



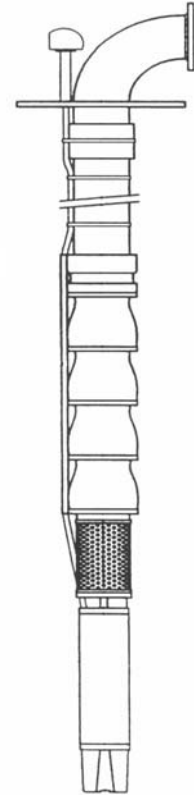
PRODUCT BULLETIN MODEL SUBMERSIBLE VERTICAL TURBINE

Submersible Vertical Turbines

The American-Marsh Vertical Turbine pumps are designed for long, dependable life in many applications. Modern processing methods require modern pumping equipment to satisfactorily handle the many and varied fluids used in the various industries. American-Marsh Engineers, backed by over 125 years of manufacturing experience, have met this demand with the vertical turbines offered today. We have incorporated in our design, ideas and suggestions from competent engineers from all sections of the country.

Material Specifications

	CONSTRUCTION		
	BRONZE FITTED	ALL IRON	ALL BRONZE
Bowl Assembly	Cast Iron	Cast Iron	Bronze
Bowl Bearings	Bronze	Bronze	Bronze
Impeller(s)	Bronze	Cast Iron	Bronze
Bowl Shaft	416 SS	416 SS	416 SS
Strainer	Galvanized Steel	Galvanized Steel	Galvanized Steel
Discharge Column	A53 Steel	A53 Steel	A53 Steel
Column Shaft	C1045 Steel	C1045 Steel	C1045 Steel
Column Bearings	Rubber	Rubber	Rubber
Discharge Head	Cast Iron	Cast Iron	Cast Iron



PUMPING CONDITIONS:

Fluid to be Pumped:
Design Capacity (USGPM):
Differential Head (FEET):
Maximum RPM:
Minimum acceptable bowl efficiency, (%):
Viscosity (SSU):
Specific Gravity:
Suction Pressure (PSIG)
Temperature (°F):

INDUSTRIAL
Process, Petrochemical,
Cargo Transfer

COMMERCIAL
Booster, Supply Water

MUNICIPAL
Quench Water, Filtration, Transfer,
Filter Backwash, Circulation, Well

PRODUCT BULLETIN
MODEL VERTICAL TURBINE

MODEL SUBMERSIBLE VT SPECIFICATIONS

Bowl Assembly: The pump bowls shall be of close grained, cast iron ASTM A48 Class 30. The water passages on bowl sizes 6" through 16" shall be lined with porcelain enamel or fusion epoxy lined to reduce friction loss, shall be free of blow holes, sand holes and other detrimental defects, and shall be accurately machined and fitted. The impellers shall be of bronze (enclosed or semi-open) and dynamically balanced. Impellers through 16" shall be securely fastened to the shaft with taper split bushings of steel. Larger sizes shall be double-keyed. Impellers shall be adjusted vertically by an external means.

The pump shaft shall be of A582 grade 416 stainless steel, turned, ground and polished. It shall be supported by bronze bearings above and below each impeller. The suction case bearing shall be grease lubricated and protected by a bronze sand collar. The size of the shaft shall be no less than that determined by ANSI/AWWA Specifications E101, Section A4.3 paragraph 4.3.3.

Riser Pipe: The riser pipe shall be sized such that the friction loss will not exceed 5' per 100' based on the rated capacity of the pump. If possible, the riser pipe should be sized such that the minimum velocity will not be less than 5' per second at the rated capacity. Riser pipe sections shall not exceed _____ in length. The pipe shall be ¾" tapered (NPT) threaded from material conforming to ASTM A120 or ASTM A53 grade 53.

Maximum water temperature: 85° Fahrenheit.

Minimum flow past the motor: ½ foot per second

Motor Adapter: A motor adapter of close grained ductile iron with rabbeted fits shall be supplied to connect the submersible motor to the bowl assembly. It shall include the motor adapter bearing assembly and a corrosion resistant metal strainer whose free area shall be at least three times the impeller suction eye area. The maximum strainer opening shall

not be more than 75% of the minimum opening through the bowl or impeller.

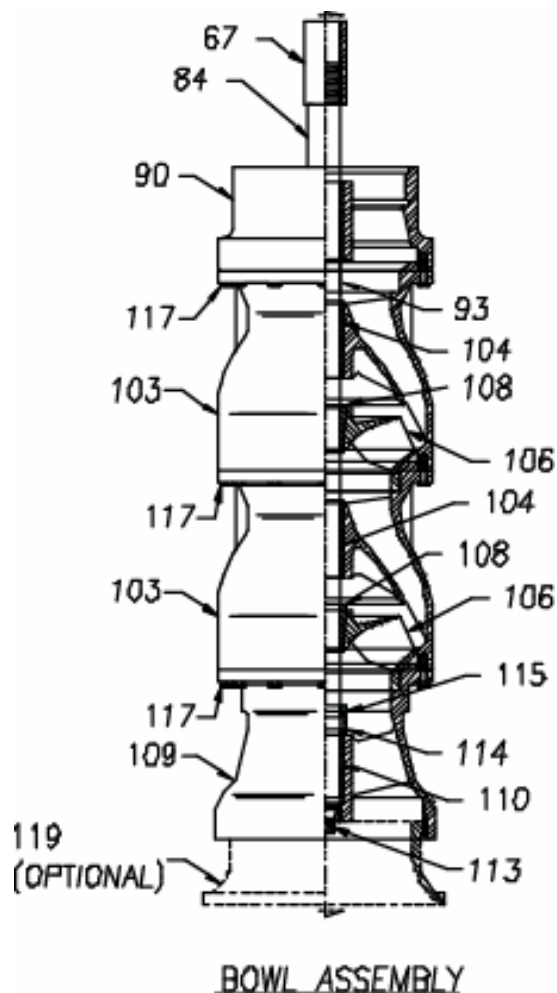
Submersible Motor: The electric motor shall be a submersible _____ RPM., three phase (50 or 60 Hz) _____ volts with a NEMA pump register. The motor shall be rated for continuous duty and have a thrust bearing of ample capacity. The motor should be of the water filled design. Motor shall have Class B or Class F insulation with temperature rise as specified by NEMA standards for class insulation used and shall have a 1.15 service factor.

Thrust bearing shall be chosen to handle the continuous down thrust as specified by the pump manufacturer with an AFBMA B-10 one-year minimum or five year average life under design conditions. Provisions shall be made for momentary upthrust equal to 30 percent of rated down thrust. The motor rating shall be such that at design it will not be loaded beyond nameplate rating and at no place on the pump curve shall the loading exceed the service factor.

Surface Plate: The surface plate shall be fabricated from carbon steel with a flat face base flange to match the well casing flange, short radius 90° steel elbow terminating in a 150 pound raised faced steel discharge flange. The surface plate shall be fitted with properly sized electrical junction box to allow for splicing surface cables and well cables. It shall also be tapped from a well vent and air-line and shall be provided with lifting lugs of sufficient strength to lift the entire pump and motor assembly including riser pipe. A short 12", threaded or flanged, nipple shall extend below the surface plate for connection to riser pipe.

Power Cable: The power cable shall be sized such that the voltage drop will not exceed five percent at the motor rated full load current and voltage. Cable shall be designed specifically for submersible pump service and shall consist of either three single conductors individually insulated or three individual conductors individually insulated and the whole covered with an outer jacket.

OPEN LINESHAFT TURBINE PUMP SECTIONALS

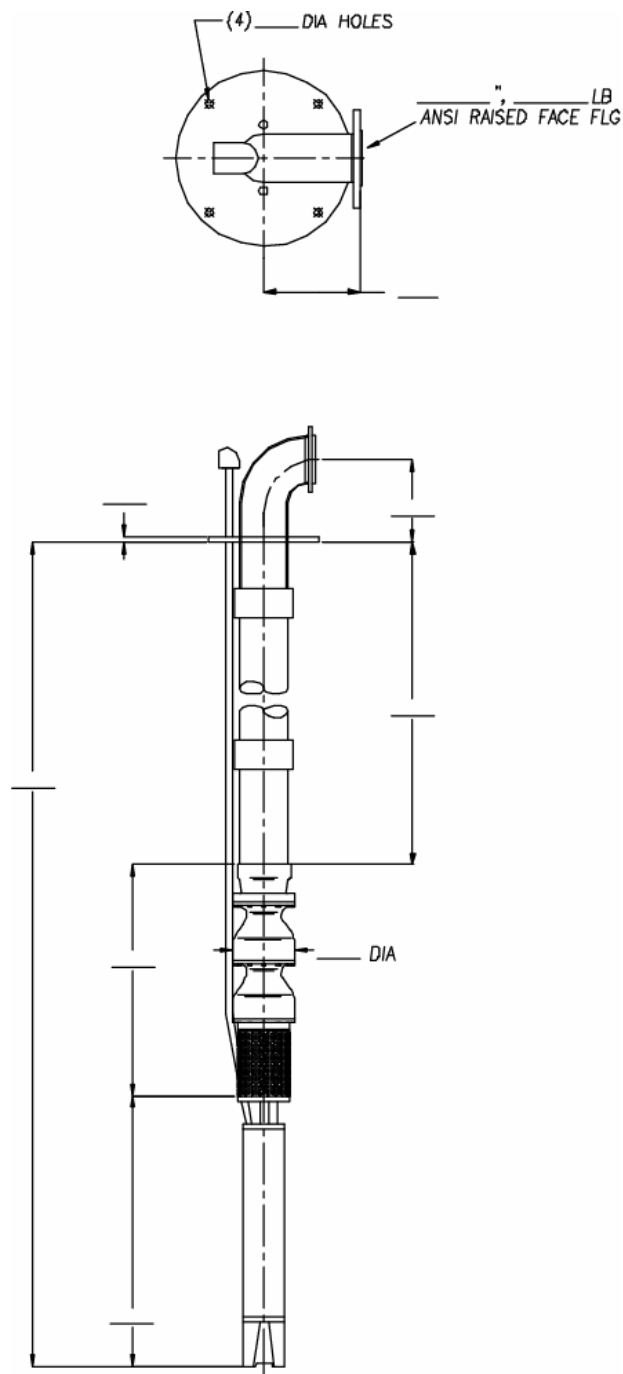


Item Number	Item Description
67	Shaft Coupling
84	Water Lubricated Bowl Shaft
90	Water Lubricated Case Bearing
91	Water Lubricated Case Bearing
93	Water Lubricated Case Bearing
94	Sand Cap Set Screws
103	Bowl Assembly (Enclosed Type)
104	Bowl Bearing
105	Bowl Assembly (Semi-Open Type)
106	Impeller (Enclosed Type)

Recommended spare parts are in **BOLD**.

Item Number	Item Description
107	Impeller (Semi-Open Type)
108	Taper Lock
109	Suction Case Assembly (Enclosed Type)
110	Suction Case Bearing
111	Suction Case Assembly
113	Suction Case End Plug
114	Suction Case Sand Cap
115	Optional Set Screws for Brass Sand Cap
117	Bowl Assembly Cap Screws

SUBMERSIBLE VERTICAL TURBINE



MATERIALS OF CONSTRUCTION

BOWL	IMPELLER
BOWL SHAFT	SHAFT COUPLING
BOWL BEARINGS	SHAFT BEARINGS
STRAINER	BOWL W/R
IMPELLER W/R	COLUMN PIPE
LINESHAFT	PACKING
BASE PLATE	DISCHARGE HEAD

PUMP

TYPE	DISCHARGE HEAD
SUCTION	DISCHARGE
LINESHAFT	COLUMN
LUBRICATION	MODEL
STAGE	GPM
TDH	TRIM
RPM	BHP

MOTOR

MAKE	TYPE
ENCLOSURE	NRR
SRC	HP
RPM	PHASE
HERTZ	VOLTAGE
FRAME NO.	TYPE COUPLING

OTHER SPECIFICATIONS

DRAWING NO.	SERIAL NO.
FLUID	SPECIFIC GRAVITY
VISCOSITY	TEMPERATURE
PH	NO. UNITS REQUIRED

CUSTOMER		
ADDRESS		
CITY	ST	ZIP
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REP.		
SUPPLIER		
SALESMAN		

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