



TYPICAL SPECIFICATIONS

GENERAL

There shall be furnished and installed as shown on the plans. Peerless Pump Company, vertical can turbine pump(s) model number VT _____ Each unit shall have a capacity of _____ U.S. GPM discharging against a total head of _____ feet, and operating at a maximum speed of 3575 RPM.

PUMP CONSTRUCTION - TYPE VTM (Mechanical Seal Stuffing Box)

Pumps shall be heavy duty industrial turbine type equipped with cast iron enameled bowls, bronze and rubber bowl bearings, cast bronze enclosed impellers, rubber lateral seal rings, 416 stainless steel impeller and top shafts, (125 lb.) (250 lb.), ANSI discharge flange. Each pump shall be provided with a single bellows type mechanical seal with Ni-resist seat and carbon sealing washer to seal the pump shaft. The seals shall have precision lapped faces for true seating. Water sealing shall be provided integral with the pump construction including breather vent for bleeding air out of high point of casting. The units shall be so constructed that shaft sealing may be replaced without disconnecting the suction or discharge piping from the pump or removing the motor.

ALTERNATE CONSTRUCTION - TYPE VTP (Packed Stuffing Box)

Each pump shall be provided with synthetic packing to seal the shaft. Water sealing shall be provided integral with the pump construction.

Each pump shall be mounted in a heavy steel can assembly with a 1.25" thick, steel plate base for mounting to the foundation.

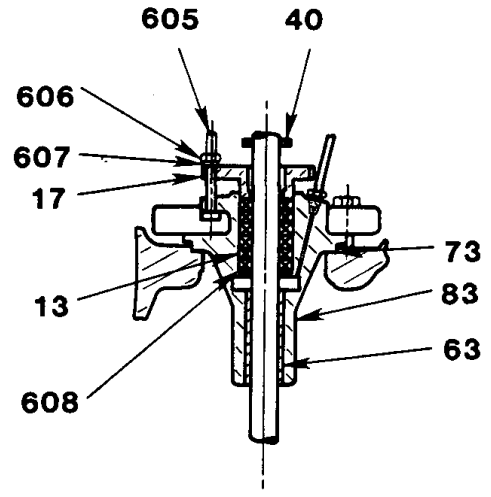
ELECTRIC DRIVER

Each pump shall be driven by a ___ HP, _____ RPM, ___ Volt, _____ Phase, _____ Hertz, vertical, hollow shaft motor in a weather protected enclosure. Motors shall be Class B winding, 40⁰C ambient, 1.15 service factor design, with steady bushings to minimize shaft deflections.

OPTIONAL EQUIPMENT

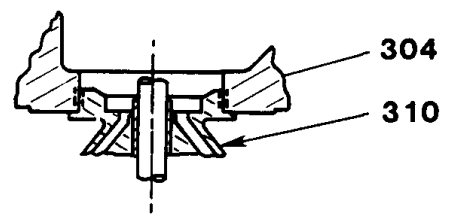
Each pump shall be provided with an **epoxy lined can** suitable for potable water.

VERTICAL CAN TURBINE PUMPS
 Types VTM, VTP



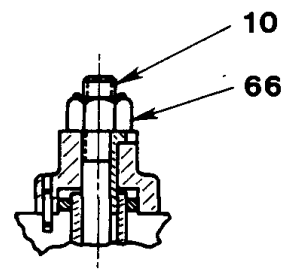
PACKING CONTAINER ASSEMBLY
 (OPTIONAL)

SECTION A

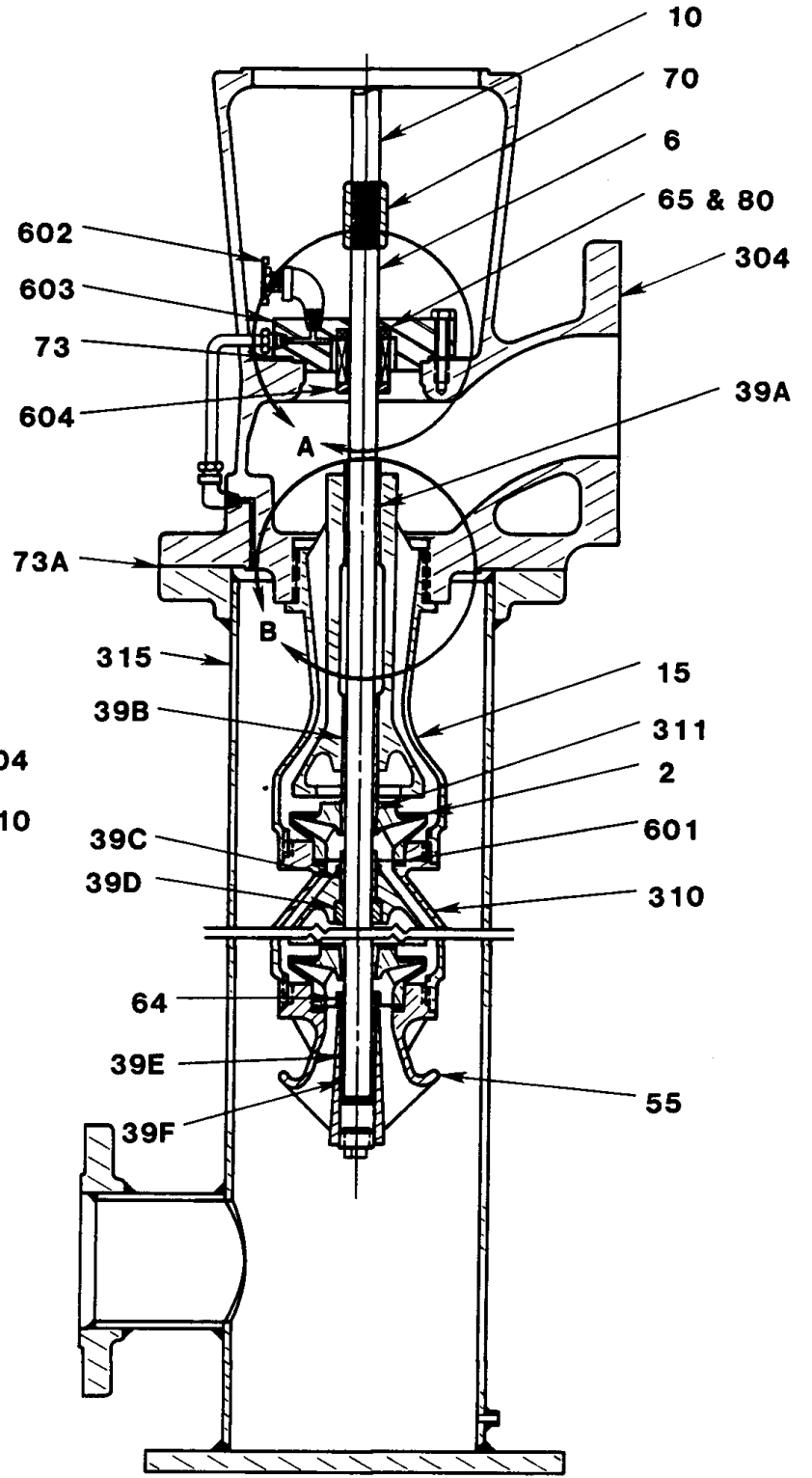


BOWL TO HEAD DETAIL
 7LB AND 8LB

SECTION B



TOP SHAFT NUT
 DETAIL



Ref. 4850494



MATERIALS OF CONSTRUCTION

ITEM NO.	DESCRIPTION	MATERIAL	ITEM NO.	DESCRIPTION	MATERIAL	
2	Impeller	Bronze	66	Top Shaft Nut	Bronze	
6	Impeller Shaft	416 Stainless Steel	70	Shaft Coupling	Steel	
10	Top Shaft	416 Stainless Steel	73	Stuffing Box or Mech. Seal Flange Gasket	Vegetable Fiber	
13	Packing	Braided Synthetic				
15	Top Bowl	Cast Iron Enameled	73A	Head to Can Gasket	Rubber	
17	Split Gland	Cast Iron	83	Stuffing Box	Cast Iron	
39A	Top Bowl Bearing	Bronze	304	Discharge Head	Cast Iron	
39B	Top Bowl Bearing	Bronze	310	Standard Bowl	Cast Iron Enameled	
39C	Std. Bowl Bearing	Bronze	311	Impeller Collets	Steel	
39D	Std. Bowl Bearing	Rubber	315	Suction Can	Steel	
39E	Suction Casing Bearing.	Bronze	601	Lateral Seal Rings	Rubber	
39F	Suction Casing Bearing.	Bronze	602	Vent Valve	Assembly	
40	Top Shaft Seal Ring	Rubber	603	Mechanical Seal Flange	Cast Iron	
55	Suction Casing	Cast Iron	604	Shaft Collar	Steel	
63	Stuffing Box Bearing	Bronze	605	Gland Bolts	Steel	
64	Sand Collar	Cast Iron	606	Gland Bolt Nuts	Brass	
65-80	Mechanical Seal	Seat	Ni-Resist	607	Gland Clamp	18-8 Stainless Steel
		Spring	18-8 Stainless Steel	608	Stuffing Box Washer	Brass
		Washer	Carbon			
		Flexible Members	Rubber			
		Metal Parts	Brass			

Ref. 4850494

PUMP SERVICE LIMITATIONS AND APPLICATION DATA

PUMP MODELS	MAXIMUM WORKING PRESSURE PSIG ①			MAXIMUM SUCTION PRESSURE psig (ALL DISCHARGE HEADS)	MAXIMUM OPERATING TEMPERATURE	
	DISCHARGE HEAD ANSI RATING				°F	°C
	125 LB STD MECH SEAL OR PACKING	250 LB STD MECH SEAL OR PACKING	250 LB HIGH PRESSURE MECH SEAL ②			
VTM6LB	175	250	350	175	115	46
VTM7LB	175	250	350	175	115	46
VTM8LB	175	200	300	175	115	46
VTM8MA	175	200	300	175	115	46
VTP6LB	175	400	-	175	115	46
VTP7LB	175	400	-	175	115	46
VTP8LB	175	400	-	175	115	46
VTP8MA	175	400	-	175	115	46

① MAXIMUM WORKING PRESSURE = PUMP SHUT-OFF PSIG + SUCTION PRESSURE PSIG.

② REQUIRES PRICE ADDITION - REFER TO THE FACTORY FOR PRICE ADDITION

MAXIMUM MOTOR FRAME SIZE - 365TP MAXIMUM MOTOR BASE DIA - 12 INCHES

Subject to change without notice.

VERTICAL CAN TURBINE PUMPS
Types VTM, VTP



Peerless Pump Company
Indianapolis, IN 46207-7025

SELECTION INFORMATION:

Type VT vertical pumps are furnished with one or more stages of a vertical turbine pump bowl assembly as required to satisfy specified requirements of capacity and total discharge head.

Model VTM uses a mechanical seal and Model VTP uses a packed stuffing box as a shaft sealing device. If the expected operating pressure or temperature exceeds the established limits for standard construction, the application must be referred to the factory.

The selection chart (pg. 1, 2740) may be entered with the specified capacity and by moving across to the column containing the specified head, the top line is the number of stages, the middle line is the last four digits of the impeller part number and the lower number is the motor horsepower sized so as to not be loaded beyond 1.15 service factor for any point in the pump operating range.

If the pump will operate sometimes at shut off it is recommended that a thermal safety valve be installed. Refer to Section 4710A for details.

The selection chart covers most of the requirements, but in the event the specified capacity and head fall between charted values, make a preliminary selection at the next higher capacity or head in order to determine the number of stages and the recommended impeller part number. Locate the performance curve for the impeller and calculate horsepower for the specific conditions and for maximum horsepower.

Example:

280 USGPM, 150 psi (347 ft.) total discharge head, 70° F clear water, 1.0 specific gravity, 30 psi min., 50 psi max. suction pressure.

From selection chart 300 GPM at 160 psi; 7LB 4 stage; using impeller 2616208 and 50 HP motor. This is the preliminary selection to determine stages and impeller.

Check curve for impeller 2616208 to verify motor size:

$$\frac{347 \text{ ft.}}{4 \text{ Stages}} = 86.8 \text{ ft. per stage at 280 USGPM}$$

Efficiency 72%, no reduction due to staging

$$\text{BHP} = \frac{280 \times 86.8 \times 4}{3960 \times .72} = 34.1 \text{ BHP}$$

Check max BHP:

Pump will carry out to 390 USGPM.

62 ft./stg 67% efficiency

$$\text{BHP} = \frac{390 \times 62 \times 4}{3960 \times .67} = 36.5 \text{ BHP max}$$

Can safely use 40 HP motor because capacity and head are slightly less than preliminary chart selection.

Check shut off pressure:

$$110 \text{ ft/stg} \times 4 = 440 \text{ ft} \div 2.31 = 190 \text{ psi}$$

$$190 \text{ psi} + 50 \text{ psi max suction pressure} = 240 \text{ psi}$$

Maximum working pressure:

Maximum working pressure exceeds 175 psi MWP for standard discharge flange, therefore optional 250 Lb.

ANSI discharge must be specified. Standard mechanical seal is rated at 250 psi MWP, therefore it is satisfactory for application.



HYDRAULIC PERFORMANCE TOLERANCE

Peerless Pump performance tests are determined acceptable based on the tolerances of the Hydraulic Institute, paragraph 1.6.5.3 Level "A", as follows (unless level "B" is customer specified).

At rated capacity;

Heads under 200 feet at 2999 US GPM and under	= +8%, -0% Head
Heads under 200 feet at 3000 US GPM and over	= +5%, -0% Head
Heads 201 feet to 500 feet, at any flow	= +5%, -0% Head
Heads 501 feet and over, at any flow	= +3%, -0 Head

OR

At rated head;	
Capacity tolerance at rated head	= +10%, -0% Capacity

The plus 8%, 5%, 3% head tolerances will result in a plus 8%, 5%, 3% pump horsepower requirement. Drivers must be selected allowing for the increased pump horsepower requirement.

Performance Guarantee

- A guarantee of pump efficiency requires Peerless Pump factory engineering to determine and authorize a guarantee.
- A Peerless Pump factory performance test is required for any performance guarantee.
- A Peerless Pump factory authorized performance guarantees will be based on Peerless Pump factory testing.
- A Peerless Pump factory determined and authorized efficiency guarantee will have a -0% tolerance.
- A guarantee of pump performance is limited to one operating condition point only.



VERTICAL CAN TURBINE PUMPS Types VTM, VTP

VERTICAL PUMPS Types VTM, VTP Selection Table—3500 rpm

Bowl Size	Capacity US GPM	Pump Total Head—PSI (Feet)														
		Number of Stages/Impeller Number/Motor H.P.														
		30 (69)	40 (92)	50 (115)	60 (138)	70 (161)	80 (184)	90 (207)	100 (231)	115 (265)	130 (300)	145 (335)	160 (369)	175 (404)	190 (439)	205 (473)
6LB	80	1 8292 3	2 6324 5	2 5	2 8292 5	3 6324 7.5	3 7.5	3 8292 7.5	4 6324 7.5	4 8292 10	5 6324 10	6 15	6 15	6 8292 15	7 15	7 20
	100	1 8292 5	2 6324 5	2 8292 5	2 7.5	3 7.5	3 7.5	3 10	4 10	4 15	5 6324 15	6 15	6 15	6 8292 15	7 20	7 20
	125	1 6318 5	2 6324 5	2 8292 7.5	2 6318 7.5	3 8292 10	3 10	3 6318 10	4 8292 15	4 6318 15	5 8292 20	5 6318 20	5 20	6 20	6 25	7 25
	150	1 6318 5	2 7.5	2 7.5	2 10	3 10	3 10	3 15	4 8292 15	4 6318 15	5 20	5 20	5 25	6 25	6 25	7 30
	175	1 6318 5	2 7.5	2 7.5	2 10	3 10	3 15	3 15	4 15	4 20	5 20	5 25	6 25	6 25	7 30	7 30
	200	2 6318 7.5	2 7.5	2 10	3 10	3 15	3 15	4 15	4 20	4 20	5 20	5 25	6 30	6 30	7 40	7 40
7LB	225	1 6207 7.5	1 10	2 15	2 15	2 15	3 20	3 20	3 25	3 25	4 30	4 30	5 40	5 40	5 40	5 40
	250	1 6207 7.5	1 6208 10	2 6207 15	2 15	2 15	3 20	3 20	3 25	3 25	4 6208 30	4 30	4 40	4 40	5 40	5 50
	275	1 6207 7.5	1 6208 10	2 6207 15	2 6207 15	2 6207 20	2 6208 20	2 6208 20	3 6207 25	3 6208 25	3 30	4 40	4 40	4 40	5 50	5 50
	300	1 6208 10	1 10	2 15	2 15	2 20	2 20	2 25	3 25	3 30	3 40	4 40	4 40	4 50	5 50	5 50
	325	1 6208 10	1 10	2 15	2 20	2 20	2 25	3 30	3 30	3 40	4 40	4 50	4 50	5 50	5 60	5 60
8LB	350	1 6464 10	1 6464 15	1 6465 15	2 6464 20	2 6464 20	2 6464 25	2 6464 30	2 6465 30	2 40	3 40	3 50	3 50	4 60	4 60	4 60
	375	1 6464 10	1 6464 15	1 6465 20	2 6464 20	2 6464 25	2 6464 25	2 6465 30	2 40	2 40	3 50	3 50	3 60	4 60	4 75	4 75
	400	1 6464 15	1 6464 15	1 6465 20	2 20	2 25	2 30	2 30	2 40	3 40	3 50	3 50	3 60	4 60	4 75	4 75
	425	1 6464 15	1 6465 15	1 6465 20	2 6464 25	2 6464 25	2 6465 30	2 30	2 40	3 40	3 50	3 50	3 60	4 60	4 75	4 75
	450	1 6464 15	1 6465 20	1 6465 25	2 6464 25	2 6465 30	2 30	2 40	2 40	3 50	3 50	3 60	3 60	4 75	4 75	5 100
	475	1 6465 15	1 20	1 20	2 25	2 30	2 30	2 40	2 40	3 50	3 50	3 60	4 60	4 75	4 75	5 100
	500	1 6465 15	1 20	1 25	2 30	2 30	2 40	2 40	3 50	3 50	3 60	3 75	4 75	4 100	5 100	5 100

Note: Impeller number is last 4 numerals of actual 7 digit impeller number. For complete number see performance curves. Motor size is based on utilizing 1.15 service factor. Subject to change without notice. For 1750 RPM selections, contact your Peerless representative.