End Suction Pumps

General:
The contractor shall furnish and install as shown on the plans, qty _____ Deming (horizontal frame mounted)(close coupled) Series 3120 size _____ Centrifugal Pump(s) as herein specified.

The pump(s) shall be rated for continuous service and of (all iron)(bronze fitted) construction for the following operating conditions.

Each pump shall be capable of delivering _____ GPM of liquid against _____ feet total head. The following characteristics of the liquid to be pumped are:

Liquid Handled _____
Specified Gravity _____
Viscosity Of Liquid At Pumping Temperature _____
$NPSH_A$ _____

Model 3121 Horizontal Frame Mounted:
The design requires a 4140 steel shaft for a maximum deflection of .002 at the seal faces with the pump running at ____ percent maximum load conditions. The bearings shall be grease lubricated having a 3 year minimum life (AFBMA B_{10}) under the maximum load conditions and protected from outside contamination by oil seals. The shaft and bearings are to be encased in a cast iron ASTM-A48 Class 30 frame and the thrust bearing housing is to be of a micrometer adjustment design.

The Model 3121 pump and motor will be mounted on a common (fabricated steel with drip rim)(steel) baseplate. Pumps are to be coupled to the driver by means of an approved (spacer)(non-spacer) type coupling with an OSHA approved coupling guard.

Model 3122 Close Coupled:
The pump is to be coupled directly to a NEMA JM Frame _____ HP _____ Phase _____ Hertz _____ Voltage _____ RPM _____ Enclosure _____ motors. The adapter to the casing is to be one piece cast iron construction capable of mounting a John Crane Type 21 mechanical seal. The standard seal construction is carbon vs. ceramic faces, stainless steel hardware with buna elastomers: various other face materials and elastomers are available, depending on the medium being pumped. The maximum operating temperature is 225° F.

NOTE: Add any additional facts concerning the nature of the liquid or installation which might affect the pump construction, application or operation.

Casing:
Casing shall be of close grained ASTM-A48 Class 30 Cast Iron with a minimum tensile strength of 30,000 PSI. The casing shall be vertically split with centerline discharge and back pull-out design, capable of standing hydrostatic test pressures of 1-1/2 times maximum working pressure. All assembly points shall be of machine register fit to assure proper pump alignment. The casing shall also have a tapped and plugged drain connection available for any of the eight (8) rotatable casing discharge positions.

Casing Connection:
The threaded and flanged casing nozzles shall conform to ANSI NPT and B16.1 specifications with a minimum 125 PSI ratings, all flanged nozzle connections shall be standard flat face.

Casing Wearing Rings:
Casing wearing rings of 316 stainless steel material for service and easily replaceable design shall be provided as standard both in front and rear of the impeller.

Impeller:
The impeller shall be of the enclosed single suction type of (cast iron)(bronze) both statically and hydraulically balanced for maximum efficiency and smooth operation. Holes shall be provided through the impeller hub to keep positive pressure on the mechanical seal and balance axial thrust loads. Impeller shall be positioned and securely locked to the shaft by use of a key, hex head impeller nut and washer.

Impeller Wearing Rings (Optional):
Impeller rings of 316 stainless steel material shall be securely mounted on the impeller hubs to provide for renewable clearances.

Shaft Sleeve:
The shaft sleeve shall be of the renewable type in 316 stainless steel and completely cover the shaft in the seal area. Sleeve shall be locked in place to prevent axial movement and sealed with a gasket between it and the impeller.

Casing/Seal (Housing) Head Adapter:
The adapter shall be one piece integrally cast with the seal head to mount on either a close coupled JM motor or the appropriate frame assembly. The design of the chamber shall have a machine register fit on both ends to maintain positive alignment from casing to (frame)(close coupled motor). The design shall incorporate an open seal chamber to allow maximum flushing action at the mechanical seal faces.

Motor:
The motor shall be not less than _____ hp _____ RPM, NEMA design B squirrel cage type, (drip proof)(TEFC)(EISA)(premium) efficiency motor with (1.15)(1.0) service factor and suitable for operation on (115)(230) volt, 1 phase, (50)(60) Hertz power supply OR (200)(230)(460)(575) volt, 3 phase, 60 hertz power supply. Motor size shall be sufficient to prevent overloading at operating conditions or at the lowest listed head conditions whichever point requires greater horsepower. Following installation, grouting and connection of all piping, pump and motor must be checked for alignment in accordance with standards of the Hydraulic Institute.