NOTICES

- The control unit on S3 Series and S5 Series pumps 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 back-up 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

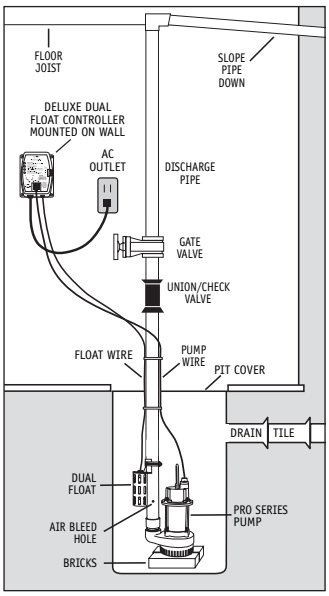
Prior to Installation

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

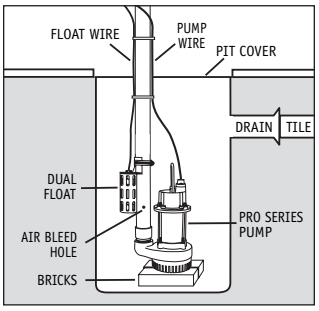
⚠ WARNING	**This installation must be in accordance with the National Electric Code and all applicable local codes and ordinances.**

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. The minimum requirements for the pumps with the tethered float assembly are 18″ in diameter and 24″ deep. However, larger sump 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 onto 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 1¼″ to 2″. Try to match the size of the discharge pipe to the size of the outlet on the pump to maintain the optimum pumping capacity. If you are using a PHCC Pro Series pump with a 2″ discharge outlet to replace a pump in a system that has been plumbed with 1½″ pipe, you may use the adapter included with the system to reduce the size of the discharge outlet to 1½″. However, this will reduce the capacity of the pump.



7. An in-line check valve is recommended to prevent back-flow. This check valve is mandatory when sharing a discharge line with another pump (i.e. a back-up pump or a second primary pump). *Note: When using a check valve, an air bleed hole of 1/8″ (3.2mm) for the S3 & S5 Series and 3/16″ (4.76mm) for the E7 Series needs to be drilled in the discharge pipe. The best location is about 3″ above the top of the discharge outlet. The hole must be drilled below the check valve. No air bleed hole is necessary for the S2 Series since it is incorporated into the housing of the pump. A small stream of water will escape through this 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. Install a gate valve or ball valve as required by any codes.
9. Secure the power cord to the discharge pipe with wire ties or clamps to prevent interference with the float assembly.
10. A pit cover is recommended for all installations as a safety measure, and to prevent debris from falling into the pit.
11. A cover is required in all sewage pump installations with gas-tight seals to contain gases and odors. A vent pipe should be added in any sewage installation.
12. In instances where the discharge line is exposed to freezing temperatures, the pipe must be positioned in a downward slope so any remaining water will drain away. Failure to do this will prevent water from exiting the pit and damage the pump if the line freezes.

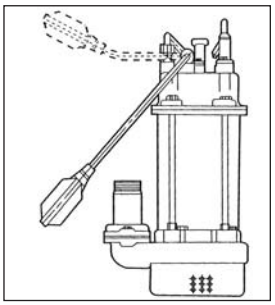
Installing the Double Float
(included with S2, S3 and S5 Series pumps)



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 Tethered Float
(included with E7 Series pumps)

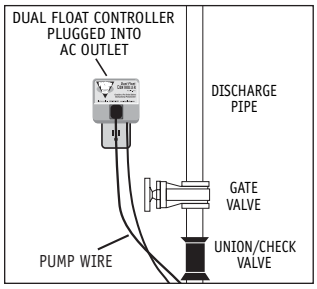


1. The tethered float switch is already mounted to the pump. When the pump is installed, make sure the float has enough clearance to move freely without interfering with the wall of the pit.
2. The float can be adjusted by loosening the screw located on the top of the pump. Adjust the length of cord to fit the application. The minimum length of cord should be no less than 5″. It is important to tighten the screw after adjustments have been made.

Connecting the Pump and Controller

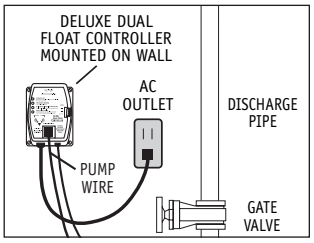
⚠ WARNING	**Make sure the outlet is single phase, 115V and 60HZ for all the pump installations.**

Dual Float Controller Model # DFC1
(included on S2 Series)

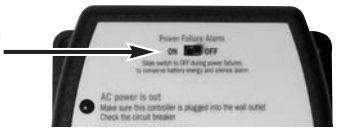


Plug the control box into a properly grounded, 3-prong receptacle (preferably with ground fault circuit interrupt), then insert the pump plug into the receptacle on the control box.

Deluxe Dual Float Controller Model # DFC2
(included on S3 and S5 Series)



1. Mount the controller to the foundation, drywall or a stud through the 4 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 8″ of the outlet.
2. Open the plastic door on top of the unit and install a 9V alkaline battery.
3. Plug the control box into a properly grounded, 3-prong receptacle (preferably with ground fault circuit interrupt). Then, plug the pump into the receptacle on the control box. Do not use an extension cord.
4. Make sure the Power Failure Alarm slide switch is in the ON position.



E7 Series

The E7 Series pumps do not come with a controller. Plug the pump directly into a properly grounded, 3-prong receptacle (preferably with ground fault circuit interrupt).

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 connections on this terminal: N.O. – normally open, N.C. – normally closed, and Common. (Refer to photo on next page)

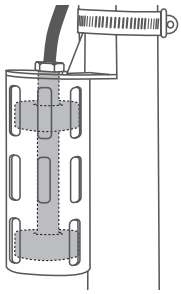
1. Check your security system to determine whether an open (no contact) or closed (making contact) connection is needed to activate the alarm.
2. The security system will provide (2) two connection terminals to extend wires to the control terminal. Strip two wires 1/4″ each. Connect either wire to the 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 and DFC2)

The dual float switch contains two large floating rings enclosed within a protective cage. Water will lift the bottom float by a ¼", 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 floats 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.*

Dual Float Controller Model # DFC1 (S2 Series)

This control box is a piggyback switch that powers the PHCC Pro Series Dual Float. The Dual Float Controller will activate the pump when either float is lifted, and then shuts off automatically 10 seconds after the float drops.

DFC1

Deluxe Dual Float Controller Model # DFC2 (S3 and S5 Series)

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.*

DFC2

Operating the Pump in a Continuous Duty Application

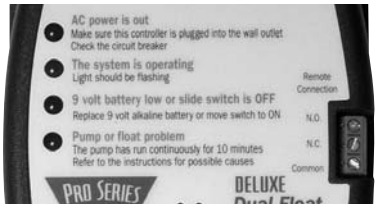
The PHCC Pro Series pumps are rated for continuous duty and may be used in applications requiring continuous pumping including fountains, ponds, etc. For use in any continuous duty application the pump should be plugged directly into the wall outlet without the use of a controller. The outlet must be a single phase properly grounded 3-prong receptacle, 115V, 60HZ (preferably with ground fault circuit interrupt). *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 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 Series 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 out. 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 sump 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.

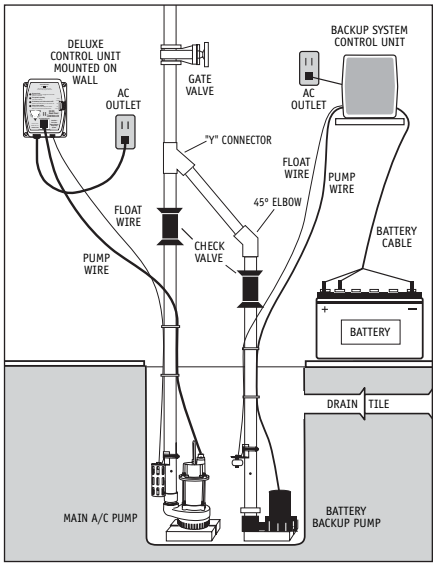
Maintenance Check List

Maintenance should be performed 1-2 times per year.

1. Remove all debris from the 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.

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 following is an example of a typical battery backup installation.



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

Troubleshooting

The pump will not start or run	Pump is not plugged in	Plug pump in properly (see instructions)
	Water is not high enough to activate the pump	Make sure float switch is positioned properly
	Open circuit	Check circuit breaker or fuse, and GFI reset button
	Poor power source	Check circuit line wires and cable*
	Low voltage	Check line wires and source voltage*
	Bad power cable	Replace with new cable*
	Locked impeller	Remove strainer and clear obstruction
	Defective float switch	Replace float switch with new float switch
	Defective pump	Replace pump with new pump
Thermal protector tripping or not functioning	Locked impeller	Remove strainer and clear obstruction
	Incorrect power supply	Check power supply source and voltage
	Overburdened due to heavy sand content in the water	Use water filter or replace with a higher wattage pump
	Pump running continuously with no water present	Check float switch
Pump starts and stops too frequently	Float switch mounted too low	Raise float switch
	Water flowing back from pipe	Install or replace check valve
	Malfunctioning float switch	Replace float switch with new float switch
Pump will not shut off	Clogged or frozen discharge	Clear blockage or thaw frozen line
	Blocked intake strainer	Clear debris from intake strainer
	One or both of the floats is obstructed and cannot drop down	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.
	Defective float switch	Replace float switch with new float switch
	Check valve installed with no air bleed hole in pipe or pump	Drill a bleed hole in the discharge pipe, or clean debris from the existing hole in the pipe or pump
	Check valve is stuck or installed upside down	Reverse or replace check valve. Make sure the check valve is installed with the flow arrow pointing up and out of the pit.
Insufficient or no water volume	Check valve on secondary pump will not close and water re-circulates within the system	Replace the check valve on the secondary pump
	Worn impeller	Replace impeller & adjust spacing between impeller and cover
	Partially blocked impeller	Remove strainer and clear obstruction
	Clogged or frozen discharge	Clear blockage or thaw frozen line
	Broken or leaking pipe	Repair piping
	Low power voltage	Check power voltage, wires and cable condition
	Check valve installed with no air bleed hole in pipe or pump	Drill a bleed hole in the discharge pipe, or clean debris from the existing hole in the pipe or pump
	Check valve is stuck or installed upside down	Reverse or replace the check valve. Be sure check valve is installed with flow arrow pointing up and out of the pit
Abnormal sound or vibration	Check valve on secondary pump will not close and water re-circulates within the system	Replace the check valve on the secondary pump
	Blocked intake screen	Clear debris from intake screen
	Broken impeller	Replace impeller with new one

*Consult a licensed electrician.

Warranty

GLENTRONICS, INC. warrants to the end purchaser that its pumps, switch and control unit products are free from defective materials and workmanship for the periods indicated below:

All parts and labor (excluding installation) for a period of:

- 2 years from the date of purchase, when purchased with the PHCC Pro Series S2 Series pumps
- 3 years from the date of purchase, when purchased with the PHCC Pro Series S3 or E7 Series pumps
- 5 years from the date of purchase, when purchased with the PHCC Pro Series S5 Series pumps
- 1 year from the date of purchase, when used in continuous duty operations such as fountains or ponds

The defective product must be returned directly to the factory, postage prepaid with the original bill of sale or receipt to the address listed below. GLENTRONICS, INC., at its option, will either repair or replace the product and return it postage prepaid.

Conditions

The unit must be shipped, freight prepaid, or delivered to GLENTRONICS, INC. to provide the services described hereunder in either its original carton and inserts, or a similar package affording an equal degree of protection.

The unit must not have been previously altered, repaired or serviced by anyone other than GLENTRONICS, INC., or its agent; the serial number on the unit must not have been altered or removed; the unit must not have been subject to accident, misuse, abuse or operated contrary to the instructions contained in the accompanying manual.

The dealer's dated bill of sale, or installers invoice must be retained as evidence of the date of purchase and to establish warranty eligibility.

This warranty does not cover product problems resulting from handling liquids hotter than 104 degrees Fahrenheit, handling inflammable liquids, solvents, strong chemicals or severe abrasive solutions; user abuse; misuse, neglect, improper maintenance, commercial or industrial use; improper connection or installation, damages caused by lightning strikes; excessive surges in AC line voltage; water damage to the controller; other acts of nature, or failure to operate in accordance with the enclosed written instructions.

GLENTRONICS, INC. WILL NOT BE LIABLE FOR ANY INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTIES ON THIS PRODUCT. SOME STATES DO NOT ALLOW FOR THE EXCLUSION OR LIMITATION OF CONSEQUENTIAL OR INDIRECT DAMAGE. THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THIS EXPRESS WARRANTY SHALL BE EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS CUSTOMER'S EXCLUSIVE REMEDY FOR BREACH OF THIS WARRANTY, OR OF ANY IMPLIED WARRANTY NOT EXCLUDED HEREIN, SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT.

For information or service contact:

Glentronics, Inc., 640 Heathrow Drive, Lincolnshire, IL 60069 800-991-0466

Model No. _____ Serial No. _____ Purchase Date _____