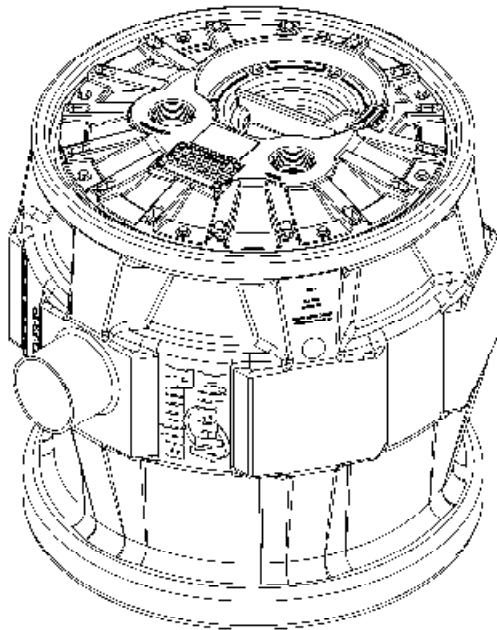




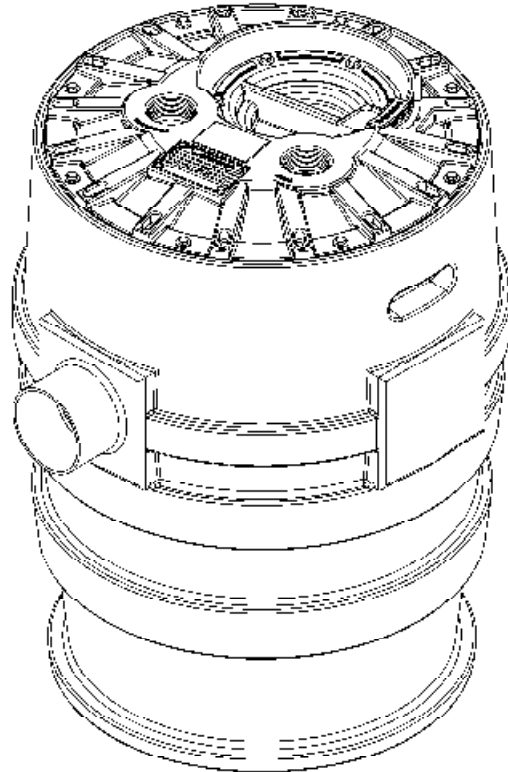
Installation Manual PRO-Series Sewage Systems P370, P380

7225000A

With QuickTree™ Technology



Pro380-Series
24" x 24"
Shallow System
41 Gallons



Pro370-Series
21" x 30" System
41 Gallons

Manual Contents

- 1.) General Information
- 2.) The Basin
- 3.) Installation & Connections
- 4.) QuickTree™ & Access Cover
- 5.) Electrical Service & Operation
- 6.) Maintenance & Troubleshooting

Important:

Prior to installation, record the Model and Serial/Code number from the nameplate for future reference.

Model: _____

Serial/Code: _____

1. General Information – All Models

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

WARNING: Risk of electric shock. Always disconnect the pump from the power source before handling or making adjustments. Check to make sure installation is in accordance with the National Electric Code and all applicable local codes. Installation and servicing is to be conducted by qualified personnel.

DO NOT use these pumps in water over 140° F.

Pro-Series System

The Pro-series by Liberty Pumps features new QuickTree™ float system technology. The QuickTree™ system is located under a separate access cover for ease of maintenance and service. Floats for both pump activation and alarm (if equipped) are mounted on a stainless steel tree (rod), separate from the pump. There is no need to disconnect plumbing or remove the pump to inspect, service or replace floats. QuickTree™ floats are preset at the factory for optimum operating levels and should not be adjusted.

The Pro-Series 370 and 380 systems are shipped from the factory fully assembled with a wide range of possible pumps. The following chart lists the pumps available in the Pro370 and Pro380. Your specific pump is identified by the model number on the nameplate attached to the Pro-Series cover.

Model designations for P370 and P380-series systems

System Model	Pump Model	HP	Volts	Phase	Full Load Amps	Solids Handling	FNPT Discharge	Shut-off Head (no-flow)
P372LE41, P382LE41	LE41M	4/10	115	1	12	2"	2"	17'
P373LE41, P383LE41	LE41M	4/10	115	1	12	2"	3"	17'
P372LE51, P382LE51	LE51M	1/2	115	1	12	2"	2"	25'
P373LE51, P383LE51	LE51M	1/2	115	1	12	2"	3"	25'
P372LE52, P382LE52	LE52M	1/2	208-230	1	6.8	2"	2"	25'
P373LE52, P383LE52	LE52M	1/2	208-230	1	6.8	2"	3"	25'
P372LE71, P382LE71	LE71M	3/4	115	1	12	2"	2"	28'
P373LE71, P383LE71	LE71M	3/4	115	1	12	2"	3"	28'
P372LE72, P382LE72	LE72M	3/4	208-230	1	6	2"	2"	28'
P373LE72, P383LE72	LE72M	3/4	208-230	1	6	2"	3"	28'
P372LE102, P382LE102	LE102M	1	208-230	1	7	2"	2"	36'
P373LE102, P383LE102	LE102M	1	208-230	1	7	2"	3"	36'
NOTE: LEH-Series High-Head pumps require a minimum application of 15' head.								
P372LEH102, P382LEH102	LEH102M	1	208-230	1	12	2"	2"	53'
P373LEH102, P383LEH102	LEH102M	1	208-230	1	12	2"	3"	53'

Systems ordered with alarm option have an "A" suffix designating the alarm. "/A2" ...ALM-2, "/A2W" ...ALM-2W, "/A3" ...ALM-3. Pump and Alarm floats are pre-set on the QuickTree™ system at proper operating levels. Do not adjust floats.

Was your system sized by a professional? Minimum fluid flows are required in sewage applications. Consult Factory for proper pump sizing prior to installation.

2. The Basin

The Pro-Series Systems features a clear disposable construction cover designed to protect the system during rough-in and masonry work. The protective cover should remain in place until finish plumbing; however, can be removed and reinstalled if required. The cover is snapped into the threaded ports of the discharge and vent. To remove the clear cover, simply pull upward disengaging it from the discharge and vent holes.

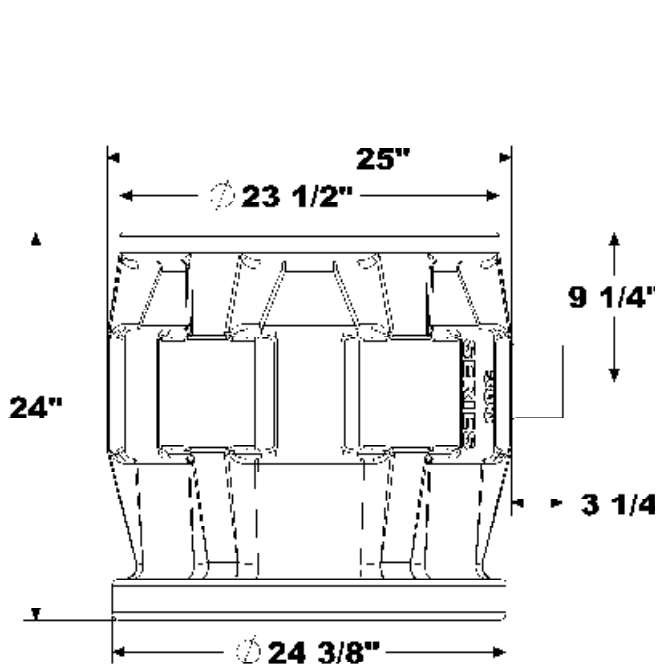
In-Ground Installation of Pro-Series Basins

- A.) Excavation:** Excavate the hole as small as possible, with a minimum recommended 8" diametrical clearance around the tank. Never place the basin directly in contact with rocks or other sharp objects. Place only fine, 1/8" to 3/4" pea gravel or 1/8" to 1/2" washed, crushed stone as bedding between the basin and the hole walls. Do not use sand or native soil as backfill. Properly compact underneath the basin to provide a solid, level base that can support the weight of the filled basin. It is recommended that the top lip of the basin be level with the finished floor.
- B.) Initial Backfill:** Only fine, 1/8" to 3/4" pea gravel or 1/8" to 1/2" washed, crushed stone should be used around the bottom of the basin to hold it in place. Do not use sand or native soil as backfill. Make the inlet connection as required for your basin.
- C.) Inlet Connection:** The Liberty P370 and P380 series basins have a 4" inlet molded to the side of the tank. This inlet is sized to accept a 4" no-hub type coupling. Connect the gravity drainage line from the fixtures to this hub.
- D.) Final Backfill:** Large rocks, clods, and foreign objects should be kept out of the backfill material. Only fine, 1/4" to 3/4" pea gravel, or 1/8" to 1/2" washed, crushed stone is recommended. Do not use sand or native soil as backfill. Mound the backfill slightly and allow for natural settling. Provide access to the basin cover for maintenance and service.

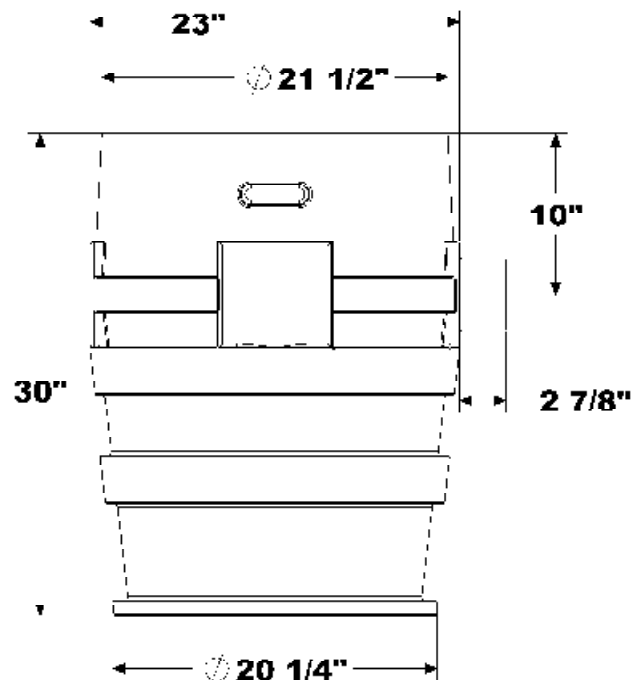
IMPORTANT: Do not exert heavy pressure or run heavy equipment on the backfill material as this could cause the tank to collapse.

Dimensional Data

PRO380



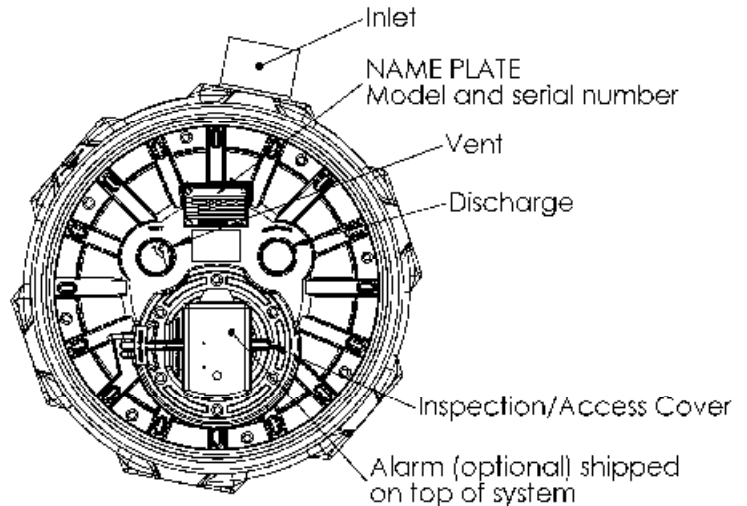
PRO370



3. Installation and Connections

A.) Discharge: Using an adapter, connect the discharge pipe to the threaded 2" or 3" port provided on the cover. **IMPORTANT: Do not reduce the discharge pipe size below that which is provided on the pump.** Sewage pumps should not be smaller than 2". In some applications, it may be necessary to increase the pipe size to reduce friction losses. Contact Liberty Pumps if you have questions regarding proper pipe sizes and flow rates. (800)-543-2550.

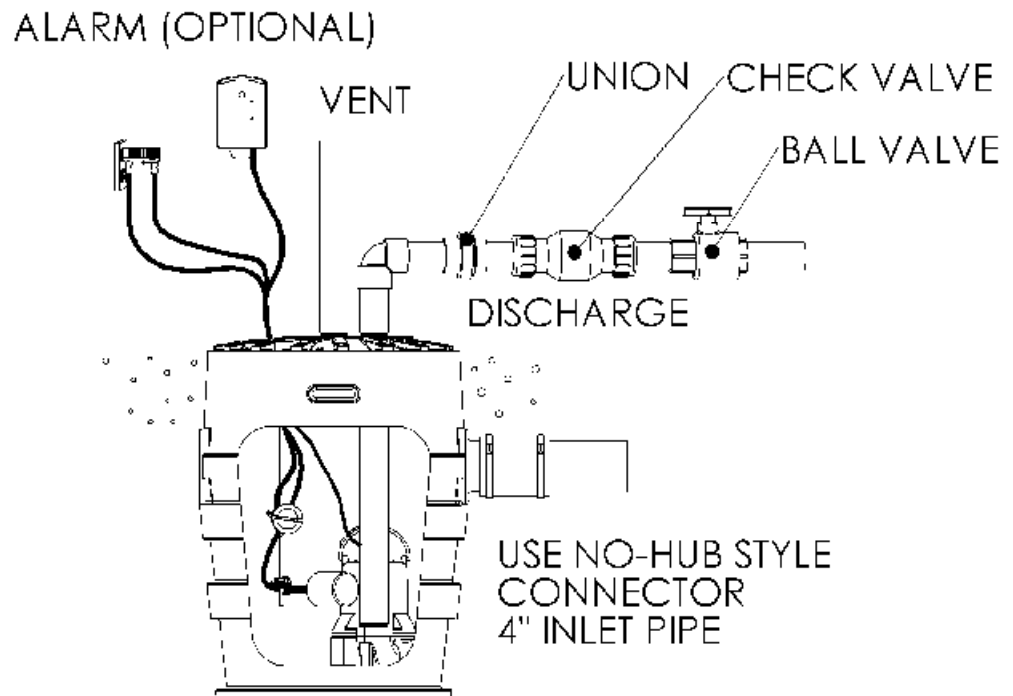
Install the remaining discharge line. A union should be installed just above the cover to facilitate pump removal if necessary. A check valve is recommended after the union to prevent the backflow of liquid after each pumping cycle. A gate or ball valve should follow the check valve to allow periodic cleaning of the check valve or removal of the pump. The remainder of the discharge line should be as short as possible with a minimum number of turns, to minimize friction head loss. Do not restrict the discharge below 2" in sewage applications. Larger pipe sizes may be required to eliminate friction head loss over long runs. *Contact Liberty Pumps or other qualified person if there are questions regarding proper pipe size and flow rates.*



E.) Vent: A threaded 2" or 3" connection is provided on top of the cover which must be piped to the existing building vent, or extended outside on its own standpipe. The vent size should be in accordance with applicable codes, but not less than the discharge size.

Note: Pro-Series systems shipped with steel pipe option have a rubber grommet seal on the discharge instead of female NPT connections.

Typical Installation Diagram Actual installations may vary



4. QuickTree™ and Access Cover

Pro-Series P370 and P380 systems feature new QuickTree™ technology. The QuickTree™ float system uses a stainless steel mounting rod (tree) and specially designed cord clamping brackets to affix the pump float and (optional) alarm float in the system. **All floats are pre-set at the factory at optimum levels and do not require adjustment.** NOTE: Field adjusting floats may cause improper activation or turn-off of the pump and optional alarm.

QuickTree™ removal and float inspection:

The QuickTree™ system is located under the separate access cover to help ease inspection, service and replacement of a float. To inspect the float(s), simply unbolt the access cover and lift out the QuickTree™ assembly from it's holder. There is no need to disconnect plumbing or remove the pump. Pro-Series systems feature a manual LE-series pump (with no switch attached directly to the pump). Operation of the pump is accomplished by the QuickTree™ system.

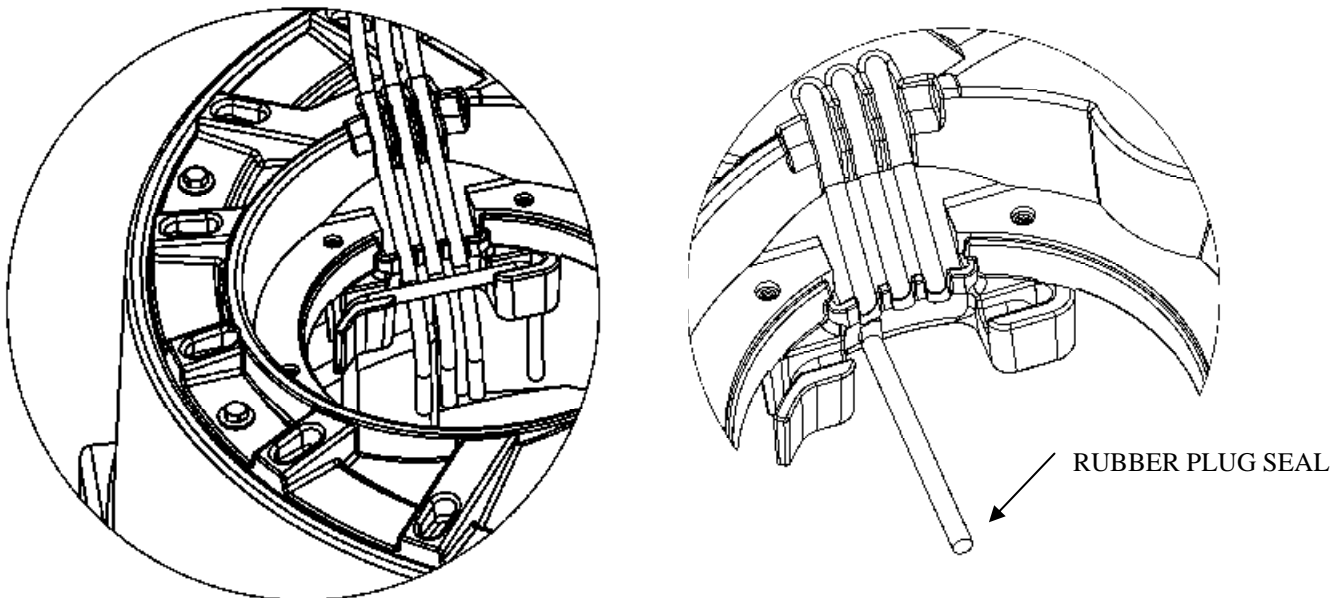
Re-inserting the QuickTree™

After service or inspection of the floats, re-insert the QuickTree into it's holder. Cords from the pump, float switch and optional alarm need to be properly sealed as described below in the Integrated Cord Seal System.

Integrated Cord Seal System:

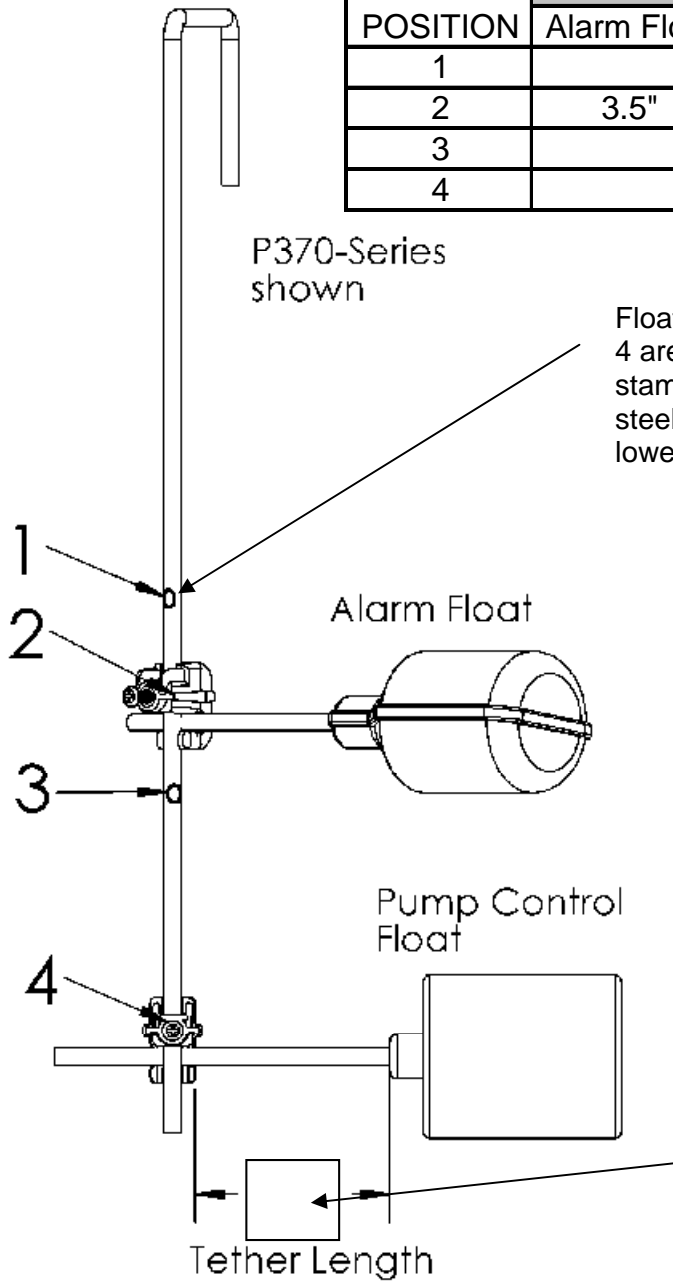
It is important that cords from the pump motor, float switch and optional alarm float are sealed in the specially designed rubber sealing channels under the access cover. Proper sealing is required to keep sewer gas from leaking from the system. Place the cords securely in the rubber channels as shown in FIGURE B. being careful to remove excessive cord "slack" from inside the system. **IMPORTANT:** Three cord channels are provided. For systems without the alarm option, only two channels will be used and the third must be "plugged" with an attached rubber plug seal. SEE FIGURE C. If the alarm cord is present, all three channels will be used. All rubber cover gaskets are permanently attached and do not require replacement.

IMPORTANT: Proper cord sealing – behind QuickTree rod



QuickTree™ settings for PRO370 and PRO380 Systems:

ROD POSITION	TETHER LENGTH (SWITCH TO CLAMP)			
	P370		P380	
	Alarm Float	Control Float	Alarm Float	Control Float
1			3.5"	
2	3.5"			
3				3.0"
4		3.5"		



P370 and P380 systems have different tether lengths. See above chart for proper tether length and correct rod position.

When servicing the QuickTree place the switch cord into the trough or channel then slip the stainless steel rod through the clamp and tighten the screw with a Philips screw driver do not over tighten. Flats have been formed on the rod to designate float positioning the screw should be tightened onto the flat. The tether length is the amount of cord between the clamp and float.

5. Electrical Service & Operation

WARNING: Risk of electric shock. This pump is supplied with a grounding conductor or a grounding type attachment plug. To reduce the risk of electric shock, be certain that the grounding conductor is connected only to a properly grounded control panel or, if equipped with a grounding type plug that it is connected to a properly grounded, grounding type receptacle. **DO NOT bypass grounding wires or remove ground prongs from attachment plugs.**

CAUTION:

- The electrical connections and wiring for a pump installation should only be made by qualified personnel.
- To reduce risk of electric shock, always disconnect pump from power source before handling.

A separate branch circuit, properly fused and grounded, should be provided to the pump. Make sure the power source is properly sized for the voltage and amperage requirements of the motor, as noted on the pump nameplate. The electrical outlet or panel shall be within the length limitations of the pump power cord, and at least 4 feet above floor level to minimize possible hazards from flood conditions. Check to make sure installation is in accordance with the National Electric Code and all applicable local codes and ordinances. Wiring extended over greater distances must be in accordance with NEC requirements. **DO NOT use an extension cord.**

All P370 and P380 models come factory-equipped with the float switch mounted on the QuickTree™ assembly. These models come with two cords - one to the float switch and the other to the pump motor. The switch cord has a series (piggyback) plug enabling the pump (motor) cord to be plugged into the back of it (See figure D). The purpose of this design is to allow manual operation of the pump.

For automatic operation the two cords should be interconnected and plugged into a separately fused, grounded outlet of proper amp capacity for your selected pump model. (See Section 1, General Information, or the pump nameplate for electrical specifications of your model.) Both cords are equipped with 3-prong plugs and must be plugged into a properly grounded 3-wire receptacle. **DO NOT REMOVE THE GROUND PRONGS.**

For manual operation, or in the event of switch failure, the pump cord can be separated and plugged into the electrical outlet, directly bypassing the switch. 208-230V single phase pumps should only be operated without the float switch by using the circuit breaker or panel disconnect. Do not let the pump run dry for extended periods.

If the pump is to be wired directly into a control device or junction box, and it is necessary to remove the plugs, have a certified electrician do the wiring in accordance with the National Electric Code and applicable local codes. See figure E for direct wire installation of single phase, automatic pumps.

Figure D. Piggyback plug installation.

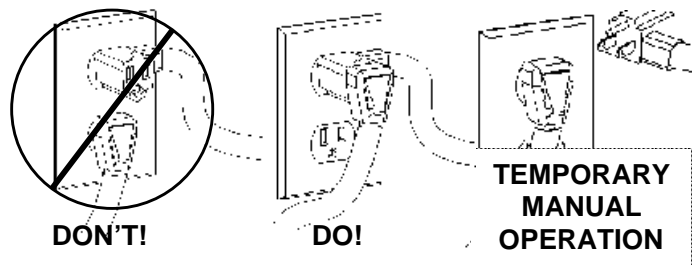
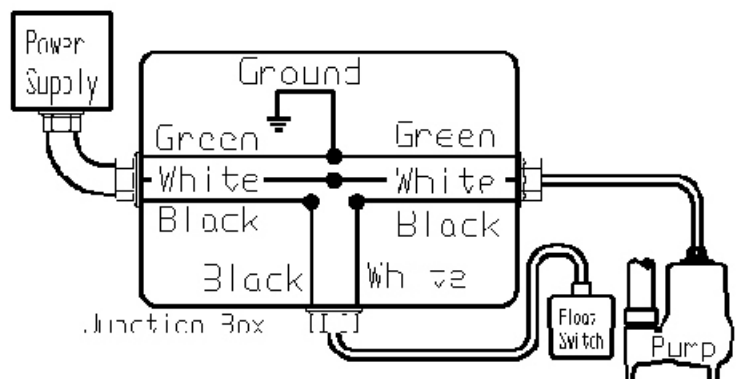


Figure E. – Direct wiring of 115V or 208-230V, single phase, automatic pumps.

WARNING: In 208-230V installations, one side on the line going to the pump is always “hot”, whether the float switch is on or off. To avoid hazards, install a double pole disconnect near the pump installation.



6. Maintenance & Troubleshooting

Pump will not run.	<ol style="list-style-type: none"> Blown fuse or other interruption of power; improper voltage. Switch is unable to move to the "turn on" position due to interference or other obstruction. Insufficient liquid level. Defective switch. 	<ol style="list-style-type: none"> Check that the unit is securely plugged in. Have an electrician check all wiring for proper connections and adequate voltage and capacity. Remove QuickTree assembly from under the access cover and check floats for obstruction. Check for proper float settings using figure E. on page 5 and adjust as required.
Pump will not turn off.	<ol style="list-style-type: none"> Switch(s) unable to move to the "turn off" position due to interference or other obstruction Defective switch. Pump undersized. Application exceeds pump's capability 	<ol style="list-style-type: none"> Make sure the liquid level is allowed to rise enough to activate switch(s). Remove and replace switch. Check the discharge line for foreign material, including ice if the discharge line passes through or into cold areas. Remove check valve(s) and examine for freedom of operation and proper installation. Open gate or ball valve. Try to route piping to a lower level. If not possible, a larger pump may be required. Consult the factory.
Pump runs or hums, but does not pump.	<ol style="list-style-type: none"> Discharge is blocked or restricted. Check valve is stuck closed or installed backwards. Gate or ball valve is closed. Total lift is beyond pump's capability. Pump impeller is jammed or volute casing is plugged. 	<ol style="list-style-type: none"> READ NOTE* Remove the pump from the basin. Detach the pump base and clean the area around the impeller. Reassemble and reinstall. Repair fixtures as required to eliminate leakage. Consult the factory for information regarding replacement of impeller. Return pump to the factory or authorized repair station for repair. Replace a portion of the discharge line with rubber hose or connector.
Pump runs periodically when fixtures are not in use.	<ol style="list-style-type: none"> Check valve was not installed, is stuck open or is leaking. Fixtures are leaking. 	
Pump operates noisily.	<ol style="list-style-type: none"> Foreign objects in the impeller cavity. Broken impeller. Worn bearings. Piping attachments to building are too rigid. 	

* **NOTE:** 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.

2 Year Limited Warranty

Liberty Pumps, Inc. warrants that pumps of its manufacture are free from all factory defects in material and workmanship for a period of 2 years from the date of purchase. 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 2 years from the "CODE" (date of manufacture) number noted on the pump nameplate.

The manufacturer's 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; if it has been disassembled, modified, abused or tampered with; if the electrical cord has been damaged or improperly spliced; if the pump discharge has been reduced in size; if the pump has been used in hot water or water containing sand, lime, cement, gravel or other abrasives; if the product has been used to pump chemicals or hydrocarbons; if a non-submersible motor has been subjected to excessive moisture; or if the label bearing the serial and code 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 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 two 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.

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