



SUGGESTED SPECIFICATIONS

DEEP WELL, OIL LUBRICATED PUMP

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Pump shall be designed for pumping water at:	Rated capacity of	_____ (GPM)
	Total dynamic head of	_____ (TDH)
	Minimum bowl efficiency of	_____ %
	Water temperature of	_____ °F
	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. The discharge bowl shall have vanes to deliver the flow of water with minimum turbulence. A tube adaptor of extra heavy steel tubing with epoxy coating shall be located in the discharge bowl to provide a means of connecting the oil tubing to the bowl assembly by use of an ASTM B145 bronze adapter bearing. Drain ports are to be provided with a sufficient area and shape to permit the escape of water that passes through the pump bowl bearings. 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. 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. A sand collar or bronze, ASTM B144 alloy 3B, shall be provided to protect the suction bowl bearing from abrasives. 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:** COLUMN PIPE: Column pipe shall be of ASTM steel A53 grade B, connected by threaded sleeve couplings. The weight of the pipe shall be no less than stated in AWWA E101, Section 4.5 and shall have ANSI standard tapered pipe threads. Intermediate sections of column shall not exceed 20 feet. Top and bottom sections shall not exceed 5 feet.

**SHAFT ENCLOSING TUBING:** The shaft enclosing tubing to be furnished under this specification shall be of sufficient diameter to provide adequate lubrication under any operating conditions. The enclosing tube shall be ASTM A120, schedule 80XS steel, continuous weld prime pipe. Both ends of each tubing length shall be bored, faced, and threaded inside with a Class A thread. The ends of the tubing shall be square with the axis and shall butt to insure accurate alignment. The lengths shall be interchangeable not to exceed 60". The top section shall be designed for applying proper tension to the tubing. The interchangeable tubing shall be of such overall assembled length to properly match the length of the discharge column.

**LINESHAFT BEARINGS:** The lineshaft bearings which serve as couplings for the shaft tubing shall be spaced at each tubing length, to maintain alignment of pump shafting and to prevent excessive vibration. They shall be cast of continuous cast ASTM A145 bronze, machined, threaded and grooved for proper lubrication.

**LINESHAFT:** The lineshaft shall be of ASTM A108, grade 1045 carbon steel, ground and polished with a surface finish not to exceed 32 rms. It shall be of ample size to operate the pump without distortion or vibration and shall be capable of carrying the maximum horsepower that may be generated by the motor. The butting ends shall be machined, faced and recessed square to the axis of the shaft. To insure proper alignment, the shaft shall be straight within 0.007 inch total indicator reading. The ends of the shaft shall be accurately machine threaded. Shaft couplings shall be bored and threaded from solid ASTM A108, grade 1018 carbon steel designed with a safety factor of 1-1/2 times that of the shaft. The threads shall be left hand to tighten during pump operation. The length of the shaft shall be such as to match properly the length of the discharge column.

**DISCHARGE HEAD:** The discharge head shall be of ASTM A48, class 30 cast iron or ASTM A53, grade B fabricated steel designed for above ground discharge with sufficient strength and rigidity to support the motor and carry the weight of the attached column and bowl assemblies. The discharge flange shall be faced and drilled to match 150 pound ANSI connections. Discharge size on fabricated heads shall be the same size as the column pipe. The design shall permit the shaft to be coupled above the stuffing box. A cast iron tension box designed to maintain proper tension in the shaft tubing at all times. The bottom face of the discharge head shall be circular and fully finished. A lubricator with manual operated, sight drip feed and a five quart oil reservoir shall be provided.

**FOUNDATION PLATE:** A square, ASTM A-36 steel foundation plate 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.

**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 have a threaded adjusting nut. The upper half shall have a circular key to absorb pumping downthrust and a vertical key to transmit torque.