

## Installation Manual

4617000L

### LowPro-Series

*Low Profile Sewage System*

#### Models

**LowPro41LP**

*4/10 hp, 115V*

**LowPro51LP**

*1/2 hp, 115V*

**LowPro52LP**

*1/2 hp, 230V*







#### Features

- Fully assembled at factory
- 2" Solids handling sewage pump

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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.

<b>⚠ WARNING</b>	<b>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.</b>
<b>NOTICE</b>	<b>Installer: manual must remain with owner or system operator/maintainer.</b>
	Record information from pump nameplate:
Keep this manual handy for future reference.	Pump Model #: _____
For replacement manual, visit LibertyPumps.com, or contact Liberty Pumps at 800-543-2550.	Pump Serial #: _____
Retain dated sales receipt for warranty.	Manufacture Date: _____
	Install Date: _____

## Safety Precautions

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

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- Accidental contact with electrically live parts, items, fluid, or water can cause serious injury or death.
- Always disconnect the pump from power source before attempting to service the pump. Fatal electrical shock could occur.
- 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.
- 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.
- 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 the pump 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.

### **⚠️ WARNING** RISK OF FIRE

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- 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.
- Sewage and effluent systems produce and may contain flammable and explosive gases. Prevent introduction of foreign objects into basin as sparks could ignite these gases. Exercise caution using tools and do not use electronic devices or have live, exposed electrical circuits in or around basins, open covers and vents.
- These pumps are not to be installed in locations classified as hazardous in accordance with the National Electric Code<sup>®</sup>, ANSI/NFPA 70.

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

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- 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.
- Vent basin in accordance with local code. Proper venting of sewer and effluent gases alleviates poisonous gas buildup and reduces the risk of explosion and fire from these flammable gases.
- 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).

### **NOTICE**

- ◆ 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 140°F (60°C). Operating the pump in fluid above this temperature can overheat the pump, resulting in pump failure.
- ◆ Do not use an air admittance valve or a mechanical spring-loaded venting device.
- ◆ Do not allow pump to freeze.
- ◆ 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 introduce any consumer item that is not toilet paper into a non-grinder (dewatering, effluent, sewage) pump/pump system. This includes, but is not limited to the following: feminine products, wipes, towels, towelettes, dental floss, swabs, pads, etc. Items such as these put the pump under undo strain and can result in pump/pump system failure. Additionally, it creates conditions for discharge line blockage.

### General Information

Before installation, read these 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.

Pumps are certified to CSA® and UL® standards. Provide serial number in all correspondence.

Pumps must be serviced at a qualified repair facility approved by Liberty Pumps. No repair work should be carried out during the warranty period without prior factory approval. Any unauthorized field repairs void warranty. Contact Liberty Pumps at 1-800-543-2550 to locate the closest authorized service center.

### Model Specifications

For complete listing of models and their specifications, refer to <http://www.LibertyPumps.com/About/Engineering-Specs>. System nameplate provides a record of specific pump information.

### Inspection and Storage

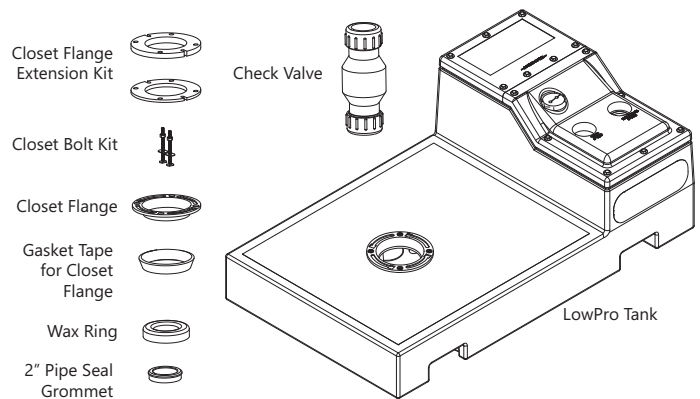
#### Initial Inspection

Inspect the pump immediately for damage that may have occurred in shipment.

1. Visually check the unit and components for damage.
2. Check all packaging for parts before discarding.

Contact Liberty Pumps customer service to report any damage or shortage of parts.

List of included parts:



### Storage Before Use

#### **WARNING** ⚡ RISK OF ELECTRIC SHOCK

- 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.

#### **NOTICE**

- ◆ Do not allow the pump to freeze.

LowPro systems are shipped from the factory ready for installation and use. The system should be held in storage if the installation area is not complete.

If storage is necessary, the LowPro system should remain in its shipping container. It should be stored in a clean, dry temperature-stable environment where the pump system and its container shall be covered to protect it from water, dirt, vibration, etc. The cord ends must be protected against moisture.

### Pump Design

The LowPro system is designed to accept wastewater from a toilet but can also simultaneously receive wastewater from several sanitary fixtures such as a sink, shower, or bathtub. However, only one water closet (toilet) per unit may be connected.

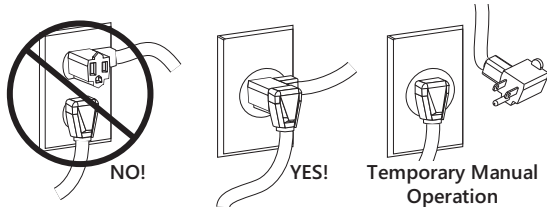
A cover is provided for easy access to the tank and switch without disturbing the discharge or vent pipe.

The LowPro features an internal jet spray to help break down solids and reduce jamming. Due to limited water volumes per pump cycle on systems of this type, care must be taken to avoid flushing extreme amounts of toilet paper or any reinforced papers, paper towels, sanitary products and other foreign objects into the LowPro.

The system starts automatically once the toilet is flushed or liquid from other fixtures enters the unit. It automatically shuts off once the contents have been pumped away. Run times will vary depending on inflow and source.

## Cords

LowPro systems come with two cords—one to the float switch and the other to the pump motor. The float switch cord has a piggyback (series) plug enabling the pump motor cord to be plugged into the back of it. Both cords must be connected in series for automatic operation.



The purpose of this design is to allow temporary manual operation of the pump. For manual operation, or in the event of a float switch failure, the pump cord can be separated and plugged into the electrical outlet, directly bypassing the switch.

## Use and Care

A routine of regular cleaning will keep the LowPro in good working order. The exterior of the unit may be cleaned with a damp cloth and normal household cleaners. Never spray or dump water or chemicals directly on the unit.

## Considerations

The LowPro41LP can be installed freestanding or built-in, concealing the pump compartment and piping. The platform section of the tank is sized to fit flush with an elevated floor framed with 2" x 6" material.

**Access to pump compartment** is required on built-in installations. To accommodate future service, it is important to allow access to the pump and switch cover when the unit is being framed-in with a wall behind the water closet. This can be accomplished by framing this portion of the tank into a closet, utility, or other accessible room.

**If installing walls or floor joists**, use caution to ensure that nails, screws, or other sharp objects do not puncture the tank when framing.

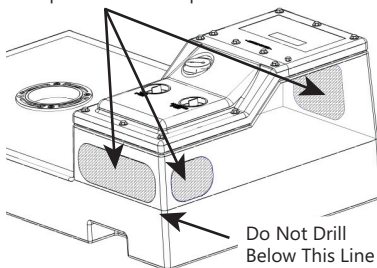
**For addition of a sink or shower**, a rubber pipe seal is included that accepts 2" schedule 40 PVC piping. Showers must be elevated to allow gravity flow to unit.

**If connecting a washing machine**, the preferred method is to drain the washer into a tub sink with a lint sock prior to the LowPro. This requires periodically removing the access cover to clean lint and debris from the switch.

The tank installation location must be level.

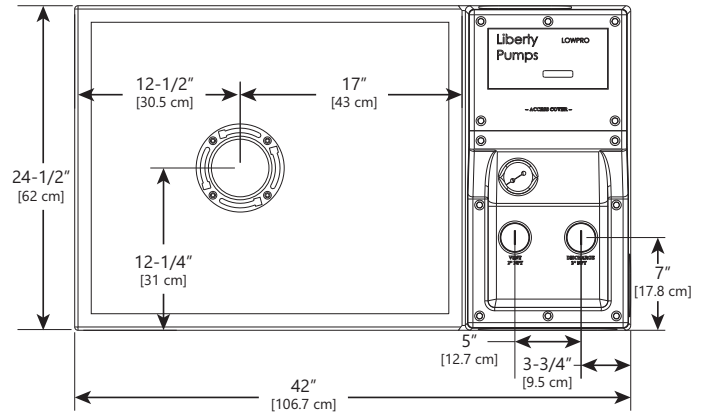
LowPro tank contains three textured areas acceptable for installing rubber pipe grommet. **Installation outside of these areas may result in damage to internal components.**

Acceptable Rubber Pipe Grommet Locations

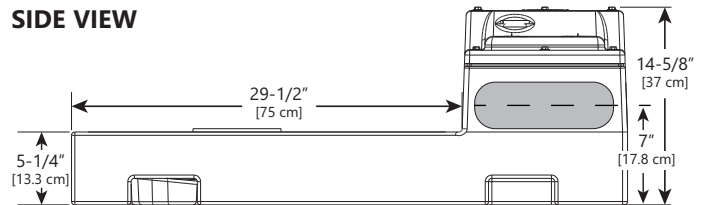


## Dimensional Data

### TOP VIEW



### SIDE VIEW

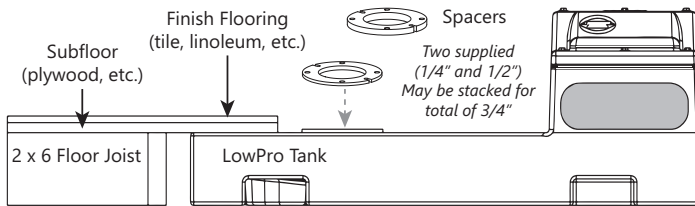


## Installation

- Position the tank in its desired location and ensure that it is level.  
Use hydraulic cement or similar material for leveling the floor if necessary.
- Determine the closest and most readily accessible locations to tie in the discharge and vent lines to existing lines. Take the necessary measurements and determine what plumbing fittings and pipes are needed.
- An inlet for a 2" PVC drain line from additional fixtures (i.e., sink or shower) may be installed using the supplied rubber pipe grommet.  
Determine the best location for the drain line to enter the tank—making sure it is within the marked textured areas of the pump chamber. **Do not drill below or outside of the textured areas.** Make sure drain lines have adequate gravity flow to the system. If a shower is being used, elevate the shower to allow for proper trapping and drainage.
- Drill a 3" diameter hole and insert the provided grommet. Slide the 2" PVC drain line into the pipe grommet, lubricating the pipe if necessary to ease installation.
- Install a 2" PVC pipe to the discharge connection on the cover.

**Threaded connections at tank require hand-tightening only. Use thread seal tape to seal pipe threads.**

6. Attach the 2" check valve to the discharge pipe as close to the top of the tank as possible. Make sure that the arrow on the check valve is pointing up, away from the pump.  
**Do not reduce the discharge pipe size below 2".**
7. Complete the discharge piping to the house waste line using a minimum number of turns.
8. Install a 2" vent pipe into the vent opening on the cover.
9. Connect the vent pipe to the house vent line or directly to the atmosphere. Unit must be vented in accordance with local plumbing codes.  
**Do not use an air admittance valve or a mechanical spring-loaded venting device.**
10. If installing a finished floor above the LowPro tank system, continue with steps 11 through 13, otherwise, resume installation at step 14.
11. The rough opening size required for installation using standard 2" x 6" floor joists will vary depending on the actual installation and the orientation of the tank. The overall rough opening size needed to enclose the entire LowPro tank is 42" x 24-1/2". See page 5 for **Dimensional Data**.
12. Measure the finished flooring thickness and determine the number of closet flange spacers needed to bring the closet flange up to the finish floor.



13. Set the proper number of plastic closet flange spacers onto the brass closet flange. **The foam gasket material on the spacer(s) must be facing down.** The spacer(s) will not be secured to the closet flange, so use care not to move them during the installation of the toilet.
14. Install the provided wax toilet bowl seal ring onto the toilet following the directions included with the toilet.
15. Install the toilet onto the closet flange following the directions included with the toilet.
16. Hook up the water line to the toilet.
17. Turn the water on and fill the toilet tank. Test for leaks. Flush the toilet several times and allow the pump to cycle to ensure proper operation.

## Sample Illustrations

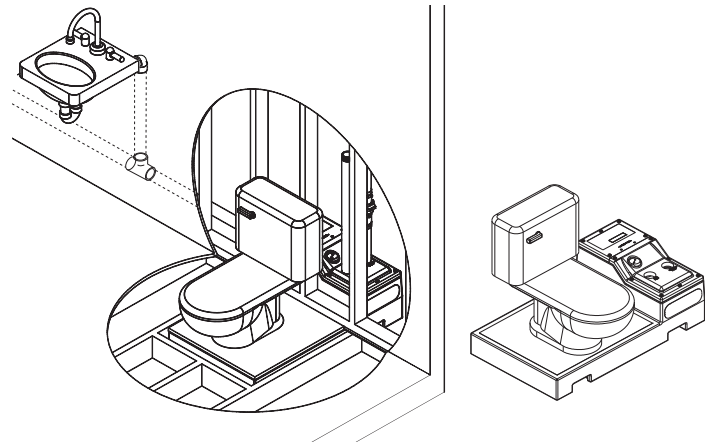


Figure 1. Typical Finished Installation and Optional Toilet Orientation

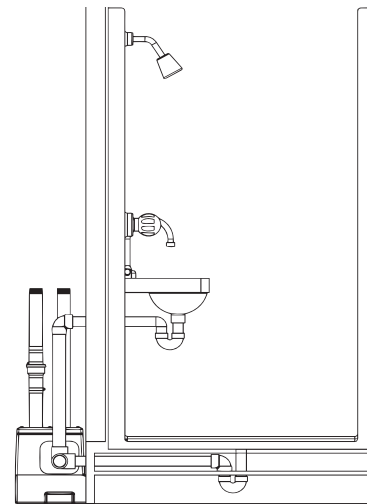


Figure 2. Elevated Shower Side View

## Maintenance and Troubleshooting

### **⚠ WARNING** **🔥 RISK OF FIRE**

- Accidental contact with electrically live parts, items, fluid, or water can cause serious injury or death.
- Always disconnect the pump from power source before attempting to service the pump. Fatal electrical shock could occur.

### Maintenance

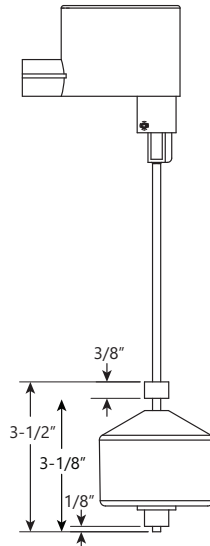
The LowPro system requires no routine maintenance. The exterior of the unit may be cleaned with a damp cloth and normal household cleaners. Never spray or dump water or chemicals directly on the unit.

If a washing machine is connected, periodically remove the access cover to clean lint and debris from the float switch.

### Float Switch Adjustment

Refer to the diagram to adjust the float switch. The pump should engage at a waste depth of approximately 4" and pump down to around 3".

To adjust the float switch, remove the switch access cover and lift the float switch out of the tank. After adjusting to the lengths shown, replace the switch by placing the cord between the two bosses. Reattach the access cover to the tank.



### Troubleshooting

No repair work shall be carried out during the warranty period without prior factory approval. To do so may void the warranty.

Liberty Pumps, Inc. assumes no responsibility for damage or injury due to disassembly in the field. Disassembly, other than at Liberty Pumps or its authorized service centers, automatically voids warranty.

Problems and improper operation of the water closet should be directed to the manufacturer of the water closet and their installation instructions and troubleshooting guidelines.

Table 1. Troubleshooting Matrix

Problem	Possible Cause	Corrective Action
Pump does not start.	Tripped circuit breaker, tripped GFCI, blown fuse, or other interruption of power.	Reset tripped circuit breaker, reset GFCI, replace blown fuse with properly sized fuse, check that the unit is securely plugged in, investigate power interruption.
	Switch unable to move to the PUMP ON position due to interference in basin or other obstruction.	Position the pump or float switch so that it has adequate clearance for free movement.
	Insufficient liquid level.	Verify the liquid level is allowed to rise enough to activate the float switch.
	Defective float switch.	Replace float switch.
	Obstructed impeller or volute.	Remove obstruction.
Pump runs, but does not turn off.	Switch unable to move to the PUMP OFF position due to interference with the side of basin or other obstruction.	Position the pump or float switch so that it has adequate clearance for free movement.
	Defective float switch.	Replace float switch.
Pump runs or hums, but does not pump.	Discharge is blocked or restricted.	Check the discharge line for foreign material, including ice if the discharge line passes through or into cold areas.
	Check valve is stuck closed or installed backward.	Remove check valve(s) and examine for freedom of operation and proper installation.
	Gate or ball valve is closed.	Open gate or ball valve.
	Total head (lift height) is beyond pump's capability.	Route piping to a lower level. If not possible, a larger pump may be required. Consult Liberty Pumps.
	Obstructed impeller or volute.	Remove obstruction.
Pump cycles too frequently.	Check valve not installed, stuck open, or leaking.	Install check valve(s); remove check valve and examine for freedom of operation and proper installation.
Pump runs periodically when fixtures are not in use.	Check valve not installed, stuck open, or leaking.	Install check valve(s); remove check valve and examine for freedom of operation and proper installation.
	Fixtures are leaking.	Repair fixtures as required to eliminate leakage.

Table 1. Troubleshooting Matrix (continued)

Problem	Possible Cause	Corrective Action
Pump does not deliver proper capacity.	Discharge partially closed or clogged.	Check the discharge line for foreign material, including ice if the discharge line passes through or into cold areas.
	Check valve partially clogged.	Raise liquid level up and down to clear; remove check valve to remove obstruction.
	Total head (lift height) is beyond pump's capability.	Route discharge piping to a lower level. If not possible, a larger pump may be required. Consult Liberty Pumps.
	Obstruction in pump or piping.	Remove obstruction.
Pump operates noisily.	Piping attachments to building are too rigid.	Replace a portion of the discharge line with rubber hose or connector.
	Worn bearings or other motor problem.	Return unit to authorized repair center for service.
	Foreign objects in the impeller cavity.	Clean the impeller cavity.
	Broken impeller.	Consult Liberty Pumps for information regarding impeller replacement.
Repeated tripping.	Circuit protection underrated.	Check rating and replace with proper size.
	Other appliance on same circuit.	Pump requires separate circuit.
	Pump is connected to an extension cord or wiring is inadequate or compromised.	Have an electrician check for proper wiring.
	Improper voltage.	Have an electrician check all wiring for proper connections and adequate voltage and capacity.
	Obstruction in pump.	Remove obstruction.
	Foreign matter buildup.	Clean motor and float switch housing.

## 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). 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.**