PHCC Pro Series
Sump Pumps
Instruction Manual
& Safety Warnings

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>HP</th>
<th>Volts</th>
<th>Discharge Diameter</th>
<th>Amps @ 10'</th>
<th>Max Handling GPM</th>
<th>Max Head @ 10'</th>
<th>GPM / GPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>S3033</td>
<td>1/2</td>
<td>115</td>
<td>1 1/2&quot;</td>
<td>4.0</td>
<td>30'</td>
<td>50</td>
<td>3000</td>
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<tr>
<td>S3050</td>
<td>1/2</td>
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<td>2&quot;</td>
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<td>65</td>
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<td>S3100</td>
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<td>S5033</td>
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<tr>
<td>S5050</td>
<td>1</td>
<td>115</td>
<td>2&quot;</td>
<td>6.8</td>
<td>36'</td>
<td>83</td>
<td>4980</td>
</tr>
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</table>

Important Safety Instructions and Warnings

SAVE THESE INSTRUCTIONS. This manual contains important SAFETY WARNINGS and OPERATING INSTRUCTIONS for the PHCC Pro Series pumps. You will need to refer to it before attempting any installation or maintenance. ALWAYS keep these instructions with the unit so that they will be easily accessible. Failure to read and follow these warnings and instructions could result in property damage, serious injury, or death.

\[\text{\textbf{WARNING}}\] Risk of electric shock. To reduce this risk, observe the following precautions.

- ALWAYS disconnect the pump from the power source before servicing or making adjustments.
- NEVER handle the pump or motor with wet hands or when standing on a wet or damp surface while the pump is plugged into the power source.
- MAKE SURE THERE IS A PROPERLY GROUNDED RECEPTACLE AVAILABLE. This pump is wired with a 3-prong grounded plug. To reduce the risk of electric shock, be certain that it is only connected to a properly grounded, 3-prong receptacle. If you have a 2-prong receptacle, have a licensed electrician replace it with a 3-prong receptacle according to local codes and ordinances.
- NEVER bypass grounding wires or remove the ground prong from the plug.
- DO NOT use an extension cord. The electrical outlet should be within the length of the pump’s power cord, and at least 4 feet above the floor level to minimize potential hazards from flood conditions.
- DO protect the electrical cord from sharp objects, hot surfaces, oil, and chemicals. Avoid kinking the cord.
- MAKE SURE the supply circuit has a fuse or circuit breaker rated to handle the power requirements noted on the nameplate of the pump.
- DO NOT remove the power supply cord and strain relief or connect the pump directly to the conduit.
- NEVER install the pump in locations classified as hazardous in accordance with the National Electrical Code, ANSI/NFPA 70.
- ALWAYS install the pump in accordance with the National Electric Code and all applicable local codes and ordinances. All wiring should be performed by a licensed electrician.

\[\text{\textbf{CAUTION}}\] To reduce the risk of hazards that can cause injury or property damage, observe the following precautions.

- DO NOT use the power cord or strain relief to carry the pump. Use the pump handle.
- DO NOT expose the control unit to any type of moisture, water, rain or snow.
- DO NOT operate the pump or control unit if it has been damaged in any way.
- DO drill an air bleed hole in the discharge pipe when a check valve is used. Drill the hole angled toward the bottom of the sump to avoid splashing water outside the sump pit. If a hole is not drilled above the pump, an air lock may prevent the pump from operating. The hole must be drilled above the water line but below the check valve. The optimum size of the hole is different for different pumps. Drill a 1/8" (3.2mm) hole in the discharge pipe for the S3 Series and S5 Series pumps.
- DO NOT use sump pumps in pits handling raw sewage, salt water, or hazardous liquids. S3 & S5 Series pumps are not designed for this purpose. The S3 and S5 Series sump pumps are designed for ground water use only.
- DO NOT disassemble the pump or control unit. When service is required, contact Glentronics technical support at 800-991-0466, option 3. Return the product to the manufacturer for any repairs at the following address:

Glentronics, Inc.
645 Heathrow Drive, Lincolnshire, IL 60069

NOTICES

- The control unit must receive 115V AC +/- 5% and 60 Hz from the AC outlet. Lower voltage may cause the power failure alarm to activate.
- These primary pumps will not provide protection during a power outage. With the risk of property damage from high water levels, the addition of a PHCC Pro Series battery backup sump pump system is highly recommended.
- After the initial installation, be sure to check the operation by filling the sump with water and observing the pump operation through one full cycle.
- For continuous duty operation, the pump must be submerged at least 3/4 of the depth of the pump at all times.
- In instances where the discharge line is exposed to freezing temperatures, the pipe must be sloped downward so any remaining water will drain out. Failure to do so will prevent water from exiting the sump and damage the pump if the line freezes.

Installation Instructions

Prior to Installation

1. Visually inspect your pump. Products may be damaged during shipping. If the product has been damaged, contact your place of purchase or Glentronics, Inc. before installation.
2. Thoroughly read the instructions provided to learn specific details regarding installation and use. This manual should be retained for future reference.
Installing the Pump

⚠️ WARNING: This installation must be in accordance with the National Electric Code and all applicable local codes and ordinances.

1. Use a pit that conforms to all local codes and is large enough to accommodate the pump and float switch. The minimum requirements for pumps with the double float assembly are 10" in diameter and 14" deep. However, larger pump pits are preferred, since they will extend the discharge cycle and reduce the number of times the pump turns on.

2. Clean the pit of all debris. The pump's intake screen must be kept clear.

3. The pump should not be set directly on a clay, earthen, or sand base. You may install bricks or blocks under the pump to provide a solid base.

4. The pump should be level.

5. Install discharge plumbing according to local, regional and state codes. Rigid PVC pipe is recommended.

6. The sizes of the discharge outlets on the pumps vary from 1 1/2" to 2". This range is normal. If it is necessary to change the size of the discharge pipe to match the size of the discharge pump, it is mandatory when sharing a discharge line with another pump (i.e. a back-up pump or a second primary pump).

7. In instances where the discharge line is exposed to freezing temperatures, the pipe must be insulated. A small stream of water will escape from an air bleed hole when the pump is running, so the hole should be drilled on an angle toward the bottom of the sump pit.

8. Place the hose clamp over the discharge pipe so that the diameter of the clamp is less than 1" below the top of the pit. To avoid debris from pouring onto the float, it should be positioned on the side of the discharge pipe opposite the drain tile. The pit cover either has a hole punch that will allow the cord to be passed through or one can be drilled.

Connecting the Pump and Controller

⚠️ WARNING: Make sure the outlet is single phase, 115V and 60HZ for all the pump installations.

Deluxe Dual Float Controller Model # DFC2

1. Mount the controller to the foundation, drywall or a stud through the 2 holes on the cabinet using the proper mounting hardware for the application. The controller should be mounted at least 4’ from the floor and within 4’ of the outlet.

2. Open the plastic door on the top of the unit and using a small flat head screwdriver adjust the dial to select the number of seconds that the pump will run after the bottom float drops. The timer can be adjusted from 5-65 seconds. Install a 9V battery and replace the door.

3. Plug the control box into a properly grounded 3-prong receptacle. Then, plug the pump into the receptacle on the control box. Do not use an extension cord.

4. Make sure the Power Failure Alarm switch is in the ON position.

Vertical Float Switch Model # 1020012

1. Plug the vertical float switch cord into a properly grounded 3-prong receptacle. Then, plug the pump into the receptacle on the float switch cord. Do not use an extension cord.

Connecting to a Security System

The Deluxe Controller (Model DFC2) includes a terminal on the right side of the control box to connect to a security system or other alarm devices. There are (3) three positions for wire connection on this terminal: N.O. - normally open, N.C. - normally closed, and Common.

1. Check your security system to determine whether an open (no contact) or closed (making contact) connection is needed to activate the alarm.

2. The security system will provide (2) two connection terminals to extend wires to the control terminal. Strip two wires 1/4" each. Connect either wire to the common terminal. To secure the wire into the terminal, insert the exposed wire into the hole on the side of the terminal next to the screw marked common. Turn the screw a few turns to lock in the wire.

3. If the security system requires a closing of a contact to activate the alarm, secure the other wire into the terminal hole labeled N.O. (normally open). If the security system requires an opening of a contact, secure the wire into the terminal hole labeled N.C. (normally closed). Note: Only the "AC power out" and "Float raised for 10 minutes" alarms will activate the remote terminal signal.

Completing the Installation (all models)

1. After the initial installation, be sure to check the pump operation by filling the sump with water and observing the pump through one full cycle. When using the dual float the pump should run for 10 seconds after the lower float drops. When using the tethered float the pump should shut off when the float is tilted down. Note: When the pump activates, it should have a "normal pumping" sound. Any abnormal sound, vibration, or lack of output is the signal of a problem. Stop the pump and refer to the troubleshooting guide.

2. Replace the pit cover making sure not to pinch or crimp the pump wire with the cover. The pit cover either has a "hole punch" that will allow the cord to be passed through or one can be drilled.

Product Operation

Dual Float Switch

(included with controller models DFC1, DFC1.5 and DFC2)

The dual float switch contains two large floating rings enclosed within a protective cage. Water will lift the bottom float by a 1/2", which will activate the pump. If for any reason the lower float does not activate the pump, the water will rise and activate the second switch. As the pump evacuates the water from the pit the float will drop. The pump will run for an additional 10 seconds to extend the cycle after the lower float drops. Note: When mounting the float switch, position the bottom of the cage at the height you want the pump to activate.

Installing the Vertical Float

The vertical float switch contains a single large float. This float will activate the pump. If for any reason the lower float does not activate the pump, the water will rise and activate the second switch. As the pump evacuates the water from the pit the float will drop. The pump will run for an additional 10 seconds to extend the cycle after the lower float drops. Note: When mounting the float switch, position the bottom of the cage at the height you want the pump to activate.

Installing the Double Float

The PHCC Pro Series double float switch is easy to install by using the enclosed metal hose clamp.

1. Hold the float switch to the discharge pipe so the cage is below the bracket.

2. Secure the float to the pipe with the enclosed hose clamp, but do not completely tighten the clamp at this time.

3. Position the float switch to a level where the bottom of the float cage is no lower than 3" above the bottom of the pump and no higher than 1" below the top of the pit. To avoid debris pouring into the float, it should be positioned on the side of the discharge pipe opposite the drain tile. Note: It is important to mount the float below the drain tile that empties into the pit. Mounting it above the drain tile would allow water to fill the drain tile before the pump is activated to pump out the water.

4. Once the float switch is in the desired position, tighten the clamp.

Installing the Vertical Float

The vertical float switch contains a single large float. Water will lift the float to the top of the lift rod which will raise the lift rod and activate the pump. As the pump evacuates the water from the pit the float will drop, lowering the lift rod and turning off the pump.

1. Fully open the metal hose clamp and insert it through the slots in the mounting bracket of the float switch.

2. Place the hose clamp over the discharge pipe so that the gripping tabs are against the pipe and select the desired activation level of the pump.
Deluxe Dual Float Controller Model # DFC2

The benefit of this controller is that it will sound an alarm when problems exist regarding the ability of the sump pump to keep the basement dry.

The PHCC Pro Series Deluxe Dual Float Controller features a series of warnings (audible and visual) that pinpoint potential problems with the pump, switch and power conditions. The controller will sound an alarm when power has been interrupted, when the pump has run for more than 10 minutes continuously, or when the 9V battery is low. The 9V battery (sold separately) runs the controller during a power outage, allowing it to sound an alarm if the circuit breaker trips, the controller is not plugged in securely, or the homes power is interrupted. Note: The 9V battery will only power the switch, not the pump. The Deluxe Controller has a dial (located in the battery compartment) to determine the number of seconds that the pump will run after the float drops. The Deluxe Controller will also run the pump once a week for approximately 4 (seconds). This test will exercise the pump and help ensure the pump is working properly.

Operating the Pump in a Continuous Duty Application

The PHCC Pro Series pumps are rated for continuous duty and may be used in applications requiring continuous pumping including fountains, ponds, etc. For use in any continuous duty application the pump should be plugged directly into the wall outlet without the use of a controller. The outlet must be a single phase properly grounded 3-prong receptacle, 115V, 60HZ. For continuous duty operation, the pump must be submerged at least 3/4 of the depth of the pump at all times.

Understanding the Warnings and Alarms (Model # DFC2)

AC power is out

There are several causes for power failure. The most common are a power outage by the electric company or a tripped circuit breaker. Although the deluxe controller can not run the pump, it will sound an alarm indicating the loss of power. This will allow the homeowner time to address the problem. If this warning light and alarm are on, the control box is not receiving AC power for one of several reasons:

1. The control box is not plugged in.
2. The power to the house is out.
3. The circuit breaker to that outlet has been tripped.
4. The ground fault interrupter has been tripped for that outlet.
5. A power brownout is taking place.

Note: A PHCC Pro Battery backup sump pump system can protect the basement during a power outage. It will automatically activate a separate 12-volt battery powered pump, which will keep the basement dry until power is restored.

Power Failure Alarm slide switch

When the controller is not receiving AC power, the monitoring features and the audible alarms are powered by the 9-volt battery. This type of battery will power the controller for many hours, but not indefinitely. Once the source of the AC power alarm is determined, it is suggested that the Power Failure Alarm slide switch be turned to the OFF position until the power is restored. This will preserve the battery and silence the alarm. When AC power is restored, slide this switch back to the ON position. Note: If the AC power is restored and the slide switch is in the OFF position, the alarm and light for the 9-volt battery warning will activate, even if the battery is good. This is a reminder to reset the alarm. Slide the switch to the ON position. If the battery is good, the light will go off. If the alarm continues to sound, replace the battery.

The system is operating

This light should be ON and flashing at all times. It is included to indicate that the system is monitoring the power conditions. This light will not illuminate when:
1. The power is out and the Power Failure Alarm slide switch is in the OFF position.
2. The power is out and the 9V battery is discharged.
3. The controller is not functioning. Contact Glentronics service department.

The 9-volt battery is low

1. The 9-volt battery located in the top of the control box is coming to the end of its useful life. Replace it with a new 9-volt alkaline battery.
2. The Power Failure Alarm switch is in the OFF position. It must be in the ON position at all times, except when silencing an actual power failure condition.

Pump or float problem

This key feature monitors the time that the float switch is continuously up or in the activated position. It is unusual for a pump run for 10 or more minutes continuously. This can occur for many different reasons. Either the float is stuck in the up position, there is a mechanical problem with the pump, or there is a problem with the plumbing connections. Please refer to this manual’s Troubleshooting Guide on the following page.

See page 4 for Maintenance Check List and Backup Installation
Maintenance Check List
Maintenance should be performed 1-2 times per year.
1. Remove all debris from the the pump strainer and bottom of the pit.
2. Remove all debris floating in the water.
3. Remove all debris from the float switch cage.
4. Fill the pit with water. Make sure pump turns on at the intended level.
5. While the pump is running, make sure pump is evacuating water at a good pace.
6. While the pump is running, make sure a stream of water is escaping from the air bleed hole. If not, clear the hole of any deposits or debris.
7. Unplug the control box from the wall. Make sure the “AC power is out” light and alarm sound (DPC2).

Visit our website www.stopflooding.com for more information about the PHCC Pro Series AC pumps and battery backup sump pump products.

Backup Installation
When the power goes out, the PHCC Pro Series AC sump pumps will not operate. For protection during a power outage, a PHCC Pro Series battery backup system can be installed. There are three systems with matching batteries that will provide protection. The illustration at right is an example of a typical battery backup installation.

Troubleshooting  (Always unplug the pump from the controller before performing any maintenance)

<table>
<thead>
<tr>
<th>The pump will not start or run</th>
<th>Pump starts and stops too frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump is not plugged in</td>
<td>Float switch mounted too low</td>
</tr>
<tr>
<td>Plug pump properly (see instructions)</td>
<td>Raise float switch</td>
</tr>
<tr>
<td>Water is not high enough to activate the pump</td>
<td>Water flowing back from pipe</td>
</tr>
<tr>
<td>Make sure float switch is positioned properly</td>
<td>Install or replace check valve</td>
</tr>
<tr>
<td>Open circuit</td>
<td>Malfunctioning float switch</td>
</tr>
<tr>
<td>Check circuit breaker or fuse, and GFI reset button</td>
<td>Replace float switch with new float switch</td>
</tr>
<tr>
<td>Poor power source</td>
<td>Blocked intake strainer</td>
</tr>
<tr>
<td>Check circuit line wires and cable*</td>
<td>Clear blockage or thaw frozen line</td>
</tr>
<tr>
<td>Low voltage</td>
<td>One or both of the floats is obstructed and cannot drop down</td>
</tr>
<tr>
<td>Check line wires and source voltage*</td>
<td>Clear debris from inside the float cage (Loosen nut on top of float, then remove c-clip on bottom of float. Remove debris. Tighten nut on top of float, then replace c-clip on bottom of float.) When reassembling the float, the magnetic strip on the inside of the float should be facing down.</td>
</tr>
<tr>
<td>Bad power cable</td>
<td>Defective float switch</td>
</tr>
<tr>
<td>Replace with new cable*</td>
<td>Replace float switch with new float switch</td>
</tr>
<tr>
<td>Locked impeller</td>
<td>Check valve or installed upside down</td>
</tr>
<tr>
<td>Remove strainer and clear obstruction</td>
<td>Reverse or replace check valve. Make sure the check valve is installed with the flow arrow pointing up and out of the pit.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pump will not shut off</th>
<th>Insufficient or no water volume</th>
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</thead>
<tbody>
<tr>
<td>Defective float switch</td>
<td>Check valve or installed upside down</td>
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<tr>
<td>Replace float switch with new float switch</td>
<td>Reverse or replace check valve. Be sure check valve is installed with flow arrow pointing up and out of the pit.</td>
</tr>
<tr>
<td>Check valve or installed upside down</td>
<td>Clear blockage or thaw frozen line</td>
</tr>
<tr>
<td>Drill a bleed hole in the discharge pipe, or clean debris from the existing hole in the pipe or pump</td>
<td></td>
</tr>
<tr>
<td>Check valve or installed upside down</td>
<td>Clear blockage or thaw frozen line</td>
</tr>
<tr>
<td>Reverse or replace check valve. Be sure check valve is installed with flow arrow pointing up and out of the pit.</td>
<td></td>
</tr>
<tr>
<td>Pump is air locked</td>
<td>Worn impeller</td>
</tr>
<tr>
<td>Remove debris from the air bleed hole</td>
<td>Replace impeller &amp; adjust spacing between impeller and cover</td>
</tr>
<tr>
<td>Abnormal sound or vibration</td>
<td>Partially blocked impeller</td>
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<tr>
<td>Check valve or installed upside down</td>
<td>Remove strainer and clear obstruction</td>
</tr>
<tr>
<td>Check valve or installed upside down</td>
<td>Clogged or frozen discharge</td>
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<tr>
<td>Reverse or replace check valve. Be sure check valve is installed with flow arrow pointing up and out of the pit.</td>
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<tr>
<td>Pump is air locked</td>
<td>Clear blockage or thaw frozen line</td>
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<tr>
<td>Remove debris from the air bleed hole</td>
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</tr>
<tr>
<td>Abnormal sound or vibration</td>
<td>Broken or leaking pipe</td>
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<tr>
<td>Check valve or installed upside down</td>
<td>Repair piping</td>
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<tr>
<td>Check valve or installed upside down</td>
<td>Low power voltage</td>
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<tr>
<td>Reverse or replace check valve. Be sure check valve is installed with flow arrow pointing up and out of the pit.</td>
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<tr>
<td>Pump is air locked</td>
<td>Check power voltage, wires and cable condition</td>
</tr>
<tr>
<td>Remove debris from the air bleed hole</td>
<td></td>
</tr>
<tr>
<td>Abnormal sound or vibration</td>
<td>Check valve or installed upside down</td>
</tr>
<tr>
<td>Check valve or installed upside down</td>
<td>Remove debris from the air bleed hole</td>
</tr>
<tr>
<td>Replace impeller with new one</td>
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</tbody>
</table>

*Consult a licensed electrician.
If the above solutions do not solve the problem, contact Glentronics customer service 800-991-0466, option 3.