



PCD-1000 SUBMERSIBLE PUMP STAINLESS STEEL UTILITY PUMP



INSTALLATION AND USER'S GUIDE

IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

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IMPORTANT NOTICE

This guide provides installation and operation instructions for this product. Consult Pentair with any questions regarding this equipment.

Attention Installer: This guide contains important information about the installation, operation and safe use of this product. This information should be given to the owner and/or operator of this equipment after installation or left on or near the pump.

Attention User: This manual contains important information that will help you in operating and maintaining this product. Please retain it for future reference.

Warnings and safety instructions for Pentair Aquatic Systems™ pumps and other related products are available at: <http://www.pentairpool.com/pool-owner/safety-warnings/> or call (800) 831-7133 for additional free copies of these instructions.

Please refer to <http://www.pentairpool.com/pool-owner/safety-warnings/> for warning and safety instructions related to this product.

READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS



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



Warns about hazards that can cause death, serious personal injury, or major property damage if ignored.



Warns about hazards that may cause death, serious personal injury, or major property damage if ignored.



Warns about hazards that may or can cause minor personal injury or property damage if ignored.

NOTE indicates special instructions not related to hazards.

Carefully read and follow all safety instructions in this manual and on equipment. Keep safety labels in good condition; replace if missing or damaged.

PUMP WARNING AND SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, include the following:

⚠ WARNING Do not permit children to use this product.

⚠ WARNING **RISK OF ELECTRICAL SHOCK.** Connect only to a branch circuit protected by a ground-fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify that the circuit is protected by a GFCI.

⚠ WARNING This unit must be connected only to a supply circuit that is protected by a ground-fault circuit-interrupter (GFCI). Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push the reset button. Power should be restored.

If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the pump without the test button being pushed, a ground current is flowing, indicating the possibility of an electric shock. Do not use this pump. Disconnect the pump and have the problem corrected by a qualified service representative before using.

⚠ DANGER FAILURE TO FOLLOW ALL INSTRUCTIONS AND WARNINGS CAN RESULT IN SERIOUS BODILY INJURY OR DEATH. THIS PUMP SHOULD BE INSTALLED AND SERVICED ONLY BY A QUALIFIED SERVICE PROFESSIONAL. INSTALLERS, OPERATORS AND OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS IN THE OWNER'S MANUAL BEFORE USING THIS PUMP. THESE WARNINGS AND THE OWNER'S MANUAL MUST BE LEFT WITH THE PUMP OWNER.

⚠ WARNING This pump has not been investigated for swimming pool and marine areas. This pump is not intended for use with the filtration or circulation systems of pool, spas or water applications. This pump has not been investigated for use in swimming pool areas while swimmers are present. Do not allow swimmers in the pool or spa while operating a submersible pump.

⚠ WARNING This pump has not been tested or approved for use as the filtration or circulation systems of pools, spas, or water applications. This pump has not been tested or approved for use in swimming pool areas while swimmers are present.

⚠ WARNING This pump is intended for utilitarian purposes only and to be used only by a trained service professional using a properly-functioning GFCI (ground fault circuit interrupter) device. An acceptable motor-control switch shall be provided at the time of installation that matches motor input in full load amps.

⚠ WARNING Pump is supplied with a grounding conductor and grounding-type attachment plug. Be sure it is connected only to a properly grounded grounding-type receptacle. Where a 2-prong wall receptacle is encountered, it must be replaced with properly grounded 3-prong receptacle installed in accordance with codes and ordinances that apply.

⚠ WARNING Pump should always be electrically grounded to a suitable electrical ground such as a grounded water pipe or a properly grounded metallic raceway or ground wire system. Do not cut off round ground pin.

⚠ WARNING **RISK OF ELECTRICAL SHOCK.** Electrical shock can burn or kill. If your work surfaces have water or moisture on them, do not walk on wet area until all power has been turned OFF. If the pump stops, disconnect power from unit before attempting to check why unit has stopped operating.

⚠ WARNING Pumps improperly or installed or used in applications other than for which the pump was intended can result in severe personal injury or death. These risks may include but not be limited to electric shock, fire, flooding, suction entrapment or severe injury or property damage caused by a structural failure of the pump or other system component.

Release all pressure within system before servicing any component.

Remove pump from any body of water before servicing.

Secure discharge line before starting pump. An unsecured discharge line will whip, possibly causing personal injury and/or property damage.

If servicing or while power is connected, do not handle pump or pump motor with wet hands or when standing on wet or damp surface, or in water.

⚠ CAUTION Do not run the pump dry.

⚠ CAUTION **RISK OF FLOODING.** If a flexible discharge hose is used, be sure pump is secured in sump to prevent movement. Failure to secure pump may allow pump movement, switch interference, and prevent pump from starting or stopping.

⚠ CAUTION Check hoses for weak or worn condition before each use, making certain that all connections are secure. Protect electrical cord from sharp objects, hot surfaces, oil, and chemicals. Avoid kinking cord.

Replace or repair damaged or worn cords immediately.

General Installation Information

- All work must be performed by a qualified service professional, and must conform to all GFCI standards; and all national, state, and local codes.
- Install to provide drainage of compartment for electrical components.
- The pump will function correctly only if it is properly sized to the specific application and properly installed.
- Know the pump application, limitations, and potential hazards.
- Do not use this pump in a fish pond.
- Always disconnect power before servicing.

Personal Safety

- Wear safety glasses at all times when working with pumps.
- Keep work area clean, uncluttered, and properly lighted – replace all unused tools and equipment.
- Keep visitors at a safe distance from work area.
- Make work areas child-proof – with padlocks, master switches, and other applicable safety devices.

SAVE THESE INSTRUCTIONS

PUMP OVERVIEW

Pump Description

This submersible sump pump is designed for draining and utility applications. The pump features a stainless steel casing, suction strainer, impeller and shaft, along with permanently lubricated ball bearings and automatic thermal overload protection. Includes a float switch and a PVC elbow.

- Equipped with 15-foot, 18/3 grounding type power cord.
- Optional tethered float switch for automatic operation
- Clog-resistant cast stainless steel impeller, ceramic shaft facings, and oil chamber for efficient seal lubrication.
- 115V, 60 Hz, single phase permanent split capacitor motor

Specifications

The pump is designed for 115 VAC, 60 Hz operation and requires a minimum 15 amp dedicated circuit.

Both pump and switch are supplied with three wire cord sets with grounding-type plugs.

Power supply required 115VAC, 60 Hz
Motor duty Continuous*
Dedicated Circuit Requirement (min) 15 Amps
Pump Discharge1-1/4" Male NPT
Discharge Adapter:.....1-1/4" Female NPT Elbow
Passes solids up to: 3/4"
***Note: For continuous operation, water depth must be at least 2" (5 cm).**

Pump Performance

Model	HP	Motor Full Load (Amps)	RPM	Minimum Circuit Req. (Amps)	Liquid Temperature Range	Switch Setting		Pumps Down To
						On	Off	
PCD-1000	3/4	6.4	3450	15	32/130° F 0/54° C	12" 30 cm	6" 15.2 cm	1-3/8" 3.5 cm

Model	HP	GPM of Water @ Total Feet of Head				Shut off
		5'	10'	15'	20'	
PCD-1000	3/4	45.5	34.0	21.5	12.0	26.2'

General Information

Electrically powered sump pumps can provide many years of trouble-free service when correctly installed, maintained, and used. However, unusual circumstances may prevent your pump from functioning normally, such as:

- **Interruption of power to the pump**
- **Dirt/debris in the sump**
- **Flooding that exceeds the pump's capacity**
- **Electrical or mechanical failure in the pump.**

To prevent possible water damage due to flooding, consult your retailer about a secondary AC sump pump, a DC backup sump pump, and/or a high water alarm.

See the "Troubleshooting" in section 4 of this manual for information about common sump pump problems and corrective action. Note: No repair parts are available for this pump.

INSTALLATION AND OPERATION



RISK OF ELECTRICAL SHOCK. Do not handle a pump or pump motor with wet hands, or when standing on wet or damp surface or in water if power is connected. Know the pump application, limitations, and potential hazards.



Pump should always be electrically grounded to a suitable electrical ground such as a grounded water pipe or a properly grounded metallic raceway or ground wire system. Do not cut off round ground pin.



Failure to check operation by filling sump with water and observing pump operation through one complete cycle may lead to improper operation, premature failure, and flooding.

Location and Placement

- Construct sump pit of tile, concrete, steel, or plastic. Check local codes for approved materials. Install the pump in sump pit with:
 - Minimum diameter of 12" (30.5 cm)
 - Sump depth of 18" (46 cm)
- Install pump in pit so that switch operating mechanism has maximum possible clearance.
- Pump should not be installed on clay, earth, or sand surfaces.
 - Clear sump pit of small stones and gravel which could clog pump.
 - Be sure to keep pump inlet screen clear.

Note: Do not use ordinary pipe joint compound on plastic pipe. Pipe joint compound can disintegrate plastic.
- Install discharge plumbing. Use rigid plastic pipe and wrap threads with thread seal tape or other pipe joint compound. Screw pipe into pump and hand tighten 1 to 1-1/2 turns.
- To reduce motor noise and vibrations, a short length of rubber hose (1-7/8" I.D., e.g. radiator hose) can be connected into discharge line near pump using suitable clamps.
- Install an in-line check valve to prevent flow backwards through pump when pump shuts off.
- If pump discharge line is exposed to outside sub-freezing atmosphere, portion of line exposed must be installed so any water remaining in pipe will drain to the outfall by gravity.

Note: Failure to do this can cause water trapped in discharge to freeze which could result in damage to pump.

- The unit is ready for operation after the piping and check valve are installed.
- Check operation by filling sump with water and observing pump operation for one complete cycle.

Operation Information

- Be sure to secure a discharge line before starting the pump. An unsecured discharge line can whip around and potentially cause personal injury.
- Check all hoses for weak or worn conditions before each use, be sure that all connections are secure.
- Protect electrical cord from sharp objects, hot surfaces, oil, and chemicals.
- Periodically inspect sump, pump, and system components. Keep free of debris and foreign objects and perform routine maintenance as required.

Note: This pump is not designed for applications involving salt water or brine. Using the pump with salt water or brine will void the warranty. Pump only water with this pump.

Shaft Seal

The shaft seal depends on water for lubrication. Do not operate pump unless it is submerged in water as seal may be damaged if allowed to run dry. Allowing the pump to run dry will void warranty.



PCD-1000 Submersible Pump

Automatic Reset Thermal Protector

The motor is equipped with automatic reset thermal protector. If the temperature in the motor should rise, the switch will cut off all power before damage can be done to motor. When the motor has cooled sufficiently, the switch will reset automatically and restart the motor.

If protector trips repeatedly, remove the pump and check for the cause of difficulty. The following can cause the pump to cycle on and off:

- Low voltage
- Dry running (running the pump without water)
- Long extension cords
- Clogged impeller
- Very low head or lift

The pump will not remove all water. If a manually operated pump is operating and suddenly no water appears from the discharge hose, shut OFF unit immediately. Water level is probably very low and unit has lost prime.

Float Switch

For automatic operation, plug the float switch directly into the outlet and plug the pump cord into opposite end of switch plug. The use of float switch is optional. For manual operation, insert the pump plug directly into the outlet.

1. Plug the float switch into the wall outlet.
2. Plug the pump into the float switch.
3. Anchor the float switch cord on the handle on the pump.
4. The float switch is now ready for operation.
5. The float switch turns on the pump when it reaches about a 45° angle from the handle.
6. The images below show when to expect the float switch to turn on the pump.



Float switch rises as water level increases.



Float switch turns the pump on as it reaches approx. a 45° angle.

Float Switch Positions

TROUBLESHOOTING


RISK OF ELECTRICAL SHOCK.

Hazardous voltage; can shock, burn, or kill. Unplug pump and disconnect power before attempting to clean or work on pump.

This pump has no serviceable parts inside the pump casing. Opening the case will ruin the pump. If obstruction or blockage of impeller cannot be cleaned out from the outside (for instance, by washing out with a garden hose), replace the pump.

Symptoms	Possible Causes	Corrective Action
Pump won't start or run.	Blown fuse. Low line voltage. Defective motor. Defective float switch Impeller. Float obstructed.	If fuse is blown, replace with fuse of proper size. If voltage under recommended minimum, check size of wiring from main switch on property. If OK, contact power company or hydro authority. Replace pump. Replace switch. If impeller won't turn, locate source of binding and clean out with hose or remove. Remove obstruction.
Pump starts and stops too often.	Backflow of water from piping. Faulty float switch	Install or replace check valve. Replace switch.
Pump will not shut off.	Defective float switch. Restricted discharge (obstacle in piping) Float obstructed.	Replace switch. Remove pump and clean pump and piping. Remove obstruction.
Pump operates but delivers little or no water.	Low line voltage. Something caught in impeller. Worn or defective parts or plugged impeller. Airlock (check valve installed without vent hole).	If voltage under recommended minimum, check size of wiring from main switch on property. If OK, contact power company or hydro authority. Clean out impeller or replace pump. Clean out impeller if plugged; otherwise replace pump. Drill a 1/16" - 1/8" diameter hole between pump and discharge and check valve.



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