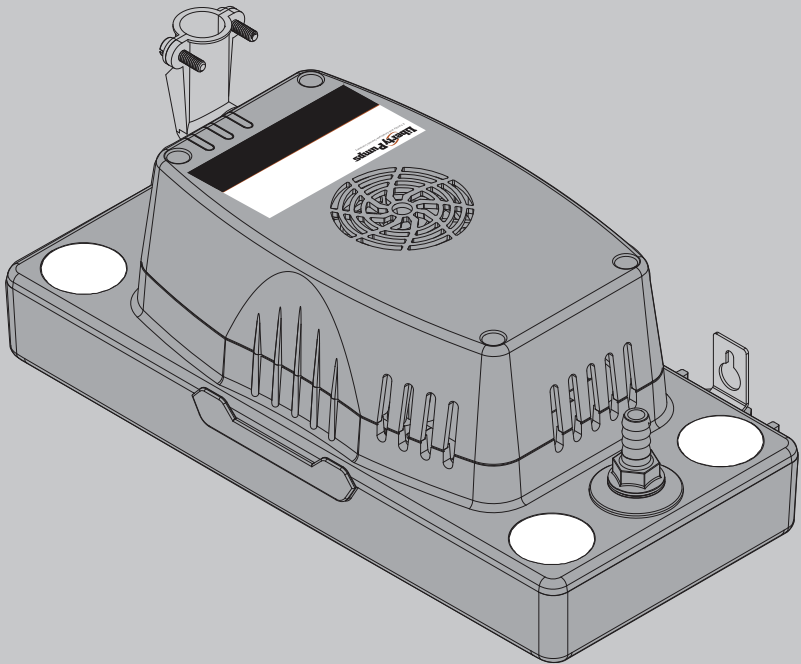


Liberty Pumps®

A Family and Employee Owned Company

Plenum-Rated Condensate Pump

Installation



2235000A

Models
LCU-PR20S
LCU-PR220S

Introduction

Safety Information

Please read, understand, and follow all safety instructions. Failure to follow instructions may result in property damage, serious injury, or death.

DANGER

⚠ **Always** disconnect power prior to moving, adjusting, or servicing pump or attached systems. **DO NOT** use this pump in the presence of spraying or standing water. Failure to do so could result in a fatal electric shock.

WARNING: Fire and Explosion Hazard

⚠ **DO NOT** use this pump to move flammable or explosive liquids. **DO NOT** use this pump in explosive or flammable environments.

⚠ Ensure that pump is mounted away from heat exchanger or wiring. If you are unsure of any items in this manual, please consult a professional and **DO NOT** attempt to install this product.

CAUTION: Flood Risk

⚠ Personal injury or property damage can result from an inoperative pump. If a flood has occurred, **DO NOT** walk in wet area until all power has been turned off. Check with local electric company or a qualified electrician before disconnecting any electrical service prior to pump removal.

WARNING

⚠ Pump must be properly wired to condensate producing appliance control board in order to shut off appliance in alarm (high water) conditions.

⚠ Supply voltage and frequency must match what is shown on pump nameplate. Source voltages lower than the rated supply can reduce performance and cause pump to overheat.

⚠ Pump must be level and should be mounted to, or placed on, a solid surface or floor.

⚠ **DO NOT** cover pump air vents. Pump is air cooled. **DO NOT** cover vent holes located on top or sides of the pump housing. Pump may be operated continuously as long as air vents are not covered.

⚠ Pump should be installed indoors. The chosen location should be clean and dry.

⚠ This pump is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the pump by a person responsible for their safety. Children should be supervised to ensure that they do not play with the pump.

Temperature Rating (not tested for hot water)

- Continuous duty 140°F
- Max inlet temperature 160°F
- Not suitable for contact with steam or gases that exceed 160°F

This pump should be installed by HVAC/R trained service professionals.

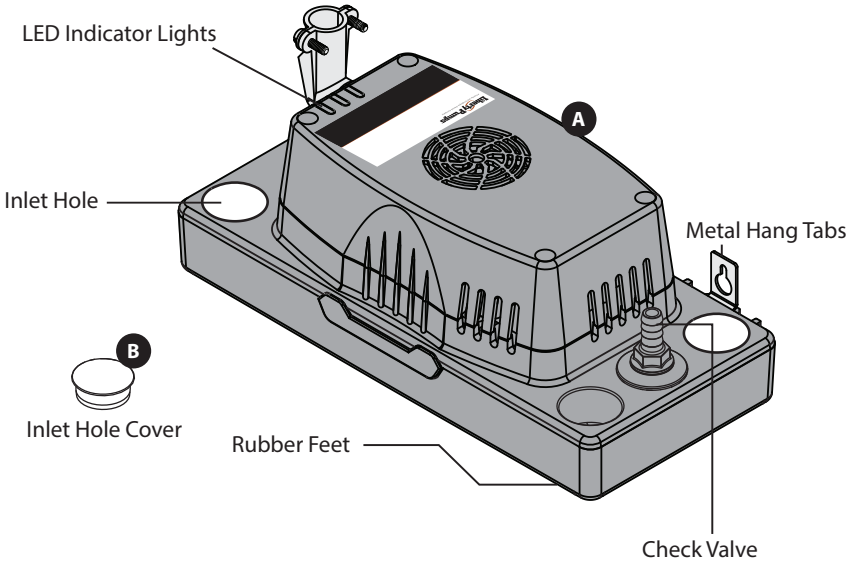
General Information

This pump is designed to automatically remove condensate water that collects from appliances such as air conditioners and dehumidifiers. The pump has a built-in tank that collects water from the appliance. When collected water reaches sufficient level inside the pump tank, the unit switches on and pumps water to a remote location for removal.

When the tank is sufficiently empty, the pump automatically switches off. Pump is capable of lifting water up to 22 ft and is equipped with a check valve that prevents water from flowing back into the tank when the pump shuts off.

The pump is outfitted with LED indicators that show the status of power available, motor running, and high water (alarm) conditions. The pump is also equipped with a switch that activates when water in the tank reaches an overflow condition. The overflow safety switch may be connected to turn off the appliance if high water conditions occur.

Features



Package Contents

PART	DESCRIPTION	QUANTITY
A	Condensate Pump	1
B	Inlet Hole Covers	3

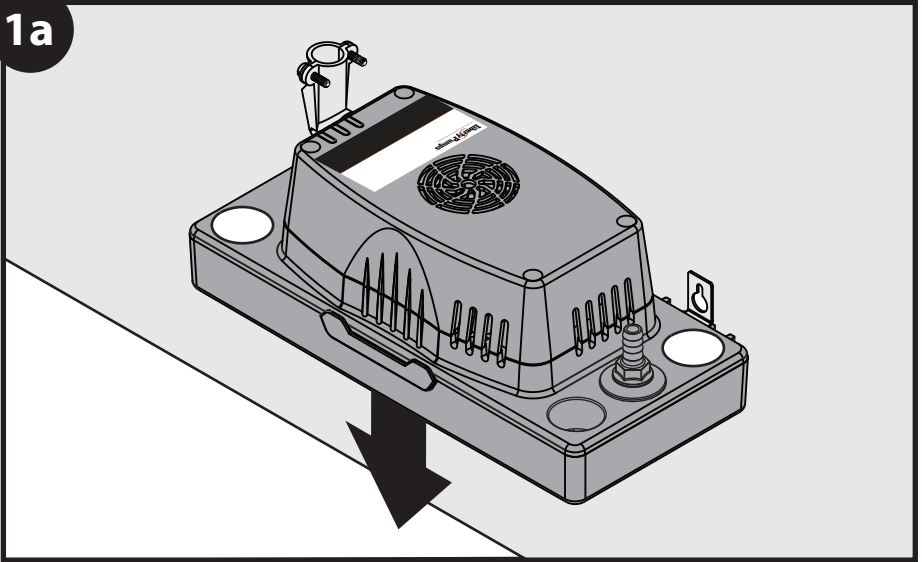
Specifications

	LCU-PR20S	LCU-PR220S
Rated Voltage	120 Volts/60 Hz	230 Volts/60 Hz
Rated Current Draw	1.9 Amps	1.0 Amps
Head Height	22 ft maximum	22 ft maximum
Flow Rate at Zero Head	1.6 GPM	1.0 GPM
Product Weight	4.7 lbs	4.7 lbs
Inlet Height from Base	1.75"	1.75"

Installation

Mounting Options

1a

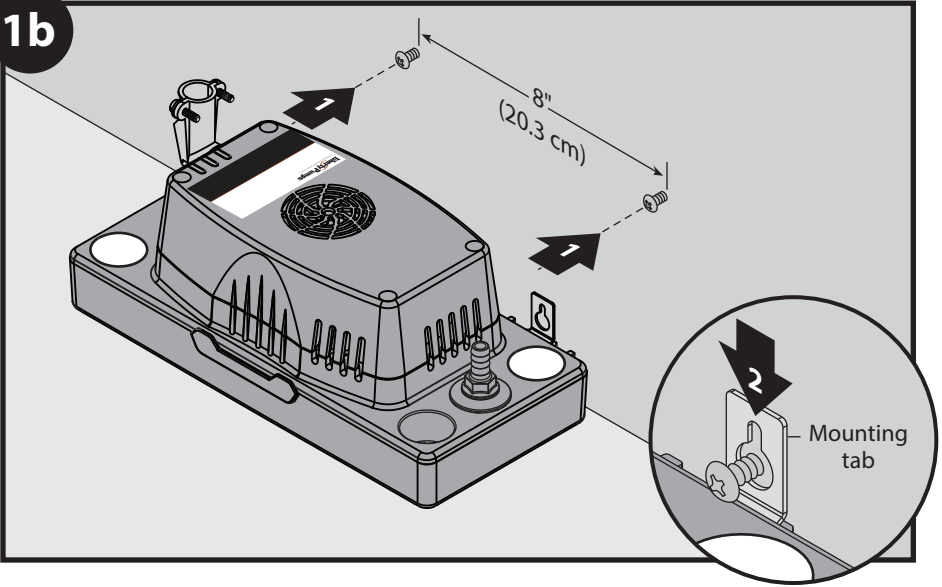


1a. Place on Floor

Determine condensate pump location. Pump must be level and should be mounted to, or placed on, a solid surface or floor away from moving objects and extreme heat.

Installation

1b



1b. Attach to Wall (optional)

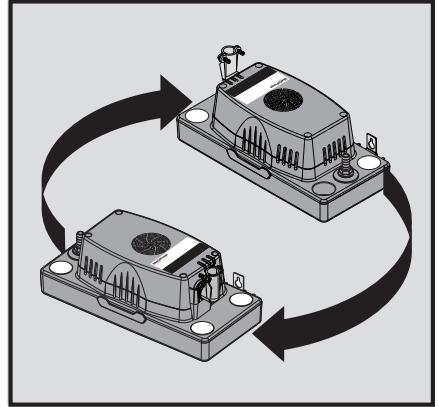
Attach condensate pump with screws, through mounting tabs (8" between mounting tabs).

Option: Reverse Top If Necessary

Pump top may be rotated 180° to allow access to pump outlet or power connection.

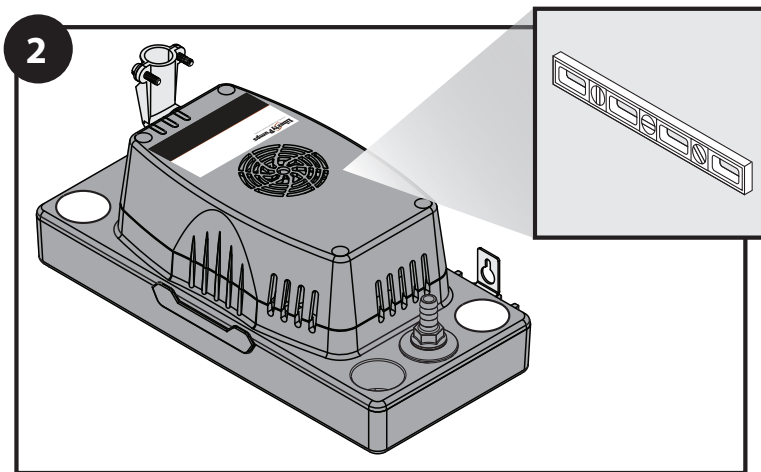
How to rotate pump top

1. Set pump on solid surface.
2. Hold pump cover with one hand.
3. With other hand, push one hanging tab away from centerline of the pump perpendicular to wide part of tab.
4. There should be a click sound.
5. Repeat for other hanging tab.
6. The pump should be free from base.
7. Lift pump off tank and rotate 180 degrees.
8. Push pump onto tank and there should be two click sounds.
9. Check that pump is secured to tank.



Installation

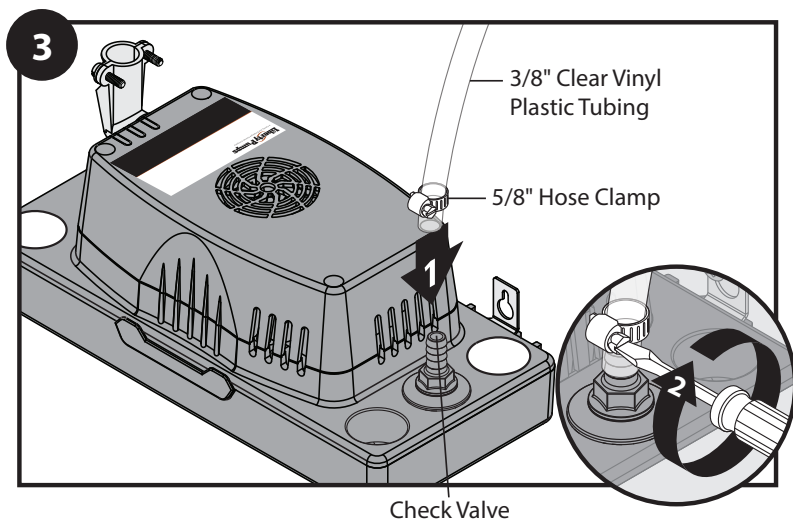
Support pump and piping when assembling and when installed. Failure to do so may cause piping to break, pump to fail, motor bearing failures, etc.



2. Level Unit

Ensure that condensate pump is level. If unit is out of level by more than 15° from horizontal surface, it will not function properly and warranty and property protection will not be valid.

Outlet Connection

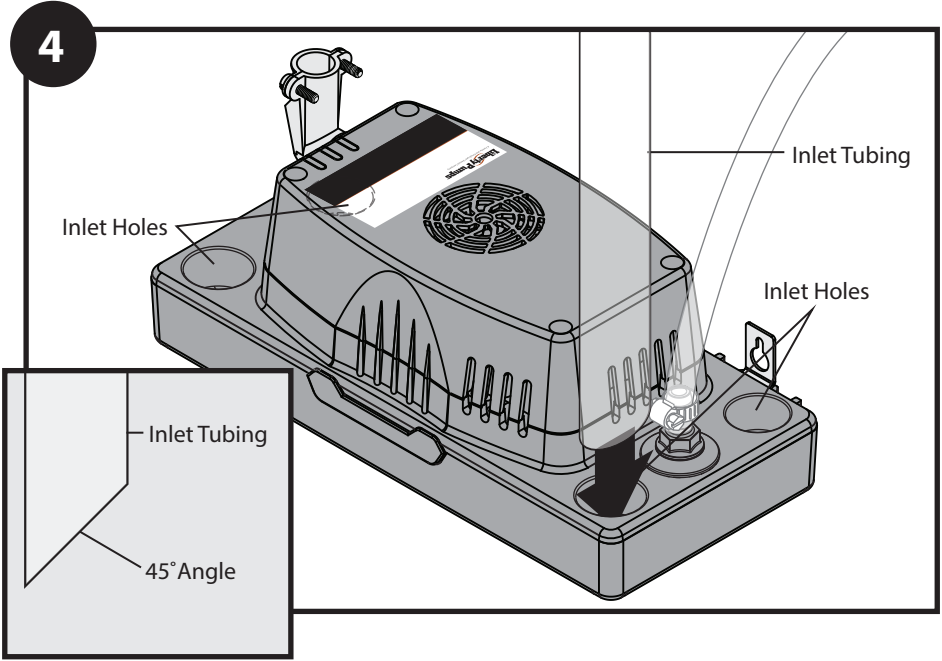


3. Install Outlet Tube Connection

Attach plastic tubing to check valve and secure with hose clamp (sold separately). Route tubing up and away from condensate pump (avoid compressing or kinking tubing).

Installation

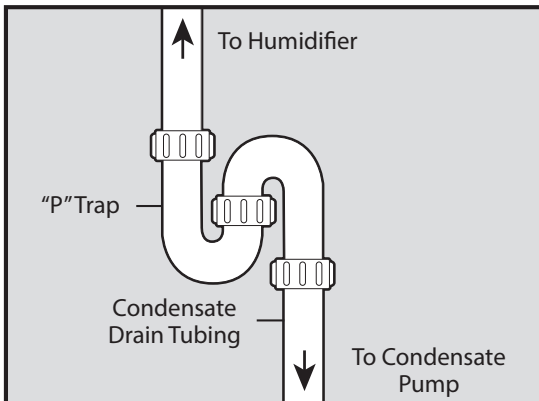
Inlet Connection



4. Install Inlet Tube Connections

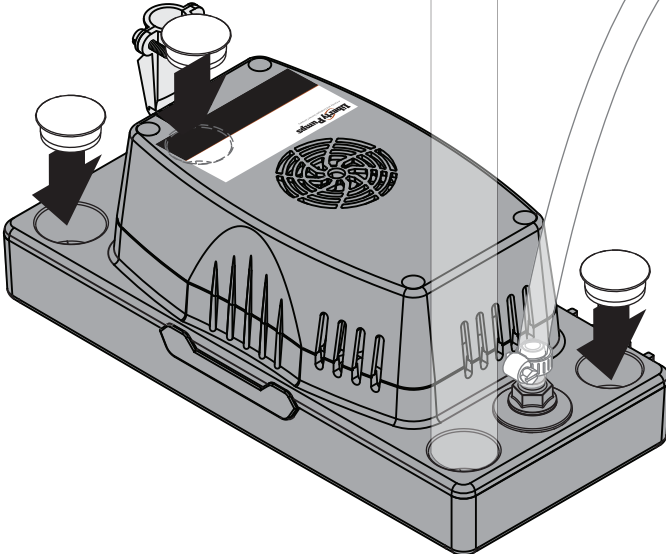
Install condensate drain tubing into one of the four inlet holes, making sure tubing is vertical. Inlet tubing should be cut to 45 degree angle.

If installing to a humidifier, a "P" trap should be used.



Installation

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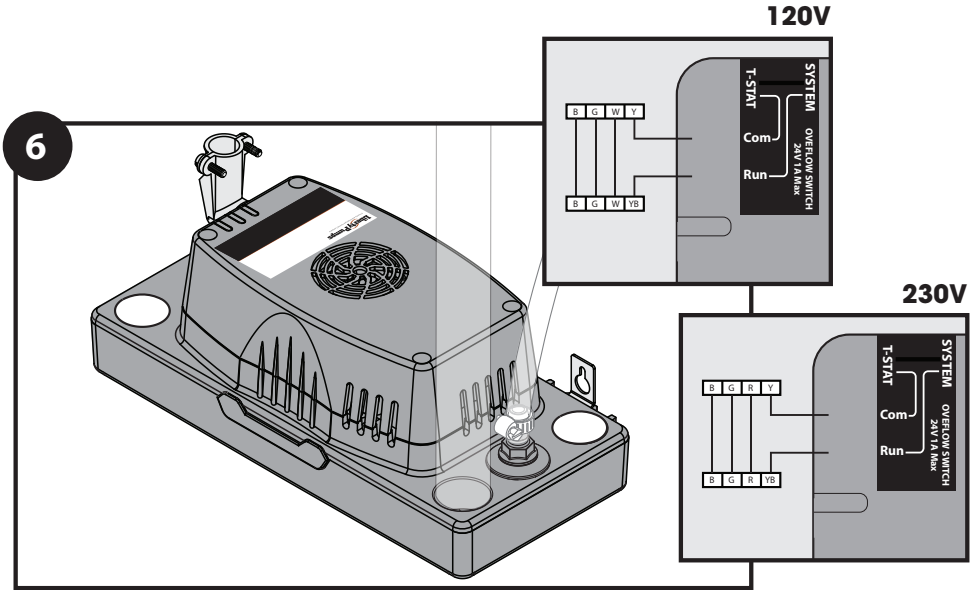


5. Install Inlet Covers

Insert inlet covers in remaining condensate pump inlet holes.

Installation

6. Electrical Connection and Safety Switch



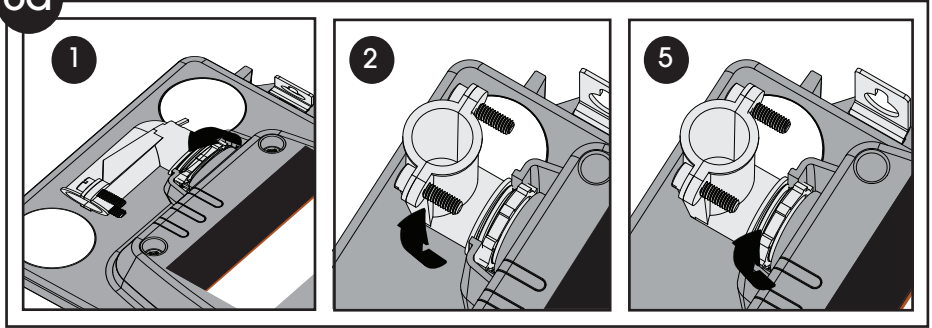
WARNING: Risk of Electric Shock

⚠ This pump must be properly connected to power following the National Electric Code (NEC). Failure to follow these warnings will void the warranty and could result in a fatal electric shock. A green LED will indicate if power is available. The pump is supplied with a grounding conductor. To reduce the risk of electric shock, be certain that it is connected to ground. Disconnect power before working on or around the pump.

1. This pump is supplied with lead wires and intended to be hardwired using a junction box or other approved enclosure. This pump includes a conduit connector for using 1/2" flexible metal conduit. The conductors must be enclosed in conduit in accordance with local authority, NEC, and Occupational Safety and Health Act (OSHA).
2. The installation should be performed by a qualified technician. Comply with national and local electrical and plumbing codes as well as local authority, NEC, and OSHA.
3. Pump conductors must be connected to voltage specified on the pump nameplate. Power conductors must be connected to a constant source of power (not a fan or other device that runs occasionally). The power conductors provided must be enclosed in conduit and hardwired inside a junction box or other approved enclosure.
4. Final installations should always be inspected and approved by the local authority of jurisdiction per requirements set forth by the same local authority.

Installation

6a



6a. Conduit Connection

1. Loosen conduit fitting nut.
 2. Rotate fitting for desired application.
 3. Route wires through conduit.
 4. Align conduit and insert conduit into conduit fitting.
 5. Tighten conduit screws.
- To prevent abrasion of wires, conduit should be reamed or finished to remove rough edges.

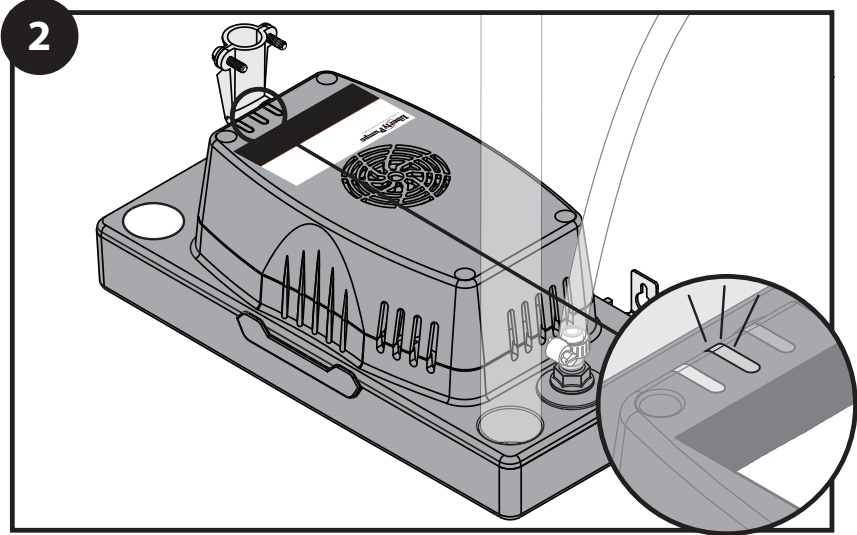
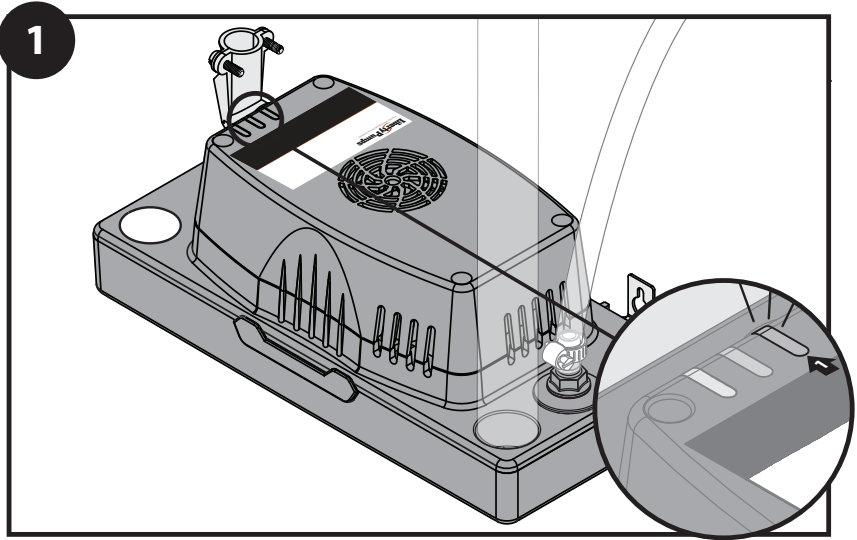
Pump power connections - 120V	Pump power connections - 230V
G-G, Green - ground	G-G, Green - ground
W-W, White - neutral	B-B, Black - line 1
B-B, Black - line	R-R, Red - line 2
Y-YB, Yellow / Yellow with Black Stripe - alarm circuit	Y-YB, Yellow / Yellow with Black Stripe - alarm circuit

6b. Safety Switch

The safety switch should be connected to a Class II Low Voltage circuit. The safety switch wires are yellow and yellow with black stripe. Do not confuse these wires with the power conductors.

The safety switch connection is normally closed (NC). Refer to thermostat and air conditioning or refrigeration unit's operating instructions when using the safety switch. Be sure to disconnect power to the air conditioning or refrigeration unit when installing or modifying the safety switch circuit. Connect the safety switch in series with the low voltage thermostat circuit as specified in the thermostat's operating manual.

Operation



1. Testing Float

Manually fill the tank with water. An amber LED will indicate pump is operating. A green LED indicates pump has power.

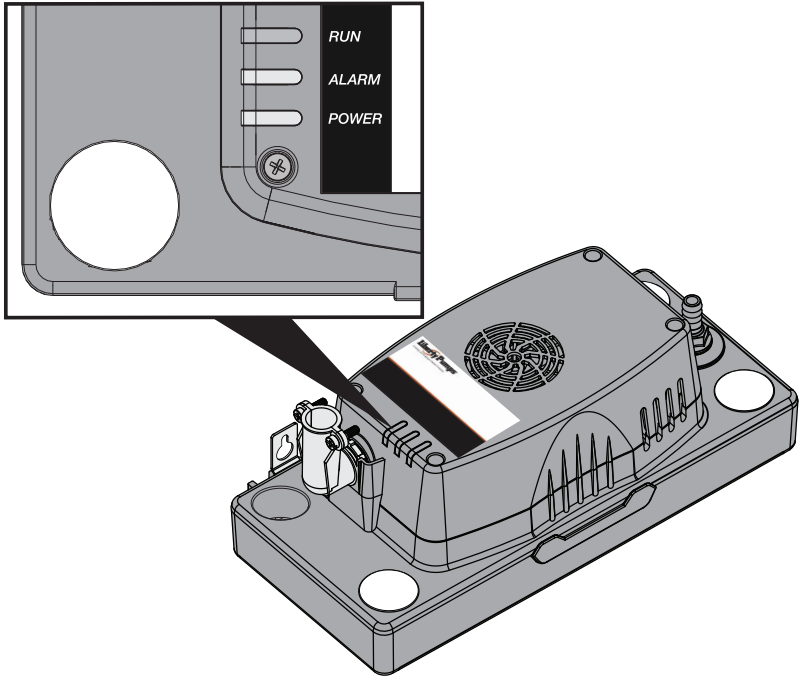
2. Testing Overflow Switch (if connected)

Manually overflow tank with water. If overflow safety switch is wired correctly, appliance will shut down, condensate pump will pump out water, and a red LED will illuminate.

Operation

LED Indicator Status

LED	STATUS
Green	Indicates pump has power and is ready.
Amber	Indicates pump is running and removing condensate from tank.
Red	Indicates pump is in alarm mode and that the system is shutoff/disabled (if connected).

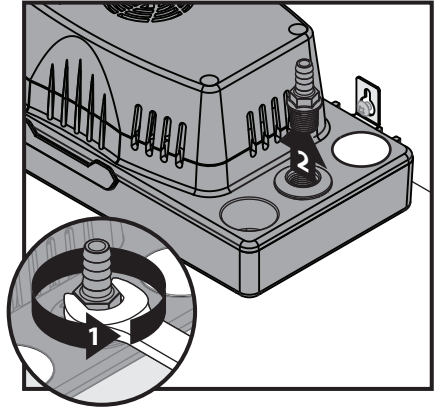


Maintenance and Disassembly

Always disconnect power before performing maintenance. Pump and deck may be removed from tank by pushing tabs located on tank sides away from deck while lifting on pump cover.

Periodically inspect the condensate pump tank to ensure it is free of accumulated dirt or sludge. **DO NOT** use solvent cleaners. Clean tank with mild soap and warm water only. Check valve may be removed for cleaning or replacement by unscrewing with a 15 mm wrench.

Clean inlet and outlet piping. Reassemble system and check for correct operation.



Troubleshooting

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Unit does not start when full of condensate.	1. Power is not supplied to pump.	1. Ensure that power is supplied to pump. A green LED indicator on top of pump cover will show that power is supplied and that pump is ready.
	2. Pump impeller is not turning.	2. Clear any blockage in impeller housing. If problem persists, motor is stuck. Return pump to place of purchase if under warranty.
Condensate is overflowing from unit.	1. Power is not supplied to pump.	1. Ensure that power is supplied to pump. A green LED indicator on top of pump cover will show that power is supplied.
	2. Pump is in overflow condition.	2. The inlet flow to condensate pump is exceeding outlet flow. Check to ensure that pump safety switch (alarm circuit) is connected to appliance. The safety switch connection will shut off appliance in this condition.
	3. Pump is not level.	3. Check to ensure that pump is level. If pump is not level, it may not activate, causing water to overflow from tank. Place unit on a flat and level surface.
	4. Outlet flow is blocked.	4. Check outlet tubing to ensure that it is not kinked or blocked. Clear blocked tubing of slime and debris. Clean inlet and outlet piping.
	5. Pump impeller is not turning.	5. Clear any blockage in impeller housing. If problem persists, motor is stuck. Return pump to place of purchase if under warranty.
Pump will not shut off.	1. The pump is in overflow condition.	1. The inlet flow to condensate pump is exceeding outlet flow. Check to ensure that pump safety switch (alarm circuit) is connected to A/C or dehumidifier unit. The safety switch connection will shut off A/C or dehumidifier unit.
	2. Outlet flow is blocked.	2. Check outlet tubing to ensure that it is not kinked or blocked. Clear blocked tubing of slime and debris. Clean inlet and outlet piping.
Red LED does not illuminate.	1. Power source wiring incorrect.	1. Check power source wiring. HOT and NEUTRAL may be reversed.
	2. Factory defect.	2. Return pump to place of purchase if under warranty.

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.