

# Battery Backup Sump Pump System

# Instruction Manual



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### Important Safety Instructions

#### General

Do not expose the control unit to rain or snow.

Pull the plug rather than the cord when disconnecting the control unit.

An extension cord should not be used unless absolutely necessary.

To reduce the risk of electric shock, unplug the control unit and disconnect the cables from the battery before attempting any maintenance or cleaning.

Do not disassemble the control unit. When service is required contact Glentronics technical support at (800) 991-0466, select option 3.

#### **AC Power Requirements**

The control unit must receive 115 volts AC +/- 5% from the AC outlet. Any voltage lower than this will cause the power failure alarm to activate. Lower voltages can be caused by utility company brown outs or heavy power draw from other appliances on the same circuit.

#### **Personal Precautions**

Wear eye protection and avoid touching your eyes while working near the battery.

If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention. Never smoke or allow a spark or flame in the vicinity of the battery.

Remove personal metal items such as rings, bracelets, watches, etc. when working with a lead-acid battery.

#### **Preparing to Charge**

Charge only LEAD-ACID batteries with the Pro Series 1000 control unit. Do not use the control unit for charging dry-cell batteries that are most commonly used with home appliances.

Be sure the area around the battery is well-ventilated.

When cleaning or adding water to the battery, gas can be forcefully blown away by using a piece of cardboard or other *nonmetallic* material as a fan.

Clean the battery terminals. Be careful to keep corrosion from coming in contact with your eyes.

#### **DC Connection Precautions**

Connect and disconnect the battery cable rings only after removing the charger cord from the electric outlet. *Never allow the rings to touch each other.* 

Coat the terminals with a thin coat of petroleum jelly to retard corrosion.

Attach the rings on the ends of the battery cables to the battery posts and secure them with wing nuts to insure a good connection.

Follow these steps when the battery is installed. A spark near the battery may cause a battery explosion. To reduce the risk of a spark near the battery: Check the polarity of the battery posts. The POSITIVE (+) battery post usually has a larger diameter than the NEGATIVE (-) post.

Connect the large ring on the POSITIVE (BLACK) wire from the control unit to the POSITIVE (+) post of the battery. Connect the small ring on the NEG-ATIVE (WHITE) wire from the control unit to the NEGATIVE (-) post of the battery.

When disconnecting the control unit, first disconnect the charger, and then remove the rings from the battery terminals.



POSITIVE	NEGATIVE
POST HAS	POST HAS
LARGER	SMALLER
DIAMETER	DIAMETER



# Introduction

The Pro Series 1000 backup sump pump system is battery-operated. It is designed as an emergency backup system to support your regular AC sump pump, and it will automatically begin pumping if your main AC pump fails. Should any malfunction or emergency occur that involves the sump pump, the battery, or the AC power, your Pro Series 1000 battery backup sump pump system will sound an alarm and indicate the nature of the problem and the solutions by means of a lighted display on the control panel.

# The Pro Series 1000 Battery Backup Sump Pump System includes:

- 1 Control unit with a float switch and a battery fluid level sensor
- 1 Pump with 1½" PVC pipe adapter
- 1 Battery box with safety strap
- 2 Plastic wire ties for mounting the control unit and the float switch
- 1 Battery cap with a hole to accommodate the fluid sensor
- 1 Battery charger

#### You will also need to supply:

- A Pro Series 1000 Standby Battery (A maintenance-free battery is not recommended)
- 1½" PVC pipe and fittings
- PVC cement and primer
- A rubber union with hose clamps or a "Y" connector and two (2) check valves depending on the installation method you use
- Six (6) quarts of 1.265 specific gravity battery acid





# For narrow sump pits you will need some additional parts:

- An "L" bracket at least 6 inches long. (Preferably one that will not rust.)
- Two (2) stainless steel hose clamps
- One (1) stainless steel screw (#8-32 x ¾"), a matching washer & nut



# Pump & Pipe Installation Instructions (Direct Discharge to Outside)

There are two basic methods that can be used to install the pump, (A) a direct discharge to the outside of the building, or (B) a hookup to an existing discharge pipe.

Whenever possible, install your Pro Series 1000 backup sump pump with a direct discharge to the outdoors. By using this method, there will always be an outlet for the water from the sump. During times of very heavy rain, many storm sewers fill up. If your pump is trying to discharge water into a full sewer, there is nowhere for the water to go. This defeats the purpose of the backup system. By discharging directly outdoors, there is always an outlet for the water that is pumped out of the sump.

There are two options for installing your sump pump with a direct discharge to the outside. If you have a sump pit wide enough to place the backup pump next to the main pump, use Method A. If your sump pit is too narrow, the pump may be mounted above the main pump. In this instance use the instructions for Method Aa.

#### METHOD A: DIRECT DISCHARGE TO THE OUTSIDE OF THE BUILDING (Diagram A)

- Cut a four-foot (4') piece of 1<sup>1</sup>/2" rigid PVC pipe and cement it to the threaded fitting that is attached to the elbow on the pump.
- 2. Secure the pump wire so that the plug on the end will not fall into the sump. Attach the wire to the pipe with a piece of tape.

- 3. Place the pump with the 4' PVC pipe attachment on the bottom of the sump floor next to the main AC pump. Do not mount the pump to any existing pipes...it should be placed on the floor of the sump. A brick may be placed under the pump if there are rocks or other debris on the sump floor.
- Attach a rubber union (sold separately) to the top of the 1<sup>1</sup>/2" pipe. This will allow the pump to be removed easily, should the need arise.

The path of the rest of the pipe and the details of each installation will vary. Using sound plumbing practices, try to route the discharge pipe to an exterior wall via the shortest path with the fewest turns. The pipe section exiting the building should be on a downward slope so that the water in the pipe will exit outside rather than return to the sump. Extend the discharge pipe outside the building as far as possible to avoid the return of discharged water to the sump. Be sure to seal the hole in the wall where the pipe exits and cement or clamp all connections securely to prevent leaking. No check valve is needed with this method of installation, as long as you use less than 20 feet of pipe.







Diagram A

## Pump & Pipe Installation Instructions (Direct Discharge to Outside)

#### METHOD Aa: DIRECT DISCHARGE TO THE OUTSIDE OF THE BUILDING FOR NARROW SUMP PITS (Diagram Aa)

- Attach an "L" bracket to the discharge pipe of the main AC pump with two (2) stainless steel hose clamps. Position the bracket so the bottom of the "L" is just above the top of the main pump, and out of the way of any float switch on the main pump.
- (a) Remove the black bottom strainer of the pump by pressing in the two tabs on the strainer. There are holes suitable for mounting on the bottom of the strainer. (b) Using a #8-32x<sup>3</sup>/4" stainless screw, washer & nut, attach the strainer to the "L" bracket. (c) Once the strainer is attached, simply press the pump body onto the mounted strainer.
- Cut a three-foot (3') piece of 11/2" rigid PVC pipe and cement it to the threaded fitting that is attached to the elbow on the pump.
- 4. Secure the pump wire so that the plug on the end will not fall into the sump. Attach the wire to the pipe with a piece of tape.
- Attach a rubber union (sold separately) to the top of the 1<sup>1</sup>/<sub>2</sub>" pipe. This will allow the pump to be removed easily, should the need arise.

The path of the rest of the pipe and the details of each installation will vary.

Using sound plumbing practices try to route the discharge pipe to an exterior wall via the shortest path with the fewest turns. The pipe section exiting the building should be on a downward slope so that the water in the pipe will exit outside rather than return to the sump. Extend the discharge pipe outside the building as far as possible to avoid the return of discharged water to the sump. Be sure to seal the hole in the wall where the pipe exits and cement or clamp all connections securely to prevent leaking. No check valve is needed with this method of installation, as long as you use less than 20 feet of pipe.







## Pump & Pipe Installation Instructions (Hookup to Existing Discharge Pipe)

If the direct discharge method (Method A) is not possible, the Pro Series 1000 backup sump pump system can be hooked up to the same pipe as your AC sump pump by installing a "Y" connector and two check valves.

Check your local plumbing codes. Some municipalities prohibit the discharge of sump water into the sewer system.

If you have a sump pit wide enough to place the backup pump next to the main pump, use Method B. If your sump pit is too narrow, the pump may be mounted above the main pump. In this instance use the instructions for Method Bb.

#### METHOD B: HOOKUP TO AN EXISTING DISCHARGE PIPE (Diagram B)

- 1. Cut a four-foot (4') piece of  $1^{1/2}$ " rigid PVC pipe and cement it to the threaded fitting that is attached to the elbow on the pump.
- 2. (a) Install a check valve on the PVC pipe attached to the Pro Series 1000 sump pump. (b) IMPORTANT: WHEN A CHECK VALVE IS USED, DRILL A 1/8" HOLE IN THE 11/2" PVC PIPE THREE INCHES (3") ABOVE THE CONNECTION TO THE PRO SERIES 1000 PUMP. Drill the hole at a 45° angle toward the bottom of the sump to avoid splashing water outside the sump pit. If a 1/8" hole is not drilled above the pump, an air lock may prevent the pump from pumping.
- 3. If there is no check valve on the

pipe of the main AC pump, one must be installed at this time. Then install a "Y" connector above the check valve on the discharge pipe for the main AC pump.

- 4. Secure the pump wire so that the plug on the end will not fall into the sump. Attach the wire to the pipe with a piece of tape.
- 5. Place the pump with the 4' PVC pipe attachment on the bottom of the sump floor, next to the main AC pump. Do not mount the pump to any existing pipes...it should be placed on the floor of the sump. A brick may be placed under the pump if there are rocks or other debris on the sump floor.
- Connect a 1<sup>1</sup>/2" diameter discharge pipe above the check valve of the Pro Series 1000 sump pump, and attach a 45° elbow to that pipe. Extend another piece of pipe to reach the "Y" connector you have inserted above the check valve on the discharge pipe of the main pump.
- 7. Cement or clamp all connections securely to prevent leaking.







Diagram B

## Pump & Pipe Installation Instructions (Hookup to Existing Discharge Pipe)

#### METHOD Bb: HOOKUP TO AN **EXISTING DISCHARGE PIPE** FOR NARROW SUMP PITS (Diagram Bb)

- 1. Attach an "L" bracket to the discharge pipe of the main AC pump with two (2) stainless steel hose clamps. Position the bracket so the bottom of the "L" is just above the top of the main pump, and out of the way of any float switch on the main pump.
- (a) Remove the black bottom 2. strainer of the pump by pressing in the two tabs on the strainer. There are holes suitable for mounting on the bottom of the strainer. (b) Using a #8-32x3/4" stainless screw, washer and nut. attach the strainer to the "L" bracket. (c) Once the strainer is attached, simply press the pump body onto the mounted strainer.
- 3. Cut a three-foot (3') piece of  $1^{1/2}$ " rigid PVC pipe and cement it to the threaded fitting that is attached to the elbow on the pump.
- 4. (a) Install a check valve on the PVC pipe attached to the Pro Series 1000 pump. (b) IMPORTANT: WHEN A CHECK VALVE IS USED, DRILL A 1/8" HOLE IN THE 11/2" PVC PIPE THREE INCHES (3") ABOVE THE CONNECTION TO THE PRO SERIES 1000 PUMP. Drill the hole at a 45° angle toward the bottom of the sump to avoid splashing water outside the sump pit. If a 1/8" hole is not drilled above the pump, an air lock may prevent the pump from pumping.

- 5. If there is no check valve on the pipe of the main AC pump, one must be installed at this time. Then install a "Y" connector above the check valve on the discharge pipe for the main AC pump.
- Secure the pump wire so that the 6. plug on the end will not fall into the sump. Attach the wire to the pipe with tape.
- Connect a  $1^{1/2}$ " diameter discharge 7. pipe above the check valve of the Pro Series pump, and attach a 45° elbow to that pipe. Extend another piece of pipe to reach the "Y" connector you have inserted above the check valve on the discharge pipe of the main pump.
- Cement or clamp all connections 8. securely to prevent leaking.







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# **Battery Instructions**

The Pro Series 1000 Standby Battery has been designed to run this system for a minimum of 6 hours of continuous pumping. However, most of the time the pump will turn on and off, and the battery will run the pump intermittently for days. In addition, the unique materials in the battery enable it to last longer...for five to seven years in standby service. To extend the run time of the pump, use the Pro Series 2200 Standby Battery. It will run this pump continuously for 12 hours.

The use of automotive batteries is *not* recommended. Automotive batteries are not designed for this application. They will only run the pump for a short time and will have a shorter life than a standby battery.

In addition, the battery fluid sensor and cap are designed to fit the Pro Series batteries. (As a safety precaution, do not use the cap on batteries of a different brand, and do not drill a hole in the cap of another brand of battery to accommodate the sensor.)

#### PREPARING THE PRO SERIES STANDBY BATTERY

The Pro Series standby batteries are shipped dry (without acid) so they will never lose power before you take them home. A battery is activated when the acid is added, and then it slowly begins to deteriorate as it ages. By adding the acid just before use, the battery will always be fresh. Use 1.265 specific gravity battery acid to fill the battery. It is available where you purchased the battery.

#### IMPORTANT: REVIEW THE SAFETY INSTRUCTIONS BEFORE YOU PROCEED

1. Place the battery box on the floor. Position the battery box safety strap under the box and through the loop on the top of the battery box.

- 2. Place the dry (unfilled) battery into the battery box. Remove the foil seal on the top of the battery.
- 3. (a) Carefully push in the perforated tab at the top of the acid pack. Pull up the large tab and pull out the dispensing hose. Hold the hose upright above the pack and squeeze the hose forcing all the acid back into the pack. Cut off the tip of the hose. (b) Position the acid pack and battery as shown in picture 3b. Insert the end of the hose into each cell. Control the flow by pinching the hose with thumb and forefinger. Fill each cell of the battery to a level just covering the battery plates, then go back and top off each cell equally. It is important to have the cells filled equally. (c) The acid should reach a level just below the cap ring. (Diagram C)

A newly filled battery will sometimes require additional acid after about ten minutes. Re-examine the fill level and add additional acid, if necessary. The battery acid may bubble at this time and give off a sulfur-like smell, but this is normal. After the battery has been filled, screw the caps on the top of the battery.

Always be careful and avoid contact with skin, clothing, furniture or floor.

When you fill the battery for the first time, it will be the only time you add acid to the battery. When the fluid level is low, add distilled water to the cells. Never add more acid.





# **Control Unit Hookup**

When you position the control unit, be sure the charger cord will reach the AC power outlet and the pump cable and the float switch will reach the bottom of the sump. Position the unit in a well-ventilated area. (Diagram D)

- 1. Mounting the control unit: (a) Thread the plastic wire tie through the two mounting brackets on the back of the control unit. (b) Secure the controller to the discharge pipe of the Pro Series pump by wrapping the tie around the pipe and pulling it tight.
- 2. Positioning the float switch: The float switch will turn on the pump when the water rises to the top of the switch, and it will remain running as long as the water is above the float switch. When the water drops below the float, the internal timer in the control unit will keep the pump running an additional 30-40 seconds to empty the sump pit. The switch should be mounted six inches (6") above the activation level of the main AC pump. Attach the float switch verv securely to the discharge pipe of the backup pump with the plastic wire tie. (If you are stacking the pumps in a narrow sump pit, the float may be attached to the elbow of the backup pump.) Be sure the switch is positioned vertically with the mounting bracket at the top. Do not tilt the switch. Do not position the float switch on the side of the discharge pipe facing the drain tile or any incoming rush of water! Do not position it next to the power cord of the AC pump.
- Installing the battery fluid sensor: 3. Replace the battery cap that is 2nd from the POSITIVE (+) post of the battery with the battery cap that is provided in the Pro Series sump pump package. An arrow on the top of

the battery marks this position. There are two holes in the battery cap. Insert the fluid sensor in the hole that is offcenter on the top of the cap. Do not glue the sensor into the cap. If you are not using a Pro Series Standby Battery, you cannot use the battery fluid sensor. However you must attach the sensor to the POSITIVE (+) post of the battery or the alarm will sound continuously. The Pro Series Sump Pump System will not warn you if the fluid level is low in this configuration. You will need to check your battery monthly to see if it needs water.

- 4. Hooking up the pump: Plug the pump wires into the pump connector on the back of the control unit.
- 5. Hooking up the battery: Remove the wing nuts. Coat the terminals with a little petroleum jelly to prevent corrosion. Attach the battery cables to the battery...the BLACK wire to the POSITIVE (+) post, the WHITE wire to the NEGATIVE (-) post. Tighten the wing nuts.
- Immediately plug the charger into the 6. charger hole on the back of the control unit and into an AC outlet on the wall.
- 7. If the pump alarm is sounding, press the reset button to silence the alarm.

The Pro Series 1000 Battery Backup Sump Pump System is ready to use!







# Understanding the Warnings & Alarms

The Pro Series 1000 System control unit features a series of warning lights that pinpoint potential problems. In addition, an alarm sounds to alert you to the problem. In some cases, the lights and alarm will go off automatically when the problem has been solved. In others, the gray "RESET" button must be pushed to silence the alarm. Refer to the table below for a quick review of the features and their corresponding alarm status.

Warning	Alarm shuts off automatically when problem is corrected
Power	Yes
Water	Yes
Pump	No, must push gray button
Battery	Yes



FRONT PANEL OF CONTROL UNIT

#### POWER ALARM

There are several causes for power failure. The most common is a power outage by your electric company. During this emergency, the Pro Series 1000 Sump Pump System will automatically switch to battery power and protect your basement from flooding.

If the power is on in the rest of the house, check the home circuit breaker or fuse box for failure, and correct the problem.

Check the charger. Make sure it is securely plugged into the wall outlet.

Check the charger plug that fits into the rear panel of the control unit. Make sure it is securely plugged into the control unit.

The control unit must receive 115 volts AC +/- 5% from the AC outlet. Any voltage lower than this will cause the power failure alarm to activate. Lower voltages can be caused by utility company brown outs or heavy power draws from other appliances on the same circuit.

If all the connections are secure and the wall outlet is operating, but the "Power" warning light is still lit, replace the charger unit. Contact Glentronics, Inc. for a 400mA charger at 800-991-0466.

#### WATER ALARM

If this warning light and alarm are on, you need to add distilled water to the battery.

#### IMPORTANT: REVIEW THE SAFETY INSTRUCTIONS BEFORE YOU PROCEED

Remove the top of the battery box. Unscrew the six battery caps. Add distilled water to each cell. If distilled water is not available, tap water with a low mineral content may be used. Well water is not recommended. *Never add more acid.* Fill the battery to the 2nd level as shown in Diagram C on page 7. Replace the caps and the fluid sensor. Be sure the fluid sensor is positioned in the 2nd cell from the positive post. It's marked with an arrow on the top of the battery. The warning light will turn off automatically when the battery is refilled.



#### PUMP ALARM

The "Pump" warning stays on to alert you to the fact that the Pro Series backup pump was used to empty water from the sump. Try to determine what caused the system to operate. Check the main pump for failure. Another possibility is that the power was out while you were away and the backup system automatically pumped the water out of the sump. Or, if the incoming water was more than your AC sump pump could handle, then the backup system automatically pumped the water out of the sump. It is also possible that your check valve is stuck and needs to be replaced. After determining the source of the problem, push the gray button to silence the alarm.

#### **REPLACING THE PUMP**

- 1. Unplug the pump from the back of the control unit.
- 2. Release the rubber union or check valve and remove the pump and the rigid PVC pipe section from the sump.
- 3. Unscrew the pipe and fitting from the old pump and screw them into the new pump.
- 4. Lower the pump into the sump and reconnect the rubber union or check valve.
- 5. Plug the pump wires into the back of the control panel.





#### **CHARGER OPERATING**

This green light should always be flashing. It indicates that the charger is operating and that all connections are intact. If for any reason the AC power is interrupted, or a plug comes loose, this light will go off, the RED "Power" light will appear, and an alarm will sound.

Check the charger. Make sure it is securely plugged into the wall outlet.

Check the charger plug that fits into the rear panel of the control unit. Make sure it is securely plugged into the control unit.

If all connections are secure and the wall outlet is operating, but the "Power"

warning light is still flashing, replace the charger unit with a 400mA charger. The alarm will continue until the power is restored.

#### BATTERY ALARM

This light and alarm will go on when the control unit senses that the battery has approximately ½ hour of pumping energy left. This could occur when the pump has been running for many hours and is reaching the last half hour of operating power, or it could occur because the battery is getting old and should be replaced.

The alarm can also be triggered by corrosion of the battery cable and the battery terminals. Remove the battery cables and clean and tighten the battery terminals as described at the right. If this warning goes on while the pump is running, you will have a minimum of ½ hour to replace the battery. (In most cases, the pump does not run continuously, and therefore, you actually have much longer.) In a severe emergency, if a replacement battery is not available, you could temporarily use your car battery.

Once the AC power is restored, the battery will recharge, unless it is old or damaged. The alarm will go off when the AC power is restored and the pumping energy reaches ½ hour or more.

In the event that your Pro Series Sump Pump System has been called on to pump for extended periods of time, the battery can become very depleted. In this condition, when the AC power is restored, a "Battery" alarm will continue to sound. The battery may need a longer period to recharge. For a fast recharge, an automotive or marine battery charger can be used to recharge the battery. When another charger is used, you must disconnect the control unit from the battery.

#### TO CHECK FOR CABLE OR TERMINAL PROBLEMS

#### IMPORTANT; REVIEW THE SAFETY INSTRUCTIONS BEFORE YOU PROCEED

- 1. Unplug the charger cord from the wall outlet.
- 2. Remove the battery cables and clean the battery posts with a battery post terminal cleaner or a wire brush and a 50/50 solution of water and baking soda. Do not allow the soda water to enter the battery. Thoroughly dry the posts and apply a thin coat of petroleum jelly or another terminal protective material.
- Clean the corrosion off of the connectors on the end of the battery wires. Use a stiff brush or sand paper.
- 4. Replace the battery cables, BLACK to the POSITIVE (+) post, and WHITE to the NEGATIVE (-) post.
- 5. Plug the charger into the wall outlet.
- 6. You may have to press the "RESET" button to silence the pumping alarm.



#### **REPLACING THE BATTERY**

#### IMPORTANT: REVIEW THE SAFETY INSTRUCTIONS BEFORE YOU PROCEED

- 1. Unplug the charger from the wall outlet.
- 2. Remove the battery cables from the battery posts.
- 3. Fill the battery following the instructions on page 7.
- 4. Coat the battery terminals with a little petroleum jelly and replace the battery cables, BLACK to the POSITIVE (+), post and WHITE to the NEGATIVE (-) post. Tighten the wing nuts. Replace the battery cap in the cell which is 2nd from the POSITIVE post with the yellow cap from the old battery. Insert the fluid sensor in the cap.
- 5. Plug the charger into the wall outlet.
- 6. You may have to press the reset button to silence the pumping alarm.





#### TEST BUTTON

The TEST button may be used to check the pump and system. Push the TEST button. This will activate the pump for as long as you hold the button.

#### TESTING THE FLOAT SWITCH

Manually testing the float switch

periodically is highly recommended. Lift the float up and let go. This will activate the pump. The control unit will run the pump for approximately 40 seconds so it can empty all the water in the sump pit. If there is no water in the sump, the pump can run dry for this amount of time. The alarm will sound and the pump light will go on. After the pump has stopped, push the gray button to silence the alarm. If the gray RESET button is pressed before the pump has stopped, the alarm will go off temporarily. Wait for the pump to stop pumping, and then push the RESET button to completely silence the alarm.



#### PARTS & SERVICE INFORMATION

You can receive technical support, parts or service information by calling Glentronics, Inc. at (800) 991-0466, option 3.

Send your unit to the following address for repairs:

Glentronics, Inc. 640 Heathrow Dr. Lincolnshire, IL 60069



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