

## Installation Manual

442800G

# PC-Series Sump Pump Combo Series

## Models

### 441-Series

*PC237-441*

*PC237-441-10A*

*PC257-441*

*PC257-441-10A*

*PC457-441*

*PC457-441-10A*

*PCS37-441*

*PCS37-441-10A*

*PCS37-P-441*

*PCS37-P-441-10A*

### 442-Series

*PC237-442-10A*

*PC237-442-10A-EYE*

*PC257-442-10A*

*PC257-442-10A-EYE*

*PC457-442-10A*

*PC457-442-10A-EYE*

*PCS37-442-10A*

*PCS37-442-10A-EYE*

*PCS37-P-442-10A*

*PCS37-P-442-10A-EYE*



*PC237-441-10A shown*

### NOTICE

Installer: Manual must remain with owner/operator.

Prior to installation, record information from pump nameplate for future reference:

7000 Apple Tree Avenue  
Bergen, NY 14416  
ph: 1-800-543-2550  
fax: 1-585-494-1839  
www.LibertyPumps.com

Keep this manual handy for future reference.

For replacement manual, visit LibertyPumps.com, or contact Liberty Pumps at 1-800-543-2550.

Retain dated sales receipt for warranty.

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

Serial: \_\_\_\_\_

Mfg Date: \_\_\_\_\_

Install Date: \_\_\_\_\_

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## Safety Guidelines

	This safety alert symbol is used in the manual and on the pump to alert of potential risk for serious injury or death.
	This safety alert symbol identifies <b>risk of electric shock</b> . It is accompanied with an instruction intended to minimize potential risk of electric shock.
	This safety alert symbol identifies <b>risk of fire</b> . It is accompanied with an instruction intended to minimize potential risk of fire.
	This safety alert symbol identifies <b>risk of serious injury or death</b> . It is accompanied with an instruction intended to minimize potential risk of injury or death.
<b>⚠ DANGER</b>	Warns of hazards which if not avoided <b>will</b> result in serious injury or death.
<b>⚠ WARNING</b>	Warns of hazards which if not avoided <b>could</b> result in serious injury or death.
<b>⚠ CAUTION</b>	Warns of hazards which if not avoided <b>could</b> result in minor or moderate injury.
<b>NOTICE</b>	Signals an important instruction related to the pump. Failure to follow these instructions could result in pump failure or property damage.

**⚠ WARNING** Read every supplied manual before using pump system. Follow all the safety instructions in manual(s) and on the pump. Failure to do so could result in serious injury or death.

## Safety Precautions

### **⚠ WARNING** **RISK OF ELECTRIC SHOCK**

- Accidental contact with electrically live parts, items, fluid, or water can cause serious injury or death.
- Always disconnect pump(s) from power source(s) before handling or making any adjustments to either the pump(s), the pump system, or the control panel.
- All installation and maintenance of pumps, controls, protection devices, and general wiring shall be done by qualified personnel.
- Do not remove cord and strain relief, and do not connect conduit to pump.

- All electrical and safety practices shall be in accordance with the National Electrical Code<sup>®</sup>, the Occupational Safety and Health Administration, or applicable local codes and ordinances.
- The pump shall be plugged into a properly fused electrical outlet with a ground fault circuit interrupter (GFCI) that conforms to current National Electric Code (NEC) and all applicable local codes. All wiring must be performed by qualified personnel.
- Pump shall be properly grounded using its supplied grounding conductor. Do not bypass grounding wires or remove ground prong from attachment plugs. Failure to properly ground the pump system can cause all metal portions of the pump and its surroundings to become energized.
- Do not handle or unplug the pump with wet hands, when standing on damp surface, or in water unless wearing Personal Protective Equipment.
- Always wear dielectric rubber boots and other applicable Personal Protective Equipment (PPE) when water is on the floor and an energized pump system must be serviced, as submerged electrical connections can energize the water. Do not enter the water if the water level is higher than the PPE protection or if the PPE is not watertight.
- Do not lift or carry a pump or a float assembly by its power cord. This will damage the power cord, and could expose the electrically live wires inside the power cord.
- The electrical power supply shall be located within the length limitations of the pump power cord, and for below grade installations it shall be at least 4 ft (1.22 m) above floor level.
- Do not use this product in applications where human contact with the pumped fluid is common (such as swimming pools, fountains, marine areas, etc.).
- Protect the power and control cords from the environment. Unprotected power and control (switch) cords can allow water to wick through ends into pump or switch housings, causing surroundings to become energized.
- Do not use metal or any other electrical conducting material to raise the float or contact anything inside an electrically live sump pit.

### **⚠ WARNING** **RISK OF FIRE**

- Use PVC cement in a well-ventilated area away from fire or flames. Follow the PVC cement and primer manufacturer's instructions.
- Do not use an extension cord to power the product. Extension cords can overload both the product and extension cord supply wires. Overloaded wires will get very hot and can catch on fire.
- This product requires a separate, properly fused and grounded branch circuit, sized for the voltage and amperage requirements of the pump, as noted on the nameplate. Overloaded branch circuit wires will get very hot and can catch on fire. When used, electrical outlets shall be simplex of the appropriate rating.
- Do not use this product with or near flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. If rotating elements inside pump strike any foreign object, sparks may occur. Sparks could ignite flammable liquids.
- These pumps are not to be installed in locations classified as hazardous in accordance with the National Electric Code<sup>®</sup>, ANSI/NFPA 70.

- Do not use to pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Do not use in flammable and/or explosive atmosphere. Sparks could ignite flammable liquids.

**⚠ WARNING**  **RISK OF SERIOUS INJURY OR DEATH**

- Do not modify the pump/pump system in any way. Modifications may affect seals, change the electrical loading of the pump, or damage the pump and its components.
- All pump/pump system installations shall be in compliance with all applicable Federal, State, and Local codes and ordinances.
- Do not allow children to play with the pump system.
- Do not allow any person who is unqualified to have contact with this pump system. Any person who is unaware of the dangers of this pump system, or has not read this manual, can easily be injured by the pump system.
- Wear adequate Personal Protective Equipment when working on pumps or piping that have been exposed to wastewater. Sump and sewage pumps often handle materials that can transmit illness or disease upon contact with skin and other tissues.
- Do not remove any tags or labels from the pump or its cord.
- Keep clear of suction and discharge openings. To prevent injury, never insert fingers into pump while it is connected to a power source.
- Do not use this product with flammable, explosive, or corrosive fluids. Do not use in a flammable and/or explosive atmosphere as serious injury or death could result.
- This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov).

**⚠ WARNING**  **BATTERY HAZARDS**

- Battery voltage can cause serious or fatal electrical shock. Follow the battery manufacturer's recommendations for maintenance and safe use of battery before using charger.
- Explosive gases develop during normal battery operation. Keep battery in a well ventilated area, away from sparks and open flames (such as pilot light). Never smoke in vicinity of battery. Batteries generate flammable gases both charging and discharging, which can explode or catch fire if ignited.
- Battery acid is corrosive. Wear adequate Personal Protective Equipment when working with the battery.
- Never allow the battery DC terminals to touch each other. This can cause severe burns and start a fire. For added safety, protect the battery in provided battery box.
- Only use 12 Volt lead acid batteries with this backup system. Use of batteries with higher or lower output voltages can damage the backup system, leak acid or explode.

**NOTICE**

- ◆ A check valve is required in the primary sump pump discharge pipe to prevent water from recirculating back into the pit.
- ◆ Pump clear water *only* with this pump.
- ◆ Do not use pump system with mud, sand, cement, hydrocarbons, grease, or chemicals. Pump and system components can be damaged from these items causing product malfunction or failure. Additionally, flooding can occur if these items jam the impeller or piping.

- ◆ Do not dispose of materials such as paint thinner or other chemicals down drains. Doing so could chemically attack and damage pump system components and cause product malfunction or failure.
- ◆ Do not use pumps with fluid over 104°F (40°C). Operating the pump in fluid above this temperature can overheat the pump, resulting in pump failure.
- ◆ Do not run dry.
- ◆ Be prepared for water to leak from the coupling or piping when disassembling or cutting the discharge pipe. Protect system components, tools, and supplies from getting wet. Dry any work areas that get wet immediately.
- ◆ Do not position the pump float directly under the inlet from drain tile or in the direct path of any incoming water.
- ◆ Do not expose pump or discharge to freezing temperatures.
- ◆ Maximum vertical pumping distance is 18 feet (5.5 m) for 441 system; 21 feet (6.4 m) for 442 system.
- ◆ If a Carbon Monoxide (CO) sensor is installed, it must be at least 15 feet away from the battery charger in order to avoid nuisance CO alarms. Refer to the CO detector's installation guidelines for more information.
- ◆ Locate charger as far away from battery as DC cables permit.
- ◆ Never place charger directly above battery being charged as gases from battery will corrode and damage charger.
- ◆ Never allow battery acid to drip on charger when reading gravity or filling battery.
- ◆ Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified service professional.
- ◆ Do not expose charger to rain, snow, or liquids.
- ◆ Use charger only for charging a 12V lead acid battery.
- ◆ 12V marine-type deep cycle battery recommended (Group 27 or Group 31 AGM or Wet Cell compatible).
- ◆ Never charge a frozen battery.
- ◆ Never charge lithium ion batteries with charger.
- ◆ A Group 27 battery will provide the same performance as a Group 31 battery, but for a shorter length of time.
- ◆ To protect battery box from chipping and gouging, do not let the battery box sit on a concrete floor. Install the battery box on a shelf or a protective pad (plywood, 2x4s, etc.).
- ◆ Always install the battery box in a dry location that is protected from flooding.
- ◆ Use of a standard automobile battery with this charger is not recommended as an automobile battery may require charging after only 1–2 hours of continuous use and the repeated charging cycles may cause early plate failure in the battery.

## Preparation

Before installation, read the following instructions carefully. Each Liberty Pumps product is individually factory tested to ensure proper performance. Closely following these instructions will eliminate potential operating problems, assuring years of trouble-free service.

The PC-Series includes a primary sump pump pre-assembled with a DC powered battery back-up pump. An exploded view of PC-Series combination systems for a 441 or 442 DC back-up pump system is shown on next page.

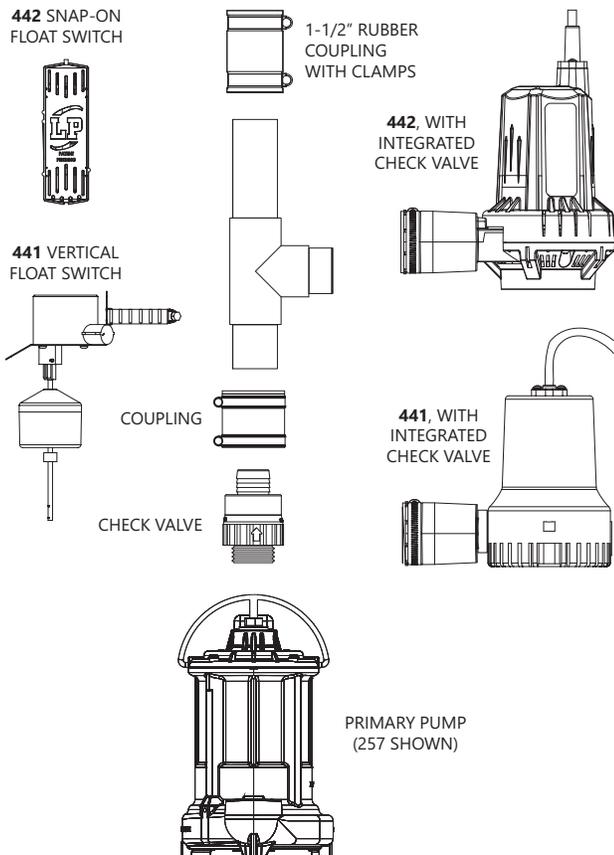
Check valves come pre-installed on both the primary and back-up pumps. Refer to the supplied installation manual for further instructions regarding the battery back-up system.

This system should not be installed in a sump pit less than 15" in diameter. A larger diameter pit is preferred as it allows for longer pump cycling and reduced switch cycling. The depth of the pit should be at least 18" above the surface that the pump is resting on. If the pit is not already enclosed on the bottom, provide a hard level bottom of bricks or concrete. Do not place the pump directly on earth, gravel or debris since this can cause excessive wear of the impeller and possible jamming. "The Brick" (sold by Liberty Pumps, P/N 4445000) is a pre-molded stable platform designed to fit the primary submersible pump. It raises the pump 2-1/2" off the bottom of the pit, reducing the potential for jamming from rocks and debris (contact a local distributor to order). Remove all debris from the bottom of the sump pit before installation of the pump. A sump pit cover is required for safety and to prevent foreign objects from entering the pit.

## Installation

Set the complete system in place by lowering the pump by the handle on the primary pump. Confirm that both the primary float switch and the back-up float switch have adequate clearance and will not hang-up on the pit wall. The float switch must be free to move throughout its travel, without contacting the pump body, piping, or other objects.

The uppermost rubber coupling will connect to 1-1/2" PVC pipe. Tighten clamps to prevent leaking. Do not reduce the discharge size to less than 1-1/4", as this will affect pump flow and performance.



## Charger Operation

Refer to supplied 441 or 442 back-up system manual.

## System Operation

Refer to supplied 441 or 442 back-up system manual.

## Maintenance and Troubleshooting

Refer to supplied 441 or 442 back-up system and pump manual.

## Warranty

### Liberty Pumps Wholesale Products Limited Warranty

Liberty Pumps, Inc. warrants that Liberty Pumps wholesale products are free from all factory defects in material and workmanship for a period of three (3) years from the date of purchase (excluding\* batteries and "Commercial Series" models). The date of purchase shall be determined by a dated sales receipt noting the model and serial number of the pump. The dated sales receipt must accompany the returned pump if the date of return is more than three years from the date of manufacture noted on the pump nameplate.

The manufacturer's sole obligation under this Warranty shall be limited to the repair or replacement of any parts found by the manufacturer to be defective, provided the part or assembly is returned freight prepaid to the manufacturer or its authorized service center, and provided that none of the following warranty-voiding characteristics are evident:

The manufacturer shall not be liable under this Warranty if the product has not been properly installed, operated, or maintained per manufacturer instructions; if it has been disassembled, modified, abused, or tampered with; if the electrical cord has been cut, damaged, or spliced; if the pump discharge has been reduced in size; if the pump has been used in water temperatures above the advertised rating; if the pump has been used in water containing sand, lime, cement, gravel, or other abrasives; if the product has been used to pump chemicals, grease, or hydrocarbons; if a non-submersible motor has been subjected to moisture; or if the label bearing the model and serial number has been removed.

Liberty Pumps, Inc. shall not be liable for any loss, damage, or expenses resulting from installation or use of its products, or for indirect, incidental, and consequential damages, including costs of removal, reinstallation or transportation.

**There is no other express warranty. All implied warranties, including those of merchantability and fitness for a particular purpose, are limited to three years from the date of purchase. This Warranty contains the exclusive remedy of the purchaser, and, where permitted, liability for consequential or incidental damages under any and all warranties are excluded.**

\*Liberty Pumps, Inc. warrants StormCell batteries for 1 year from date of purchase, and warrants that pumps of its Commercial Series are free from all factory defects in material and workmanship for a period of 18 months from the date of installation or 24 months from the date of manufacture, whichever occurs first, and provided that such products are used in compliance with their intended applications as set forth in the technical specifications and manuals.