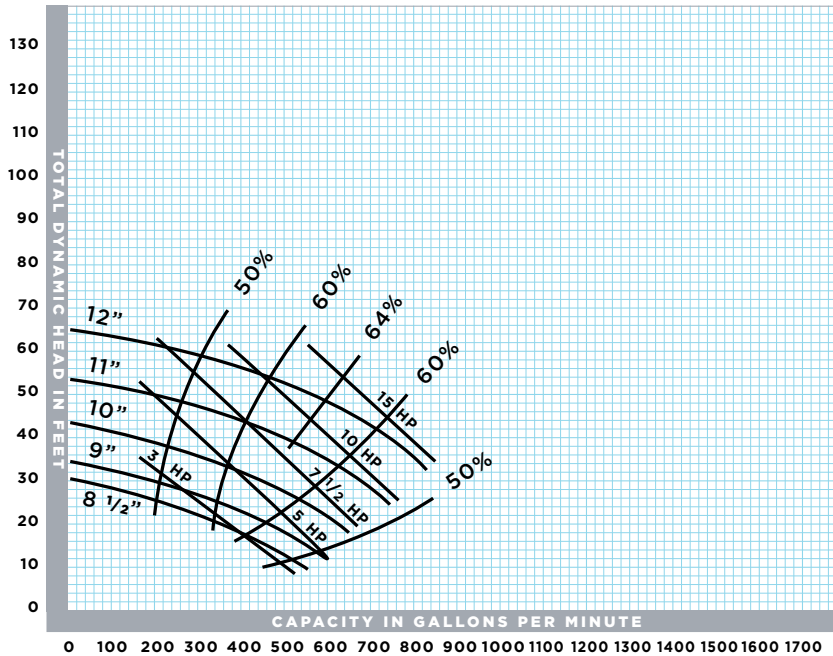


Parts List & Diagram

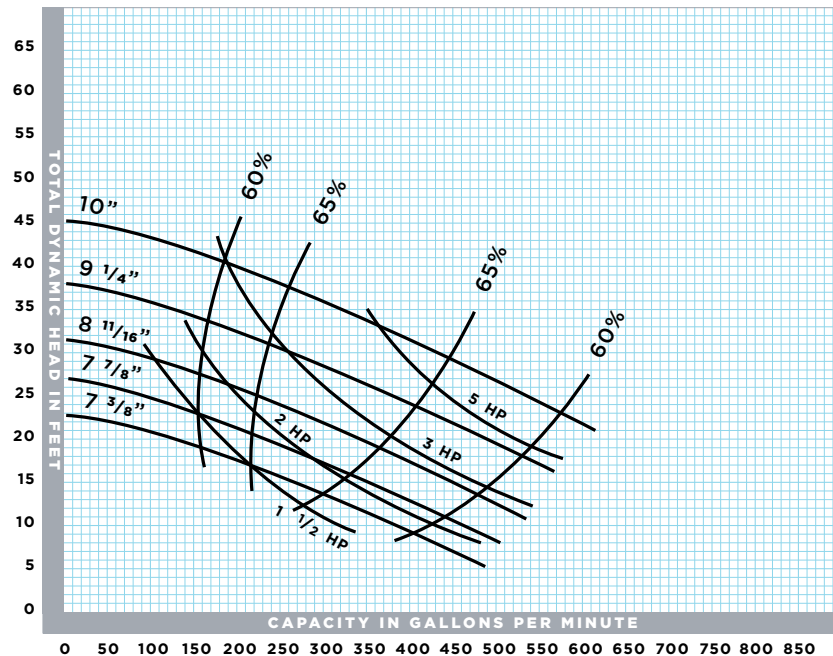


TYPE VSS
 SUBMERSIBLE SEWAGE PUMPS
 BULLETIN 229

Section 4
 Curve Page VSS-4
 March, 1984

1150 RPM
MODEL: VSS-4E
DISCHARGE SIZE: 4"
IMPELLER: VSA-4C-2-50

Also applies to VSS-5E & VSS-6E



TYPE VSS
 SUBMERSIBLE SEWAGE PUMPS
 BULLETIN 229

Section 4
 Curve Page VSS-4
 March, 1984

1150 RPM
MODEL: VSS-4C
DISCHARGE SIZE: 4"
IMPELLER: VSA-4C-2-20

Also applies to VSS-5C & VSS-6C

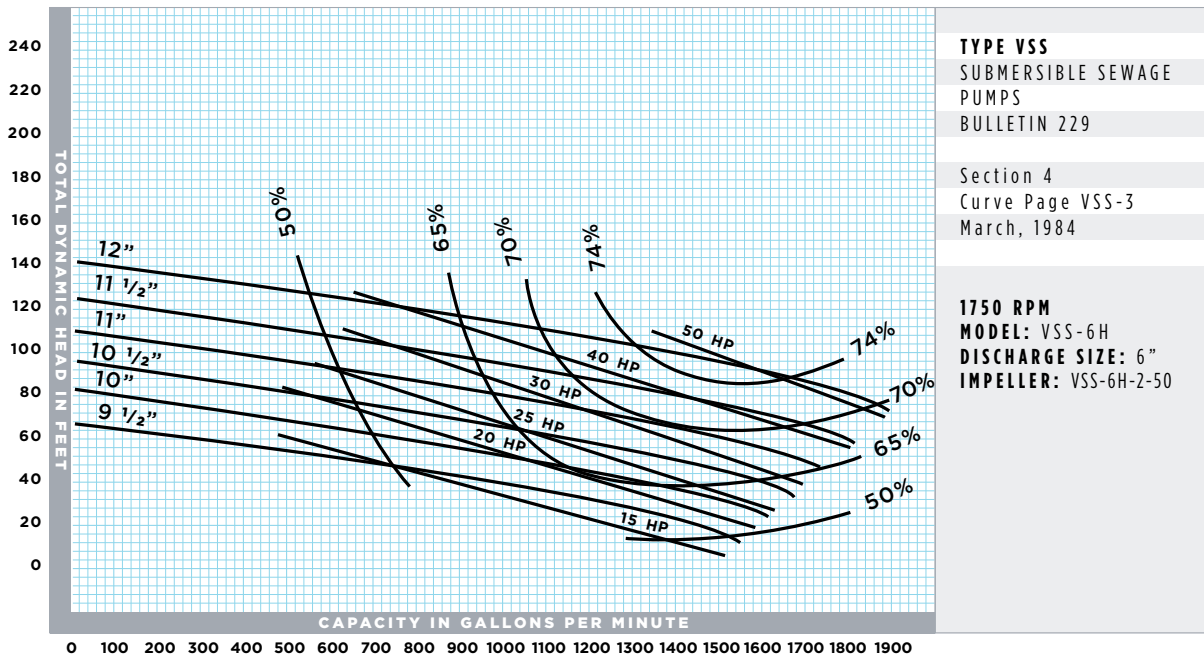
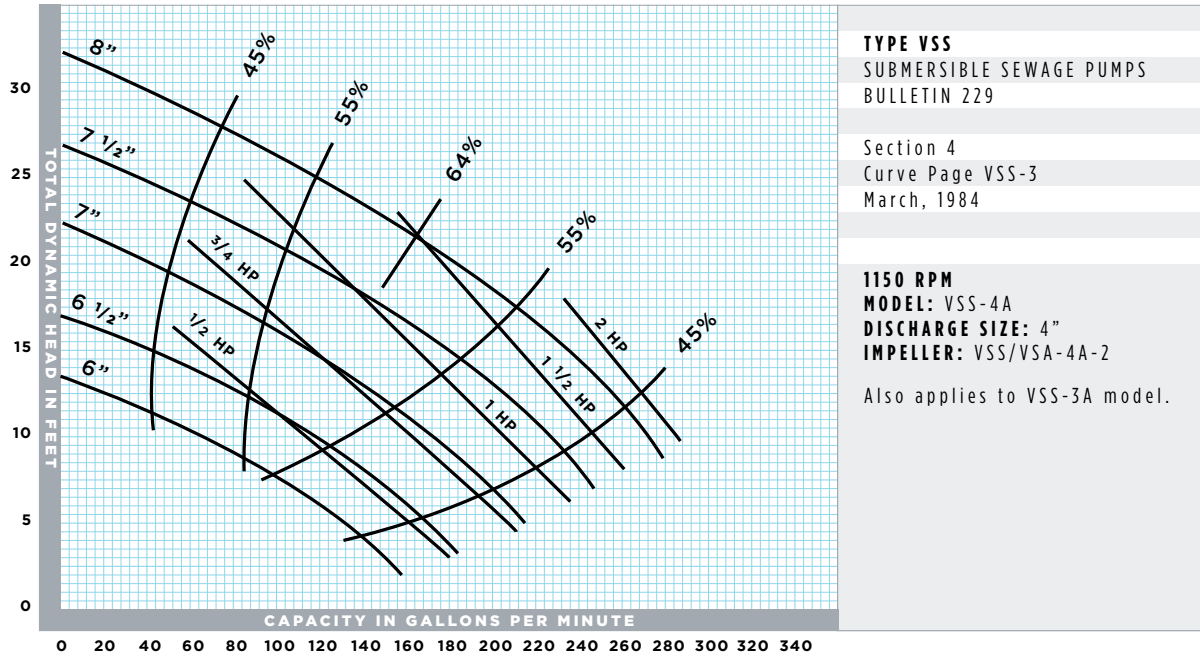


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Parts List & Diagram

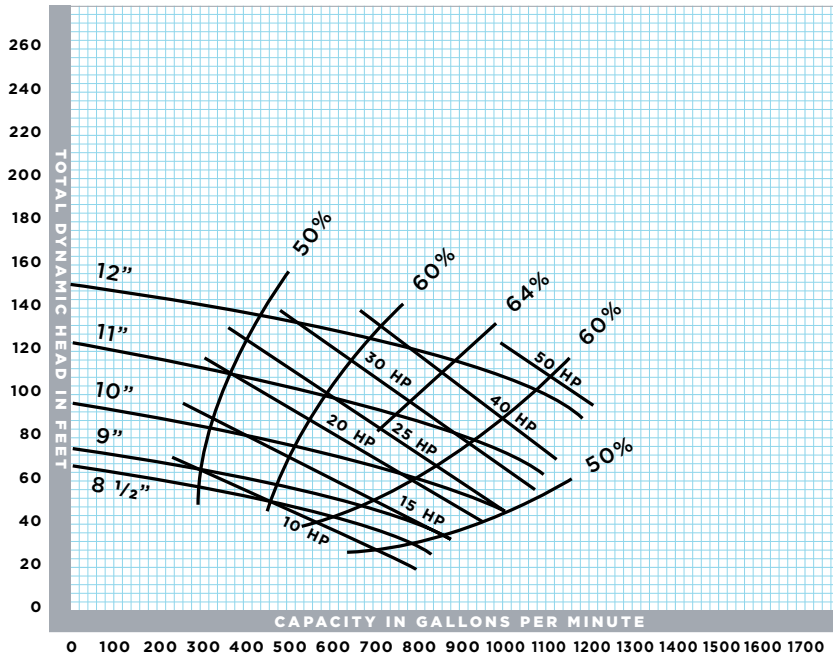


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Parts List & Diagram

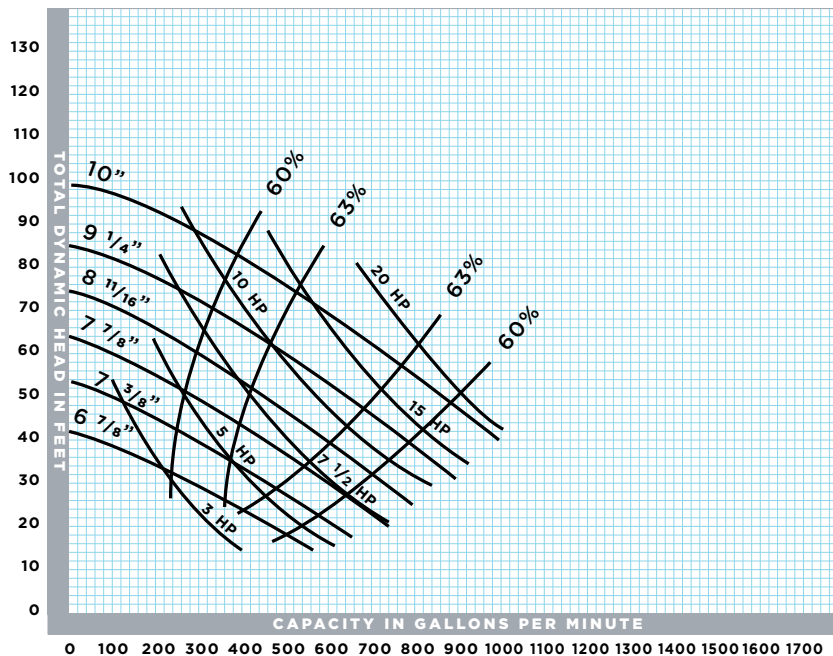


TYPE VSS
 SUBMERSIBLE SEWAGE PUMPS
 BULLETIN 229

Section 4
 Curve Page VSS-2
 March, 1984

1750 RPM
MODEL: VSS-4E
DISCHARGE SIZE: 4"
IMPELLER: VSA-4C-2-50

Also applies to VSS-5E & VSS-6E



TYPE VSS
 SUBMERSIBLE SEWAGE PUMPS
 BULLETIN 229

Section 4
 Curve Page VSS-2
 March, 1984

1750 RPM
MODEL: VSS-4C
DISCHARGE SIZE: 4"
IMPELLER: VSA-4C-2-20

Also applies to VSS-5C & VSS-6C

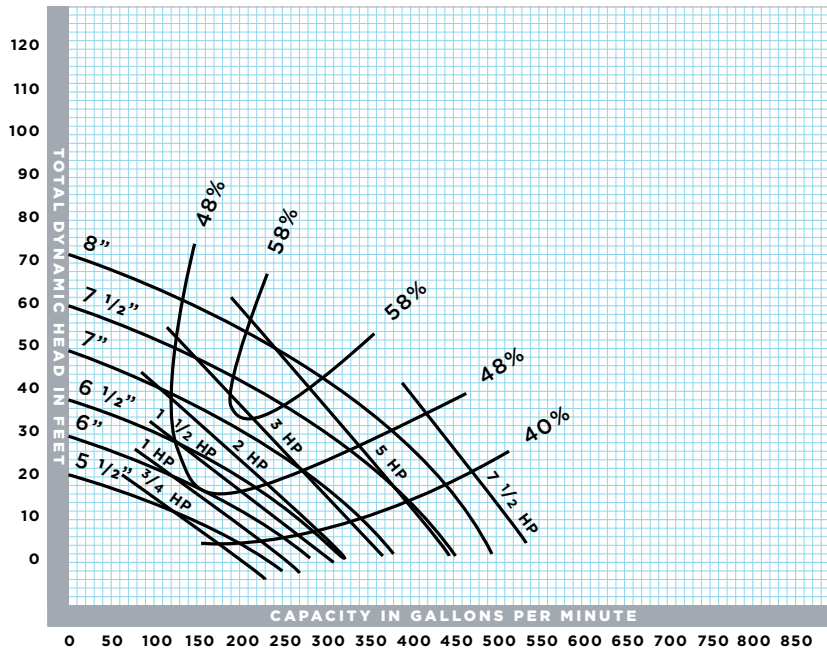


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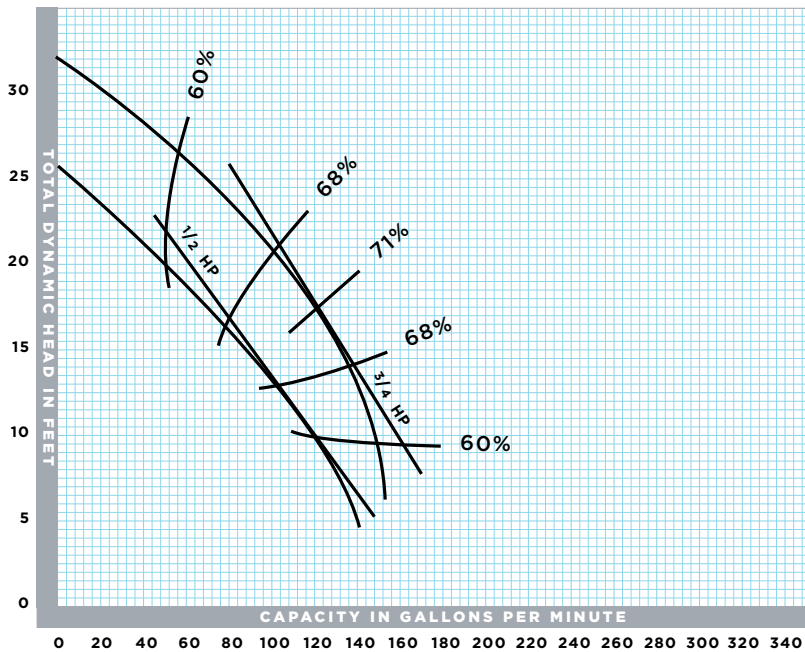
Performance Charts



TYPE VSS
SUBMERSIBLE SEWAGE PUMPS
BULLETIN 229

Section 4
Curve Page VSS-1
March, 1984

1750 RPM
MODEL: VSS-4A
DISCHARGE SIZE: 4"
IMPELLER: VSS/VSA-4A-2
Also applies to VSS-3A model.



TYPE VSS
SUBMERSIBLE SEWAGE PUMPS
BULLETIN 229

Section 4
Curve Page VSS-1
March, 1984

1750 RPM
MODEL: VSS-3P
DISCHARGE SIZE: 3"
IMPELLER: VSS-3P-2
Also applies to VSS-2P model.



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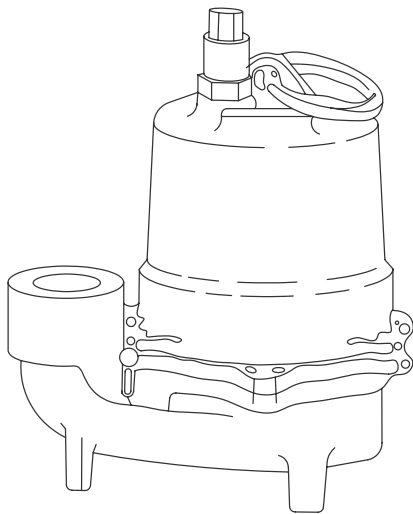
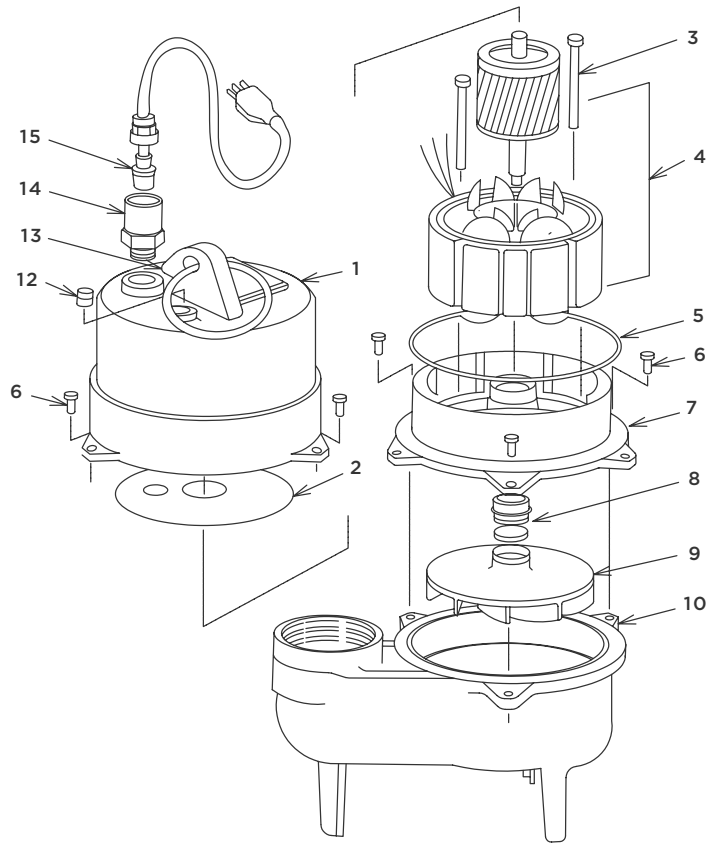
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Parts List & Diagram

PARTS LIST		
NO.	NAME	REQD.
1	UPPER MOTOR HOUSING	1
2	INSULATION DISC	1
3	CAP SCREW	-
4	ROTOR-STATOR ASSEMBLY	-
5	O-RING	1*
6	CAP SCREW	-
7	LOWER MOTOR HOUSING	1
8	SHAFT SEAL	1*
9	IMPELLER	1*
10	VOLUTE	1
12	PLUG	2
13	HANDLE RING	1
14	CORD CONNECTOR	1*
15	POWER CORD	1*
-	DIELECTRIC OIL	-

1. Parts shown above may vary somewhat for certain type P pump models.
 2. Part numbers shown above are not standard Federal Pump part numbers.
 * recommended spare parts to be carried in stock.



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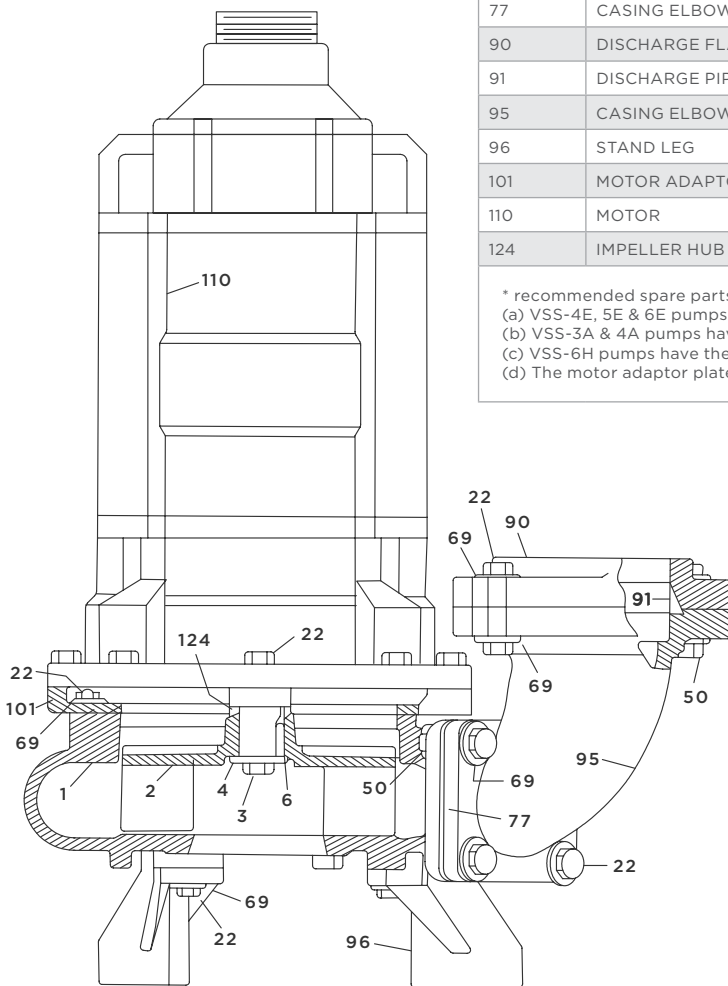
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Parts List & Diagram

PARTS LIST					
PART NO.	NAME	REQD.	STANDARD FITTED	ALL IRON	ALL BRONZE
1	PUMP CASING (A)	1	CAST IRON	CAST IRON	BRONZE
2	IMPELLER (B)	1*	CAST IRON	CAST IRON	BRONZE
3	IMPELLER LOCK SCREW	1*	ST. ST.	ST. ST.	BRASS
4	IMPELLER WASHER	1*	ST. ST.	ST. ST.	ST. ST.
6	IMPELLER KEY	1*	STEEL	STEEL	ST. ST.
22	CAP SCREW	-	STEEL	STEEL	BRASS
50	NUT	-	STEEL	STEEL	BRASS
69	WASHER	-	STEEL	STEEL	BRASS
77	CASING ELBOW GASKET (C)	1	RUBBER	RUBBER	RUBBER
90	DISCHARGE FLANGE	1	CAST IRON	CAST IRON	BRONZE
91	DISCHARGE PIPE GASKET	1	RUBBER	RUBBER	RUBBER
95	CASING ELBOW (C)	1	CAST IRON	CAST IRON	BRONZE
96	STAND LEG	3	CAST IRON	CAST IRON	BRONZE
101	MOTOR ADAPTOR PLATE (D)	1	CAST IRON	CAST IRON	BRONZE
110	MOTOR	1	VARIOUS	VARIOUS	VARIOUS
124	IMPELLER HUB SPACER	1*	STEEL	STEEL	ST. ST.

* recommended spare parts to be carried in stock
 (a) VSS-4E, 5E & 6E pumps have a separate suction plate (#38).
 (b) VSS-3A & 4A pumps have semi-open impellers as shown. All other pumps have enclosed impellers.
 (c) VSS-6H pumps have the casing elbow (#95) cast integral with the pump casing (#1).
 (d) The motor adaptor plate (#101) is only required for certain horsepower.



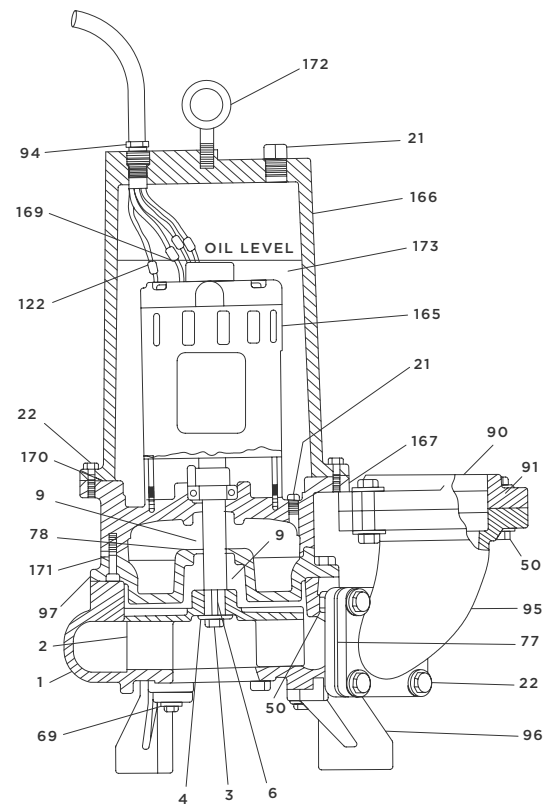
Parts List & Diagram

PARTS LIST					
PARTS	NAME	REQ.	STANDARD FITTED	ALL IRON	ALL BRONZE
1	PUMP CASING	1	CAST IRON	CAST IRON	BRONZE
2	IMPELLER	1	CAST IRON	CAST IRON	BRONZE
3	IMPELLER LOCK SCREW	1*	ST. ST.	ST. ST.	BRASS
4	IMPELLER WASHER	1*	ST. ST.	ST. ST.	ST. ST.
6	IMPELLER KEY	1*	STEEL	STEEL	ST. ST.
9	MECHANICAL SHAFT SEAL	2	VARIOUS	VARIOUS	VARIOUS
21	PLUG	2	STEEL	STEEL	BRASS
22	CAPSCREW	-	STEEL	STEEL	BRASS
50	NUT	-	STEEL	STEEL	BRASS
69	WASHER	-	STEEL	STEEL	BRASS
77	CASING ELBOW GASKET	1	RUBBER	RUBBER	RUBBER
78	SNAP RING	1	ST. ST.	ST. ST.	ST. ST.
90	DISCHARGE FLANGE	1	CAST IRON	CAST IRON	BRONZE
90A	REMOVAL PLATE DIS-CHARGE FLANGE	1	CAST IRON	CAST IRON	RUBBER
91	DISCHARGE PIPE GASKET	1	RUBBER	RUBBER	RUBBER
91A	REMOVAL PLATE DIS-CHARGE PIPE GASKET	1	RUBBER	RUBBER	VARIOUS
94	CORD GRIP	1	VARIOUS	VARIOUS	BRONZE
95	CASING ELBOW	1	CAST IRON	CAST IRON	BRONZE
96	STAND LEG	3	CAST IRON	CAST IRON	BRONZE
97	BACK PLATE	1	CAST IRON	CAST IRON	BRONZE
101	MOTOR ADAPTOR PLATE	1	CAST IRON	CAST IRON	BRONZE
103	COVER REMOVAL PLATE	1	STEEL	STEEL	STEEL
108	NAMEPLATE	-	ST. ST.	ST. ST.	ST. ST.
-	REMOVAL PL. FASTENERS & PACKING	-	VARIOUS	VARIOUS	VARIOUS
122	ELECTRICAL CONNECTOR	3	PLASTIC	PLASTIC	PLASTIC
124	IMPELLER HUB SPACER	1	STEEL	STEEL	ST. ST.
165**	ROTOR-STATOR ASSEMBLY	1	VARIOUS	VARIOUS	VARIOUS
166	MOTOR HOUSING	1	CAST IRON	CAST IRON	BRONZE
167	BOTTOM MOTOR BRACKET	1	CAST IRON	CAST IRON	BRONZE
168	MOTOR ELECTRODE	2	STEEL	STEEL	-
169	MOTOR CABLE SET	1	VARIOUS	VARIOUS	VARIOUS
170	MOTOR HOUSING O-RING	1	RUBBER	RUBBER	RUBBER
171	BACK PLATE O-RING	1	RUBBER	RUBBER	RUBBER
172	LIFTING RING	1	STEEL	STEEL	BRASS
173	MOTOR HOUSING OIL	-	OIL	OIL	OIL
174	ELECTRODE WIRE	2	COPPER	COPPER	-

*Recommended spare parts to be carried in stock

**Rotor-Stator assembly includes the following basic parts: Rotor, Stator, Shaft, Radial Ball Bearing, Thrust Ball Bearing, Studs, Stator Shell, Top End Bell and Stator Leads.

Some parts listed in the table are not shown in the drawing. Some of the parts listed may not be required for all pump sizes and models.



Diagram

TYPE VSS SUBMERSIBLE SEWAGE PUMPS

TYPE SBS SUBMERS-A-BULB CONTROLLER TYPICAL DUPLEX INSTALLATION

- A: Type VSS submersible sewage pumps.
- B: Blocks (If pit depth permits).
- C: Discharge pipe (by others). Use flanged fittings. Install check valve and gate valve in each discharge line, on a 45 degree angle if possible. Discharge pipe may come up thru the pit cover or may leave the pit under the cover (thru the pit wall).
- D: Inlet. Should be away from the control bulbs.
- E: Vent to atmosphere. May be thru the pit cover or thru the pit wall.
- F: Floor or ground level.

- G: Pit cover (steel) and grouting frame (steel).
- J: Control panel (includes disconnect switches, magnetic starters, control circuitry and alarm). Panel should be in sight of the pump pit and no more than 50 feet from the pit.
- M: Electric service line. At start-up, switch leads to insure correct pump rotation.

- N: Pit or basin. Concrete pit shown in drawing. May also be steel or fiberglass. Should be deep enough to permit proper pumping cycle without pumping down below the top of the motors.

- P: Junction box. Install above floor level, if possible. Wire the motors and the bulbs directly to the control panel and delete the junction box, if possible.

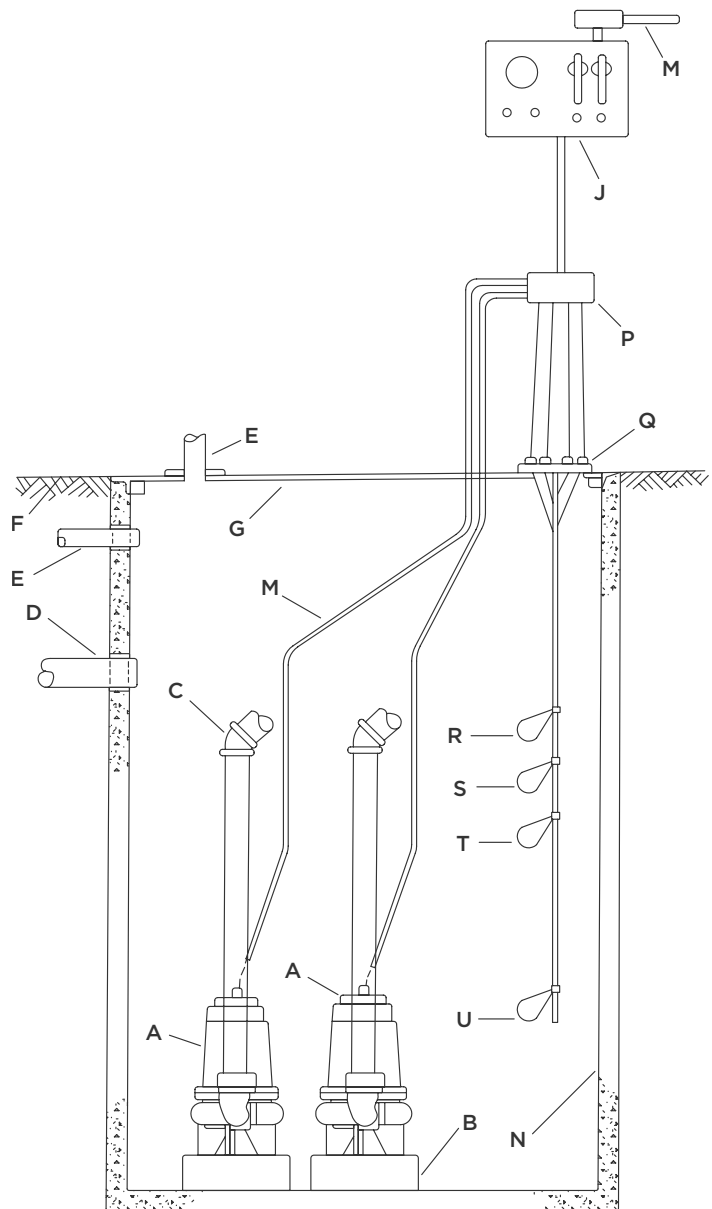
- Q: Submers-a-bulb suspension bracket.
- R: High water alarm bulb. Set approximately 6 inches below inlet.

- S: Pump no. 2 on bulb.

- T: Pump no. 1 on bulb.

- U: Both pumps off bulb. Set no lower than top of motors.

- V: Power cables.



SPECIFICATIONS

SUGGESTED SPECIFICATION

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, man-hole 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



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