Centrifugal Pumps
(Part Nos. PS2SS–PS73SS)
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Safety Messages

Safety is important to us. We have included safety messages throughout this manual and for your protection. Please read and follow all directions.

A safety message has a safety alert symbol followed by an explanation of what the hazard is, what can happen and what you should do to avoid injury. This is the safety alert symbol:

⚠️ CAUTION
You can be killed or seriously injured if you don’t follow instructions.

⚠️ ELECTRICAL SHOCK HAZARD
Disconnect electrical power at the circuit breaker or fuse box before installing this product. Install where it will not come into contact with water or other liquids and where it will be weather protected. Electrically ground this product. Failure to follow these instructions can result in death, fire or electrical shock.

Pump Curves

The safety alert symbol and "WARNING" or "CAUTION" will precede all safety messages:

⚠️ WARNING
You will be killed or seriously injured if you don’t follow instructions.
Pump End Assembly

1. Clean and inspect all pump parts (O-ring, seal seats, motor shaft, etc.).
2. Apply sealant in bracket bore hole and possibly around seal case according to sealant instructions. For SS seal, chamfer the edge of the bracket bore hole.
3. Press carbon graphite seal into bracket while taking care not to damage carbon graphite face.
4. Place slinger (rubber washer) over motor shaft and mount bracket to motor.
5. Carefully lubricate boot or O-ring around ceramic piece and press into impeller (if ceramic has O-ring, the marked side goes in). Use glycerine for EPDM.
6. Sparingly lubricate carbon graphite and ceramic sealing surfaces. Water, glycerine or a lightweight machine oil may be used, depending on the elastomers used in the pump. Do not use silicon lubricants or grease!
7. Thread impeller onto shaft and tighten. If required, remove motor end cap and use a screwdriver on the back of motor shaft to prevent shaft rotation while tightening. Replace motor end cap.
8. Electrically, connect the motor so that the impeller will rotate CCW when facing the pump with the motor toward the rear. Incorrect rotation will damage the pump and void the warranty! For 3-phase power, electrically check rotation of impeller with volute disassembled from bracket. If pump end is assembled and rotation is incorrect, serious damage to pump end assembly will occur even if the switch is “quickly bumped.” If rotation is incorrect, simply exchange any two leads.
10. Install drain plug with its O-ring in volute drain hole.

Disassembly

**WARNING**

Shut off power to motor before disconnecting any electrical wiring from the back of the motor.

1. Disassemble the bracket motor assembly from the volute, by removing the seven \( \frac{1}{4} \times 2\frac{1}{2} \) cap screws. (The volute may be left in-line.)
2. Remove cap covering shaft at back of motor. Using a large screwdriver, prevent shaft rotation while unscrewing impeller.
3. Remove ceramic piece from impeller.
4. Detach bracket from motor.
5. Remove carbon graphite seal from bracket by pressing out from the back. Do not dig out from the front!
**Installation**

Please read carefully! When properly installed the Sweetwater® pump will provide dependable, trouble-free service.

1. Locate pump as near the source to be pumped as possible. A flooded suction situation is preferred. The pump is not self-priming; therefore, if the fluid level is below the pump, a foot valve must be installed and the pump primed prior to startup.

2. Mount motor base to a secure, immobile foundation.

3. Use only plastic fittings on both the intake and discharge ports. Seal pipe connections with PTFE paste. These fittings should be self-supported and in neutral alignment with each port. Forcing the fittings into alignment may cause premature line failure or damage to the pump volute.

4. Never restrict the intake. Keep both input and discharge lines as free of elbows and valves as possible. Always use pipe of adequate diameter. This will reduce friction losses and maximize output.

5. This pump is not self-priming and must not be run dry! We recommend a flooded suction installation.

**Maintenance**

Lubricate motor per instructions on motor. Rotary seal requires no lubrication after assembly.

Pump must be drained before servicing or if stored below freezing temperatures. Periodic replacement of seals may be required due to normal carbon wear.

**Electrical Hookup**

**ELECTRICAL SHOCK HAZARD**

_All electrical wiring should meet state and local ordinances. Improper wiring may not only be a safety hazard but may permanently damage the motor and/or pump._

1. Check that supply voltages match the motor’s requirements.

2. Check motor wiring and connect (according to instructions on motor) to match supply voltage. Be sure of proper rotation (refer to Pump End Assembly, #8)! Improper rotation will severely damage pump and void warranty.

3. Power cord should be protected by conduit or by cable and be of proper gauge. It should be no longer than necessary.

4. Power should be drawn directly from a box with circuit breaker protection, or with a fused disconnect switch.

5. Always switch off power before repairing or servicing pump and/or motor.
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Reason</th>
<th>Remedy</th>
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<tbody>
<tr>
<td></td>
<td>Overheated motor.</td>
<td>Check main power supply for tripped breaker, etc.</td>
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<tr>
<td></td>
<td></td>
<td>Check thermal overload on motor.</td>
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<tr>
<td>Motor hums or will not rotate at</td>
<td>Improper wiring. Debris in impeller/volute. Mechanical resistance to</td>
<td>Check for proper electrical connections and proper cord size and length.</td>
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<tr>
<td></td>
<td>Failed condenser/start switch.</td>
<td>Remove motor and check impeller rotation without excessive resistance.</td>
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<td></td>
<td></td>
<td>Remove motor and check shaft rotation for excessive bearing noise.</td>
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<td></td>
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<td>Have authorized service person check condenser.</td>
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<tr>
<td>Pump operates with little or no</td>
<td>Pump not primed. Seal leak.</td>
<td>Check to insure that pump is primed.</td>
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<tr>
<td>flow.</td>
<td>Improper line voltage.</td>
<td>Check for leaking seal.</td>
</tr>
<tr>
<td></td>
<td>Improper phase rotation.</td>
<td>Check voltage.</td>
</tr>
<tr>
<td></td>
<td>Obstruction in plumbing/impeller.</td>
<td>Check phase rotation.</td>
</tr>
<tr>
<td></td>
<td>Defective check or foot valve.</td>
<td>Check for clogged inlet port and/or impeller.</td>
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<td></td>
<td>Air introduction in inlet plumbing.</td>
<td>Inspect check/foot valve for obstruction or failure.</td>
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<tr>
<td></td>
<td></td>
<td>Check inlet lines for air leakage.</td>
</tr>
<tr>
<td>Pump loses prime.</td>
<td>Defective check or foot valve.</td>
<td>Inspect check/foot valve for obstruction or failure.</td>
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<tr>
<td></td>
<td>Seal leak.</td>
<td>Check for leaking seal.</td>
</tr>
<tr>
<td></td>
<td>Air introduction in inlet plumbing.</td>
<td>Check inlet lines for air leakage.</td>
</tr>
<tr>
<td></td>
<td>Fluid supply low.</td>
<td>Ensure proper sizing of pump for available fluid supply.</td>
</tr>
<tr>
<td>Motor or pump overheats.</td>
<td>Improper line voltage, phase, wiring.</td>
<td>Check amperage, voltage, and phase.</td>
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<tr>
<td></td>
<td>Binding motor shaft or pump parts.</td>
<td>Check for obstruction, bearing failure, shaft distortion.</td>
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<td></td>
<td>Inadequate ventilation.</td>
<td>Allow for airflow around pump motor.</td>
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<td></td>
<td>Deadheaded pump.</td>
<td>Ensure water flow at pump discharge.</td>
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