



# OWNER'S MANUAL

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## Important Safety Instructions

 - This manual contains important instructions that should be followed during installation, operation, and maintenance of the product. Save this manual for future reference.

 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**

## Limited Warranty

BERKELEY warrants to the original consumer purchaser ("Purchaser" or "You") of the products listed below, that they will be free from defects in material and workmanship for the Warranty Period shown below.

Water Systems Products — jet pumps, small centrifugal pumps, submersible pumps and related accessories	<i>whichever occurs first:</i> 12 months from date of original installation, or 18 months from date of manufacture
Pro-Source™ Composite 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	12 months from date of original installation, or 18 months from date of manufacture
Centrifugals – close-coupled motor drive, frame mount, SAE mount, engine drive, VMS, SSCX, SSHM, solids handling, submersible solids handling	12 months from date of original installation, or 24 months from date of manufacture
Submersible Turbines, 6" diameter and larger	12 months from date of original installation, or 24 months from date of manufacture

Our limited warranty will not apply to any product that, in our sole judgement, has been subject to negligence, misapplication, improper installation, or improper maintenance. Without limiting the foregoing, operating a three phase motor with single phase power through a phase converter will void the warranty. Note also that warranty ameteran

## Location

Place unit as close to water source as possible to minimize suction lift, obtain the best pumping performance, and aid in priming. A typical portable installation is shown in Figure 1.

For permanent installation, mount unit on a foundation that will support the weight of pump and engine and also provide stability while the pump is running. For most permanent installations, it is advisable to bolt unit directly to foundation.

**NOTICE** Settling and/or shifting during operation can cause piping to place excessive strain on the pump and may damage pump case.

## Suction Connection

Connect either rigid pipe or flexible suction hose to pump suction as shown in Figure 1. If hose is selected, hose must be rated to hold the suction pressure and prevent collapse while the pump is running.

Make the suction line a continuous rise from the water source to the pump. High spots can trap air and also make priming difficult. Make sure all connections are tight and free of air leaks.

**NOTICE** Suction pipe or hose must be at least as large as the pump suction inlet in order for the pump to operate properly.

Minimum depth for the suction inlet is determined by the diameter of the suction line. See Figure 1.

Use a suction screen to keep debris out of pump.



Operation

NOTICE Do not start or run pump dry or damage to the mechanical seal will result.

- Wear safety glasses at all times when working on pumps.
• Do not allow pump or any system component to freeze. To do so will void warranty.
• Periodically inspect pump and system components.

Priming The Pump

A self priming pump only needs to be manually primed at the first start-up. Once primed, under normal conditions the pump will reprime automatically at each subsequent start-up.

To prime, remove plug from top of pump case and fill

case with water. After filling, replace plug and start pump.

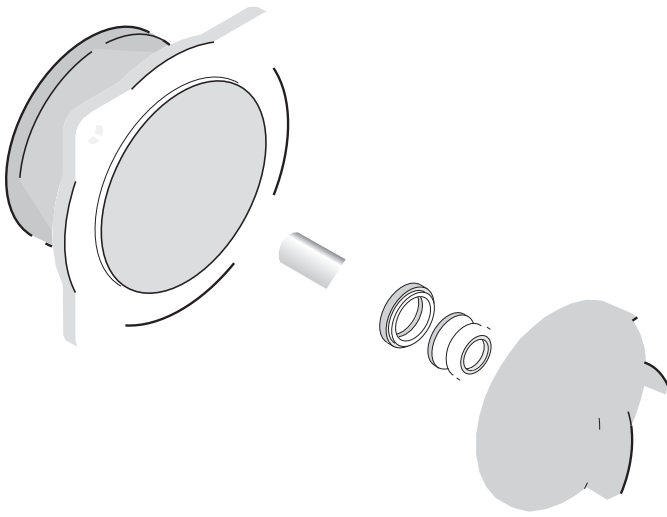
When the pump is started, the water will be drawn into the pump and fill the pump case.

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## Seal Replacement

1. Refer to Figure 2. Remove pump case from seal plate to expose impeller and mechanical seal.



**NOTICE** Gasket(s) may be damaged during disassembly. Replace with new gasket(s) at this time.

2. Hold engine shaft stationary and unscrew impeller. Remove rotating body of mechanical seal.
3. Remove seal plate from engine, then tap ceramic seat out of seal plate from the back.
4. Clean ceramic seat cavity in seal plate thoroughly before installing new seal.  
**NOTICE** Make sure that seal faces are clean; do not scratch or damage new seal face during seal replacement.
5. Lubricate ceramic seat with mineral oil and press into seal plate cavity.
6. Lubricate shaft sleeve with mineral oil and slide seal body into place. If an impeller spacer was provided with pump between shaft sleeve and impeller, replace it.
7. Screw impeller back on engine shaft and re-install pump case.

## Ordering Replacement Parts:

Locate the Berkeley nameplate on pump. This plate is normally on the pump case or bracket (Seal Plate). A typical nameplate is shown in Figure 3.

To be sure of receiving correct parts, provide all nameplate data when ordering. B.M. (Bill of Material) number is most important.

Write the nameplate information below, as nameplates can become worn or lost.

Model: \_\_\_\_\_

S.N. or Date: \_\_\_\_\_

Impeller Dia.: \_\_\_\_\_

B.M. \_\_\_\_\_

<b>1.</b>		
A. Speed too low		Refer to engine manufacturer's manual
B. Rotating and/or reciprocating parts drag		Refer to engine manufacturer's manual
C. Speed too high		Maximum engine speed not to exceed engine manufacturer's recommendation.
D. Loose or broken parts		Refer to engine manufacturer's manual
<b>2.</b>		
A. Not primed		Reprime, inspect suction system for air leaks, and or clack assembly.
B. Pump takes too long to prime		Check for air leaks or defective check valve.
C. Flow through pump completely or partially blocked.		Locate and remove obstruction. Attach strainer.
D. Internal leakage		Check clearances between face of vanes and case. Should not exceed 1/32".
E. Rotating parts drag		Inspect. Repair.
F. Loose or broken parts		Inspect. Repair.
<b>3.</b>		
A. Pressure required by system at design flow rate exceeds pressure rating of pump		Compare pump pressure and flow rate against pump performance chart. Reduce system

