SERIES 326
VERTICAL, IN-LINE CLOSE COUPLED CENTRIFUGAL PUMPS

## PART I - GENERAL

### 1.01 DESCRIPTION

The Contractor shall furnish materials, equipment and labor to furnish, install and test the pumping system complete with the pumps, motors, mounting bases, piping, valves and appurtenances, as indicated on the contract drawings and as herein specified.

### 1.02 INSTALLATION

The Contractor shall insure that the pumps and motors are properly installed with no pipe strain transmitted to the pump casing.

### 1.03 RESPONSIBILITY

To assure a properly integrated and compatible system, all equipment described in this section shall be furnished by the Pump Manufacturer, who shall assume full responsibility for the proper operation of the pumps and associated equipment.

### 1.04 SUPERVISION

The Contractor shall arrange for the Pump Manufacturer to provide a factory-trained representative as required for the purpose of supervising installation, start-up, final field acceptance testing, and providing instruction to the owner's operating personnel in the proper operation and maintenance of the equipment in this section.

### 1.05 REFERENCE STANDARDS

The work in this section is subject to the requirements of applicable portions of the following standards:

Hydraulic Institute Standards
IEEE Standards
NEMA Standards
OSHA Rules and Regulations

## PART II - PRODUCTS

### 2.01 GENERAL DESCRIPTION

The pump shall be a centrifugal vertical close-coupled in-line pump, Aurora Pump Model 326 or pre-approved equal. Pre-approval must be obtained a minimum of ten days before bid date.

### 2.02 MATERIALS OF CONSTRUCTION

Casing.....Cast Iron (ASTM A48)
Impeller.....Bronze (ASTM B584)
Shaft.....Stainless Steel (AISI 416)

Case Wear Ring.....Bronze (ASTM B62)

2.03 CASING

The casing will be of the in-line design with same size suction and discharge flanges located on a common centerline 180 degrees apart for mounting in pipe line. The casing shall have tapped and plugged holes for priming and draining. The casing bore shall be large enough to allow "back pullout" of the impeller without disturbing the casing or suction and discharge piping.

2.04 IMPELLER

The impeller shall be of the enclosed type, vacuum cast in one piece. It shall be finished all over, the exterior being turned and the interior being finished smooth and cleaned of all burrs, trimmings, and irregularities. The impeller shall be dynamically balanced. The impeller will be keyed to the shaft, and fastened with a washer, gasket and capscrew.

2.05 CASE WEARING RING

The pump casing shall be fitted with a case wear ring to minimize abrasive and corrosive wear to the casing. The wear ring shall be of the radial type, pressed fitted into the casing.

2.06 STUFFING BOX

The stuffing box shall be integrally cast with a motor mounting bracket, and shall provide an adequate area for internal recirculation of the pumped fluid around the sealing medium. A tapped and plugged hole shall be provided for external flushing as required.

2.07 MECHANICAL SEAL

Shaft sealing shall be accomplished by means of a mechanical seal with a Ni-Resist seat, carbon washer, Buna-N elastomers, and stainless steel metal parts.

2.08 SHAFT

The impeller shall be direct-coupled to the motor shaft. The motor shaft shall be machined to provide a keyway, and drilled and tapped to accept the impeller fastener. Stub shafts are not acceptable.

2.09 MOTOR

The motor shall conform to the latest NEMA standards, and shall have the following characteristics:

Enclosure.....Open Drip Proof/TEFC/X-Proof
Number of Phases.....Three
Cycles.....60 Hz
Voltage.....230/460 volt
Speed.....1800 RPM
Horsepower.....? hp

Each motor shall have a sufficient horsepower rating to operate the pump at any point on the pump's head-capacity curve without overloading the nameplate horsepower rating of the motor regardless of service factor. The motor shall have a service factor of 1.15. The service factor is reserved for variations in voltage and frequency.

## PART III - PERFORMANCE

### 3.01 CONDITIONS OF SERVICE

The following conditions of service shall be strictly adhered to:

Number of Units.....?
Type of Drive.....? (variable or constant)
Discharge Size.....1.25 in, minimum
Suction Size.....1.25 in, minimum
Design Capacity..... US gpm
Design Head..... ft
Efficiency at Design..... %, minimum
Rotative Speed.....1750 RPM, maximum
Shut-off Head.....35.4 ft, minimum
Driver Horsepower.....0.493 hp, minimum
NPSHR at Design..... ft, maximum

### 3.02 INSPECTION AND FACTORY TESTS

Each centrifugal pump furnished under these specifications shall be tested at the factory to verify individual performance (VIP). Certified copies of all test reports shall be submitted to the Engineer for approval prior to shipment. Each unit shall be hydrostatically tested in accordance with the Hydraulic Institute Standards.

### 3.03 INSTALLATION AND ACCEPTANCE TESTS

A. The pumping units shall be installed in accordance with the instructions of the manufacturer and as shown on the drawings by the Contractor.

B. Installation shall include furnishing the required oil and grease for initial operation. The grades of oil and grease shall be in accordance with the manufacturer's recommendations.

NOTES: Teflon is a registered trademark of E.I. DuPont.

Additional information is available from any Aurora Pump authorized distributor.

Aurora Pump reserves the right to make revisions to its products and their specifications without notice.