufacturer shall standardize on one mechanical seal throughout the entire range of the family of pumps. The manufacturer shall not use multiple part numbers for the same part.

PART 3 - EXECUTION

3.1 PUMPS

A. General

1. Contractor shall install pump in accordance with the manufacturer's instructions. Pipe connections to pumps shall be made in such a manner so as not to exert any stress on pump housings. If necessary to meet this requirement, provide additional pipe supports and flex connectors.
2. Do not put pipe hanger under motor in a manner that stresses the motor and causes misalignment issues.
3. Pumps shall **NOT** be run dry to check rotation.

END OF SECTION 15185