



## Assembly and Installation Manual



## SCP Series Solar Pool Pumps

**Made In America**



**Intertek**  
4009458

Conforms to UL Stds 1081 & 1563

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Phone (928) 348-9652 Fax (928) 348-9653

# SCP Series Pump Assembly Instructions

1. Remove pump base from shipping box and place on a flat surface.



2. Rest the pump end on the base and align the two feet over the two mounting holes.



3. Place the stainless steel flat washers over the base flanges on each side of the pump. Insert the two stainless steel screws and start the two base mounting screws by hand.



4. Make sure the pump is straight in the base and the screws are aligned vertical before tightening.

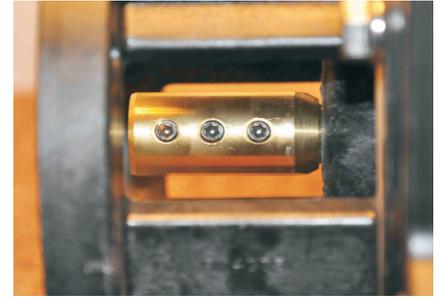


5. Tighten the screws until it just touches the base and then turn it an additional 1/4 turn. Do not over tighten the screws in the plastic base. If you see the stainless washer bend then that is too much.



# SCP Series Pump Assembly Instructions

6. Rotate the pump shaft adapter until the set screws are aligned to the center of the motor adapter slot. This will be about a 45 degree angle.



7. Rotate the motor shaft until the key way is at the same 45 degree angle to align with the pump coupling set screws. Apply a small amount of never seize or grease to the motor shaft before inserting into coupling.



8. Install the motor by guiding the motor shaft inside the pump coupling. Make sure the key way aligns with the set screws.



9. Slide the motor toward the pump until it touches the motor adapter.

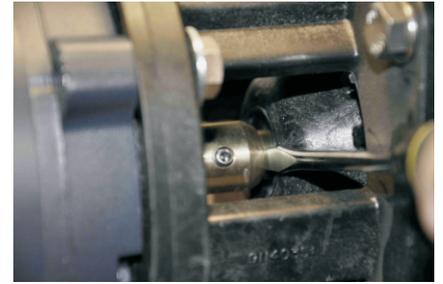


10. Install the four 3/8-16 motor bolts through the motor adapter into the motor and tighten.



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11. Now the impeller and the pre-load on the shaft seal needs to be adjusted. With a large flat point screw driver, pry the motor shaft coupling toward the motor until it stops. Then back it off about 1/8".



12. While holding the pump shaft in position with the screw driver, insert a 1/8" Allen wrench into one of the set screws and tighten. You can then remove the screw driver and tighten the other two set screws.

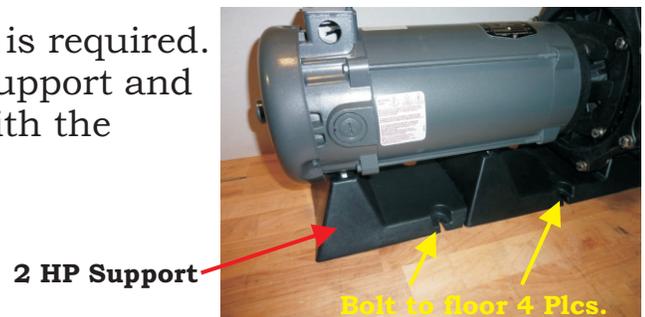


13. Your pump is now assembled and the impeller and shaft seal is adjusted properly. It is now ready for installation.



## NOTE: For 2 HP Pumps Only

14. For the 2 HP motors an additional support is required. This support is not attached to the other support and should be bolted down to the floor along with the standard base. (See yellow arrows.)



# SCP SERIES POOL PUMP

## **Installation & Operating Instructions**

### **GENERAL**

Your pump has been engineered to give maximum efficiency under normal pool water pumping applications. Consult the manufacturer for any other applications.

### **INSTALLATION**

#### **I. LOCATION OF PUMP**

Place pump on a firm level surface. The pump does not need to be bolted down unless required by local code. Select a location close to the filter allowing for convenience and serviceability.

#### **II. PUMP CONNECTIONS**

The suction line from the pool skimmer and main drain must be connected to inlet on the hair and lint trap. It is recommended to have a minimum of 12" of straight pipe before hair and lint trap. The discharge line to pool (return lines) must be connected to outlet at top of pump. If the pump is installed below water level of pool, install valves on the inlet and outlet piping to permit removing of equipment without draining the pool.

**CAUTION:** During the pressure test procedure, this pump is under pressure. **DO NOT LOOSEN** the filter trap cap while pump is running or until all pressure is released. Raise the pressure slowly. Do not exceed 35 psi. Extreme care must be taken during pressure test. Failure to follow these instructions explicitly can result in personal injury.

### **OPERATION**

#### **I. PRIMING PUMP**

At initial start-up, pump must be primed by filling hair and lint trap with water. To prime pump, remove cover from hair and lint trap; fill pump and suction trap with water. Replace cover (make sure the O-ring is in place) and tighten lock ring. Pump will now prime, with priming time depending upon lift and horizontal distance of suction piping.

#### **II. CLEANING BASKET**

It is important to clean the hair and lint basket frequently. A dirty basket will reduce the efficiency of the filter and heater and will put an abnormal stress on the pump motor, which could result in costly repair bills.

**CAUTION:** Do not remove hair and lint strainer lid while pump is running or under pressure! The lid can be removed or tightened by hand. Basket must be kept clear of leaves and debris at all times.

#### **III. REMOVING BASKET**

1.) Turn off motor. 2.) Remove trap lid by rotating counter clockwise. **DO NOT USE TOOLS.** 3.) Remove lid. 4.) Remove basket and empty debris. 5.) Replace basket, fill with water, replace lid and lock ring securely to prevent air from entering and tighten. **DO NOT USE TOOLS** 6.) Turn on motor.

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

#### DO NOT RUN PUMP DRY!

Always maintain proper water level in pool. If the water level falls below skimmer intake, pump will suck air. Pump is equipped with a maintenance-free heavy-duty mechanical seal. Damage will occur if pump runs dry, and warranty will be voided.

#### IV. TO PREVENT FREEZING

Drain liquid from pump through plug at bottom front section of volute. Make sure the pump and filter equipment are completely empty to prevent freezing.

#### MOTOR

Your pump is equipped with a permanently lubricated, maintenance-free, industrial quality motor designed to withstand the requirements of swimming pool application. Improper wiring can cause serious injuries and damage to the motor, voiding warranty. (For wiring instructions, see system design diagram.)

NOTE: Motor is designed to withstand the effects of normal rainfall. To increase the life of your motor, observe the following. However is it recommended to install the pump out of the weather, if possible.

- 1.) Do not flood motor or submerge in water. To do so voids warranty.
- 2.) Provide ample cross ventilation, minimum of 6" at all points.
- 3.) Keep motor and surrounding area clean.
- 4.) Avoid sweeping or stirring dust near motor while it is running.
- 5.) Avoid storing or spilling dry chemicals, powders, etc., near motor.
- 6.) Provide protection against the elements.
- 7.) Locate motor on a slight elevation so water will drain away from motor.
- 8.) Avoid spilling or dripping liquid chemicals on or near motor.
- 9.) Avoid splashing water or hosing deck near motor. Water damage voids warranty.

For replacement parts or repairs, contact SunPumps 1-800-370-8115.

**WARNING – All electrical wiring of the motor installation must be done by a qualified electrician in accordance with applicable electrical codes. Before working on any motor be certain that the source of electrical power is off at the main junction box.**

**GROUNDING WIRE – Upon installation of the pump, the motor must be grounded with a No 8 AWG (8.4mm<sup>2</sup>) solid copper conductor per National Electric Code. The connection should be from the accessible wire connector on the motor to all metal parts of the swimming pool, spa, or hot tub structure and to all electrical equipment, metal conduit, and metal piping within 5 feet (1.5mm) of the inside walls of a swimming pool, spa or hot tub, when the motor is installed within 5 feet of the inside walls of the swimming pool, spa, or hot tub.**

**Note: For electrical connections, see system wiring diagram .**

## **TROUBLE SHOOTING**

### **If pump loses prime, or if too many bubbles come through return line, check:**

- 1.) Hair and lint pot cover is tight and O-ring is in place and free from defects.
- 2.) Valves on suction and return lines are working properly and open
- 3.) Water level in pool is too low.
- 4.) Filter O-ring or gasket is in place and free from defects.
- 5.) All fittings and connections are secure and air tight.

### **Not pumping water, check:**

- 1.) Filter pressure gauge reading too high, indicating filter needs cleaning.
- 2.) Clogged plumbing lines.
- 3.) Clogged impeller.
- 4.) Worn or damaged impeller

### **Motor does not run, check:**

- 1.) Fuses
- 2.) Incorrect or loose wire connections
- 3.) Output of the controller, if used. Disconnect the controller and connect panel wires directly to the pump motor to see if the motor runs.

### **Power to the motor but it doesn't run, check:**

- 1.) Make sure motor shaft turns free.
- 2.) Jammed impeller or an obstruction in (volute) casing.
- 3.) Controller for proper output.
- 4.) Check the motor brushes to see if they are worn.

### **Motor overheating, check:**

- 1.) Incorrect or loose wire connections
- 2.) Oversized solar panel array.
- 3.) Make sure the motor gets a fresh air supply and the vents are kept unclogged

### **Noises, check:**

- 1.) Plumbing vibration
- 2.) Impeller turns freely and is properly adjusted
- 3.) Motor bearings
- 4.) For cavitation, due to obstruction in or undersized suction line.

### **For information regarding this pump contact:**

**SunPumps, Inc.**  
**325 E. Main Street**  
**Safford, AZ 85546**

**Phone: (928) 348-9652**

# SCP Series Pool Pumps Safety Warnings



## IMPORTANT SAFETY INSTRUCTIONS

### READ AND FOLLOW & SAVE ALL INSTRUCTIONS



**WARNING:** Before installing this product, read & follow all warning notices and instructions accompanying this pump. Failure to follow safety warnings & instructions can result in severe injury, death, or property damage.



**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.



**NOTE:** When motor is mounted permanently within 5 ft. of the inside walls of a swimming pool, spa or hot tub you must use metal conduit and metal piping. Always use # 8 AWG or larger conductor to connect to the grounding lug.



**WARNING:** To reduce the risk of injury, do not permit children to use this product.



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

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**WARNING:** This pool pump must be installed by a licensed, certified electrician or qualified pool serviceman in accordance with the National Electric Code and all applicable local codes and ordinances.



**WARNING:** Improper installation will create an electrical hazard which could result in death or damage to property.



**WARNING:** Always disconnect power to the pool pump at the disconnect or circuit breaker before servicing the pump. Failure to do so could result in death or serious injury to the serviceman due to electrical shock.



**WARNING:** Make sure all electrical breakers or switches are turned off before removing terminal box cover or wiring the solar array or the pump motor.



**CAUTION:** Make sure all electrical connections are clean and tight. Make sure the solar array voltage ( $V_{mp}$ ) are within the limits of the rated motor voltage. Use only copper conductors to wire the solar array and motor.



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



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



**WARNING:** Do not open the strainer pot if the pump fails to prime or if the pump has been operating without water for a long time. Pumps operated in these circumstances may experience a build up of vapor pressure and may contain scalding hot water. Opening the strainer lid may cause serious personal injury. In order to avoid the possibility of personal injury, make sure the suction and discharge valves are open and the strainer pot is cool to the touch, then remove the lid with extreme caution.



**WARNING:** This pump filter operates under high pressure. Never remove the strainer lid while the pump is operating. Always bleed the pressure out of the system before removing the strainer pot lid.



**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 the pump.



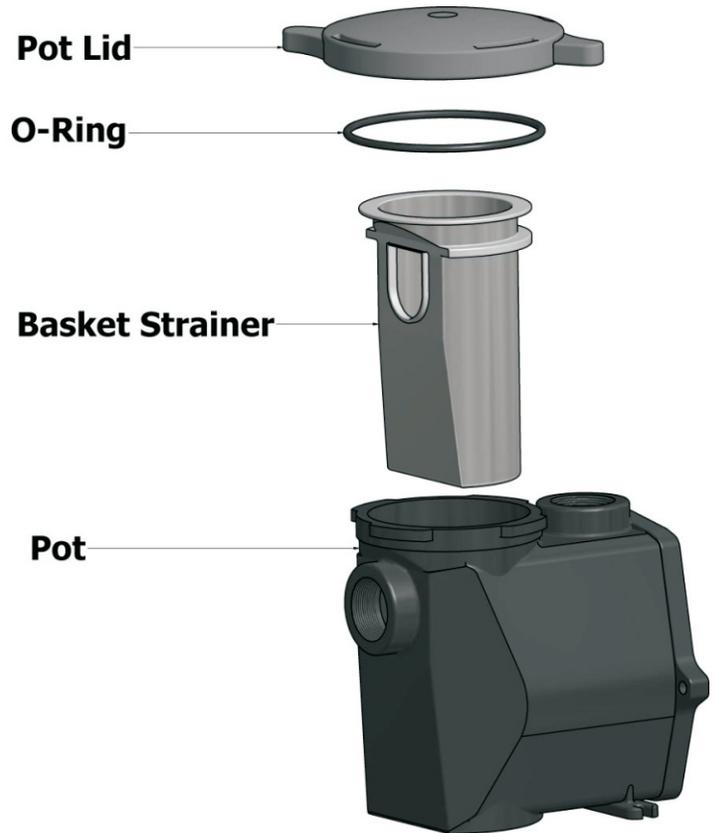
**CAUTION:** Protect the motor from heat, dirt and moisture. Shade the motor from sun, rain, splashing water, and lawn sprinklers. If the motor becomes wet, let it dry before operating it. Water damage voids the warranty.



**CAUTION:** The pump must be installed in a well ventilated area to prevent overheating. Provide ample cross ventilation. Do not block the of the end of the motor with the cooling shroud.

**TO AVOID POTENTIAL HAZARDS, FOLLOW THESE INSTRUCTIONS FOR CLEANING THE BASKET STRAINER.**

1. Turn off motor.
2. Relieve pressure in the system.
3. Turn the lid in a counter-clockwise direction until it stops.
4. Lift lid and remove basket.
5. put the debris from the basket into the trash and rinse out basket. if the basket is cracked it should be replaced.
6. Replace the basket and fill the pump pot and volute with water.
7. Clean the cover, O-ring and sealing surface of the pump pot. Grease the O-ring with Teflon or silicone.
8. Reinstall the strainer lid.
9. Make sure the lid O-ring is properly placed. Seat the lid then turn clockwise until hand tight. **DO NOT** over tighten with tools.
10. Turn the power "ON" at the main disconnect or circuit breaker.
11. Open the manual air relief valve on top of the filter.
12. Stand clear of the filter. Start the pump.
13. Bleed air from the filter until a steady stream of water comes out. Then close the main air relief valve.



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