



INSTRUCTIONS FOR USE – PORTABLE VACUUM SYSTEM

LEI Part #'s / 27-009, 27-010, 27-015, 27-020

IMPORTANT INFORMATION

UNAUTHORIZED CHANGES OR ALTERATIONS TO ANY LINCOLN PORTABLE VACUUM SYSTEM WILL AUTOMATICALLY VOID YOUR WARRANTY.



CAUTION (APPLICABLE TO GASOLINE MODELS ONLY)



All gasoline pumps must be fully drained of all water **AFTER EVERY USE**. Failure to fully drain blue cast-iron impeller assembly attached to the gasoline engine will cause rust to accumulate in the impeller assembly, which can cause the impeller to malfunction. Any damages incurred as a result of improper draining procedures will void the warranty.

The Lincoln Portable Gasoline Vacuum System should never be stored in any position other than completely upright (as seen in the Lincoln catalog), in an area that is poorly ventilated, near a source of open flame (such as a gas water heater), or in areas containing chemicals or other hazardous materials.

All gasoline engines are shipped dry, in compliance with hazardous materials safety regulations. Please consult the instructions on proper oil and gasoline levels for your specific engine model, as supplied by the manufacturer. Any attempt to start the gasoline engine without first filling gasoline and oil to the proper levels could lead to engine damage and may void the warranty.



CAUTION (APPLICABLE TO ELECTRIC MODELS ONLY)



Before operating the electric series of Lincoln Portable Vacuum Systems, vacate all persons from the pool. Failure to do so could lead to severe electrical shock or death of persons who remain in the water while the unit is operating.

This unit requires a 110V/20 A or 220V/20A (twist-lock style) electrical outlet, which must be grounded. Any attempt to alter, adapt, or otherwise change the plug can lead to severe electrical shock or death, and will automatically void the warranty.

The unit comes equipped with either a yellow plug-end ground-fault circuit-interrupter (GFCI) unit (110V) or a yellow in-line GFCI unit (220V). These GFCI units are in place to protect the end user as well as bystanders from electrical shock. If the GFCI unit is in need of repair, contact Customer Service or our Service Department at Lincoln Equipment, Inc. Do not, for any reason, attempt to repair or remove the GFCI unit, or to adapt the plug-end GFCI unit to fit into a non-grounded (two-pronged) electrical outlet.

Any alterations made to the GFCI or other electrical wiring on your unit can cause severe electrical shock or death, and will automatically void the warranty.



BEFORE OPERATING VACUUM FOR THE FIRST TIME



Electric Vacuum Models

Locate the strainer pot at the front of the pump motor and unscrew the clear plastic lid. Be aware that there is a small black 'O'-ring seal that fits into a groove around the lip of the strainer pot. This seal is used to prevent air from leaking into the strainer during normal operation. Operating the pump without this 'O'-ring seal for any reason, can cause severe damage to pump seals, internal motor components, and will void the warranty. Remove the yellow plastic strainer basket by lifting up on the strainer basket handle.

All Lincoln Portable Vacuum Systems are shipped with the following materials:

- One (1) Harmsco Betterfilter Instruction Manual (for information on the stainless steel Harmsco filter tank and filter cartridges) – **In strainer basket**
- One (1) Speck Pumps Instruction Manual (for information on the black pump motor and impeller assembly) – **In strainer basket**
- One (1) GFCI Instruction Manual – **In strainer basket**
- One (1) copy of Lincoln Vacuum Priming Instructions – **In strainer basket**
- Two (2) hose fittings to accommodate a vacuum hose that is 1½ inches in diameter – **In strainer basket**
- Two (2) hose fittings to accommodate a vacuum hose that is 2 inches in diameter – **In strainer basket**
- One (1) priming tee assembly – **Zip-tied to the cart or cord near the handles**

Remove all items from the strainer basket, replace basket in strainer pot, and hand tighten strainer pot lid securely. Cut zip-ties holding priming tee assembly to cart and locate the plastic threaded pipe nipple. Lincoln strongly suggests wrapping the entire nipple, as well as the threads on the two vacuum hose fittings you decide to use with your unit, with Teflon-type thread-sealing tape. This can help prevent air from leaking into the vacuum hose during operation. This may result in a loss of prime and can cause damage to the pump seal assembly. Thread one side of the nipple into the priming tee assembly and the other side into the threaded opening at the front of the vacuum on the strainer pot, and hand tighten securely. Do not over-tighten any plastic fittings, as they may crack and become unusable. Next, determine the inside diameter of your vacuum and discharge hoses. Select the appropriately-sized fittings, thread the fitting for your vacuum hose onto the front of the priming tee assembly, and hand tighten securely. Locate the clean water discharge pipe on your vacuum unit (on the underside of the stainless steel Harmsco filter tank) and thread the proper fitting for your discharge hose onto the discharge pipe, and hand tighten securely.



Congratulations! You are now ready to proceed to the Operating Instructions.



Gasoline Vacuum Models

Locate the blue cast-iron strainer pot and impeller assembly attached to the gasoline engine and loosen both 'T'-shaped screw handles and remove the cast iron strainer pot lid. Remove the stainless steel strainer basket by lifting up on the strainer basket handle. If the basket does not lift straight out, use the handle to twist the basket counter-clockwise until it stops turning, then lift strainer basket from strainer pot.

All Lincoln Portable Vacuum Systems are shipped with the following materials:

- One (1) Harmsco Betterfilter Instruction Manual (for information on the stainless steel Harmsco filter tank and filter cartridges) – **In strainer basket**
- One (1) Briggs and Stratton Instruction Manual (for information on the gasoline engine and impeller assembly) – **In strainer basket**
- One (1) copy of Lincoln Vacuum Priming Instructions – **In strainer basket**
- Two (2) hose fittings to accommodate a vacuum hose that is 1½ inches in diameter – **In strainer basket**
- Two (2) hose fittings to accommodate a vacuum hose that is 2 inches in diameter – **In strainer basket**
- One (1) priming tee assembly – **Zip-tied to the cart near the handles**

Remove all items from the strainer basket, replace basket in strainer pot, and hand tighten strainer pot lid securely. Cut zip-ties holding priming tee assembly to cart and locate the plastic threaded pipe nipple. Lincoln Equipment, Inc. strongly suggests wrapping the entire nipple, as well as the threads on the two vacuum hose fittings you decide to use with your unit, with Teflon-type thread-sealing tape. This can help prevent air from leaking into the vacuum hose during operation. This may result in a loss of prime and can cause damage to the pump seal assembly. Thread one side of the nipple into the priming tee assembly and the other side into the threaded opening at the front of the vacuum on the strainer pot, and hand tighten securely. Do not over-tighten any plastic fittings, as they may crack and become unusable. Next, determine the inside diameter of your vacuum and discharge hoses. Select the appropriately-sized fittings, thread the fitting for your vacuum hose onto the front of the priming tee assembly, and hand tighten securely. Locate the swiveling clean water discharge pipe on your vacuum unit (on the underside of the stainless steel Harmsco filter tank) and thread the proper fitting for your discharge hose onto the discharge pipe, and hand tighten securely.

Congratulations! You are now ready to proceed to the Operating Instructions.

OPERATING INSTRUCTIONS (For Gasoline and Electric Vacuum Models)

1. Position your Lincoln Portable Vacuum System on a hard, level surface near the edge of the pool. Make sure the unit is stable and positioned in such a way that it will not be necessary to move the unit during operation. Orient the system such that the discharge hose is directed toward the pool, but that it empties away from area to be vacuumed (this minimizes surface disruption, increases visibility, and allows you to clean more thoroughly and efficiently).
2. Remove strainer pot and filter tank lids, confirm that excess leaves, debris, etc. have been removed. If excessive debris has accumulated in the strainer basket, lift the basket from the strainer pot by the handle and dump away from the pool. Invert strainer basket and spray out any remaining debris. Replace the strainer basket in the strainer pot, making sure the strainer basket handle will clear the strainer pot lid. If it does not, twist the strainer basket by the handle until it drops into place. If excessive dirt has accumulated in the filter tank and cartridge, clean the filter cartridge according to the section marked “**How to Clean Your Filter Cartridges**” in the Lincoln Portable Vacuum System Instruction Manual.
3. Securely hand-tighten the strainer pot lid. If you are using the **ELECTRIC** model of the Lincoln Portable Vacuum System, make sure strainer pot ‘O’-ring seal is seated correctly.
4. Use a garden hose to completely fill the filter tank housing with water by directing the hose so the water runs down the hole at the center of the filter cartridge and into the filter tank.



Failure to fill the entire filter tank housing with water before operation may not allow the vacuum to prime properly. This can cause severe damage to the pump seal, internal motor components, and will void the warranty.

5. Make sure the cartridge holding top plate gasket is seated flush with the top of the filter tank, replace the filter tank lid, replace wing nuts, and hand tighten securely.
6. Attach vacuum head to pole assembly via snap-locking pins (or other fasteners) onto vacuum head. Attach one end of the vacuum hose to the vacuum head, making necessary adjustments as needed.

7. Carefully lower vacuum head, hose, and pole assembly into pool. Then feed the full length of the hose into the pool, continuously pushing the hose underwater as it enters, to ensure the removal of all air from the vacuum hose. Some areas of the hose may float to the surface; this is normal.
8. Insert the other end of the hose into the pool, pushing it underwater. Cover the end of the hose with your hand to hold the water in (like you would with the tip of a straw to keep the liquid in).
9. With your hand covering the end of the hose, lift the hose to the pump connection. Connect the hose to the vacuum pump via the priming tee.
10. Fill the strainer basket and the top end of the vacuum hose with water by connecting a garden hose to the hose bib on the priming tee assembly.
11. Observe through the lid of the strainer pot, making sure the strainer pot is filling with water. If the strainer does not fill with water, *SLIGHTLY* loosen the strainer lid. Continue filling until water begins to seep from the sides of the lid.
12. When the strainer pot is full of water, tighten the strainer lid, making sure the lid is fully sealed.
13. On the discharge side of the vacuum, utilize the supplied ball valve to add some backpressure to the pump.

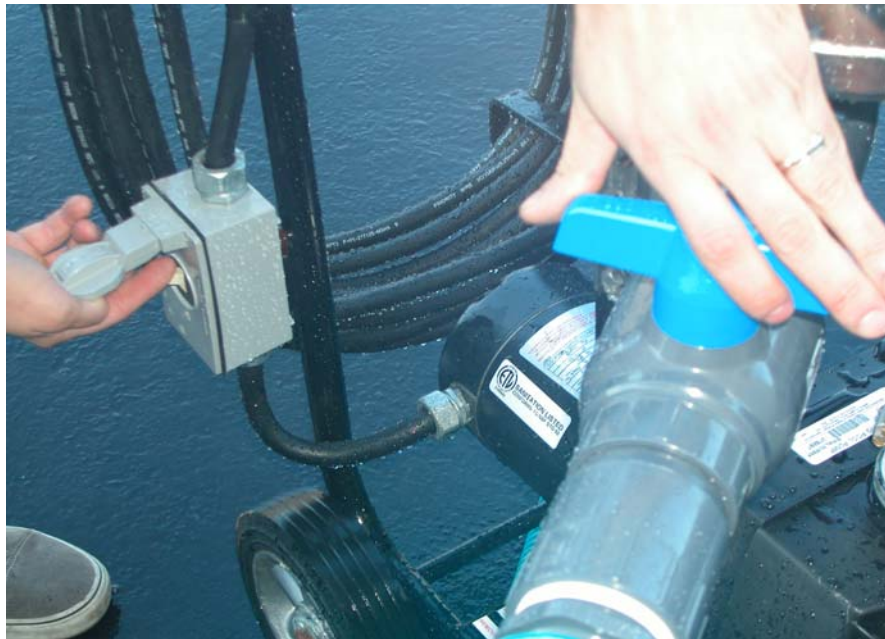


Close the valve *PARTIALLY* to achieve this. One-half to three-quarters closed should be adequate to create the necessary backpressure, but it may be necessary to completely close the valve. This is acceptable *ONLY* if you remember to open the valve in Step 16.

14. If you are using the **ELECTRIC** model of the Lincoln Portable Vacuum System, uncoil the cord in a clockwise direction from the cord storage arms attached to the Portable Vacuum System cart, and plug the cord into your grounded 110V or 220V wall socket. On the GFCI unit, locate the upper-most button (marked “RESET”) and depress this switch to begin supplying the unit with electricity.



15. Quickly “bump” the power switch for the pump motor on and then off again. This will remove any remaining air pockets from the system, protecting your unit by ensuring it is fully primed. Repeat three to four times, then flip the switch into the ‘ON’ position and allow it to run.



16. As water begins flowing, slowly open the ball valve to achieve full flow. Do not forget to open the ball valve, since the backpressure created may cause damage to the system and can cause severe injury or death of the operator.

17. Close the hose bib connection on the priming tee assembly at the pump strainer, and turn off and disengage the garden hose.



WARNING: Never run the pump motor without properly priming the unit. Running the pump motor in a ‘dry’ state can cause severe damage to pump seals, internal motor components, and will void the warranty.



WARNING: Always be aware of your surroundings while operating your Lincoln Portable Vacuum System. Use extreme caution when operating unit near any light fixtures, scoreboards, speakers, or any other electrical device near your pool. The unit should *never* be operated near any overhead wires or telephone poles, since contact with wires can lead to severe electrical shock or death of operator and/or patrons.

18. Begin vacuuming your pool, taking care not to remove the vacuum head from the pool while operating your Lincoln Portable Vacuum System, as this may result in loss of prime and can cause damage to the pump seal assembly.
19. When you are finished vacuuming, turn off the pump motor on your Portable Vacuum System by flipping the power switch into the 'OFF' position.
20. If you are using the **ELECTRIC** model, make sure your hands are dry and return to the GFCI unit at the grounded wall socket. Locate the lower-most button (marked "TEST") and depress this button to stop supplying the unit with electricity. Grasping the power cord by the plug, unplug the unit and coil the power cord in a counter-clockwise direction around the cord storage arms attached to your Portable Vacuum System cart, taking care not to allow the cord end to drag through any puddles or fall into the pool.
21. Fully close the discharge ball valve and turn the discharge hose away from the pool in order to prevent any debris from re-entering the pool when vacuum head is removed from the water.
22. Carefully remove vacuum head and hose from the pool.
23. Detach hose from vacuum head, orienting that end of the hose away from the pool so any debris expelled while draining will not re-enter the pool, then detach the other end of the vacuum hose from the priming tee assembly and drain vacuum hose.
24. Remove the end of the discharge hose from the pool and orient such that it will drain away from the pool.
25. Open both the discharge ball valve and the pressure relief hose bib (located on the bottom of the filter tank), and allow all pressure and water to drain from filter tank.
26. Detach the discharge hose from the swiveling clean water discharge pipe, located on the bottom of the filter tank, and drain hose away from the pool.
27. Remove and clean your filter cartridges (see "**How to Clean Your Filter Cartridges**").

NOTE: If unit is to sit idle for an extended period of time, see "**Winterizing**", below.

WINTERIZING (For Portable Vacuum Systems)

When freezing conditions are likely to occur, the filter and pump must be completely drained to prevent damage to the system.

1. Follow steps 1-5 under “**How to Clean Your Filter Cartridges**”.
2. Store clean filter cartridges in a dry place.
3. Drain the pump housing by removing the two lower drain plug. You may need to tilt the pump system onto the front rubber non-skid legs. Allow the pump to empty completely before placing your unit in storage for an extended period of time or whenever freezing weather is likely to occur. Do not replace drain plug. Store drain plug in strainer basket until unit is removed from storage.



HELPFUL TIPS

Remove all lane lines and other surface obstructions before vacuuming your pool. This should allow you to vacuum your pool more quickly and efficiently by eliminating the need to lift the vacuum head and pole assembly out of the water to navigate around these obstructions, which will result in a loss of prime.

Never attempt to remove heavy objects or debris from your pool with the vacuum head and pole assembly. If absolutely necessary, pull the object to a location where it will not obstruct your cleaning activities. Once you are finished cleaning the pool, retrieve the object by hand. Never lift straight up or lever the pole over the edge of the pool, as this might bend the pole.

Lincoln recommends cleaning the middle of the pool first with all necessary extension poles attached, directing the vacuum head along the floor of the pool by simply walking forward, backward, and side-to-side. When the middle of the pool is clean, remove extra extension poles and set aside (or shorten adjustable extension poles). When performed correctly, this method of vacuuming should extend the life of your poles, prevent the poles from bending, and help protect the end user by keeping the amount of excess overhead vacuum pole to a minimum.

To quicken drying time and decrease the chances of mildew growth while storing or winterizing your vacuum, unscrew the strainer pot lid and leave it partially open for better air flow.

HOW TO CLEAN YOUR FILTER CARTRIDGES



WARNING: NEVER ATTEMPT TO OPEN FILTER TANK WHILE PUMP IS RUNNING OR BEFORE EXCESS WATER AND PRESSURE HAVE BEEN EXPELLED.

1. Turn off your Lincoln Portable Vacuum System, open pressure relief hose bib (located at the bottom of the filter tank), and allow all pressure and water to drain.
2. Unscrew wing nuts and remove lid from filter tank.
3. Remove cartridge assembly from filter tank housing via the stainless steel finger catch on the cartridge holding top plate.
4. Normal cleaning is done by using a pressure nozzle on the end of your garden hose. Direct jet spray toward cartridge on an angle to wash accumulated dirt and debris from cartridge surfaces.
5. Rinse the inner surfaces of both the lid and the filter tank with garden hose to remove any accumulated debris.
6. Return cartridge to filter tank housing and ensure all gaskets are properly installed, clean, and free of foreign objects.
7. Check that cartridge holding top plate gasket is seated flush with top of filter tank housing. If not, apply light downward pressure while using the stainless steel finger catch on the cartridge holding top plate to turn cartridge assembly until the assembly seats flush with top of filter tank housing.
8. Replace filter tank lid, making sure handle is oriented toward the rear of unit.
9. Replace wing nuts and hand tighten securely.

NOTE: The weight of excessively dirty cartridges can affect vacuum suction and performance, and can cause damage to your Lincoln Portable Vacuum System.

NOTE: If the above cleaning procedure is insufficient to return the filter cartridge to normal filter runs, refer to steps 1-4 of the section marked “Special Cleaning Procedures”, located on the cover of the Harmsco Betterfilter Installation and Operation Manual (included when the Lincoln Portable Vacuum System was purchased). If you do not notice increased performance after following all “Special Cleaning Procedures”, if the filter cartridge has deteriorated, or if the cartridge is no longer cleanable by washing, replace with new Harmsco filter cartridges only.

HOW TO REPLACE YOUR FILTER CARTRIDGES

1. Follow above steps 1-3 to remove cartridge assembly from filter tank housing.
2. Unscrew special straight threaded pipe cap from cartridge holding top plate and remove both cap and plate from spent cartridge.
3. Place cartridge holding top plate on top of a new Harmsco filter cartridge.
4. Replace special straight threaded pipe cap and tighten by hand.
5. Follow above steps 6-8 for replacing cartridge assembly in filter tank housing.

WARRANTY

Lincoln Aquatics offers a one year warranty on all of our gasoline and electric Portable Pump and Portable Vacuum Systems. Normal wear and tear or abuse of the system is not covered under this warranty. Any other accessory vacuuming equipment, such as poles or hoses, is not covered under this warranty. The end user must adhere to all manufacturer suggested specifications on oil, oil levels, gasoline and electrical voltages supplied to keep this warranty in effect. Any unauthorized change to a Lincoln Portable Vacuum System or Lincoln Portable Pump System will void this warranty.

If we can be of further assistance, please feel free to contact us:

Lincoln Aquatics

2051 Commerce Avenue

Concord, CA 94520

(800) 223-5450 ext. 270

(925) 687-9500

FAX (925) 680-2825

www.lincolnaquatics.com