

STA-RITE®

293 Wright Street • Delavan, WI 53115

**EC6, EC7, EH7, HT7, SC7, SCC7,
SC9, SCC9, and EC9 Series**

Submersible Effluent & Sewage/Solids Handling Pump

INSTALLATION, OPERATION, & PARTS MANUAL

SAFETY INFORMATION

Carefully read and follow all safety instructions in this manual or on pump.

⚠ This is the safety alert symbol. When you see this symbol on your pump or in this manual, look for one of the following signal words and be alert to the potential for personal injury!

⚠ DANGER warns about hazards that **will** cause serious personal injury, death or major property damage if ignored.

⚠ WARNING warns about hazards that **can** cause serious personal injury, death or major property damage if ignored.

⚠ CAUTION warns about hazards that **will** or **can** cause minor personal injury or property damage if ignored.

The word **NOTICE** indicates special instructions which are important but not related to hazards.

NOTICE: Pump **must** be installed in a vertical position **only**. Installing pump in any other position will void warranty.

1. To avoid serious injury and/or property damage, read these rules and instructions carefully.
2. Check your local codes before installing. You must comply with their rules.
3. Vent sewage or septic tank according to local codes.
4. Do not install pump in any location classified as hazardous by National Electrical Code, ANSI/NFPA 70-1984.
5. Pump normally runs hot. To avoid burns when servicing pump, allow it to cool for 20 minutes after shut-down before handling it.
6. Do not run pump dry. Dry running can overheat pump and will void warranty.
7. Pump is permanently lubricated. No oiling or greasing is required in normal operation. For overhaul, see instructions under "Service", Page 5.

⚠ WARNING Hazardous voltage. Can shock, burn, or cause death. During operation the pump is in water. To avoid fatal shocks, proceed as follows if pump needs servicing:

- 8A. Ground pump according to all applicable codes and ordinances.
- 8B. Disconnect power to outlet box or circuit breakers before servicing.
- 8C. To reduce risk of electric shock, take care when changing fuses or resetting circuit breakers. Do not stand in water when working on control box or with circuit breakers.

Single Phase Pumps:

- 8D. When using cord and plug, plug into a grounded outlet only. When wiring to a system control, connect pump ground lead to system ground.

Three Phase Pumps:

⚠ WARNING Risk of electrical shock. Do not remove cord and strain relief. Do not connect conduit to pump.

- 8E. Three phase pumps are intended for permanent connection only. Provide strain relief at control box for power supply cord connection to box. All control components must be UL listed and suitable for end use application. Only qualified personnel should install the pump and associated control equipment.

DESCRIPTION

These pumps are designed for sewage, effluent and waste water removal, sump drainage, liquid transfer systems, circulation, dewatering and flood control. Pump motors range from a 115V or a 230V single phase to a 208-230V or 460V three phase. All models come with a 20' 3-prong grounding type cord and plug.

For continuous duty pump must be fully submerged in a liquid with a maximum temperature of 105° F (40.5° C).

The maximum liquid temperature for all models, except HT750120T (high temperature) is 130°F (55°C). The maximum liquid temperature for HT750120T is 200°F (93.3°C).

NOTICE: This unit is not designed for applications involving salt water or brine! Use with salt water or brine will void warranty.

SPECIFICATIONS – EC6, EC7, EH7, HT7, SC7, SCC7 SERIES

Model Number	Motor HP	Volts	Phase	Max. Load Amps	Individual Branch Circuit Required (Amps)	Discharge Adapter Size (Inches)	Switch Setting in inches (mm)	
							On	Off
EC650120M	1/2	115	1	12.0	15	2		
EC650120T	1/2	115	1	12.0	15	2	18.1(460)	9.1(231)
EC650220M	1/2	230	1	5.6	10	2		
EC650220T	1/2	230	1	5.6	10	2	18.1(460)	9.1(231)
EC650320M	1/2	208-230	3	5.5	10	2		
EC650420M	1/2	460	3	2.7	6	2		
EC750120M	1/2	115	1	13.0	15	2		
EC750120T	1/2	115	1	13.0	15	2	18.1(460)	9.1(231)
EC750220M	1/2	230	1	6.4	10	2		
EC750220T	1/2	230	1	6.4	10	2	18.1(460)	9.1(231)
EC750320M	1/2	208-230	3	6.0	10	2		
EC750420M	1/2	460	3	3.0	6	2		
EC7100220M	1	230	1	6.6	10	2		
EC7100220T	1	230	1	6.6	10	2	18.1(460)	9.1(231)
EC7100320M	1	208-230	3	5.8	10	2		
EC7100420M	1	460	3	3.0	6	2		
EH750120M	1/2	115	1	12.0	15	2		
EH750120T	1/2	115	1	12.0	15	2	18.1(460)	9.1(231)
EH750220M	1/2	230	1	6.5	10	2		
EH750220T	1/2	230	1	6.5	10	2	18.1(460)	9.1(231)
EH750320M	1/2	208-230	3	5.2	10	2		
EH750420M	1/2	460	3	2.7	6	2		
EH7100220M	1	230	1	8.7	10	2		
EH7100220T	1	230	1	8.7	10	2	18.1(460)	9.1(231)
EH7100320M	1	208-230	3	6.0	10	2		
EH7100420M	1	460	3	3.1	6	2		
SCC750120M	1/2	115	1	11.2	15	3		
SCC750120T	1/2	115	1	11.2	15	3	20(508)	11(279)
SC750120M	1/2	115	1	11.2	15	2		
SC750120T	1/2	115	1	11.2	15	2	20(508)	11(279)
SCC750220M	1/2	230	1	5.5	10	3		
SCC750220T	1/2	230	1	5.5	10	3	20(508)	11(279)
SC750220M	1/2	230	1	5.5	10	2		
SC750220T	1/2	230	1	5.5	10	2	20(508)	11(279)
SCC750320M	1/2	208-230	3	4.0	6	3		
SC750320M	1/2	208-230	3	4.0	6	2		
SCC750420M	1/2	460	3	2.0	3	3		
SC750420M	1/2	460	3	2.0	3	2		
SCC775120M	3/4	115	1	12.0	15	3		
SCC775120T	3/4	115	1	12.0	15	3	20(508)	11(279)
SC775120M	3/4	115	1	12.0	15	2		
SC775120T	3/4	115	1	12.0	15	2	20(508)	11(279)
SCC775220M	3/4	230	1	6.7	10	3		
SCC775220T	3/4	230	1	6.7	10	3	20(508)	11(279)
SC775220M	3/4	230	1	6.7	10	2		
SC775220T	3/4	230	1	6.7	10	2	20(508)	11(279)
SCC775320M	3/4	208-230	3	4.8	10	3		
SC775320M	3/4	208-230	3	4.8	10	2		
SCC775420M	3/4	460	3	2.4	6	3		
SC775420M	3/4	460	3	2.4	6	2		
HT750120T	1/2	115	1	12.0	15	2	17.8 (452)	8.8 (224)

SPECIFICATIONS – SC9, SCC9, EC9 SERIES

Model Number	Motor HP	Volts	Phase	Full Load Amps	Individual Branch Circuit Required (Amps)	Discharge Adapter Size (inches)
SC975220T, SCC975220T****	3/4	230	1	7.5	10	2.3
SC975220M, SCC975220M	3/4	230	1	7.5	10	2.3
SC975320M, SCC975320M	3/4	208-230	3	8.0	10	2.3
SC975420M, SCC975420M	3/4	460	3	4.0	10	2.3
SC9100220M, SCC9100220M	1	230	1	8.5	15	2.3
SC9100220T, SCC9100220T****	1	230	1	8.5	15	2.3
SC9100320M, SCC9100320M	1	208-230	3	8.5	15	2.3
SC9100420M, SCC9100420M	1	460	3	4.1	10	2.3
SC9150220M, SCC9150220M	1-1/2	230	1	12.0	15	2.3
SC9150320M, SCC9150320M	1-1/2	208-230	3	9.0	15	2.3
SC9150420M, SCC9150420M	1-1/2	460	3	4.7	10	2.3
SC9200220M, SCC9200220M	2	230	1	13.0	15	2.3
SC9200320M, SCC9200320M	2	208-230	3	10.0	15	2.3
SC9200420M, SCC9200420M	2	460	3	5.3	10	2.3
EC9200220M	2	230	1	11.0	15	2
EC9200320M	2	208-230	3	7.5	10	2
EC9200420M	2	460	3	3.8	6	2

**** Model numbers ending in "T" include Float Switch model number PW217-224. Float Switch PW217-224 turns on at 22" and turns off at 13".

PERFORMANCE – EC6, EC7, EH7, HT7, SC7, SCC7 SERIES

GPM AT TOTAL FEET									No flow at height shown below
Model	10	20	30	40	50	60	70	80	
CAPACITY GALLONS/MINUTE									
EC650120M	90	75	60	35	—	—	—	—	50
EC650120T	90	75	60	35	—	—	—	—	50
EC650220M	90	75	60	35	—	—	—	—	50
EC650220T	90	75	60	35	—	—	—	—	50
EC650320M	90	75	60	35	—	—	—	—	50
EC650420M	90	75	60	35	—	—	—	—	50
EC750120M	110	95	80	60	35	—	—	—	59
EC750120T	110	95	80	60	35	—	—	—	59
EC750220M	110	95	80	60	35	—	—	—	59
EC750220T	110	95	80	60	35	—	—	—	59
EC750320M	110	95	80	60	35	—	—	—	59
EC750420M	110	95	80	60	35	—	—	—	59
EC7100220M	100	95	90	80	65	40	80	—	72
EC7100320M	100	95	90	80	65	40	80	—	72
EC7100420M	100	95	90	80	65	40	80	—	72
EH750120M	60	60	60	55	50	30	50	—	71
EH750120T	60	60	60	55	50	30	50	—	71
EH750220M	60	60	60	55	50	30	50	—	71
EH750220T	60	60	60	55	50	30	50	—	71
EH750320M	60	60	60	55	50	30	50	—	71
EH750420M	60	60	60	55	50	30	50	—	71
EH7100220M	62	62	62	62	60	50	40	20	89
EH7100220T	62	62	62	62	60	50	40	20	89
EH7100320M	62	62	62	62	60	50	40	20	89
EH7100420M	62	62	62	62	60	50	40	20	89

GPM AT TOTAL FEET					No flow at height shown below
Model	10	20	30	40	
CAPACITY GALLONS/MINUTE					
SCC750120M	100	40	—	—	26
SCC750120T	100	40	—	—	26
SC750120M	100	40	—	—	26
SC750120T	100	40	—	—	26
SCC750220M	100	40	—	—	26
SCC750220T	100	40	—	—	26
SC750220M	100	40	—	—	26
SC750220T	100	40	—	—	26
SCC750320M	100	40	—	—	26
SC750320M	100	40	—	—	26
SCC750420M	100	40	—	—	26
SC750420M	100	40	—	—	26
SCC775120M	115	60	—	—	28
SCC775120T	115	60	—	—	28
SC775120M	115	60	—	—	28
SC775120T	115	60	—	—	28
SCC775220M	115	60	—	—	28
SCC775220T	115	60	—	—	28
SC775220M	115	60	—	—	28
SC775220T	115	60	—	—	28
SCC775320M	115	60	—	—	28
SC775320M	115	60	—	—	28
SCC775420M	115	60	—	—	28
SC775420M	115	60	—	—	28
HT750120T*	65	60	50	30	48

* Flows are for 200° F water temperature.

PERFORMANCE SC9, SCC9, EC9 SERIES

GPM AT TOTAL FEET								No flow at height shown below
Model	10	20	30	40	50	60	70	
CAPACITY GALLONS/MINUTE								
SC975220T	160	105	—	—	—	—	—	29
SCC975220T	160	105	—	—	—	—	—	29
SC975220M	160	105	—	—	—	—	—	29
SCC975220M	160	105	—	—	—	—	—	29
SC975320M	160	105	—	—	—	—	—	29
SCC975320M	160	105	—	—	—	—	—	29
SC975420M	160	105	—	—	—	—	—	29
SCC975420M	160	105	—	—	—	—	—	29
SC9100220M	185	140	80	—	—	—	—	38
SCC9100220M	185	140	80	—	—	—	—	38
SC9100220T	185	140	80	—	—	—	—	38
SCC9100220T	185	140	80	—	—	—	—	38
SC9100320M	185	140	80	—	—	—	—	38
SCC9100320M	185	140	80	—	—	—	—	38
SC9100420M	185	140	80	—	—	—	—	38
SCC9100420M	185	140	80	—	—	—	—	38
SC9150220M	215	175	120	40	—	—	—	43
SCC9150220M	215	175	120	40	—	—	—	43
SC9150320M	215	175	120	40	—	—	—	43
SCC9150320M	215	175	120	40	—	—	—	43
SC9150420M	215	175	120	40	—	—	—	43
SCC9150420M	215	175	120	40	—	—	—	43
SC9200220M	230	190	150	100	30	—	—	54
SCC9200220M	230	190	150	100	30	—	—	54
SC9200320M	230	190	150	100	30	—	—	54
SCC9200320M	230	190	150	100	30	—	—	54
SC9200420M	230	190	150	100	30	—	—	54
SCC9200420M	230	190	150	100	30	—	—	54
EC9200220M	145	142	130	110	95	75	42	80
EC9200320M	145	142	130	110	95	75	42	80
EC9200420M	145	142	130	110	95	75	42	80

INSTALLATION

⚠ WARNING Risk of electrical shock. Can burn or kill. Do not lift pump by power cord. See "Cord Lift Warning" on Page 5.

NOTICE: Install pump on a hard, level surface (cement, asphalt, etc.). Never place pump directly on earth, clay or gravel surfaces. Basin must be at least 18" (457 mm) in diameter and 30" (762 mm) deep.

Piping:

Piping must not be smaller than pump discharge.

When installed in a **sewage** system, pipe must be capable of handling semi-solids of at least 2" (51mm) diameter.

When installed in an **effluent** system, pipe must be capable of handling semi-solids of at least 3/4" (19 mm) diameter.

The rate of flow in the discharge pipe must keep any solids present in suspension in the fluid. To meet minimum flow requirements of 2 ft. per second (61 cm/sec) in discharge line, size pipe as follows:

A Pipe Size Of:	Will Handle a Flow Rate Of:
2" (51 mm)	21 GPM (79.5 L/M)
2-1/2" (64 mm)	30 GPM (113.5 L/M)
3" (76 mm)	48 GPM (182 L/M)

In a **sewage** system use a 2" (51 mm) min. check valve in pump discharge to prevent backflow of liquid into sump basin. The check valve should be a free flow valve that will easily pass solids. Be sure check valve installation complies with local codes.

In an **effluent** system use a 1-1/2" (38 mm) min. check valve in pump discharge to prevent backflow of liquid into pump basin. The check valve should be a free flow valve that will easily pass solids. Be sure check valve installation complies with local codes.

NOTICE: For best performance of check valve when handling solids, do not install it with discharge more than 45° above the horizontal. Do not install check valve in a vertical position as solids may settle in valve and prevent opening on startup.

Drill a 3/16" (5 mm) hole in discharge pipe about 1 to 2" (25-50 mm) above pump discharge connection (but below check valve) to prevent airlocking the pump.

Electrical

⚠ WARNING Hazardous voltage. Can shock, burn, or cause death. When installing, operating, or servicing this pump, follow safety instructions below.

- DO NOT** splice the power cord, submerge electrical cord plug, or use extension cords.
- DO NOT** handle or service pump while it is connected to power supply.
- DO NOT** operate pump unless it is properly grounded. Wire pump directly into grounded terminal block in automatic float or pump controller box. Power cord on 1-phase units is a 3-wire conductor with 3-prong grounding-type plug. Do not modify cord or plug. When using with plug-in receptacle, plug pump into a 3-wire, grounded, grounding-type receptacle only. Connect pump according to all applicable codes.

For automatic operation, plug or wire pump into an automatic float switch or pump controller. For continuous operation, plug directly into an electrical outlet or wire directly into switch box. Connect pump to its own individual branch circuit with nothing else on the circuit. See Specifications Chart (Page 3) for fuse or circuit breaker sizes.

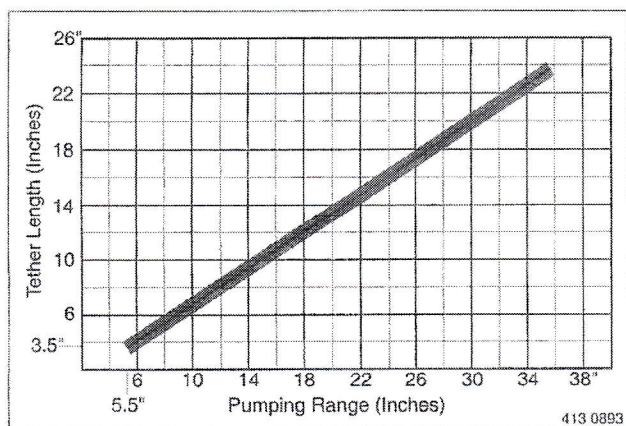
⚠ WARNING Risk of electrical shock and fire. Be sure that power supply information (Voltage/Hertz/Phase) on pump motor nameplate matches incoming power supply exactly. Install pump according to all electrical codes that apply.

Models with an automatic float switch are factory set with a 4" tether length. This tether length can be adjusted to accommodate a variety of pumping ranges. (See performance graph, Page 5). The installer must ensure that the switch does not become obstructed and that the range is set so the liquid level remains a minimum of 2" above pump suction at the lowest level, and below the basin inlet pipe at the highest level.

Overloads - Single Phase

In single-phase units, an automatic overload protector in the motor will protect motor from burning out due to overheating/overloading. When motor cools down, protector automatically resets and start motor.

If overload trips frequently, check for cause. It could be a stuck impeller, wrong/low voltage, or electrical failure in motor. If an electrical failure in the motor is suspected, have it serviced by a competent repairman.



Performance Graph – Tether Length vs. Pumping Range

Control Panel Overload Adjustment – Three Phase

NOTICE: Control panel not provided with pump. See control panel installation and operating instructions before adjusting overload setting.

For pumps with a nameplate service factor of 1.0, set overload protective device to nameplate full load current.

For pumps with a nameplate service factor of 1.15 or higher, set overload protective device to 1.09 times the nameplate full load current.

Size overload protective device so that trip current is 115% of final setting as selected above.

SERVICE

Pump is permanently lubricated. No oiling or greasing is required in normal service.

NOTICE: Do not allow pump to run in a dry sump. It will void the warranty and may damage the pump.

⚠ WARNING Hazardous voltage. Can shock, burn, or cause death. Before servicing pump, disconnect electrical power to pump and control switch.

After removing basin cover and necessary discharge piping, lift pump out of basin.

⚠ WARNING Risk of electrical shock. Can burn or kill.

Do not lift pump by power cord. See "Cord Lift Warning". Place pump in an area where it can be cleaned thoroughly. Remove all scale and deposits on pump.

Submerge pump in disinfectant (chlorox or chlorine) for at least one hour before disassembling pump.

The pump motor housing contains a special lubricating oil. Keep oil clean and free of water at all times.

NOTICE: Whenever motor cover is being removed for service, remove oil and replace with new oil at reassembly. Use only oil listed in parts list (Part No. U197-8A). When filling with new oil, DO NOT overfill. To allow room for expansion, oil level with cold motor should be about 1/4" (6 mm) above top of motor assembly.

Impeller, Seal, and Capacitor Replacement – EC6/EC7/EH7/SC7/SCC7/HT7 Series

⚠ WARNING Risk of electrical shock. Disconnect electrical power before doing any service work on pump!

Refer to assembly drawings on Page 7.

Disassembly

1. Unscrew hex-head cap screws, remove motor assembly from volute and set it on its side in a clean area.
2. Remove oil plug. Turn pump upside down to drain oil.
3. Hold impeller; remove impeller nut and washer.
4. Unscrew impeller (turn counter-clockwise) for cleaning.

⚠ WARNING Risk of electric shock. Before touching capacitor, discharge it by shorting the terminals together with an amber handled screwdriver.

5. Loosen cord nut and gently pull cord assembly out from motor cover. Disconnect wires from cord set (wires and connector are color coded for reassembly).
6. Unfasten socket head screws holding motor cover to seal plate and remove motor cover.
7. If replacing capacitor, remove wires from capacitor. Remove capacitor.
8. Remove rotating half of seal off of shaft.
9. Cradle motor assembly so that it stands vertically with motor shaft extending out of the bottom.
10. Remove through bolts from motor assembly. Remove motor and shaft from seal plate.
11. Working from back of seal plate, tap primary seal head out of seal plate; thoroughly clean seat cavity.

Re-assembly

NOTICE: Make sure that seal faces are clean and undamaged. Apply Permatex #2 or equivalent sparingly to outside edge of seal body (with spring) Figure 1.

1. Press new seal body into cavity in seal plate (Figure 1).

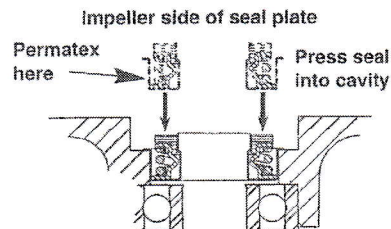


Figure 1

2. Reinstall motor and shaft to seal plate using the four through bolts removed in step 10 under "Disassembly".
NOTICE: Do not overtighten through bolts!
3. Slide new rotating half of seal onto shaft (Figure 2).
NOTICE: Do not nick or scratch the silicon carbide seal face when passing it over shaft shoulder. Seal faces must be clean and undamaged or seal may leak.

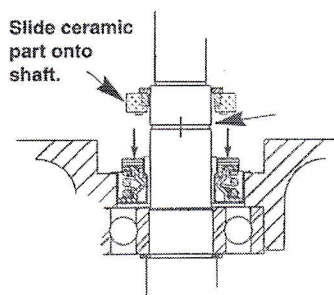
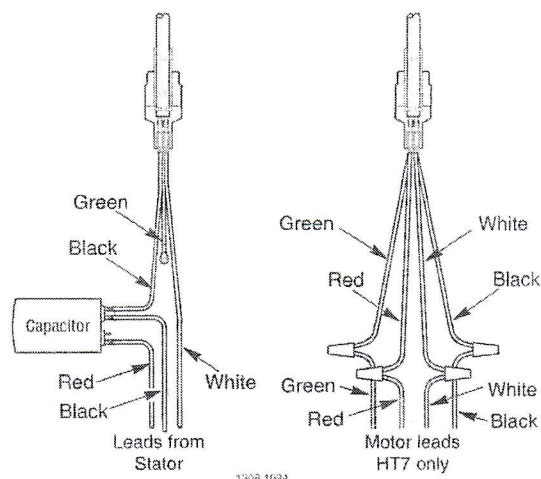


Figure 2

4. Reassemble impeller, washer, and impeller nut.
5. Install new capacitor. See below for electrical connections to capacitor.
6. Inspect O-Ring carefully; replace if damaged. If it is not nicked or scratched, clean and reinstall.
NOTICE: It is good practice to replace O-Ring each time pump is serviced.
7. Reinstall capacitor cover, feeding wire through connector hole, then reconnect cord wires to connector. Reference color code markings.

8. Fill motor with clean dielectric oil (Part No. U197-8A). To allow room for expansion, oil level with cold motor should be about 1/4" (6 mm) above top of motor assembly.

Capacitor Connections (Single Phase Only)



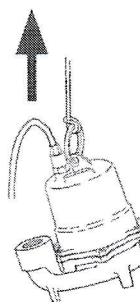
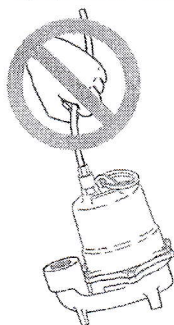
For three phase wiring connections, see the "Three Phase Wiring Connection" diagrams on Page 9.

⚠ WARNING



Risk of electrical shock.
Can burn or kill.
Do not lift pump by
power cord.

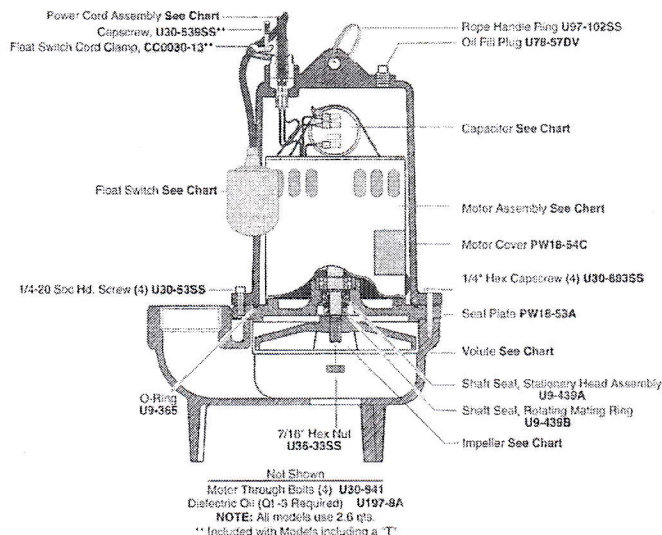
CORD LIFT WARNING



1. Attempting to lift or support pump by power cord can damage cord and cord connections.
2. Cord may pull apart, exposing bare wires with possibility of fire or electrical shock.
3. Lifting or supporting pump by power cord will void warranty.
4. Use lifting ring or handle on top of pump for all lifting/lowering of pump. Disconnect power to pump before doing any work on pump or attempting to remove pump from sump.

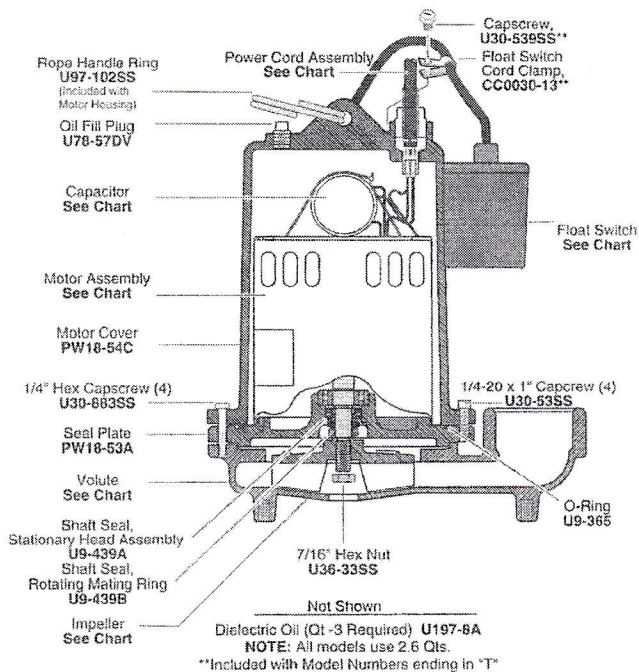
REPAIR PARTS – EC6, SC7, SCC7, EC7, EH7 AND HT7 SERIES

SC7/SCC7



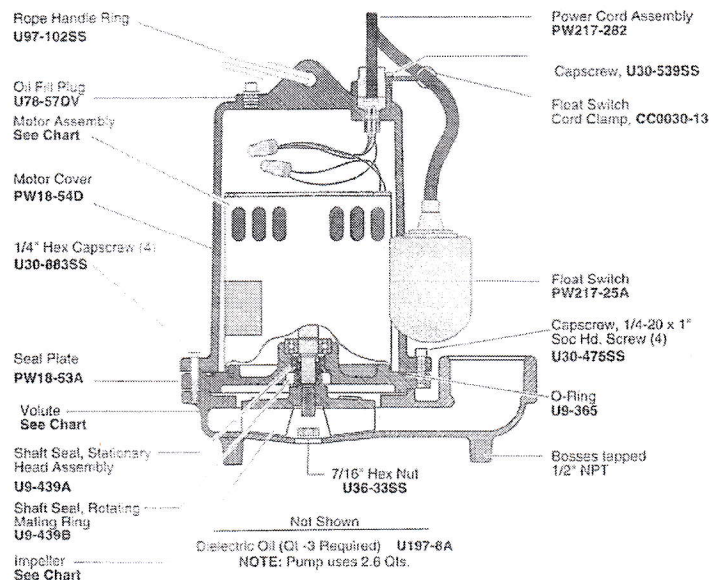
1306 1034 SC7

EC6/EC7/EH7



1306 1034 EC7 Series

HT7



1306 1034 HT7

REPAIR PARTS – EC6, EC7, EH7, HT7, SC7, SCC7 SERIES

Model	Capacitor*	Motor Assembly	Volute	Impeller	Float Switch	Power Cord
EC650120M	U18-1592	PW218-62	PW1-8F	PW5-9H	–	PW117-231-TSE
EC650120T	U18-1592	PW218-62	PW1-8F	PW5-9H	PW217-111B	PW117-231-TSE
EC650220M	U18-1592	PW218-60	PW1-8F	PW5-9H	–	PW117-232-TSE
EC650220T	U18-1592	PW218-60	PW1-8F	PW5-9H	PW217-108B	PW117-232-TSE
EC650320M	–	PW218-64	PW1-8F	PW5-9H	–	PW117-235-TSE
EC650420M	–	PW218-64	PW1-8F	PW5-9H	–	PW117-235-TSE
EC750120M	U18-1592	PW218-62	PW1-8F	PW5-9	–	PW117-231-TSE
EC750120T	U18-1592	PW218-62	PW1-8F	PW5-9	PW217-111B	PW117-231-TSE
EC750220M	U18-1592	PW218-60	PW1-8F	PW5-9	–	PW117-232-TSE
EC750220T	U18-1592	PW218-60	PW1-8F	PW5-9	PW217-108B	PW117-232-TSE
EC750320M	–	PW218-64	PW1-8F	PW5-9	–	PW117-235-TSE
EC750420M	–	PW218-64	PW1-8F	PW5-9	–	PW117-235-TSE
EC7100220M	U18-1591	PW218-61	PW1-8E	PW5-9F	–	PW117-232-TSE
EC7100220T	U18-1591	PW218-61	PW1-8E	PW5-9F	PW217-108B	PW117-232-TSE
EC7100320M	–	PW218-64	PW1-8E	PW5-9F	–	PW117-235-TSE
EC7100420M	–	PW218-64	PW1-8E	PW5-9F	–	PW117-235-TSE
EH750120M	U18-1592	PW218-62	PW1-8	PW5-9E	–	PW117-231-TSE
EH750120T	U18-1592	PW218-62	PW1-8	PW5-9E	PW217-111B	PW117-231-TSE
EH750220M	U18-1592	PW218-60	PW1-8	PW5-9E	–	PW117-232-TSE
EH750220T	U18-1592	PW218-60	PW1-8	PW5-9E	PW217-108B	PW117-232-TSE
EH750320M	–	PW218-64	PW1-8	PW5-9E	–	PW117-235-TSE
EH750420M	–	PW218-64	PW1-8	PW5-9E	–	PW117-235-TSE
EH7100220M	U18-1591	PW218-61	PW1-8	PW5-9G	–	PW117-232-TSE
EH7100220T	U18-1591	PW218-61	PW1-8	PW5-9G	PW217-108B	PW117-232-TSE
EH7100320M	–	PW218-64	PW1-8	PW5-9G	–	PW117-235-TSE
EH7100420M	–	PW218-64	PW1-8	PW5-9G	–	PW117-235-TSE
SC750120M	U18-1590	PW218-67	PW1-3A	PW5-3	–	PW117-231-TSE
SC750120T	U18-1590	PW218-67	PW1-3A	PW5-3	PW217-107B	PW117-231-TSE
SCC750120M	U18-1590	PW218-67	PW1-14	PW5-3	–	PW117-231-TSE
SCC750120T	U18-1590	PW218-67	PW1-14	PW5-3	PW217-107B	PW117-231-TSE
SCC750220M	U18-1588	PW218-68	PW1-14	PW5-3	–	PW117-232-TSE
SCC750220T	U18-1588	PW218-68	PW1-14	PW5-3	PW217-108B	PW117-232-TSE
SC750220M	U18-1588	PW218-68	PW1-3A	PW5-3	–	PW117-232-TSE
SC750220T	U18-1588	PW218-68	PW1-3A	PW5-3	PW217-108B	PW117-232-TSE
SCC750320M	–	PW218-72	PW1-14	PW5-3	–	PW117-235-TSE
SC750320M	–	PW218-72	PW1-3A	PW5-3	–	PW117-235-TSE
SCC750420M	–	PW218-72	PW1-14	PW5-3	–	PW117-235-TSE
SC750420M	–	PW218-72	PW1-3A	PW5-3	–	PW117-235-TSE
SCC775120M	U18-1590	PW218-136	PW1-14	PW5-4	–	PW117-231-TSE
SCC775120T	U18-1590	PW218-136	PW1-14	PW5-4	PW217-111B	PW117-231-TSE
SC775120M	U18-1590	PW218-136	PW1-3A	PW5-4	–	PW117-231-TSE
SC775120T	U18-1590	PW218-136	PW1-3A	PW5-4	PW217-111B	PW117-231-TSE
SCC775220M	U18-1588	PW218-71	PW1-14	PW5-4	–	PW117-232-TSE
SCC775220T	U18-1588	PW218-71	PW1-14	PW5-4	PW217-112B	PW117-232-TSE
SC775220M	U18-1588	PW218-71	PW1-3A	PW5-4	–	PW117-232-TSE
SC775220T	U18-1588	PW218-71	PW1-3A	PW5-4	PW217-112B	PW117-232-TSE
SCC775320M	–	PW218-72	PW1-14	PW5-4	–	PW117-235-TSE
SC775320M	–	PW218-72	PW1-3A	PW5-4	–	PW117-235-TSE
SCC775420M	–	PW218-72	PW1-14	PW5-4	–	PW117-235-TSE
SC775420M	–	PW218-72	PW1-3A	PW5-4	–	PW117-235-TSE
HT750120T	–	PW218-137	PW1-17	PW5-9H	PW27-25A	PW117-282-TSE

*Single Phase only.

A Control Panel is needed for all three phase models and the HT7 Series pump.

Impeller, Seal, and Capacitor Replacement – SC9, SCC9, and EC9 Series

⚠ WARNING Risk of electrical shock. Disconnect electrical power before doing any service work on pump!

Refer to assembly drawing, Page 10 – 900 Series.

Disassembly

1. Remove hex head bolts holding motor housing to volute. Remove motor housing; set it on its side in a clean area.
2. Hold impeller; remove impeller capscrew and washer or jam nut.
3. Slide impeller off of shaft for cleaning. If necessary, tap impeller to loosen it.
4. Cradle motor assembly so that it stands vertically with motor shaft extending out of the bottom.

⚠ WARNING Risk of electric shock. Before touching capacitor, discharge it by shorting the terminals together with an amber handled screwdriver.

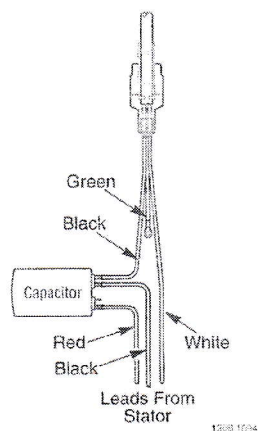
5. Unfasten hex head screws holding capacitor cover and remove cover. Disconnect wires from power cord set (wires and connector are color coded for reassembly). Turn pump upside down to drain oil.
6. If replacing capacitor (single phase only), remove wires from capacitor. Remove capacitor.
7. Slide a small screwdriver down beside the shaft and pry lip seal out. Discard lip seal after removal. Be careful not to scratch shaft.
8. Remove retaining ring and washer from motor shaft and slide rotating half of seal off of shaft.
9. Remove motor cover from seal plate. Remove through bolts from motor assembly. Remove motor and shaft from seal plate.
10. Working from back of seal plate, tap primary seal head out of seal plate; thoroughly clean seal cavity.

Re-assembly

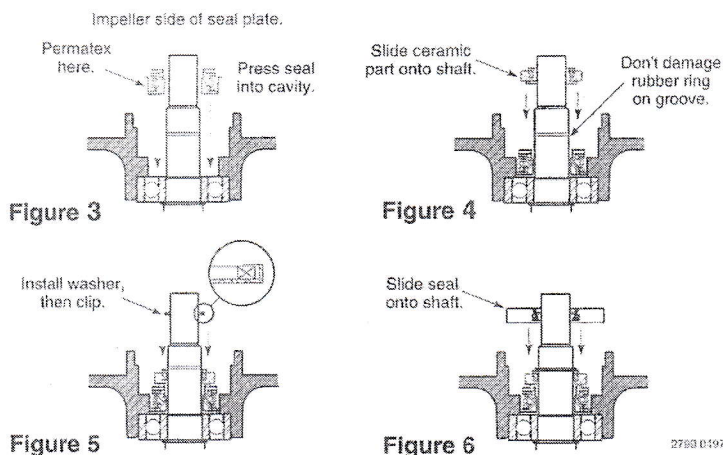
NOTICE: Make sure that seal faces are clean and undamaged.

1. Apply Permatex #2 sparingly to outside of the primary seal head. Press new primary seal head into cavity in seal plate. See Figure 3.
2. Set seal plate on cradle and reinstall motor.
NOTICE: Do not overtighten through bolts!
3. Inspect seal plate O-Ring carefully; replace if damaged. Place O-Ring in groove on seal plate, mount motor on seal plate with socket head screws.
NOTICE: It is good practice to replace O-Ring each time pump is serviced.
4. Turn assembly upside down and slide new rotating member of seal onto shaft. Apply soap to rubber ring to aid in sliding seal on shaft.
NOTICE: De-burr snap ring groove before installing seal. Do not damage ceramic face or rubber ring when passing seal over shaft shoulder and snap ring groove shoulder. Seal faces and ring must be clean and undamaged or seal may leak. See Figure 4.
5. Reinstall washer and snap ring on shaft. See Figure 5.
6. Install new lip seal (Figure 6). Lubricate lip seal with a small amount of Aqualube or a lithium-based grease.
7. Reassemble impeller, impeller capscrew or jam nut and washer.
8. Reinstall capacitor (single phase only). See below, for electrical connections to capacitor.
9. Fill motor with clean dielectric oil (Part No. U197-8A). To allow room for expansion, oil level with cold motor should be about 1/4" (6-7mm) above top of motor assembly.
10. Inspect capacitor cover O-Ring; replace if damaged. If it is not nicked or scratch, clean and reinstall.
NOTICE: It is good practice to replace O-Ring each time pump is serviced.
11. Reconnect motor lead wires to connector. Reference color code markings and Wiring Connection diagrams, below. Reinstall capacitor cover.

Capacitor Connections (Single Phase Only)

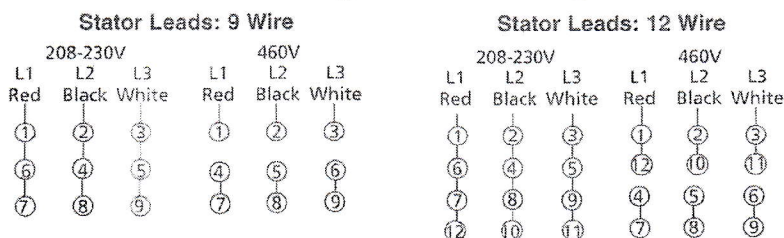


1208 10/04



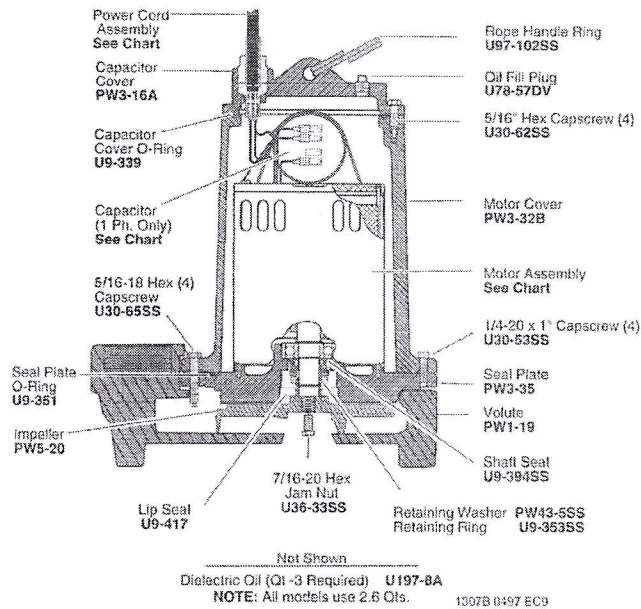
2788 0/97

3 Phase Wiring Connection Diagrams

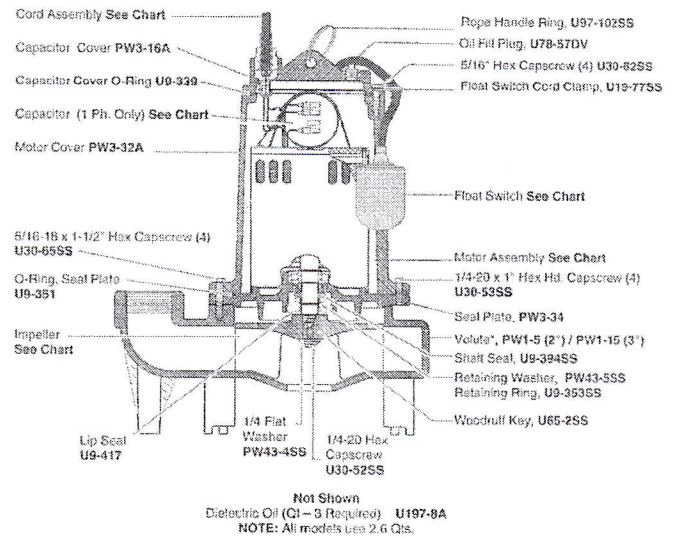


REPAIR PARTS – SC9, SCC9, EC9 SERIES

EC9



SC9/SCC9



Model	Capacitor*	Motor Assembly	Impeller	Float Switch	Power Cord
SC975220T, SCC975220T	U18-1589	PW118-81	PW5-7C	PW217-224	PW117-232-TSE
SC975220M, SCC975220M	U18-1589	PW118-81	PW5-7C	—	PW117-232-TSE
SC975320M, SCC975320M	—	PW118-87	PW5-7C	—	PW117-235-TSE
SC975420M, SCC975420M	—	PW118-87	PW5-7C	—	PW117-235-TSE
SC9100220M, SCC9100220M	U18-1589	PW118-81	PW5-7B	—	PW117-232-TSE
SC9100220T, SCC9100220T	U18-1589	PW118-81	PW5-7B	PW217-224	PW117-232-TSE
SC9100320M, SCC9100320M	—	PW118-87	PW5-7B	—	PW117-235-TSE
SC9100420M, SCC9100420M	—	PW118-87	PW5-7B	—	PW117-235-TSE
SC9150220M, SCC9150220M	U18-1590	PW118-83	PW5-7A	—	PW117-232-TSE
SC9150320M, SCC9150320M	—	PW118-87	PW5-7A	—	PW117-235-TSE
SC9150420M, SCC9150420M	—	PW118-87	PW5-7A	—	PW117-235-TSE
SC9200220M, SCC9200220M	U18-1592	PW118-83	PW5-7	—	PW117-232-TSE
SC9200320M, SCC9200320M	—	PW118-87	PW5-7	—	PW117-235-TSE
SC9200420M, SCC9200420M	—	PW118-87	PW5-7	—	PW117-235-TSE
EC9200220M	U18-1391	PW218-150	PW5-20	—	PW117-232-TSE
EC9200320M	—	PW218-151	PW5-20	—	PW117-235-TSE
EC9200420M	—	PW218-151	PW5-20	—	PW117-235-TSE

* SC9 Series Model Numbers use Volute P/N. PW1-5. SCC9 Series Model Numbers use Volute P/N PW1-15.

EC9 Series Model Numbers use Volute P/N PW1-19 and Motor Cover P/N PW3-32B.

** SC9 and SCC9 Series Model Numbers use seal plate P/N PW3-34. EC9 Series Model Numbers use seal plate P/N PW3-35.

**** Model numbers ending in "T" include Float Switch model number PW217-224. Float Switch PW217-224 turns on at 22" and turns off at 13".

TROUBLES-REMEDIES

⚠ WARNING Sudden Starts. If power is on to pump when thermal overload resets, pump may start without warning. If you are working on pump, you may get an

electrical shock or impeller may catch fingers or tools. Disconnect power before servicing pump.

A. Pump fails to operate:	<ol style="list-style-type: none"> 1. Check to be sure that power cord is securely plugged into outlet or securely wired into controller or switch box. Disconnect power to outlet before handling pump or motor. 2. Check to be sure you have electrical power. 3. Check that liquid fluid level is high enough to activate switch or controller. 4. Check to be sure that 5 mm (3/16") vent hole in discharge pipe is not plugged. 5. Check for blockage in pump inlet, impeller, check valve or discharge pipe. 6. Thermal overload may have tripped. Test start pump; if it starts and then stops immediately, disconnect from power source for 30 minutes to allow motor to cool, then reconnect to power source. Check for cause of overheating/overloading.
B. Pump fails to empty sump:	<ol style="list-style-type: none"> 1. Be sure all valves in discharge piping are fully open. 2. Clean out discharge pipe and check valve. 3. Check for blockage in pump inlet or impeller. 4. Pump not sized properly. A higher capacity pump may be required.
C. Pump will not shut off:	<ol style="list-style-type: none"> 1. Check switch or controller automatic floats for proper operation and location. See installation instructions for switch/controller. 2. If pump is completely inoperative or continues to malfunction, consult your local serviceman.

LIMITED WARRANTY

Sta-Rite Industries warrants to the original consumer of the products listed below, that they will be free from defects in material and workmanship for the Warranty Period from the date of original installation or manufacture as noted.

Product	Warranty Period
Water Systems Products – jet pumps, small centrifugal pumps, submersible pumps and related accessories	<i>whichever occurs first:</i> 1 year from date of original installation, or 2 years from date of manufacture
Hydro-Flow Filters	1 year from date of purchase
Signature 2000® Fibrewound Tanks	5 years from date of original installation
Pro-Source™ Steel Pressure Tanks	5 years from date of original installation
Pro-Source™ Epoxy-Lined Tanks	3 years from date of original installation
Sump/Sewage/Effluent Products	1 year from date of original installation, or 2 years from date of manufacture

Our warranty will not apply to any product that has been subject to negligence, misapplication, improper installation or maintenance. In the event a three phase submersible motor is operated with single phase power through a phase converter, or if three-leg ambient compensated, extra-quick trip overload relays of recommended size are not used, our warranty is void.

Buyer's only remedy and Sta-Rite Industries' only duty is to repair or replace defective products (at Sta-Rite Industries' choice). Buyer agrees to pay all labor and shipping charges associated with this warranty and to request warranty service through the installing dealer as soon as a problem is discovered. If warranty service is requested more than 30 days after the Warranty Period has ended, it will not be honored.

STA-RITE INDUSTRIES SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR CONTINGENT DAMAGES WHATSOEVER.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE WARRANTY PERIOD PROVIDED HEREIN.

Certain states do not permit the exclusion or limitation of incidental or consequential damages or the placing of limitations on the duration of an implied warranty, therefore, the limitations or exclusions herein may not apply. This warranty sets forth specific legal rights and obligations, however, additional rights may exist, which may vary from state to state.

Supersedes all previous publications.

Sta-Rite Industries, 293 Wright St., Delavan, WI 53115