Hydroflo Pumps USA, Inc.
7118 Loblolly Pine Blvd.
Fairview, TN 37062

Specifications: Water Well Submersible Turbine Pump

A. Scope

This specification is for a deep well submersible turbine pump with an above ground discharge and furnished with a specified driver and accessories. The pumping unit shall be designed and manufactured in accordance with the latest hydraulic institute, AWWA, and University of Panama specifications for submersible turbine pumps.

B. Service Conditions

The pumps shall be designed and built to operate satisfactorily with a reasonable service life, when installed in a proper submersible turbine pump application. The product shall be manufactured by Hydroflo Pumps USA, Inc. or other manufacturers that can meet the required material standards and performance specifications.

C. Operating Conditions

Design conditions:	_____	gallons per minute
Design head:	_____	feet TDH (total dynamic head)
Minimum pump eff:	_____	Percent
Maximum Pump speed:	_____	RPM
Liquid pumped	Well Water	
Pump Bowl setting:	_____	Feet
Well diameter I.D.	_____	Inches

D. Pump Construction

1. Bowl assembly: the intermediate bowls for models of 5" thru 7" and all submersible discharges and motor brackets shall be constructed from ductile iron, ASTM A536, class 65. Models 8" thru 16" intermediate bowls shall be constructed from close grain cast iron, ASTM A48, class 30. They shall be flanged type construction and free of blow holes, sand holes or other faults and be machined accurately with fitted close tolerances. The bowls shall have glass enamel or epoxy enamel lined waterways for maximum efficiency. All bowls, discharges and motor brackets are to be assembled with stainless steel bolting.

2. Impellers: the impellers shall be investment cast 304 stainless steel, ASTM A296 and shall be enclosed type. They shall be free from defects and must be investment cast, machined, backfiled and balanced for optimum efficiency and performance. They shall be securely fastened to the bowl shaft with stainless steel taper locks, C1045 steel will not be accepted.

3. Bowl shaft shall be constructed from PSQ 416 stainless steel, ASTM A582 pump shaft material. It shall be precision machined and straightened within .002 - .004 tolerance.

4. The motor adapter must be constructed of ductile iron, ASTM A536, class 65, to handle the weight and torque of the submersible motor. The water inlet must be above the motor bracket bearing to prevent early motor bracket bearing failures. The inlet area shall be protected by a 304 stainless steel screen with a net opening of four times the impeller eye opening.

5. The submersible discharge shall be constructed of ductile iron, ASTM A536, class 65, to handle the entire weight and torque of the pump and motor assembly. The discharge shall be threaded with NPT threads and have an extra long top bearing for stability and long pump life.

6. The motor coupling shall conform to NEMA standards and be constructed of 416 stainless steel. It shall be capable of handling the total torque, horsepower and thrust load of the bowl assembly.

E. Drop Pipe

Drop pipe shall be a minimum grade B steel _____ inch pipe with ends machined with NPT thread. Pipe shall be connected with threaded sleeve type steel couplings.

F. Submersible Discharge

The above ground discharge shall be of fabricated steel and incorporate a long radius elbow securely welded to an ANSI 150 lb. flange. The discharge shall be welded and secured to a surface plate capable of holding 1 ½ times the total weight of the pump, motor, pipe, wire and weight of the water in the pipe. The surface plate shall also incorporate an opening for the pump cable, with sealing capability, and additional fittings for venting and air line connections.

G. Submersible Electric Cable

Submersible electric cable must be selected to meet the U.S. Electrical Code ampacity for either individual conductors or jacketed 60 degree C or 75 degree C cable. This cable must be a continuous jacketed copper wire type and attach to the submersible motor lead with an approved water tight splice.

H. Submersible Electric Motor

The submersible motor shall be a NEMA, heavy duty oil filled, canned or wet wound type. The motor shall run at _____RPM and have a suitable thrust bearing to handle the entire hydraulic thrust of the pump assembly. The motor shall have a 1.15 service factor and be suitable for _____Volts, _____
Phase, 60 cycle electric service.