

TYPE



**VSS**

## SUBMERSIBLE SEWAGE PUMPS



Pumps with discharge size 2" thru 6". Capacities to 1600 gpm, Heads to 120', 1750 and 1150 RPM operation.

### HIGHLIGHTS

- 🌀 Motors are Fully Submersible
- 🌀 Pumps are Non-Clog Type
- 🌀 Close-Coupled Design for Perfect Alignment
- 🌀 Indoor and Outdoor Installations
- 🌀 Easy Installation and Removal
- 🌀 For Sewage, Effluent, and Industrial Waste Water
- 🌀 Control Systems Available
- 🌀 Receiving Tanks Available

## FEATURES

**PUMP FEATURES:** The cast iron pump casing has a smooth waterway to insure maximum efficiency when handling sewage. Cast iron legs elevate the pump to permit flow into the impeller. Rabbeted construction insures complete alignment of the rotating element. The cast iron impeller is of non-clog design for handling water containing solids, and is balanced prior to assembly. The vertical discharge flange and gasket permit easy installation of plain-end discharge pipe.

**MOTOR FEATURES:** Motors are available for 1750, 1150 and 870 rpm operation with both single phase and three phase windings. All motors are fully submersible and have pre-lubricated ball bearings, stainless steel shaft and fasteners.

Special motors with UL listing for Class 1, Group D explosion-proof service can be furnished, if required.

Motors are rated for continuous duty submerged. Motor housing and bottom motor bracket are cast iron. Double seals provide protection for the electrical parts. If the outer seal fails, the inner seal protects the motor while water enters the oil-filled seal chamber. Motors are furnished with 25-ft. of power cable and ground wire.

The standard motors are rated for operation in 40 degrees C (104 degrees F) water, but can be modified for higher ambient temperatures.

Motors can be furnished with moisture detection electrodes for the seal chamber and thermal detectors for the windings, if required.

### MODIFICATIONS & ACCESSORIES

Pumps can be furnished with bronze impellers, stainless steel fasteners, longer cables and special mechanical seals. Accessory items include moisture detection relays, motor controls, high water alarms, steel covers and grouting frames for concrete pits and steel or fiberglass sewage basins. VSS pumps can also be equipped with Quick-Disconnect fittings for simplified removal from pits.

**CONTROLS:** The recommended control arrangement for VSS pumps is the Submers-a-bulb Controller (see Type SBS Brochure) which includes on-off mercury bulbs, high water alarm and automatic alternation for duplex units. Float switch controls are also available.

Selection Table 1150 RPM				
Unit Number	GPM	Disch. Head (Ft.)	Motor HP	Disch. Size (ins.)
VSS-4A-.75-6	50	23	0.75	4
VSS-4A-1-6		28	1	
VSS-4A-1.5-6		31	1.5	
VSS-4C-3-6		36	3	
VSS-4E-5-6		48	5	
VSS-4E-7.5-6		61	7.5	
VSS-4A-.75-6	75	19	0.75	4
VSS-4A-1-6		23	1	
VSS-4A-1.5-6		29	1.5	
VSS-4C-3-6		35	3	
VSS-4E-5-6		46	5	
VSS-4E-7.5-6		59	7.5	
VSS-4A-.75-6	100	15	0.75	4
VSS-4A-1-6		20	1	
VSS-4A-1.5-6		27	1.5	
VSS-4C-3-6		33	3	
VSS-4E-5-6		44	5	
VSS-4E-7.5-6		58	7.5	
VSS-4A-1-6	125	18	1	4
VSS-4A-1.5-6		25	1.5	
VSS-4C-3-6		31	3	
VSS-4E-5-6		42	5	
VSS-4E-7.5-6		57	7.5	
VSS-4A-1-6	150	13	1	4
VSS-4A-1.5-6		21	1.5	
VSS-4A-2-6		24	2	
VSS-4C-3-6		30	3	
VSS-4E-5-6		40	5	
VSS-4E-7.5-6		56	7.5	
VSS-4A-1.5-6	200	16	1.5	4
VSS-4A-2-6		22	2	
VSS-4C-3-6		28	3	
VSS-4C-5-6		38	5	
VSS-4E-7.5-6		54	7.5	
VSS-4A-1.5-6	250	14	1.5	4
VSS-4C-2-6		19	2	
VSS-4C-3-6		26	3	
VSS-4C-5-6		35	5	
VSS-4E-7.5-6		50	7.5	
VSS-4E-10-6		58	10	
VSS-4C-2-6	300	15	2	4
VSS-4C-3-6		23	3	
VSS-4C-5-6		31	5	
VSS-4E-7.5-6		47	7.5	
VSS-4E-10-6		54	10	
VSS-4E-15-6		59	15	
VSS-4C-2-6	350	13	2	4
VSS-4C-3-6		21	3	
VSS-4C-5-6		28	5	
VSS-4E-7.5-6		42	7.5	
VSS-4E-10-6		50	10	
VSS-4E-15-6		58	15	
VSS-4C-2-6	400	12	2	4
VSS-4C-3-6		20	3	
VSS-4C-5-6		24	5	
VSS-4E-7.5-6		38	7.5	
VSS-4E-10-6		44	10	
VSS-4E-15-6		57	15	
VSS-4C-3-6	500	15	3	4
VSS-4C-5-6		23	5	
VSS-4E-7.5-6		31	7.5	
VSS-4E-10-6		42	10	
VSS-4E-15-6		54	15	

Selection Table 1150 RPM				
Unit Number	GPM	Disch. Head (Ft.)	Motor HP	Disch. Size (ins.)
VSS-5E-5-6	600	16	5	5
VSS-5E-7.5-6		29	7.5	
VSS-5E-10-6		40	10	
VSS-5E-15-6		50	15	
VSS-6H-5-6	800	13	5	6
VSS-6H-7.5-6		25	7.5	
VSS-6H-10-6		36	10	
VSS-6H-15-6		47	15	
VSS-6H-7.5-6	1000	17	7.5	6
VSS-6H-10-6		29	10	
VSS-6H-15-6		42	15	
VSS-6H-10-6	1200	23	10	6
VSS-6H-15-6		35	15	
VSS-6H-15-6	1400	28	15	6

Selection Table 1750 RPM				
Unit Number	GPM	Disch. Head (Ft.)	Motor HP	Disch. Size (ins.)
VSS-3P-.5-4	50	20	0.5	3
VSS-3P-.75-4		25	0.75	
VSS-4A-1-4		27	1	
VSS-4A-1.5-4		37	1.5	4
VSS-4A-2-4		44	2	
VSS-4A-3-4		48	3	
VSS-4A-5-4	58	5		
VSS-3P-.5-4	75	15	0.5	3
VSS-3P-.75-4		23	0.75	
VSS-4A-1-4		26	1	
VSS-4A-1.5-4		32	1.5	4
VSS-4A-2-4		42	2	
VSS-4A-3-4		45	3	
VSS-4A-5-4	56	5		
VSS-3P-.5-4	100	13	0.5	3
VSS-3P-.75-4		19	0.75	
VSS-4A-1-4		21	1	
VSS-4A-1.5-4		30	1.5	4
VSS-4A-2-4		37	2	
VSS-4A-3-4		40	3	
VSS-4A-5-4	55	5		
VSS-4A-1-4	125	17	1	4
VSS-4A-1.5-4		27	1.5	
VSS-4A-2-4		33	2	
VSS-4A-3-4		37	3	
VSS-4A-5-4	53	5		
VSS-4A-1-4	150	15	1	4
VSS-4A-1.5-4		25	1.5	
VSS-4A-2-4		28	2	
VSS-4A-3-4		35	3	
VSS-4A-5-4		52	5	
VSS-4C-7.5-4		62	7.5	
VSS-4A-1-4	200	9	1	4
VSS-4A-1.5-4		16	1.5	
VSS-4A-2-4		24	2	
VSS-4A-3-4		32	3	
VSS-4A-5-4		47	5	
VSS-4C-7.5-4		60	7.5	

Selection Table 1750 RPM				
Unit Number	GPM	Disch. Head (Ft.)	Motor HP	Disch. Size (ins.)
VSS-4A-1.5-4	250	8	1.5	4
VSS-4A-2-4		16	2	
VSS-4A-3-4		25	3	
VSS-4A-5-4		44	5	
VSS-4A-7.5-4		50	7.5	
VSS-4C-10-4		70	10	
VSS-4C-15-4	86	15		
VSS-4A-2-4	300	9	2	4
VSS-4A-3-4		20	3	
VSS-4A-5-4		35	5	
VSS-4A-7.5-4		49	7.5	
VSS-4C-10-4		68	10	
VSS-4C-15-4	83	15		
VSS-4A-3-4	350	16	3	4
VSS-4A-5-4		30	5	
VSS-4C-7.5-4		48	7.5	
VSS-4C-10-4		65	10	
VSS-4C-15-4		80	15	
VSS-4C-3-4	400	15	3	4
VSS-4C-5-4		29	5	
VSS-4C-7.5-4		45	7.5	
VSS-4C-10-4		61	10	
VSS-4C-15-4		75	15	
VSS-4C-5-4	500	23	5	4
VSS-4C-7.5-4		38	7.5	
VSS-4C-10-4		55	10	
VSS-4C-15-4		70	15	
VSS-4C-20-4		77	20	
VSS-4E-25-4		88	25	
VSS-4E-30-4	102	30		
VSS-4E-40-4	120	40		
VSS-5C-5-4	600	17	5	5
VSS-5C-7.5-4		30	7.5	
VSS-5C-10-4		50	10	
VSS-5C-15-4		64	15	
VSS-5C-20-4		72	20	
VSS-5E-25-4		82	25	
VSS-5E-30-4	100	30		
VSS-5E-40-4	115	40		
VSS-6E-15-4	800	43	15	6
VSS-6E-20-4		60	20	
VSS-6E-25-4		68	25	
VSS-6E-30-4		88	30	
VSS-6E-40-4	110	40		
VSS-6H-15-4	1000	40	15	6
VSS-6H-20-4		50	20	
VSS-6H-25-4		62	25	
VSS-6H-30-4		78	30	
VSS-6H-40-4		100	40	
VSS-6H-20-4	1200	42	20	6
VSS-6H-25-4		55	25	
VSS-6H-30-4		72	30	
VSS-6H-40-4	1400	90	40	6
VSS-6H-20-4		30	20	
VSS-6H-25-4		42	25	
VSS-6H-30-4		60	30	
VSS-6H-40-4	1600	80	40	6
VSS-6H-30-4		48	30	
VSS-6H-40-4		72	40	

## SUGGESTED SPECIFICATIONS

Furnish and install as shown on plans, a Federal Pump Corporation Type VSS duplex submersible sewage pump unit, or approved equal. The pumps shall be of cast iron construction with non-clog, balanced impellers and shall be rated as shown in the pump schedule.

Each motor shall be oil-filled, protected by an oil-filled double-seal chamber, shall have a stainless steel shaft and fasteners and a 25 ft. waterproof power cable. Motors shall be rated as shown in the pump schedule.

Pump control shall be by a Type SBS Submers-a-bulb Controller, including four mercury bulbs on a Style 1 suspension bracket. A NEMA-4 junction box shall be provided plus a control panel in a NEMA-1 wall-mounting enclosure, including therein a fusible disconnect switch and a magnetic starter for each motor, HOA selector switches, automatic pump alternator, pump-run lights, and an alarm bell, silencer button and light to indicate high water condition. The control panel shall be of the solid-state type with encapsulated plug-in circuit board and plug-in relays.

Furnish a Style PF-1 steel pit cover and grouting frame for a concrete pit of the size shown in the pump schedule. The cover shall be of gas-tight construction with pump removal plates, flanged openings for discharge pipes, manhole with cast iron cover, vent connection, control openings and corrosion-resistant coating.

### Pump Schedule:

No. of Pumps: \_\_\_\_\_

Model No.: \_\_\_\_\_

GPM per pump \_\_\_\_\_

FT. TDH: \_\_\_\_\_

Motor HP: \_\_\_\_\_

RPM \_\_\_\_\_

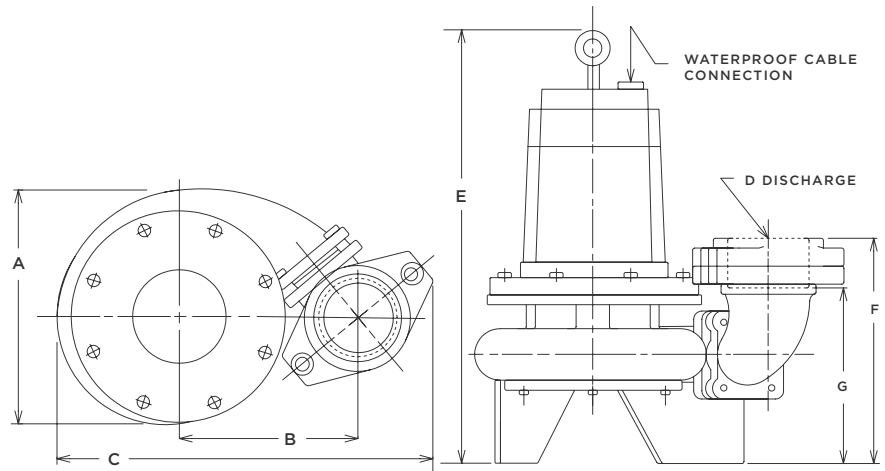
Phase: \_\_\_\_\_

Cycles: \_\_\_\_\_

Volts: \_\_\_\_\_

Pit: \_\_\_\_\_

in. x \_\_\_\_\_ in. x \_\_\_\_\_ in. deep



Pump Dimensions Table						
Pump Frame	A	B	C	D	F	G
VSS-2P	11	7.625	14.75	2	7.625	-
VSS-3P	11	7.625	14.75	3	15	-
VSS-3A	13.25	9.75	20.5	3	12.75	10.5
VSS-4A	13.25	9.75	20.5	4	12.875	10.375
VSS-4C	16.75	12.75	24.75	4	15.375	12.875
VSS-5C	16.75	12.75	25.375	5	15.375	12.875
VSS-6C	16.75	12.75	25.375	6	15.5	12.875
VSS-4E	17.125	12.75	25.5	4	15.375	12.875
VSS-5E	17.125	12.75	25.5	5	15.375	12.875
VSS-6E	17.125	12.75	25.5	6	15.5	12.875
VSS-6H	22	13	29	6	17.25	14.5

Motor Dimensions Table				
Motor Frame	Pump Frame	1750 RPM HP	1150 RPM HP	E
P	VSS-2P AND 3P	.5 THRU .75	-	19
56TY	VSS-3A AND 4A	1 THRU 5	-	30
56TY	ALL OTHERS	1 THRU 5	-	35
140TY	VSS-3A AND 4A	1 THRU 3	.75 THRU 2	34
140TY	ALL OTHERS	1 THRU 3	.75 THRU 2	39
180TY	VSS-3A AND 4A	5 THRU 7.5	3 THRU 5	35
180TY	ALL OTHERS	5 THRU 7.5	3 THRU 5	40
210TY	ALL FRAMES	10 THRU 20	7.5 THRU 10	45
250TY	ALL FRAMES	25 THRU 40	15 THRU 25	51



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