



Golf Course Irrigation Pump Replacement
2019 Bid Specs



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General Requirements:

- The contractor shall provide all labor, materials, equipment, and transportation necessary to remove and reinstall both motors, and replace both vertical turbine pumps.
- The Contractor shall be responsible for all machine-shop work and transportation to and from said shop.
- The project will include all crane work and rigging to remove/reinstall the motors and pumps at the pump station.
- All motors and pumps shall be removed in one operation and reinstalled in one operation.

Scope of work:

- Removal of motors and pumps (2)
- Removal of pressure management pump.
- Sandblast and paint discharge heads.
- Replace check valves on each pump
- Reinstall motors and new pumps
- Reinstall new pressure management pump.
- Change starter, overloads, and fuses in control panel to accommodate larger pressure management pump.
- Install mechanical seal on pumps.
- Ensure satisfactory start-up and operation.

Pump Data Sheet - Turbine 60 Hz

Company:
Name: The Bridges of Poplar Creek
Date: 10/10/2018

Customer:



Pump:

Size: 12CLC (stages: 5) Dimensions:
Type: Lineshaft Suction: ---
Synch Speed: 1800 rpm Discharge: ---
Dia: 8.5 in Vertical Turbine:
Curve: E6412CFPC1 Eye Area:
Bowl Size: 11.8 in
Specific Speeds: Ns: 2260 Max Lateral: 1 in
Nss: 2900 Thrust K Factor: 7.5 lb/ft

Search Criteria:

Flow: 800 US gpm Near Miss: ---
Head: 320 ft Static Head: 0 ft

Fluid:

Name: Water
SG: 1 Vapor Pressure: 0.256 psi a
Density: 62.4 lb/ft³ Atm Pressure: 14.7 psi a
Viscosity: 1.1 cP
Temperature: 60 °F

Pump Limits:

Temperature: --- Sphere Size: 0.94 in
Wkg Pressure: ---

Motor:

Standard: NEMA Size: 100 hp
Enclosure: WPI Speed: 1800 rpm
Frame: 404
Sizing Criteria: Max Power on Design Curve

Pump Selection Warnings:

The pump's head at the design flow rate is below the design point head value.

--- Duty Point ---

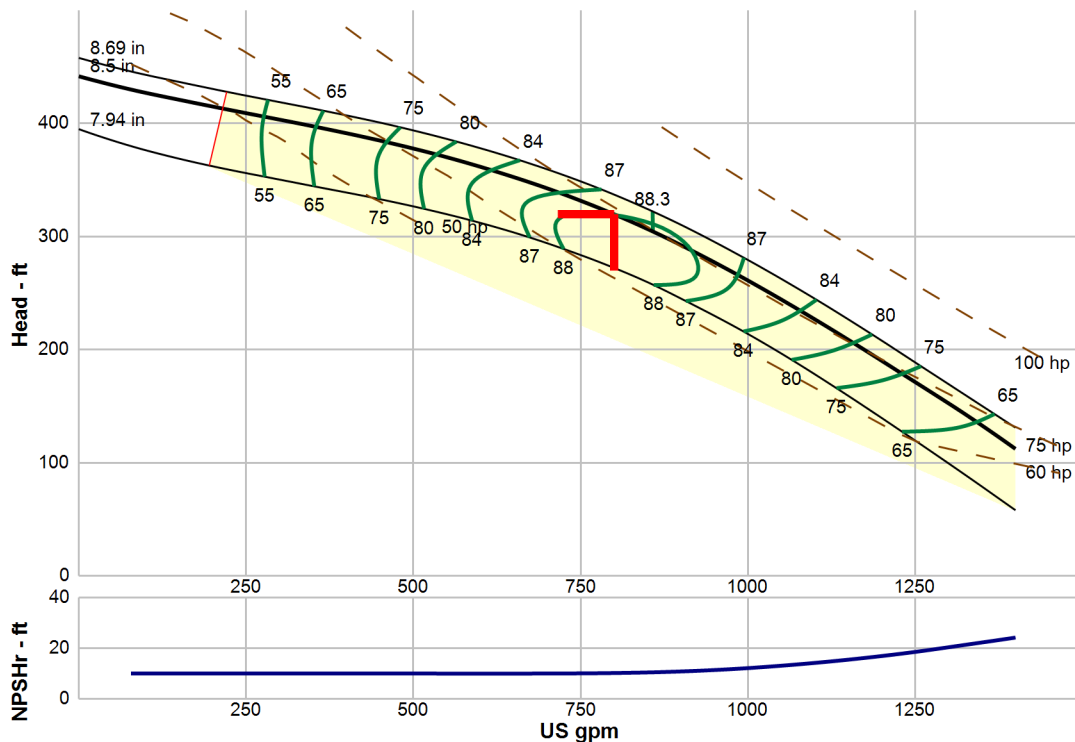
Flow: 800 US gpm
Head: 320 ft
Eff: 88%
Power: 73.4 hp
NPSHr: 10.2 ft
Speed: 1770 rpm

--- Design Curve ---

Shutoff Head: 442 ft
Shutoff dP: 191 psi
Min Flow: 215 US gpm
BEP: 88.3% @ 858 US gpm
NOL Power:
76.1 hp @ 985 US gpm

--- Max Curve ---


Max Power:
81.2 hp @ 994 US gpm



Suction Size-8in,10in Discharge Sizes-6in,8in,10in. Curves are certified for water at 60°F only. Consult factory for performance with any other fluid.

Performance Evaluation:

Flow	Speed	Head	Efficiency	Power	NPSHr
US gpm	rpm	ft	%	hp	ft
960	1770	274	87.4	75.9	11.6
800	1770	320	88	73.4	10.2
640	1770	354	84.7	67.5	10
480	1770	381	76.3	60.3	10
320	1770	401	60.6	53.3	10

Position	Count	Description
	1	<p>45S50-12</p>  <p>Product photo could vary from the actual product</p> <p>Product No.: 98924591</p> <p>Multi-stage submersible pump for raw water supply, groundwater lowering and pressure boosting. The pump is suitable for pumping clean, thin, non-aggressive liquids without solid particles or fibers.</p> <p>The pump is made entirely of Stainless steel DIN W.-Nr. EN 1.4301 and suitable for horizontal and vertical installation. The pump is fitted with a built-in non-return valve.</p> <p>The motor is a 3-phase motor of the canned type with a sand shield, liquid-lubricated bearings and pressure-equalizing diaphragm.</p> <p>Liquid:</p> <p>Pumped liquid: Water</p> <p>Maximum liquid temperature: 104 °F</p> <p>Liquid temperature during operation: 68 °F</p> <p>Density: 62.29 lb/ft³</p> <p>Technical:</p> <p>Actual calculated flow: 40.1 US gpm</p> <p>Resulting head of the pump: 331.8 ft</p> <p>Shaft seal for motor: HM/CER</p> <p>Curve tolerance: ISO9906:2012 3B</p> <p>Motor version: T40</p> <p>Materials:</p> <p>Pump: Stainless steel EN 1.4301 AISI 304</p> <p>Impeller: Stainless steel EN 1.4301 AISI 304</p> <p>Motor: Stainless steel DIN W.-Nr. 1.4301 AISI 304</p> <p>Installation:</p> <p>Maximum ambient pressure: 870.23 psi</p> <p>Pump outlet: 2"NPT</p> <p>Motor diameter: 4 inch</p> <p>Electrical data:</p> <p>Motor type: MS4000</p> <p>Rated power - P2: 5 HP</p>



Company name:

Created by:

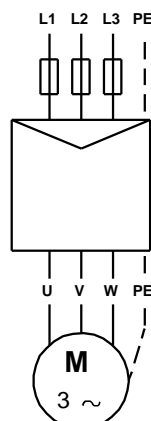
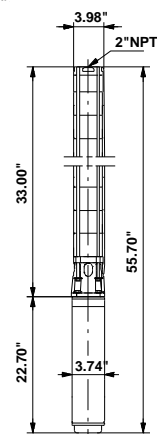
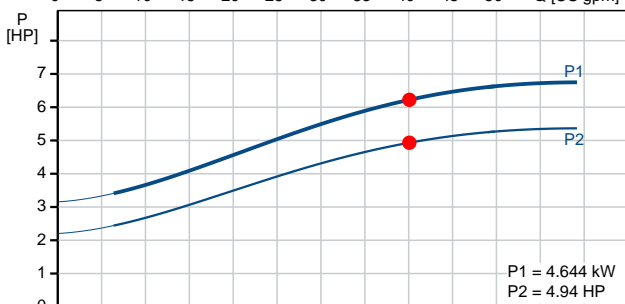
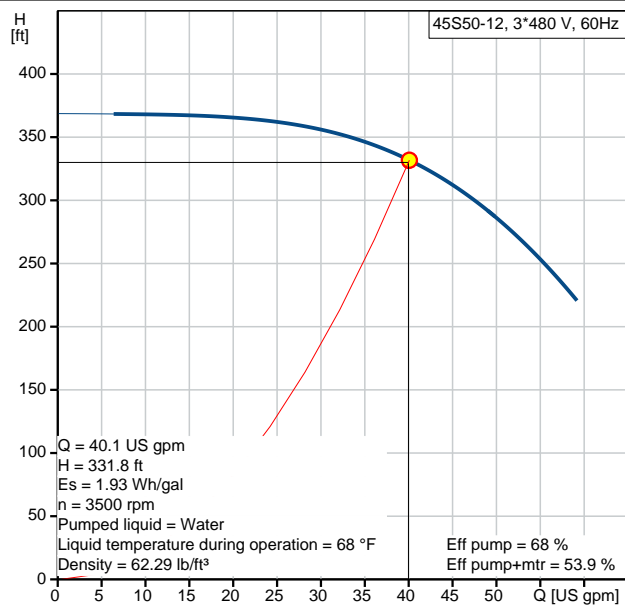
Phone:

Date:

10/10/2018

Position	Count	Description
		<p>Main frequency: 60 Hz Rated voltage: 3 x 440-460 V Service factor: 1.15 Rated current: 8.65-8.65 A Starting current: 550-590 % Cos phi - power factor: 0.83-0.80 Rated speed: 3460-3470 rpm Enclosure class (IEC 34-5): IP68 Insulation class (IEC 85): F Built-in temperature transmitter: No</p> <p>Others: ErP status: EuP Standalone/Prod. Net weight: 71.2 lb Gross weight: 127 lb Shipping volume: 7.06 ft³ Country of origin: US Custom tariff no.: 8413.70.2004</p>

Description	Value
General information:	
Product name:	45S50-12
Product No.:	98924591
EAN:	5712603665573
Technical:	
Actual calculated flow:	40.1 US gpm
Resulting head of the pump:	331.8 ft
Stages:	12
Impeller reduc.:	NONE
Shaft seal for motor:	HM/CER
Curve tolerance:	ISO9906:2012 3B
Model:	A
Valve:	YES
Motor version:	T40
Materials:	
Pump:	Stainless steel
	EN 1.4301
	AISI 304
Impeller:	Stainless steel
	EN 1.4301
	AISI 304
Motor:	Stainless steel
	DIN W.-Nr. 1.4301
	AISI 304
Installation:	
Maximum ambient pressure:	870.23 psi
Pump outlet:	2"NPT
Motor diameter:	4 inch
Liquid:	
Pumped liquid:	Water
Maximum liquid temperature:	104 °F
Liquid temperature during operation:	68 °F
Density:	62.29 lb/ft³
Electrical data:	
Motor type:	MS4000
Applic. motor:	NEMA
Rated power - P2:	5 HP
KVA code:	J
Main frequency:	60 Hz
Rated voltage:	3 x 440-460 V
Service factor:	1.15
Rated current:	8.65-8.65 A
Starting current:	550-590 %
Cos phi - power factor:	0.83-0.80
Rated speed:	3460-3470 rpm
Axial load max:	992 lb
Enclosure class (IEC 34-5):	IP68
Insulation class (IEC 85):	F
Motor protection:	NONE
Thermal protec:	external
Built-in temperature transmitter:	No
Motor Number:	96405811
Others:	
ErP status:	EuP Standalone/Prod.
Net weight:	71.2 lb
Gross weight:	127 lb
Shipping volume:	7.06 ft³
Country of origin:	US





Company name:

Created by:

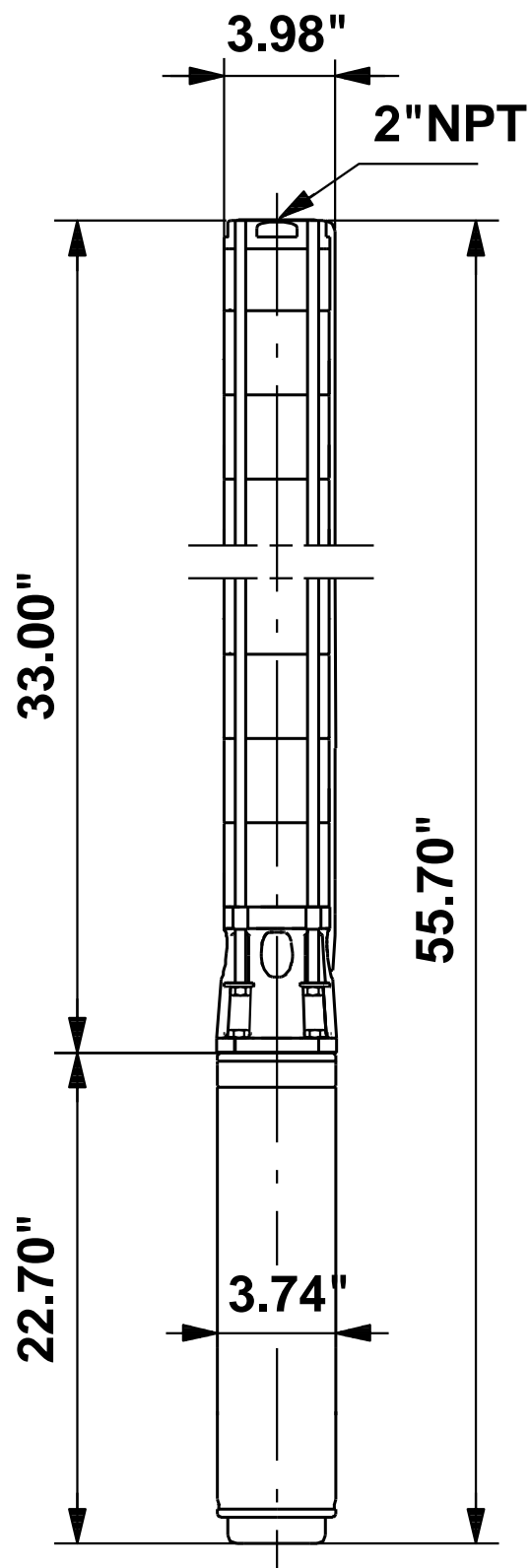
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Date:

10/10/2018

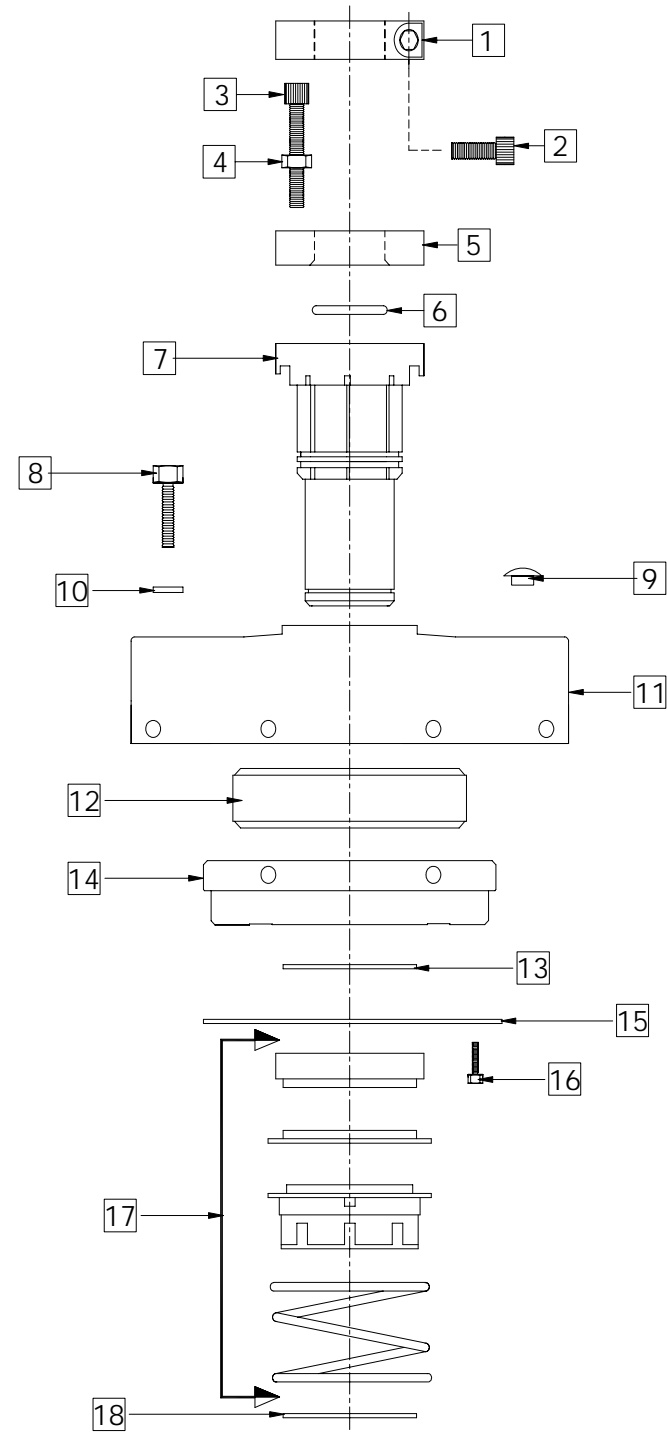
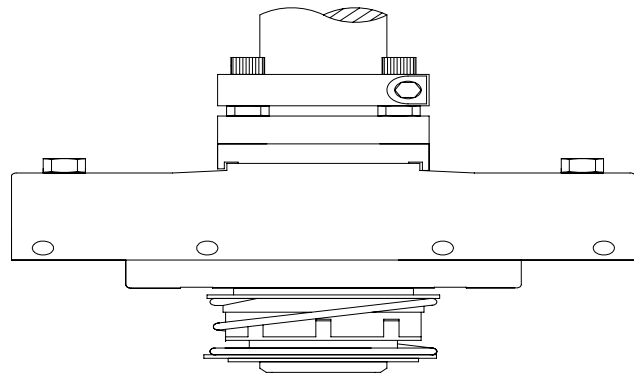
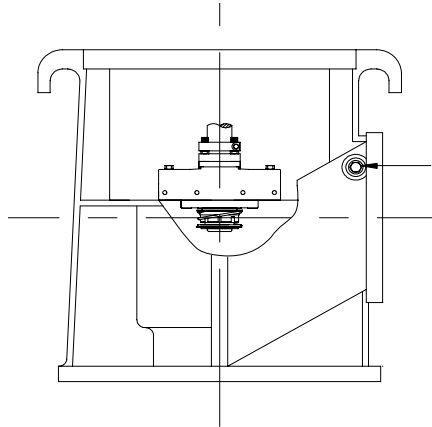
Description	Value
Custom tariff no.:	8413.70.2004

98924591 45S50-12 60 Hz



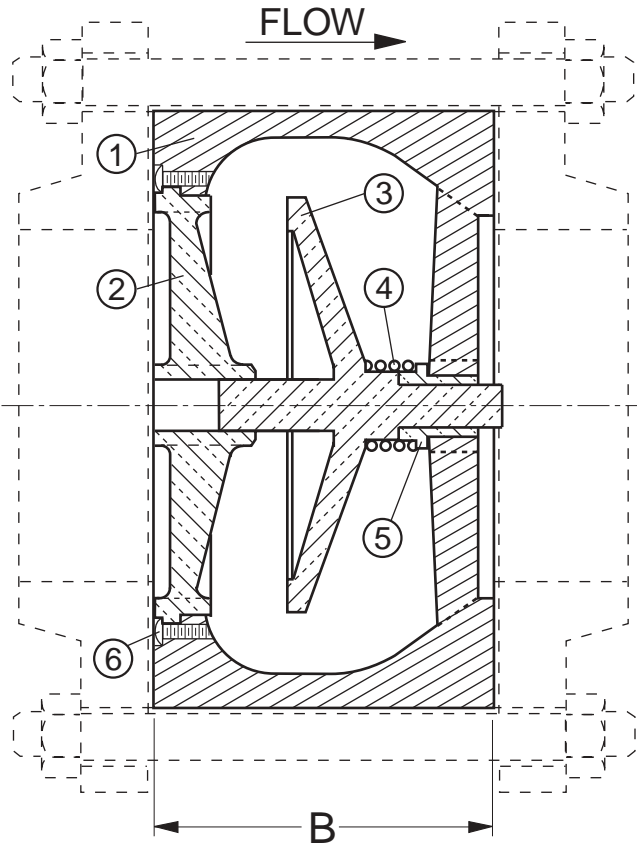
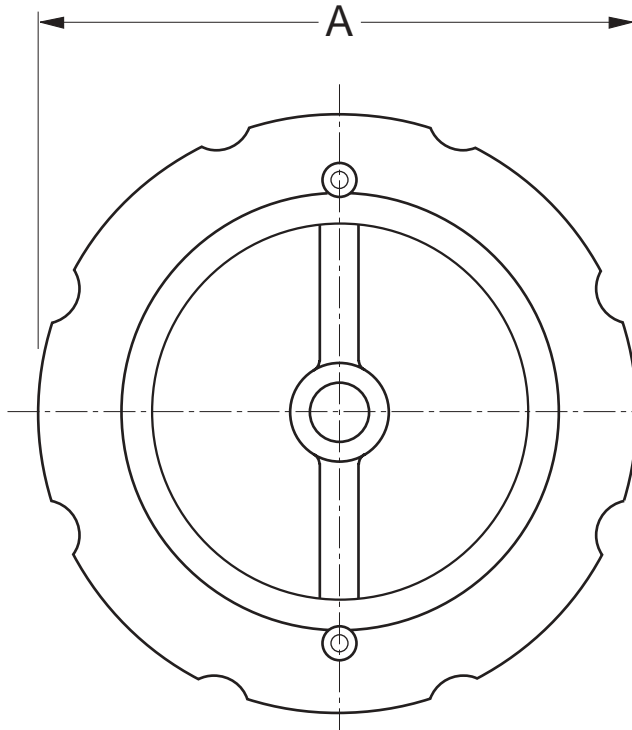
Note! All units are in [mm] unless otherwise stated.
Disclaimer: This simplified dimensional drawing does not show all details.

MECHANICAL SEAL ASSY, FLOWTRONEX DISCHARGE HEAD 1-3/16" SHAFT					
REV-12/22/06 RJS					
NOTE: WATERTRONICS PN. 92-87-3011 IS A KIT THAT INCLUDES ALL ITEMS LISTED BELOW					
			6" - 8" & 10" DISCHARGE		
ITEM NO	QTY	CODE	PART NO.	DESCRIPTION	
1	1	50	46-24-1362	DRIVE COLLAR 1-3/16"	
2	1	50	03-20-5812	S.S. SOCKET HEAD CAP SCREW (5/16 X 1-1/4")	
3	3	50	03-20-2520	S.S. SOCKET HEAD CAP SCREW (1/4-20 X 2")	
4	3	50	45-05-1400	S.S. KEEP NUT (1/4-20)	
5	1	50	46-24-1364	O-RING RETAINER 1-3/16"	
6	1	50	46-22-0217	O-RING	
7	1	50	46-22-1165	304 S.S. SHAFT SLEEVE 1-3/16"	
8	4	50	01-07-5822	BOLT 5/8 X 2-1/4 S.S.	
9	2	50	58-10-0916	PLUG BLACK PLASTIC DOME 9/16"	
10	4	50	42-45-0058	WASHER 5/8 S.S.	
11	1	50	46-22-1505	BEARING HOUSING TOP	
12	1	50	46-22-6309	SEALED BALL BEARING	
13	1	50	46-22-0175	SNAP RING 1-3/4"	
14	1	50	46-22-1507	ADAPTER PLATE, FLOWTRONEX HEAD	
15	1	50	NPN	GASKET, SEAL / DISCHARGE HEAD	
16	2	50	03-07-1014	S.S. PPHMS (10-32 X 1-1/4')	
17	1	50	87-15-3916	JOHN CRANE MECHANICAL SEAL 1-1/2"	
18	1	50	46-22-0150	SNAP RING 1-1/2"	



Equipment Specs

FLANGES, BOLTS, NUTS AND GASKETS ARE SUPPLIED BY OTHERS.



PART NO. NAME

- 1 BODY
- 2 SEAT
- 3 DISC
- 4 SPRING
- 5 BUSHING
- 6 RETAINING SCREWS

Installation Requirements

Refer to drawing SS- 974 entitled Silent Check Valve Flange Installation Requirements for mating flanges.

SEE DRAWING NO. VM-1402-M FOR STANDARD MATERIALS OF CONSTRUCTION.

125 LB. CLASS				
VALVE SIZE	MODEL NO.*	CWP (P.S.I.)	A	B
8	1408	200	13 ³ / ₈	6 ¹ / ₂
10	1410	200	16	8 ¹ / ₄
250 LB. CLASS				
8	1458	400	13 ³ / ₈	6 ¹ / ₂
10	1460	400	16	8 ¹ / ₄

* MODEL NUMBERS REFLECT BRONZE TRIM.

Equipment Specs

Revised 4-17-98

WAFER STYLE SILENT CHECK VALVE

DATE 4-1-67

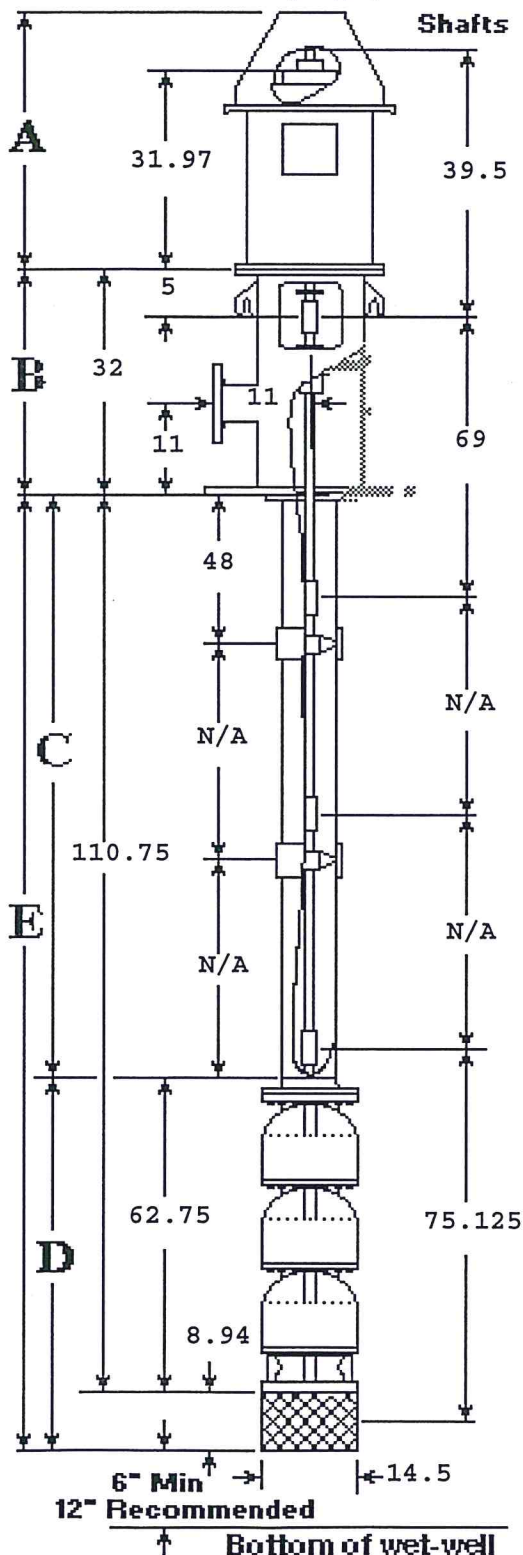
VAL-MATIC®

VALVE AND MANUFACTURING CORP.

DRWG. NO.

VM-1408

FLOWTRONEX PSI Pumping Systems



Vertical Turbine Pump Buildup

Date: 9/4/98 Rev: By Steven Hutson Jr.
Job Name: Popllar Creek GC
Job #: 8023C Serial #'s 8023C-1,2
Shop # C.O.#

Section A

Motor: New Style Newman
Motor SN:
HP: 75 RPM: 1800 Starting: XL
Oil Cap. Grease Gal. Shipped: 0
CD 31.97 BD 16.5 SRC 1.1875 NRR No
Volts/Phase 460-3P Freq: 60Hz
Headshaft 1.1875 X 39.5
Gib Key 1/4 x 1-3/4
Motor Base Bolts: (4) 5/8 X 1-1/2

Section B

Discharge Head: 616F-VFD PB 1.1875 X 4.5
Slinger Ring: 1.1875
Pump Base Bolts: (4) 1 X 3-1/2
W/ Nuts & Washers

Section C

Top Shaft: 1.1875 X 69
Top Column 6 X 47.5 FLG THD X
Inter-Shaft N/A Pieces 0
Inter-Shaft N/A Pieces 0
Inter-Column N/A Pieces 0
Inter-Column N/A Pieces 0
All Columns Threaded and Coupled
Spider Bearings No. 0 Size N/A
Hanger-Flange Goulds

Section D

Bowl Assy: IDP 12M75 Stages: 5
Trim: 9.17 OD
GPM 775 TDH 320 PSI 139
Bowl Shaft Thread 1.1875 X 1.75 X 75.125
Basket Strainer 9.5 x 14.5 Cone

Section E

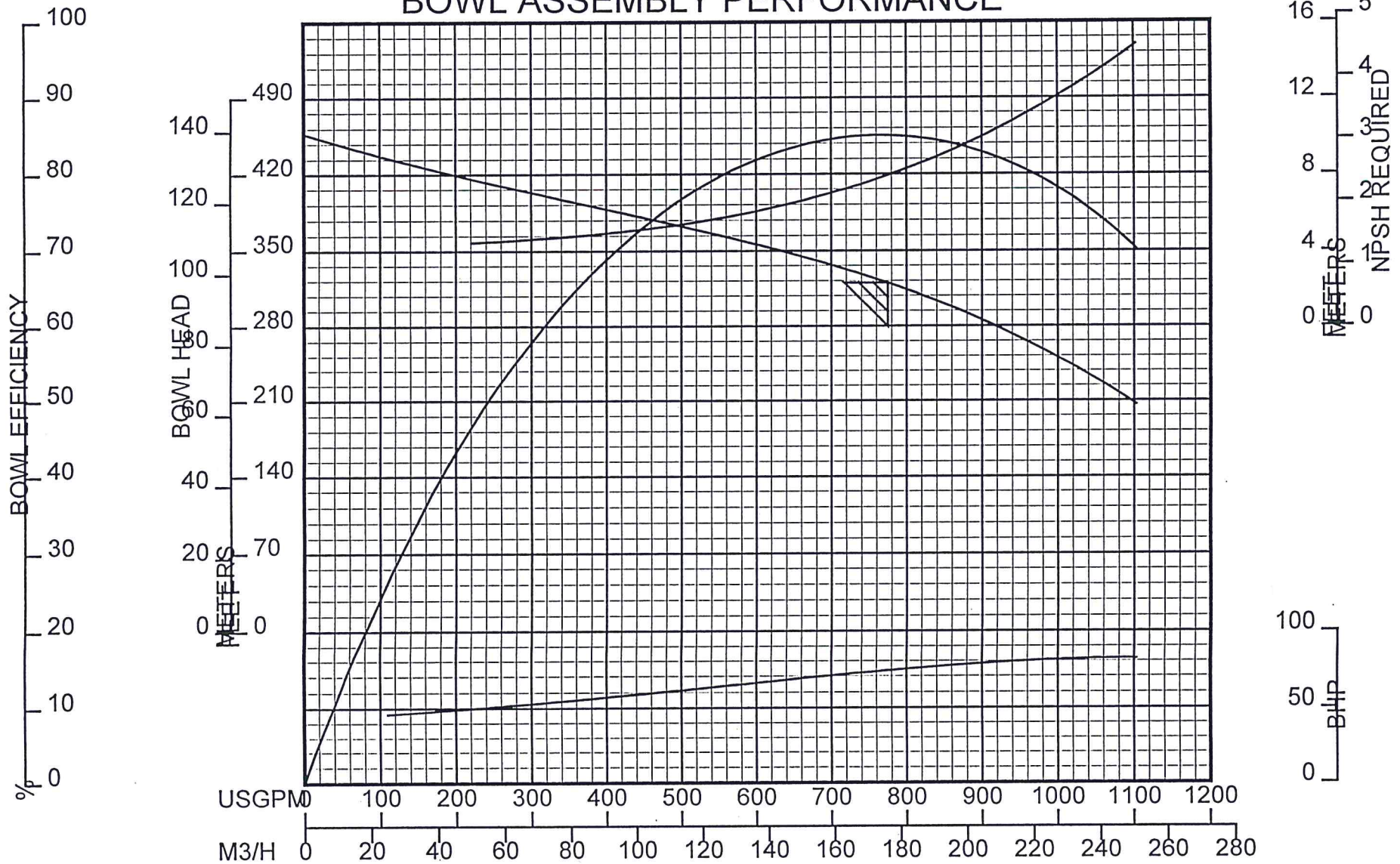
Length From Base to Bottom of Strainer
10 Ft. 0 In.

Misc. Specifications

PM Pump is 3 Hp Build 2 Like Pumps
Motors to Have Space Heaters

All Flowtronex-PSI Vertical Turbine Pumps are assembled with the following materials unless otherwise noted:
Standard-wall - 8TPI - butt thread column pipe
416SS - 10TPI - shafting and couplings on a 6-inch stickup
Bronze spider bearings with rubber inserts
Grade 5 plated bolts
Galvanized basket strainers.

BOWL ASSEMBLY PERFORMANCE



Customer: Poplar Creek GC
 Project : J-8023C-01,02
 Service : Steven Hutson Jr
 Date : 4 Sep 1998
 Impeller : Enclosed



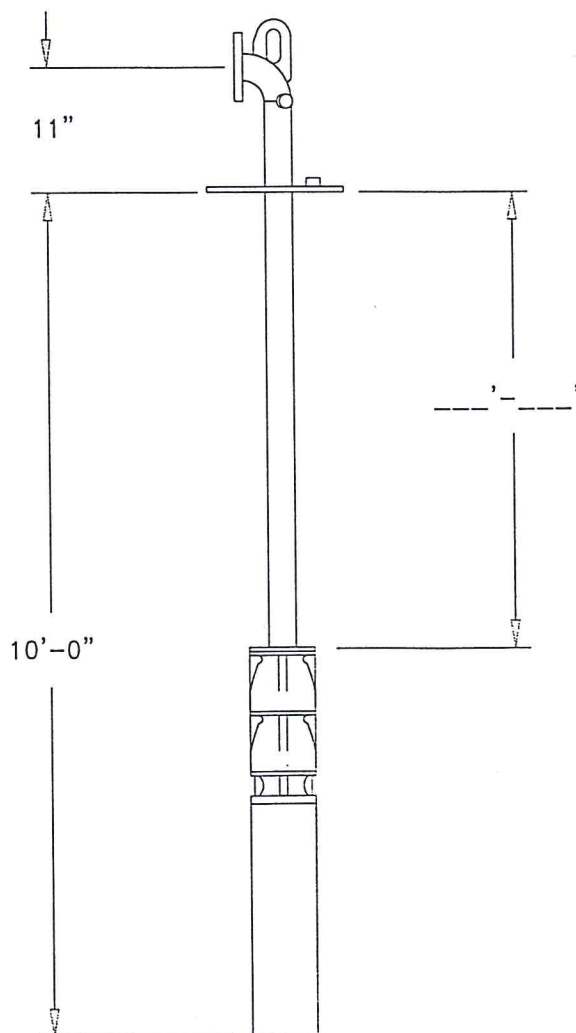
Ingersoll-Dresser Pumps

Flow (USGPM) : 775.0 SG : 1.00
 Head (FEET) : 320 RPM: 1770

Pump : 12M75
 Stages : 5
 Bowl Mat. : CI/LINED
 Imp. Mat. : BRONZE
 Shaft Mat. : 416SS

GUARANTEES ARE BASED ON SHOP TEST WHEN HANDLING CLEAR FRESH WATER AT A TEMPERATURE OF NOT OVER 65 F.
 CURVES ARE APPROXIMATE. PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS. CAPACITY, HEAD, AND EFFICIENCY.

PRESSURE MAINTENANCE PUMP BUILD-UP

BY: Steven HutsonJOB NAME: Poplar Creek GCPUMP MANF: GrundfosDATE: 9/4/98JOB NUMBER: J-8023CMOTOR MANF: GrundfosS.O.: XXXXGPM: 26 PSI: 130 TDH: 300VAC: 460 HZ: 60 PHASE: 3

As Built Specs

S.F. Amps	
S.F.	
RPM	

MOTOR HP	MODEL #	MOTOR SERIAL #	PUMP SERIAL #
3	25S30-15		

FLOWTRONEX PSI
Pumping Systems.

10717 HARRY HINES BLVD., DALLAS, TEXAS 75220, USA 1-800-527-0539