Liberty Pumps®

A Family and Employee Owned Company

Installation **Manual**

4196000C

LCU-N Series Neutralizing Condensate Pumps

Models

LCU-N20ST

115V
Safety Switch
Tubing

LCU-N220ST

230V
Safety Switch
Tubing



NOTICE **Installer: Manual must remain with owner/operator.**

Record information:

Model: _____

Serial: _____

Date Code: _____

Install Date: _____

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.

Retain dated sales receipt for warranty.

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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 **risk of electric shock**. It is accompanied with an instruction intended to minimize potential risk of electric shock.
	This safety alert symbol identifies **risk of fire**. It is accompanied with an instruction intended to minimize potential risk of fire.
	This safety alert symbol identifies **risk of serious injury or death**. It is accompanied with an instruction intended to minimize potential risk of injury or death.
	This safety alert symbol identifies **battery hazards**. It is accompanied with an instruction intended to minimize potential risk from the battery.
⚠DANGER	Warns of hazards which, if not avoided, **will** result in serious injury or death.
⚠WARNING	Warns of hazards which, if not avoided, **could** result in serious injury or death.
⚠CAUTION	Warns of hazards which, if not avoided, **could** result in minor or moderate injury.
NOTICE	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 this product. Specifications are subject to change without notice. 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 the pump from power source before attempting to service the pump. Fatal electrical shock could occur.
- The pump shall be installed in accordance with the local Authority having Jurisdiction (AHJ), all applicable local codes, and the most recent national electrical code, which may require use of a ground fault circuit interrupter (GFCI). All wiring must be performed by qualified personnel.
- All electrical and safety practices shall be in accordance with the National Electrical Code®, 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 handle or unplug pump with wet hands, when standing on a wet/damp surface, or in water. Fatal electrical shock could occur.
- 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**

- 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.

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- For ordinary location pump cord replacement: power cord must be of the same length and type as originally installed on the Liberty Pumps product. Use of incorrect cord may lead to exceeding the electrical rating of the cord and could result in death, serious injury, or other significant failure.
- 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 use this ordinary location product with flammable, explosive, or corrosive fluids. Do not use in a flammable and/or explosive atmosphere as serious injury or death could result.
- 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.
- Do not allow children to play with the pump.
- Do not remove any tags or labels from the pump or its cord.
- This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. www.p65warnings.ca.gov.

⚠CAUTION

- This pump has been evaluated for use with water only.

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 150 °F (65 °C). Operating the pump in fluid above this temperature can overheat the pump, resulting in pump failure.
- 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 allow pump to freeze.

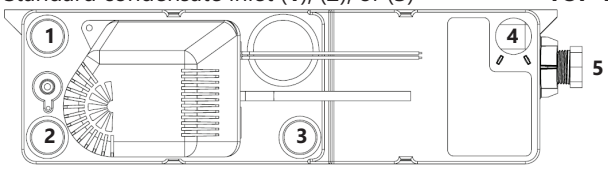
General Information

Before Installation, read the following instructions carefully. Each Liberty Pumps product is individually factory tested to assure proper performance. By closely following these instructions, potential operating problems should be eliminated, providing years of trouble-free service.

Installation

1. Select a location that is level and below the condensate pan drain. The unit may be mounted on a wall by using the mounting tabs on the tank, which are 17,6" apart.
2. Connect the drain pan. Use vinyl tubing, PVC, or any other suitable material. Be sure the tubing or pipe extends into the inlet of the tank by at least 1".
   a. STANDARD condensate (dehumidifiers, A/C, etc.) can be connected to any of the three intake holes (1), (2), or (3).
   b. ACIDIC condensate (high-efficiency boilers and furnaces) must be installed in inlet (4) or (5).

Standard condensate inlet (**1**), (**2**), or (**3**) **TOP VIEW**



Acidic condensate inlet (**4**) or (**5**) only

3. The discharge connection to the check valve may be made with 3/8" vinyl tubing secured by a hose clamp (not included), or the barb may be removed by sawing so that threaded fittings may be attached. The thread is 1/4" NPT.
   Connect discharge hose or pipe to the pump. ***Only hand-tighten discharge fasteners.*** Over-tightening may cause the discharge housing to crack and leak. Once the discharge tubing has been extended to the required height, slant it downward, if possible, to assist in drainage. **Note**: For best results, do not extend discharge tubing beyond 17' vertically.
4. Connect the safety switch leads to a Class 2 low voltage circuit (not to exceed 30 volts). Using this feature may prevent damage from condensation overflowing if the discharge becomes blocked or if the pump fails. The safety switch is normally closed (NC). The leads may be connected in series with the low voltage thermostat circuit, to ensure the heating/air-conditioning system shuts down if the water level in the pump tank rises above normal, or they may be connected to an external alarm.
5. If necessary, the pump unit may be removed and rotated 180° to make access to the plumbing inlet and discharge lines easier. To rotate the pump:
   a. Remove the clear neutralization chamber cover by inserting a screwdriver in the slot and prying the tank outward.
   b. Remove the pump unit using the same process.
   c. Rotate the pump, and snap it back into place.
   d. Snap the neutralization chamber cover back in its initial position.
6. When all mounting and water connections are secure, connect the unit to an electrical supply. Disconnect electrical power at fuse or circuit breaker box before making any connections. The power cord must be connected to a constant source of power (not a fan or other device that runs intermittently) matching the voltage specified on the pump nameplate.

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If connecting a pump with a stripped wire cord end, power connections must be made within a junction box or appropriate enclosure and must comply with the NEC and any applicable codes. Wiring is as follows: GREEN is ground, BLACK is line, and WHITE is neutral (115V) or line2 (230V).

7. To ensure proper installation, energize power and test the unit by adding water to the tank until the pump activates. Be sure the water discharges properly. Finally, check the connections for leakage and proper discharge pipe routing.

Maintenance and Troubleshooting

WARNING **RISK OF ELECTRIC SHOCK**

- 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

Pump models have sealed permanently lubricated bearings and require no additional lubrication.

Quarterly

Check the outlet pH level using a pH strip or electronic pH meter. The cartridge kit must be replaced the sooner of (1) annually or (2) if the pH at the outlet drops below 5.0 (or the minimum level of the local water authority). Use ***only*** Liberty Pumps replacement cartridge kit #K001898. To replace the neutralization cartridge, remove the neutralization chamber cover, exchange the cartridge and replace cover.

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

Pour enough water into the tank to activate the pump when not normally in use.

As Needed

If unit is mounted in an unheated area that is exposed to temperatures below freezing, the unit and lines must be drained to prevent damage to the pump.

Troubleshooting

No repair work shall be carried out during the warranty period without prior factory approval. Liberty Pumps, Inc. assumes no responsibility for damage or injury due to disassembly in the field. Dismantling the pump voids the warranty. Refer to the factory or its authorized service centers when the pump requires service other than replacing the cartridge kit or cleaning the pump inlet or impeller.

pH Level is Below 5.0

1. Replace neutralization cartridge using Liberty Pumps replacement kit #K001898. See replacement steps above.

Pump Does Not Run or Hum

1. Line circuit breaker may be off, tripped or loose. Have a certified electrician check fuse or breaker.
2. Water level in tank may be too low to activate switch. Add more water to tank.
3. Plug on power cord may not be making contact in receptacle. Check security and connection.
4. Float may be obstructed. Make sure float is free and not interfering with the inlet pipe or any other obstruction.
5. Pump is installed on a non-level surface. Re-level pump.
6. Consult factory.

Pump Runs or Hums But Does Not Deliver Water

1. Check valve may be installed incorrectly or is defective. Check that it is installed properly.
2. Examine discharge tubing for any kinks or blockages. Check that intake tubing or pipe is not obstructed.
3. Discharge line may be blocked or frozen. Check to see if line passes through cold areas or is blocked.
4. Inlet of pump is plugged or the impeller is jammed. Remove the pump screen and clean inlet and impeller.
5. Vertical lift is beyond pump capability. **Note:** At the pump's maximum lift there will be no flow.
   - maximum recommended lift: 17 ft
   - maximum lift: 20 ft

Pump Runs and Removes Water But Does Not Shut Off

1. Float is stuck in the ON position. Check to make sure the float is free to move up and down without obstruction.
2. Pump is installed on a non-level surface. Level the pump.
3. Switch is defective. Consult factory.

Pump Runs But Delivers Very Little Water

1. Vertical lift is approaching the pump's maximum lift capability.
   - maximum recommended lift: 17 ft
   - maximum lift: 20 ft
2. Pump's inlet is partially blocked. Check that inlet is clear of debris.
3. Discharge line is partially blocked. Check line for blockage.
4. Check valve is not opening all the way. Check for defective or blocked check valve.

Circuit Breaker Trips or Fuse Blows When Pump Starts

1. Fuse or breaker size is too small. Use a 15 Amp breaker.
2. Other major appliances are on the same circuit. Pump must be on its own circuit.
3. Pump wiring is inadequate or is connected to an extension cord. Have a certified electrician check for proper wiring.
4. Defective motor or switch. Consult factory.

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Liberty Pumps Wholesale/Commercial Series 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 consequential damages, including field labor costs, travel expenses, rental equipment, costs of removal, reinstallation or transportation to and from the factory or an authorized Liberty Pumps repair facility.

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.

Liberty Pumps, Inc. 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 ***Commercial Series*** technical specifications and manuals. The date of installation shall be determined by a completed pump start-up report and warranty registration form. A pump start-up report, filled out by a qualified installer, is required for warranty to take effect. The report must be submitted within 30 days from the installation date and submitted through the Liberty Pumps website.

www.libertypumps.com/wp/dom/Services/Warranty/Commerical-Series-Startup-Form

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