

Sea Flow™ Pump Owner's Manual

IMPORTANT SAFETY INSTRUCTIONS *READ AND FOLLOW ALL INSTRUCTIONS* SAVE THESE INSTRUCTIONS

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⚠ WARNING

Before installing this product, read and follow all warning notices and instructions accompanying this pump. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call 1-888-263-7763 for free copies.

Important Notice



Attention Installer.

This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner/operator of this equipment.

⚠ WARNING



Risk of electrical shock or electrocution.

This pool pump must be installed by a licensed or certified electrician or a qualified pool serviceman in accordance with the National Electrical Code and all applicable local codes and ordinances. Improper installation will create an electrical hazard which could result in death or series injury to pool users, installers, or others due to electrical shock, and may also cause damage to property.

Always disconnect power to the pool pump at the circuit at the circuit breaker before servicing the pump. Failure to do so could result in death or serious injury to serviceman, pool users or others due to electric shock.



LIFEGARD®
SEA FLOW™
High Performance Pump



Note

When pump is mounted permanently within 5 ft. of the inside walls of a swimming pool, you must use a No. 8 AWG or larger conductor to connect to bonding conductor lug.

⚠ WARNING

To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

⚠ CAUTION

This pump is for use with permanently installed pools and may also be used with hot tubs and spas if so marked. Do not use with storable pools. A permanently installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it may be readily disassembled for storage and reassembled to its original integrity and has a maximum dimension of 18 feet (5.49m) and a maximum wall height of 42 inches (1.07m).

⚠ CAUTION

For hot tubs and spa pumps, do not install within an outer enclosure or beneath the skirt of a hot tub or spa unless so marked.

SECTION I. GENERAL INFORMATION.

A. WIRING

⚠ WARNING



Risk of electrical shock or electrocution.

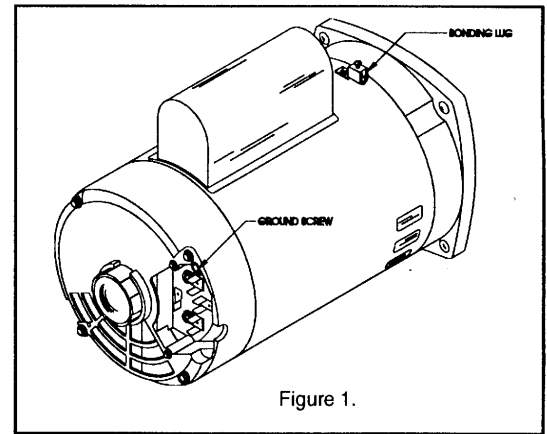
This pool pump must be installed by a licensed or certified electrician or a qualified pool serviceman in accordance with the National Electrical Code and all applicable local codes and ordinances. Improper installation will create an electrical hazard which could result in death or serious injury to pool users, installers, or others due to electrical shock, and may also cause damage to property. Always disconnect power to the pool pump at the circuit breaker before servicing the pump. Failure to do so could result in death or serious injury to serviceman, pool users or others due to electric shock.

1. Make sure all electrical breakers and switches are turned off before wiring motor.
2. Make sure that the wiring voltage matches the motor voltage (230v or 115v). If they do not match the motor will burn up.
3. Choose a wire size from the Chart 1. When in doubt use a heavier gauge (larger diameter) wire. Heavier gauge will allow the motor to run cooler and more efficient.
4. Make sure all electrical connections are clean and tight.
5. Cut wires to the appropriate length so they don't overlap or touch when connected to the terminal board.

Chart 1.

SUPPLY WIRE SIZES (AWG)						
(size and length by horsepower)						
hp	115 volts			230 volts		
	50 ft.	100 ft.	150 ft.	50 ft.	100 ft.	150 ft.
1/3	14	14	12	14	14	14
1/2	14	12	10	14	14	14
3/4	12	12	10	14	14	14
1	12	10	8	14	14	14
1 1/2	10	10	8	14	14	12
2	10	8	8	14	12	12
3	-	-	-	12	12	10

6. Permanently ground the motor using the green ground terminal located on the inside of the motor canopy or access plate, see Figure 1. Use the correct wire size and type specified by National Electrical Code. Make sure the ground wire is connected to an electrical service ground.
7. Bond the motor to the pool structure in accordance with the National Electrical Code. Use a solid No. 8 AWG or larger copper conductor. Run a wire from the external bonding to the pool bonding structure, see Figure 1.
8. Connect the pump permanently to a circuit. Make sure no other lights or appliances are on the same circuit.



NOTE

It is important that the O-ring be kept clean and well lubricated. We recommend a silicone base lubricant for best results.

B. The Pump Strainer Basket.

This unit, sometimes referred to as the 'Hair and Lint Pot', is the unit in front of the volute. Inside the chamber is the basket which must be kept clean of leaves and debris at all times. View basket through the 'See Through Lid' to inspect for leaves and debris.

Regardless of the length of time between filter cleaning, it is most important to visually inspect the hair and lint pot basket at least once a week. A dirty basket will reduce the efficiency of the filter and heater and also put an abnormal stress on the pump motor which would result in a costly repair bill.

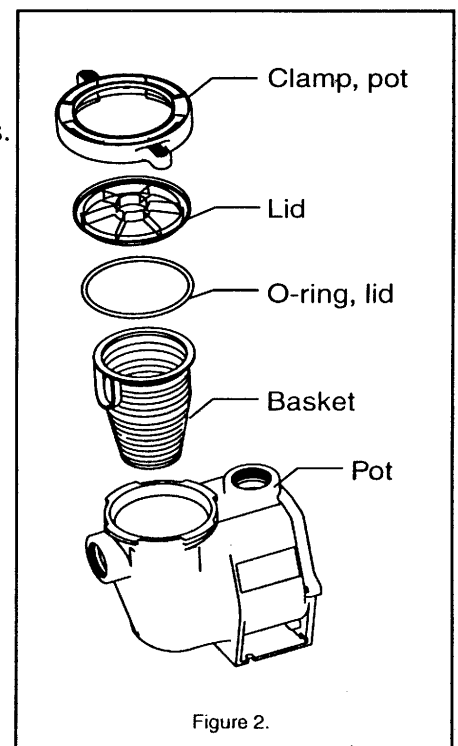
SECTION II. MAINTENANCE

CAUTION

To prevent damage to the pump and filter and for proper operation of the system, clean pump strainer and skimmer baskets regularly.

A. Pump Strainer Basket Cleaning Procedures.

1. Turn off motor.
2. Relieve pressure in the system.
3. Turn the clamp and lid in a counter-clockwise direction until it stops.
4. Turn the clamp and lid set to remove the clamp and lid.
5. Put the debris from the basket into the trash and rinse out the basket. If the basket is cracked, it should be replaced.
6. Replace the basket and fill the pump pot and volute up to the inlet port with water.
7. Clean the cover, cover O-ring, and sealing surface of the pump pot. Grease the O-ring with Teflon or silicone.
8. Reinstall the lid by placing the clamp and the lid on the pot; see Figure 2.
 - a. Make sure the lid O-ring is properly placed. Seat the clamp and lid then turn clockwise until the handles are horizontal; see Figure 3.
9. Turn the power "ON" at the house circuit breaker. Reset the pool time clock to the correct time.



⚠ WARNING

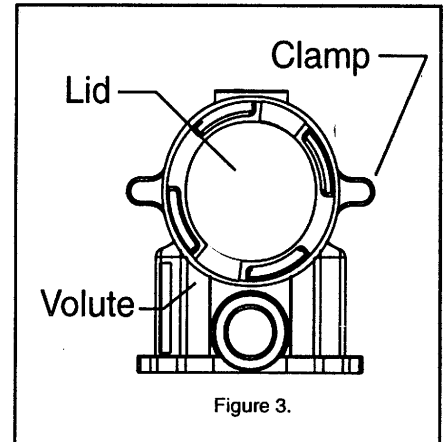


THIS FILTER OPERATES UNDER HIGH PRESSURE. WHEN ANY PART OF THE CIRCULATING SYSTEM (e.g., LOCK RING, PUMP, FILTER, VALVES, ETC.) IS SERVICED, AIR CAN ENTER THE SYSTEM AND BECOME PRESSURIZED. PRESSURIZED AIR CAN CAUSE THE LID TO BLOW OFF WHICH CAN RESULT IN SEVERE INJURY, DEATH, OR PROPERTY DAMAGE. TO AVOID THIS POTENTIAL HAZARD, FOLLOW THESE INSTRUCTIONS.

10. Open the High Flow™ manual air relief valve on top of the filter.
11. Stand clear of the filter. Start the pump.
12. Bleed air from the filter until a steady stream of water comes out. Close the High Flow™ manual air relief valve.

B. Winterizing.

1. If the air temperature drops below 35° F. the water in the pump can freeze and cause damage. Freeze damage is not warrantable.
2. To prevent freeze damage follow the procedures listed below.
 - a. Shut off electrical power for the pump at the house circuit breaker.
 - b. Drain the water out of the pump case by removing the two thumb-twist drain plugs from the case. Store the plugs in the pump basket.
 - c. Cover the motor to protect it from severe rain, snow and ice.
 - d. Do not wrap the motor in plastic. It will cause condensation and rust on the inside of the motor.



C. Care of Electric Motor.

1. Protect from heat.
 - a. Shade the motor from the sun.
 - b. Any enclosure must be well ventilated to prevent overheating.
 - c. Provide ample cross ventilation.
2. Protect against dirt.
 - a. Protect from any foreign matter or splashing water.
 - b. Do not store (or spill) pool chemicals near the motor.
 - c. Avoid sweeping or stirring up dust near the motor while it is operating.
 - d. If a motor has been damaged by dirt it voids the motor warranty.
3. Protect against moisture.
 - a. Protect from splashing pool water.
 - b. Protect from the weather.
 - c. Protect from lawn sprinklers.
 - d. If a motor has become wet - let it dry before operating. Do not allow the pump to operate if it has been flooded.
 - e. If a motor has been damaged by water it voids the motor warranty.

NOTE

DO NOT wrap motor with plastic or other air tight materials. The motor may be covered during a storm, for winter storage, etc., but never when operating, or expecting operation.

NOTE

When replacing the motor, be certain that the motor support is correctly positioned to support the size of motor being installed.

⚠ WARNING**Risk of electrical shock or electrocution.**

This pool pump must be installed by a licensed or certified electrician or a qualified pool serviceman in accordance with the National Electrical Code and all applicable local codes and ordinances. Improper installation will create an electrical hazard which could result in death or serious injury to pool users, installers, or others due to electrical shock, and may also cause damage to property. Always disconnect power to the pool pump at the circuit breaker before servicing the pump. Failure to do so could result in death or serious injury to serviceman, pool users or others due to electric shock.

Read all servicing instructions before working on the pump.

A. PUMP DISASSEMBLY

1. All moving parts are located in the rear sub-assembly of this pump.

Tools required:

- a. 3/32 inch allen head wrench.
 - b. 1/2 inch open end wrench.
 - c. 9/16 inch open end wrench.
 - d. Flat blade screwdriver.
2. To remove and repair the motor sub-assembly perform the following procedures.
 - a. Turn off the pump circuit breaker at the main panel.
 - b. Drain the pump by removing the drain plugs.
 - c. Remove the 6 bolts that hold the main pump body (strainer pot/volute) to the rear sub-assembly.
 - d. GENTLY pull the two pump halves apart, removing the rear sub-assembly.
 - e. Use a 3/32 inch allen head wrench to loosen the two holding screws located on the diffuser.

⚠ CAUTION

Be sure not to scratch or mar the polished shaft seal faces; seal will leak if faces are damaged.

- f. Hold the impeller securely in place and remove the impeller lock screw by using a flat blade screwdriver. The screw is a left-handed thread and loosens in a clockwise direction.
- g. Remove the shaft cap located at the back of the motor and hold the shaft secure with a 1/2 inch (Century) or 7/16 inch (Franklin) open-end wrench. On A. O. Smith motors, remove the motor canopy, move the capacitor to one side and hold the shaft with a 7/16 inch open-end wrench.
- h. To unscrew the impeller from the shaft, twist the impeller counterclockwise.
- i. Remove the four bolts from the seal plate to the motor, using a 9/16 inch wrench.
- j. Place the seal plate face down on a flat surface and tap out the carbon/spring seat.
- k. Clean the seal plate, seal housing, and the motor shaft.

B. Pump Reassembly/Seal Replacement; see Section V, Technical Data, Figure 4.

1. When installing the replacement shaft seal, use silicone sealant on the metal portion, before pressing into the seal plate.
2. Before installing the ceramic section of the seal into the impeller, be sure the impeller is clean. Use a light density soap and water to seal the seal. Press the seal into the impeller with your thumbs and wipe off the ceramic and carbon faces with a clean cloth.
3. Remount the seal plate to the motor.
4. Grease the motor shaft thread and screw impeller onto the motor shaft.
5. Screw in the impeller lock screw (counter-clockwise to tighten).
6. Remount the diffuser onto the seal plate. Make sure the plastic pins and holding screw inserts are aligned.
7. Grease the diffuser O-ring and seal plate gasket or O-ring prior to reassembly.
8. Grease the bolt threads, assemble the motor sub-assembly to the strainer pot-pump body by using the two through bolts for proper alignment. Do not tighten the through bolts until all 6 bolts are in place and finger tightened.
9. Fill the pump with water.
10. Reinstall the pump lid and plastic clamp; see SECTION II. START-UP.
11. Reprime the system.

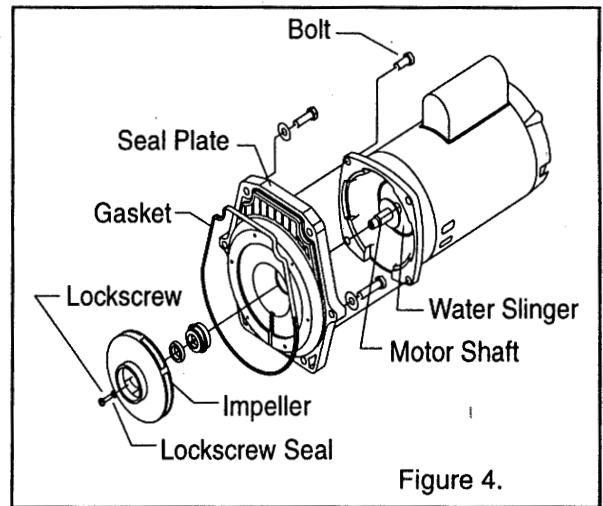


Figure 4.

C. The Shaft Seal.

1. The Shaft Seal consists primarily of two parts, a rotating member and a ceramic seal.
2. The pump requires little or no service other than reasonable care, however, a Shaft Seal may occasionally become damaged and must be replaced.

▲ CAUTION

The polished and lapped faces of the seal could be damaged if not handled with care.

▲ CAUTION

In mild climate area, when temporary freezing conditions may occur, run your filtering equipment all night to prevent freezing.

SECTION IV. RESTART INSTRUCTIONS

- A. If pump is installed below the water level of the pool, close return and suction lines prior to opening hair and lint pot on pump. Make sure to re-open valves prior to operating.

▲ CAUTION

DO NOT run the pump dry. If the pump is run dry, the mechanical seal will be damaged and the pump will start leaking. If this occurs, the damaged seal must be replaced. ALWAYS maintain proper water level in your pool (half way up skimmer opening). If the water level falls below the skimmer opening, the pump will draw air through the skimmer, losing the prime and causing the pump to run dry, resulting in a damaged seal.

Note

Continued operation in this manner could cause a loss of pressure, resulting in damage to the pump case, impeller and seal.

B. Priming the Pump.

1. The pump strainer pot must be filled with water before the pump is initially started. Follow these steps to prime the pump.
 - a. Remove the pump lid plastic clamp. Remove the pump lid.
 - b. Fill the pump strainer pot with water.
 - c. Reassemble the pump cover and plastic clamp onto the strainer pot. The pump is now ready to prime.
 - d. Open the air release valve on the filter, and stand clear of the filter.
 - e. Turn on the switch or time clock.
 - f. When water comes out of the air release valve, close the valve. The system should now be free of air and recirculating water to and from the pool.
2. For 2-speed pumps:
 - a. Pump should run on high-speed for priming.
 - b. The pump should not run longer than 8 minutes before priming is achieved.

SECTION V. TROUBLESHOOTING.

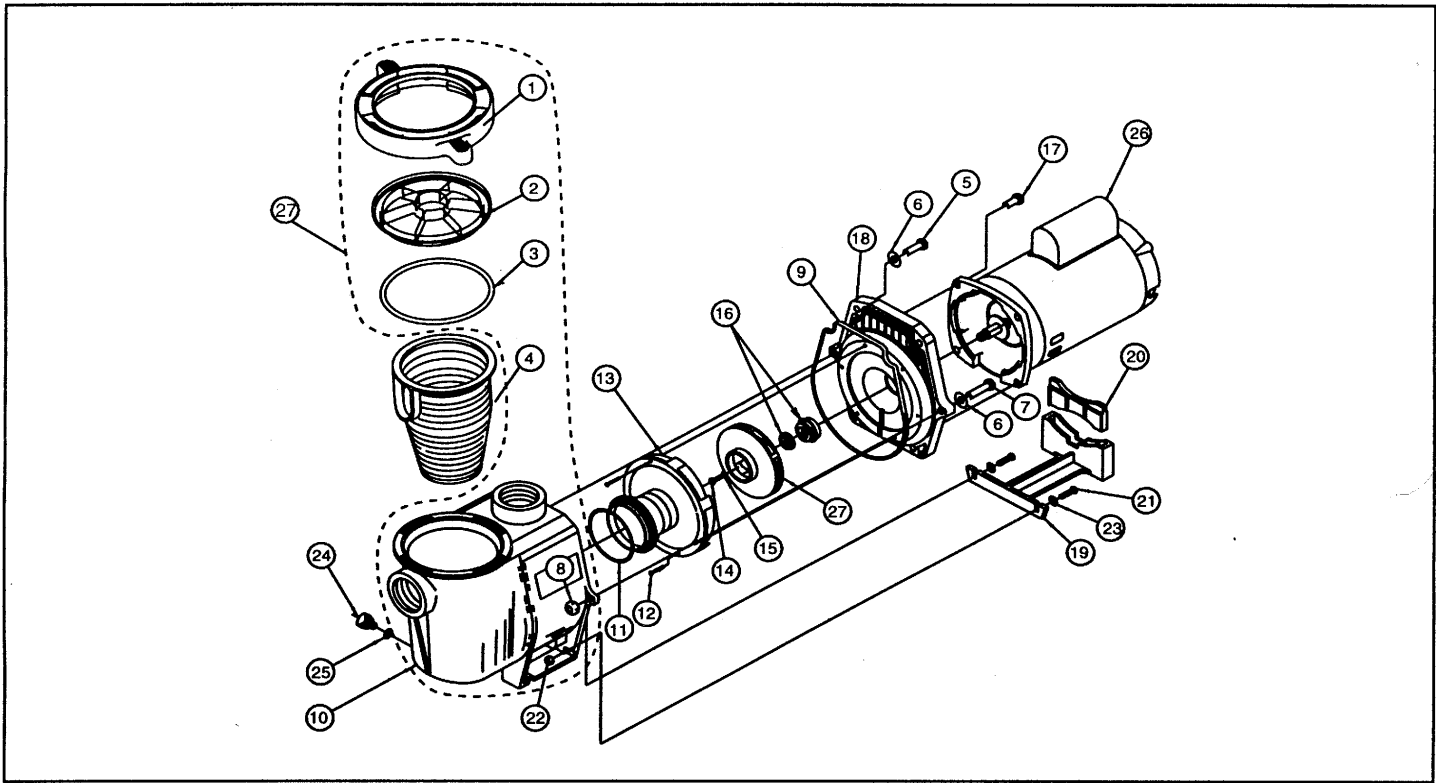
A. Failure to Pump.

1. Pump will not prime - too much air. - Remedy:
 - a. Check suction piping and valve glands on any suction gate valves.
 - b. Secure lid on pump strainer pot and make sure lid gasket is in place.
 - c. Check water level to make sure skimmer is not drawing air.
2. Pump will not prime--not enough water. - Remedy:
 - a. Make sure suction lines, pump strainer, and pump volute are full of water.
 - b. Make sure valve on suction line is working and open, (some systems do not have valves).
 - c. Check water level to make sure water is available through skimmer.
3. Pump strainer clogged. - Remedy:
 - a. Clean pump strainer pot.
4. Pump strainer gasket defective. - Remedy:
 - a. Replace gasket.

B. Reduced Capacity and/or Head.

1. Air pockets or leaks in suction line. - Remedy:
 - a. See item A.1. of this section, above.
2. Clogged impeller. Remedy:
 - a. Turn off electrical power to the pump.
 - b. Remove the clamp that holds the volute to the seal plate.
 - c. Slide the motor and seal plate away from the volute.
 - d. Clean debris from impeller. If debris cannot be removed, complete the following steps.
 - (1) Remove left hand thread anti-spin bolt and O-ring.
 - (2) Remove, clean and reinstall impeller.
 - (3) Reinstall anti-spin bolt and O-ring.
 - e. Reinstall wear-ring, diffuser, and O-ring.
 - f. Reinstall motor and seal plate into volute aligning with keyway at top of volute.
 - g. Reinstall clamp around seal plate and volute and tighten securely.
3. Pump strainer clogged. - Remedy:
 - a. Clean suction trap.

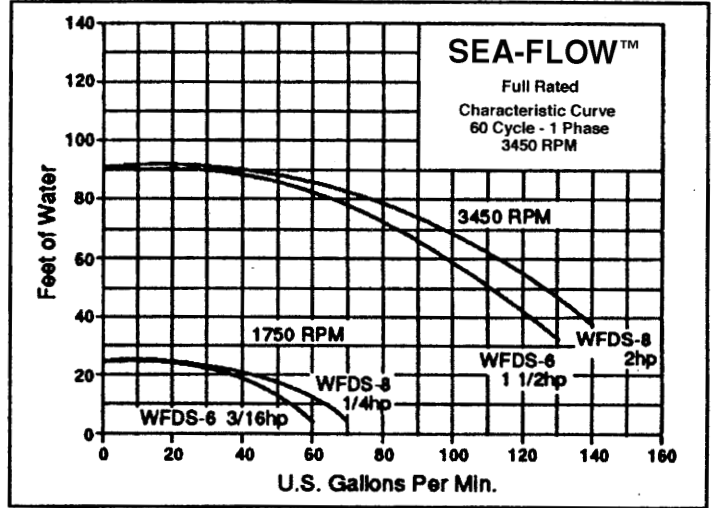
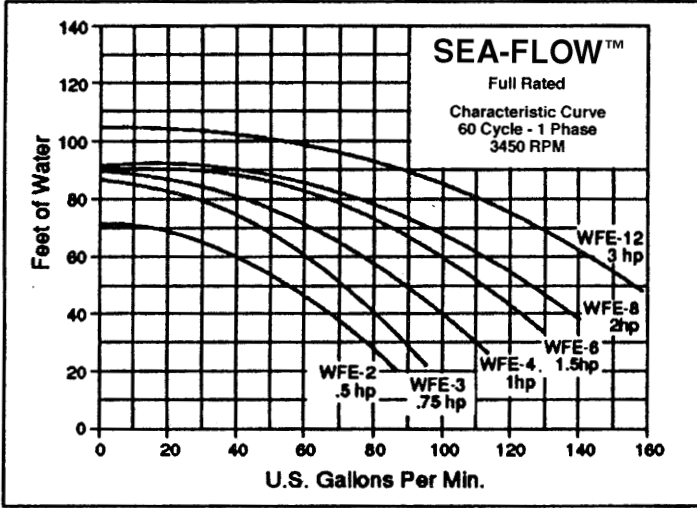
SECTION VI. TECHNICAL DATA



A. Replacement Parts

Item No.	Part No.	Model No.	Description	Item No.	Part No.	Model No.	Description
1	357150		CLAMP POT	18		07-3742	SEAL PLATE WFE - NOT AVAILABLE
2	07-0795	P08080	COVER LEXAN AQ/WFE PUMP			07-4564	SEAL PLATE WFE
2	357151		COVER LEXAN WFE PUMP	19	07-0927	P10311	FOOT WFE - 4 PUMP
3	350013		O-RING WFE COVER	20	07-0929	P10313	FOOT INSERT WFE PUMP
4	07-0387	P01325	BASKET AQ & WFE	21	07-1657	P26948	SCREW ¼ - 20 X 1 in. HH s/s, 2 req.
5	07-0430	P02812	BOLT 3/8 16 X 1.15 HEX HD s/s, 4 req.	22	07-1406	P23802	NUT ¼ - 20 HEX. hd. s/s, 2 req.
6	07-2184	P35011	Wsh. 3/8 s/s X 13/16 O.D. 6	23	07-2183	P35010	Wsh. FLAT ¼ X 5/8 , 2 req.
7	07-0431	P02813	BOLT 3/8 - 16 X 1/75 HX HD s/s, 2 req.	24	07-1131	P19656	KNOB PLUG DRAIN, 2 req.
8	07-1403	P23696	NUT 3/8 - 16 HEX. hd., 2 req.	25	07-4629		GASKET, FLAT Wsh. WFE PMP. DRN., 2 req.
9	357102		GASKET SEAL PLATE WFE PUMP				<u>ITEM 26, MOTORS</u>
10	350015		VOLUTE WFE PUMP & POT	26	07-1313	P21258	.75 HP 60HZ /WFE-2, 3 & 24, 29 Lbs.
11	07-1444	P24262	O-RING PARKER #2-238 WFE PUMP		07-1314	P21259	1 HP 60HZ /WFE-4 & 26, 33 Lbs.
12	07-1660	P26951	SET SCREW #4-40 X 1-1/8 WFE, 2 req.		07-1315	P21260	1.5 HP 60HZ /WFE-6 & 28, 39 Lbs.
13	07-2928	S05633	DIFFUSER assy. WFE 12/3 HP ONLY		07-1316	P21261	2 HP 60HZ /WFE-8 & 30, 40 Lbs.
	07-2927	S05632	DIFFUSER assy. WFE-3 & 8, 75 HP - 2.5 HP	27	357149		VOLUTE REPLACEMENT KIT
14	07-1652	P26942	SET SCREW .25 20 X 1 LH PHILLIPS				
15	07-5713		WFE PUMP RUBBER Wsh.				
16	07-1734	P28323	SEAL PA-7 W/CERAMIC SEAT				
17	07-0429	P02811	BOLT 3/8-16 X 7/8 s/s HEX hd., 4 req.				

B. Pump Curves.



SAVE THESE INSTRUCTIONS

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Sea Flow™ High Performance Pump Circulating Pump Limited Warranty

PacFab, Inc. manufactures its Sea-Flow™ High Performance Pump under-high standards of workmanship and with high quality materials. Accordingly, PacFab expressly warrants those pump models as follows:

WARRANTY COVERAGE - All pump component parts actually manufactured by PacFab, and the pump's respective motor is warranted to be free from defects in material and/or workmanship for a period of three (3) years from date of purchase. The obligation of PacFab under this warranty will be limited to either repair or replacement of the product, at PacFab's option. If PacFab elects to replace the product, then the owner agrees to pay PacFab a charge based upon the time which has elapsed since the product was purchased according to the schedule below. The percentage factor will be applied to current published list prices of the product at the time the warranty claim occurs. The amount of the charges will be determined as follows:

<u>Elapsed time since Pump Purchase</u>	<u>% of published List Price Paid by Owner</u>
Up to 1 full year	0%
1 to 2 years	33%
2-3 years	66%

EXCLUSIONS FROM THIS WARRANTY - This warranty does not cover:

1. Any item manufactured by other companies and installed by PacFab. Such items may carry warranties offered by the original manufacturer.
2. Problems resulting from oversizing of pump and/or reduction of valve piping size, or from failure to turn pump off before changing the position of the filter valve or any operating valves for the pool and its accessories.
3. Problems resulting from failure to comply with instructions contained in the Owner's Manual.
4. Problems resulting from abuse, misuse, negligence or accident by any party other than PacFab, such as but not limited to, damage to parts caused by installers, damage to pump parts caused by 'dry' operation (loss of prime or obstruction in plumbing lines).
5. Problems resulting in whole or in part from alteration or modification of the filter by any party.
6. Failures due to chemical corrosion caused by failure to maintain the water chemistry in conformity with the standard of the swimming pool and spa industry.

WARRANTY OBLIGATIONS OF PACFAB - Should a defect in workmanship and/or material in any item covered by this warranty become evident during the term of the warranty, then upon the consumer following the procedures set forth below, PacFab will, at its option, repair or replace such item or part at its own cost and expense.

PacFab is not, however responsible under this warranty for any cost of shipping or transportation of the filter or part thereof to or from the service department. Also, PacFab is not liable for any loss of time, inconvenience, incidental expenses such as telephone calls, labor or material charges incurred in connection with the removal or replacement of the equipment, or any other incidental or consequential damages. **PLEASE NOTE:** Some states do not allow the exclusion or limitation or incidental or consequential damages, so the above limitation or exclusion may not apply to you.

PROCEDURE FOR OBTAINING PERFORMANCE: In order to obtain the benefits of this warranty the consumer who made the original retail purchase will contact PacFab Customer Service Department, 10951 W. Los Angeles Ave., Moorpark, CA 93021 as soon as possible after discovery of the defect, but in no event later than the expiration date of the warranty period provided in this warranty. Upon receipt of this communication, PacFab will promptly notify the customer of the address to which the defective item may be shipped. The customer shall then ship the item, freight prepaid, to the address indicated together with a letter stating the model number, serial number, and the date of purchase of the item which is claimed to be defective, and the name and address of the consumer and a brief description of the problems encountered.

WARRANTY PROTECTS ORIGINAL PURCHASER: This warranty extends to the consumer who made the original retail purchase only and is not enforceable by any other party.

WARRANTIES OR REPRESENTATIONS BY OTHERS: No dealer or other person has any authority to make any warranties or representations concerning PacFab or its products. Accordingly, PacFab is not responsible for any such warranties or representations.

OTHER RIGHTS: This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

