

SERIES 630  
SINGLE STAGE SEWAGE PUMPS

1.0 GENERAL

The contractor shall furnish (and install as shown on the plans) Aurora Model 632 Duplex centrifugal sewage pump size 4x4x12 of ?(bronze fitted)(all iron) construction. Each pump shall have a capacity of US gpm at ft total head, with a temperature of 60 °F, 1 specific gravity. The units shall be designed for a sump depth of ? feet and shall be furnished with (an above the floor discharge terminating at the baseplate with a 45\* threaded elbow) (a below the floor discharge terminating with a threaded connection).

2.0 BASEPLATE

A steel baseplate (round) (square) (simplex) (simplex with oval) (simplex with oval and manhole) (duplex with ovals and manhole) will be provided. A 4" vent will be provided on all round or square baseplates.

2.1 CASING

The pump casing and suction cover shall be cast of iron. The casing is to be provided with a cast integral discharge elbow.

2.2 IMPELLER

The cast iron impeller is of the enclosed non-clog type and shall be capable of passing a 3" diameter sphere. The impeller running clearances will be of the face type to provide simple adjustments axially to compensate for wear. The impeller is to be dynamically balanced and keyed to the pump shaft.

2.3 COLUMN PIPE

The column pipe must be 4" diameter having machined tongue and groove joints to insure shaft alignment.

2.4 BEARINGS

A pump bearing will be located directly above the impeller and shall be (bronze sleeve) (iron sleeve) or relief type with (iron) (bronze) (cutless rubber) bushing. Spool bearing with steel housing with (iron) (bronze) (cutless rubber) bushing. Line bearings must be provided on pit depths of 6'-2" and one additional bearing for each 5' of setting thereafter. All standard sleeve or relief pump and line bearings must be (grease) (oil) (water) lubricated through separate Nylon tube lubrication lines terminating at the (baseplate) (discharge pipe). Standard bearings will be grease lubricated (unless otherwise specified).

2.5 MOTOR PEDESTAL

The motor pedestal is to be of cast iron, two piece construction, fitted with a sealed thrust ball bearing located 6" above the baseplate.

2.6 STUFFING BOX

A packed stuffing box complete with a split gland shall be provided for gastight construction. The upper head shall be of sufficient height to elevate the motor shaft extension should the motor be removed for servicing.

### 2.7 BEARING COLLAR/GREASE SEAL

The ball bearing collar will be arranged to allow external axial adjustment of the shaft and impeller. Grease seals shall be provided to retain grease and to prevent contamination of the vertically mounted ball bearing. A grease fitting will be provided to allow regreasing of the bearing.

### 2.8 FLOAT

The pump shall be controlled by an enclosed (heavy duty) (water tight and explosion resisting) (explosion proof) type float operated switch 6" above the baseplate with plastic float and float rod. A flexible bellows will provide gas-tight construction.

### 3.0 MOTOR

An automatic alternator shall be furnished on duplex pumps to allow the pumps to alternator on each successive cycle of operation. The pumps are to be driven by and flexible coupled to a standard "HP" flange ? H.P., ? volt 60 cycle 1200 R.P.M., ? vertical solid shaft (open drip-proof) (totally enclosed) (explosion proof) electric motor. A conduit box will be provided as well as a drip cover.

#### 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.....4 in, minimum  
Suction Size.....4 in, minimum  
Sphere Size.....? in, minimum  
Design Capacity..... US gpm  
Design Head..... ft  
Efficiency at Design..... %, minimum  
Rotative Speed.....1150 RPM, maximum  
Shut-off Head.....69.6 ft, minimum  
Driver Horsepower.....12.5 hp, minimum  
NPSHR at Design..... ft, maximum  
Secondary Capacity.....? US gpm (at maximum RPM)  
Secondary Head.....? ft (at maximum RPM)

#### 3.02 INSPECTION AND FACTORY TESTS

A. The Engineer shall have the right to inspect or witness test any material or equipment to be furnished, under this section, prior to their shipment from point of manufacture. The Engineer shall be notified at least ten (10) working days in advance of any testing in order to exercise or waive the right to witness any testing.

B. Each centrifugal wastewater pump furnished under these specifications shall be tested at the factory in accordance with the latest edition of the Hydraulic Institute Standards for both hydrostatic pressure and performance. Certified copies of all test reports shall be submitted to the Engineer for approval prior to shipment.

C. Each pump shall be tested at the full load speed of the respective driver for head, capacity, brake horsepower and efficiency from shut-off to 150% of design capacity. In addition, for variable speed units, one (1) pump of each service shall be tested at the minimum design conditions plus three (3) equally spaced speeds between the minimum and maximum conditions.

D. Tests on all motors shall be conducted in accordance with IEEE Standards.

All test results shall be submitted to the Engineer for approval prior to shipment.

1. Each motor shall be given a short commercial test which includes the following:

- a. No load running current
- b. High potential
- c. Winding resistance

### 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.

C. Furnish the services of an authorized factory representative to inspect the final installation, perform initial start-up and supervise the field acceptance tests of the equipment.

D. Field acceptance testing shall be conducted after the installation of all equipment has been completed and the equipment operated for an initial period to make all necessary adjustments and corrections. Each pumping unit shall be tested to determine satisfactory operation and compliance with these specifications in the presence of the Engineer or his representative. All expenses for conducting the field acceptance tests shall be borne by the Contractor.

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.