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SUGGESTED  
SPECIFICATIONS  
PRODUCT LUBRICATED PUMP  
WITH UNDERGROUND DISCHARGE



Pump shall be designed for pumping product at:

Rated capacity of	_____ (GPM)
Total dynamic head of	_____ (TDH)
Minimum bowl efficiency of	_____ %
Product temperature of	_____ °
Specific gravity of	_____
Running Speed of	_____ (RPM)

**BOWL ASSEMBLY:** Pump bowls, suction & discharge cases shall be of close grained ASTM A48 Class 30 Cast Iron, without imperfections. Discharge case shall be ASTM bronze B-505-932 fitted having a long support bushing extending into the top bowl. Suction case shall be bronze B-505-932 fitted, grease lubricated and shall be provided with an ASTM bronze B-584-836 sand collar to protect the suction bowl bearing from abrasives. Top bowl shall also have a bronze bearing of bronze ASTM B-584-836 with a sand collar. Intermediate bowl bearings shall be of fluted neoprene and/or ASTM bronze B-505-932. Impeller shall be made of ASTM bronze B-584-836, enclosed type and shall be fitted with replaceable ASTM aluminum-bronze B-148 grade D wear rings having minimum practical clearance to the mating cylindrical surface of the intermediate bowls and suction case. The impeller shall also be accurately cast, machined, statically balanced, and filed for optimum performance. The impeller shall be securely fastened to the bowlshaft with tapered collets of ASTM steel A-108 grade 1020. The water passages of pump bowls size 6" through 14" shall have vitreous enamel lining and 16" and over shall have Scotch Kote 134 Fusion Bonded Epoxy to provide optimum performance. The bowlshaft shall be of sufficient diameter to transmit the pump horsepower with a liberal safety factor. The bowl shaft material shall be ASTM stainless steel A-582 grade 416 with hard chrome plating having a Brinell hardness of no less than 500. The bowlshaft shall have no less than .007" hard chrome per side and shall have pump shaft quality dimensional tolerances of +.000" .002". Only shafts meeting pump shaft quality dimensional tolerances will be acceptable.

**COLUMN ASSEMBLY:** Lineshafts shall be of ASTM A-108 grade 1045 carbon steel. The lineshafts shall have field replaceable raised sleeves, held in position with a suitable adhesive. The sleeve material shall be ASTM stainless steel A-582 grade 416 with hard chrome plating having a Brinell hardness of no less than 500. The sleeve shall have no less than .007" hard chrome per side and shall have pump shaft quality dimensional tolerances of +.000" -.002". Only shafts meeting pump shaft quality dimensional tolerances will be acceptable. The sleeves shall be located at the bearing supports and packing box bearing surfaces. The shafts shall be of ample size to operate without distortion or vibration. Shaft threads shall be lathe cut and shall be left hand to tighten during pump operation. Shaft couplings shall be threaded from solid bar stock and made of ASTM steel A-108 grade 1018. Intermediate shaft sections shall be interchangeable and shall not exceed 10 feet in length. The butting ends shall be machined square to axis of the shaft and faces shall be recessed to insure proper alignment.

Column pipe shall be of ASTM steel A53 grade B. The column pipe shall be flanged having interchangeable sections not exceeding 10 feet for pump speeds up to 2200 RPM or 5 feet for pumps over 2200 RPM. The column flanges shall conform to ANSI specifications and have a female register accurately machined for drop-in ASTM bronze B-584-836 bearing support housings. The registers and final facing of the flanges shall be performed after all welding procedures, to maintain proper alignment. The lineshaft bearings shall be field replaceable neoprene, held in place by an ASTM stainless steel A-582 grade 416 lock ring. The neoprene bearings shall have an internal shape of a polygon to provide minimum friction contact.

**MOTOR STAND:** The motor stand shall be of ASTM A53, grade B fabricated steel designed with sufficient strength and rigidity to support the motor mounted on it and carry the suspended weight of the attached column and bowl assemblies. The design shall permit a two-piece head shaft to be coupled above the packing box. The bottom face of the motor stand shall be circular and fully finished.

**PACKED TYPE STUFFING BOX:** The stuffing box shall be of ASTM A48, Class 30 cast iron. The packing box shall be of the deep bore type with a minimum of six rings of packing and a lantern ring. Connections for grease inlet and pressure relief shall be provided. The packing gland shall be of ASTM B144, alloy 3B bronze split type and secured in place with stainless steel studs and brass nuts.

**MECHANICAL SEAL ASSEMBLY:** The design of the mechanical seal system shall provide for easy and visually verifiable pump lateral adjustments. Setting shall not require the disassembly of any portion of the factory preset seal assembly and shall be accomplished without special tooling, gauges, or equipment. For pressures up to 200 PSI, seal should be a John Crane Type 21. For pressures in excess of 200 PSI, a John Crane Type 1-B shall be used. The rotating face shall be of carbon graphite and the stationary face shall be ni-resist. All metal seal parts should be 18-8 stainless steel. The seal housing shall be ASTM A48 Class 30 cast iron, machined to accept an o-ring face for positive sealing. The housing shall have an 1/8" NPT orifice for seal circulation or lubrication. The seal plate shall be machined from ASTM A36 steel and bored for stationary seat. The sleeve and drive cap shall be machined from ASTM A-582 grade 416 stainless steel. Drive cap shall have a minimum of four (4) locking set screws. An ASTM B-505-932 bronze seal housing bearing shall be provided directly below mechanical seal for stability.

**FOUNDATION PLATE:** A square, ASTM A36 steel foundation plate with radius corners shall be provided. The foundation plate shall be uniformly faced on one side and it's size shall be equal to or greater than the size of the base of the discharge head. Anchor bolt holes shall be provided at each corner.

**MOTOR COUPLING:** When driven with a solid shaft motor, a flanged adjustable three-piece or spacer type four-piece coupling shall be furnished. The coupling shall be steel designed to transmit the required torque and horsepower. The lower half of the coupling shall be keyed to the headshaft. A threaded adjusting nut shall be located between the lower coupling half and the spacer or upper coupling half and held concentric by means of machined registers. The upper half shall have a circular key to absorb pumping downthrust and a vertical key to transmit torque.