

- Place the toilet over the holes in the floor. Slip the plastic china protectors over the lag screws ensuring proper orientation. Tighten lag screws (do not overtighten) and snap plastic caps in place.

For proper flushing performance, ensure that the base of the toilet is not below the base of the macerator. Check the extension pipe, if applicable, with a level, and verify that the pipe is either level or sloped toward the macerator unit and away from the toilet.

- Connect the water supply line to the fill valve, located directly below the flush lever, on the bottom of the toilet tank.

### Connection to the Discharge and Vent Flanges

To finish the installation, fasten the toilet to the floor and secure the macerator discharge and vent piping.

#### NOTICE

- Do not use an air admittance valve or a mechanical spring-loaded venting device, as these devices are one-way valves. The air pressure in and outside the macerating pump unit must be equal and a "cheater" vent will obstruct the airflow in one direction and prevent proper toilet function.

#### Discharge Flange

The macerator has a PVC discharge flange with an integrated check valve that can be configured in a horizontal or vertical orientation. Standard 1" Schedule 40 PVC pipe can be solvent welded directly to the flange.

Excessive amounts of glue should be avoided. The check valve can be removed from the flange if required.

A full port ball or gate valve and a union should be installed in the discharge pipe to facilitate the removal of the macerator or to perform maintenance. Additionally, a drain off point is recommended to allow the discharge piping to be drained.

#### Vent Flange

The macerator is equipped with a PVC vent flange, which can be configured in a horizontal or vertical orientation. Standard 1-1/2" Schedule 40 PVC pipe can be solvent welded directly into the flange.

The macerator **must** be vented to allow for proper toilet flush performance. Depending on the installation, the product should either be connected to the stack vent of the dwelling or vented (plumbed) directly outside. Vent in accordance with applicable plumbing codes.

The macerator is not designed to support the discharge and vent piping; proper pipe supports are required.

### Connection to the Soil-stack or Sewer

The discharge piping can be made from 3/4" or 1" diameter PVC pipe. Use long turn bends and avoid elbows where possible. The connection to the soil-stack or sewer pipe must be made with an approved connection, such as a T or Y fitting.

## Operation

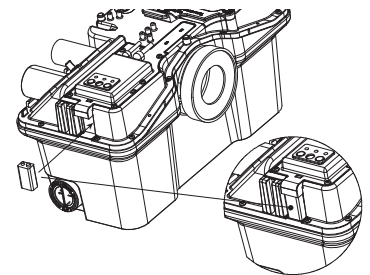
### ⚠ WARNING ⚡ RISK OF SERIOUS INJURY OR DEATH

- Decorative covers must be installed for operation as a safety device is integrated into the covers to prevent unintended operation. The unit may start when energized the first time.

#### NOTICE

- The macerating system is designed for human waste and toilet paper. Do not dispose of acids, alkalis, solvents, oils, paint, paint strippers, food waste, and cotton swabs. Off-the-shelf toilet cleansers will normally not hurt the macerating unit.
- During cleaning or when using a plunger, the macerator could turn on.
- Do not hang bleach blocks or hypochlorite cleaners in the toilet tank. These solutions have been shown to deteriorate the plastic and neoprene components of the flush and fill valves, and may cause leaks.
- In the event of a power loss, the toilet can be used twice. Use of sanitary fixtures such as a sink should be limited. Do not use shower or tub as the macerating unit will fail to pump until the power is restored.

- Ensure that the toilet and tank have been assembled per instructions provided with the toilet tank.
- Ensure any full port ball or gate valve in the discharge line is in the open (full flow) position.
- Open the shut-off valve and let the toilet tank completely fill. Look for leaks at connections and verify that the toilet fill valve float and the flush valve operate freely.
- Ensure the macerating unit has both decorative covers installed and is plugged in with the power supply turned on. The green POWER LED should be illuminated steady.
  - If the green LED is blinking, confirm the decorative covers are properly seated.
- Battery:** Battery must be installed **after** the macerator is connected to the AC power supply. If battery was inadvertently installed before power was applied:
  - unplug the macerator from power source
  - remove the 9V battery
  - plug the macerator back into the power source
  - reinstall the 9V battery
- Deposit a few sheets of toilet paper into the bowl and flush the toilet. There should be no paper remaining in the bowl after the flush. Repeat several times.



The unit will turn on shortly after the toilet is flushed or when water depth is achieved. The duration of operation will differ depending upon the installation. The macerator may not run immediately on sink usage.

## Maintenance

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

- Always disconnect pump (macerator) from power source before handling or making any adjustments. Fatal electrical shock could occur.

The macerator is designed such that every component can easily be serviced or replaced as necessary. Replacement parts can be ordered at [www.LibertyPumps.com/Service/Replacement-Parts/](http://www.LibertyPumps.com/Service/Replacement-Parts/).

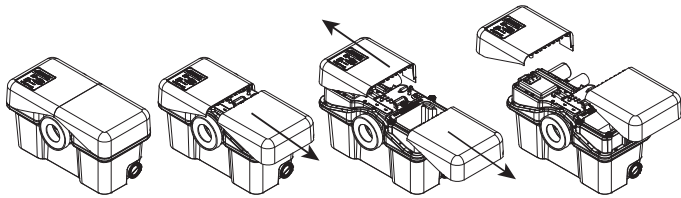
The macerator is designed with a removable access cover, making the unit serviceable without removing the macerating unit from the toilet or disconnecting any plumbing.

### Cleaning

All standard cleaners can be used just as with a standard conventional toilet. The exterior of the macerating unit may be cleaned with a damp cloth and normal household cleaners. Never spray or dump water or chemicals directly on the unit.

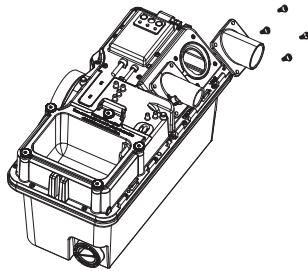
### Decorative Covers

The right cover can be removed by pulling it horizontally away from the macerator and then lifting vertically. The left cover is secured and positioned by two mating posts on the main cover.



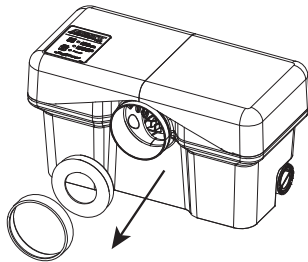
### Discharge and Vent Flanges

Both the discharge and vent flanges are fastened to the main cover and can be removed by unscrewing the four fasteners and pulling the flange away from the main cover.



### Toilet Sealing Ring

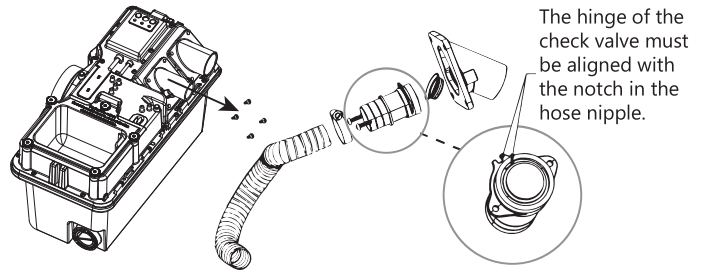
The seal between the toilet and the macerator consists of a rubber ring connected to the macerator into which the toilet slides. The rubber ring stretches and forms a seal around the discharge hub of the toilet. This rubber ring is replaceable by unclipping the plastic retainer and then pulling the ring outward. Installation is reversed, first slide the rubber ring onto the macerator, followed by the retaining ring.



## Check Valve

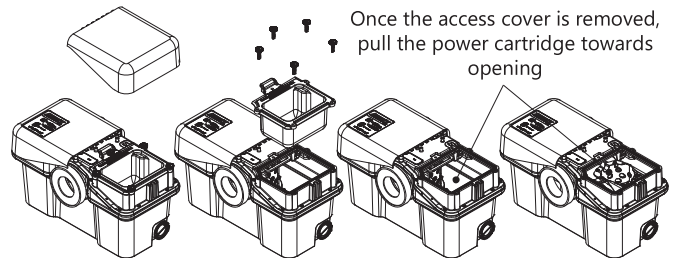
The discharge flange has an integrated check valve. The valve is held in place by a support backing plate that is also connected to the discharge hose. To access the check valve, first remove the discharge flange from the main cover by removing 4 screws. Then remove the hose, followed by the two screws. The hose nipple can then be separated from the flange by pulling it outward. The check valve snaps onto the hose nipple.

When reinstalling, the hinge of the check valve must be aligned with the "notch" in the hose nipple or backing plate. After installation of the hose nipple, confirm the check valve opens completely.



## Access Cover

The access cover is secured to the main cover with five fasteners. If required, use the 3/16" Allen wrench supplied to loosen the fasteners. Once the screws have been removed, the access cover can be lifted upward. Some manipulation might be necessary if the macerator is located directly under the toilet reservoir tank.



Once the access cover is removed, the power cartridge can be slid toward the opening by grasping the handle of the basket and pulling to the right toward the opening. In some instances, debris might be caught between the tank and the basket so some manipulation might be required.

With the power cartridge fully slid over, the cutters should be in view at the center of the basket. Any obstruction or object can be removed at this point. The cutters are very sharp and extreme caution should be used.

## Interconnect Hose

A hose connects the discharge of the motor cartridge (pump) to the discharge flange. To remove this hose, follow the procedure **Discharge and Vent Flanges** and **Accessibility to Motorized Cartridge**. Both ends of the hose are secured with clamps.

## Cutter Blade Replacement

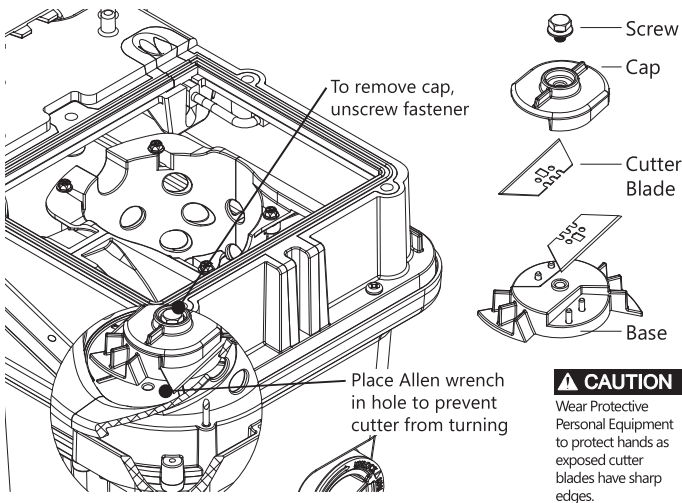
### CAUTION

- ◆ Wear Protective Personal Equipment to protect hands as exposed cutter blades have sharp edges.

The cutter blades are designed and rigorously tested to last *indefinitely* without need for service or replacement in ordinary applications. In the unlikely event that the cutter blades need replacement, Liberty Pumps recommends replacement kit # K001370 (440A Stainless Steel Cutter Blades hardened to Rockwell 54c) available from <http://www.libertypumps.com/Services/Replacement-Parts> or equivalent substitute.

To replace the cutter blades, the 3/16" Allen wrench (supplied) should be inserted into one of the holes located on the basket floor. This will create a wedge preventing the cutter blade assembly from turning. The locking fastener can be unscrewed with the use of a 7/16" socket (1/4" drive). Once loose, the screw and cap can be removed by pulling upward, exposing the two cutter blades. Carefully insert the new cutter blade onto the two pins. Replace the cap and screw.

The base of the cutting cartridge can be replaced as well. After removing the cutter blades, a thin slotted screwdriver can be inserted into the center hole and, once engaged, the base can be rotated counterclockwise until it is free.



## Accessibility to Motorized Cartridge

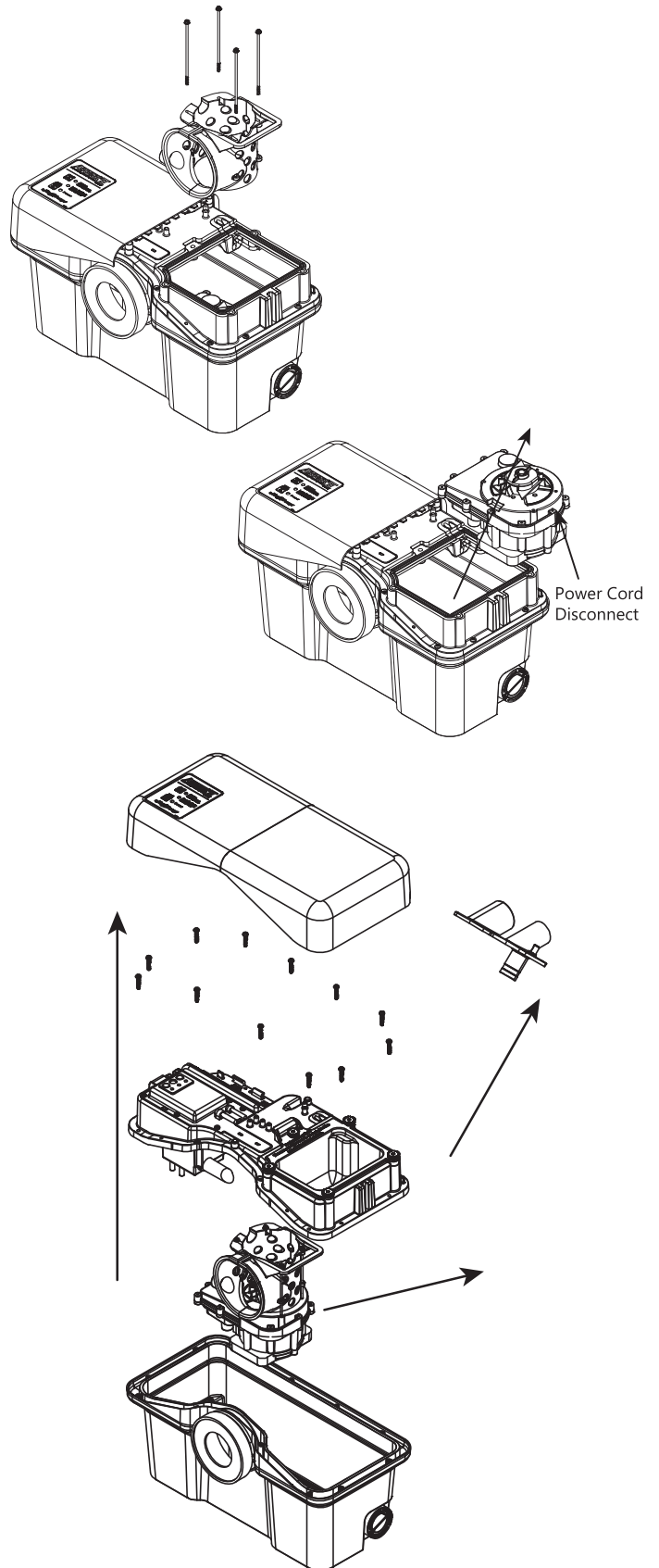
The motorized cartridge can be accessed through the access opening or removal of the main cover.

### Removal of Power Cartridge Through the Access Opening:

Once the access cover has been removed and the basket is slid toward the opening, the four fasteners securing the basket can be unscrewed. The basket can then be removed through the opening followed by the power cartridge.

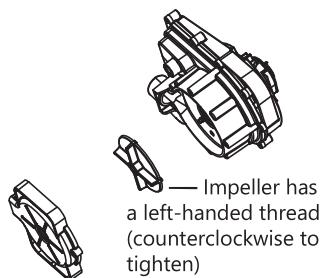
**Removal of Power Cartridge by Disassembly of Macerator:** If a full port ball valve was installed in the discharge line, it should be closed to eliminate the possibility of waste discharging from the discharge pipe. Next, the discharge and vent flanges should be separated from the main cover by removing 4 screws from each. The main cover can then be detached from the tank by removing the fasteners on the periphery of the tank. The main cover can then be lifted upward exposing the power cartridge.

**Power Cord:** The inner connecting power cord running from the switch box to the motorized cartridge can be detached by unscrewing the compression nut located at the motorized cartridge.



## Impeller Access

Once the bottom of the motorized cartridge is accessible, the fasteners retaining the volute can be removed and the volute separated by pulling it away. The impeller chamber can now be cleaned if required, or the impeller can be replaced.

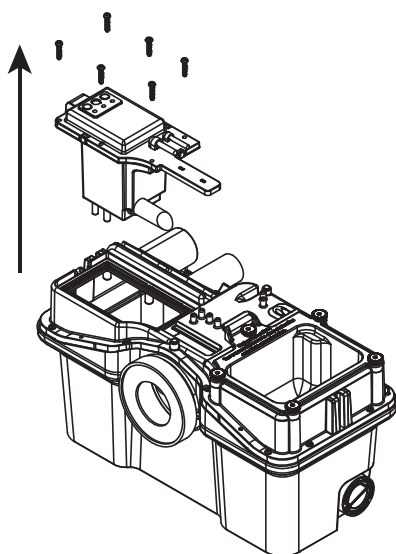


**Note:** the impeller has a left-handed thread. To remove, use a slotted screwdriver to hold the shaft and turn the impeller clockwise.

## Control Switch

The control switch cartridge is mounted to the main cover with fasteners. The control has two power cords; first is the main power cord that plugs into the GFCI receptacle and the other powers the motorized cartridge. The motorized cartridge must be removed to disconnect this cord. Refer to

**Accessibility to Motorized Cartridge** for details.



## Troubleshooting

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.

In addition to the **Alarm Panel Help** in Table 1 and the **Troubleshooting Matrix** in Table 2, verify the following:

### Plumbing System

Flush toilet and ensure water supply is turned on.

### Electrical System

Ensure breaker and receptacle GFCI are on. Check condition of circuit breaker or fuse. Ensure plug is not loose. If the pumping unit thermal overload has activated, it will take about 20 minutes to reset.

### Decorative Covers

Ensure decorative covers are installed and fully seated such that safety switch is activated. The green LED is solid when safety switch is properly activated.

### Hydraulic System

Check that the discharge pipe and vent pipe are not blocked.

### Water Leakage

If the macerating pump turns on intermittently without flushing the toilet or collecting water drainage from sink, shower, or tub, check for leakage from the toilet tank flush valve.

Table 1. Alarm Panel Help

Label LED Color/State	Condition	Corrective Action
ALARM Red/Blinking	Water is not being evacuated from holding tank.	<ol style="list-style-type: none"> <li>1. Verify unit is plugged into outlet.</li> <li>2. Verify Green LED is steady, indicating normal operating condition.</li> <li>3. Check discharge line for blockage.</li> <li>4. If items 1-3 do not remedy the alarm condition, refer to Table 2 Troubleshooting Matrix.</li> </ol>
LOW BATTERY Yellow/Steady	Battery is missing, defective, or needs to be replaced.	<ol style="list-style-type: none"> <li>1. Replace with new battery.</li> </ol>
POWER Green/Steady	<i>Normal operating condition.</i>	
POWER Green/Blinking	Safety switch condition (no signal from safety switch; unit will not operate).	<ol style="list-style-type: none"> <li>1. Verify decorative covers in place.</li> <li>2. Verify magnet in place on underside of decorative cover.</li> <li>3. Safety switch is broken; consult factory.</li> </ol>



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

- Accidental contact with electrically live parts, items, fluid, or water can cause serious injury or death.

- Always disconnect pump (macerator) from power source before handling or making any adjustments. Fatal electrical shock could occur.

Table 2. Troubleshooting Matrix

Problem	Possible Cause	Corrective Action
<b>Water is entering the macerator holding tank slowly</b>		
<b>Toilet flushes normally but evacuates or drains from the bowl slowly.</b> <ul style="list-style-type: none"> <li>• Macerator sounds normal and runs for 4 seconds, then after some time runs for 4 seconds.</li> <li>• No alarm.</li> </ul>	The toilet or discharge extension might be blocked.	The piping must be cleaned.
	Poor vent.	Unit must be vented properly to open air to allow water to enter the macerator tank. Confirm vent is clear. <b>Do not use a quick vent.</b>
	Accumulation in the strainer basket.	Repetitively flush clean water and allow the macerator to clear debris. If unit is unable to self-clear the blockage, the access cover should be removed for manual cleaning. See <b>Access Cover</b> on page 10.
<b>Water is unable to enter the macerator holding tank</b>		
<b>Toilet flushes normally but does not evacuate or drain from the bowl.</b> <ul style="list-style-type: none"> <li>• Macerator sounds normal and runs for 4 seconds then remains off.</li> <li>• No alarm.</li> </ul>	The toilet discharge or extension pipe may be blocked.	The piping must be cleaned.
	Unit not vented correctly.	Unit must be vented properly to open air to allow water to enter the macerator tank. Confirm vent is clear. <b>Do not use a quick vent.</b>
<b>The macerator is jammed</b>		
<b>Toilet Flushes normally but macerator does not turn on or just hums.</b> <ul style="list-style-type: none"> <li>• Green LED is on steady.</li> </ul>	The cutter or impeller are jammed preventing the motor from turning.	Clear the cutter or impeller of blockage.
	Internal motor problem.	The pump cartridge must be replaced.
<b>The macerator is unable to evacuate its holding tank and is cycling on thermal overload</b>		
<b>Toilet flushes normally but does not evacuate or drain from the bowl.</b> <ul style="list-style-type: none"> <li>• Macerator starts to run and sounds normal (running) then stops after 5-10 min. Restarts after 30 to 60 min.</li> <li>• Alarm is activated.</li> </ul>	Damaged impeller.	Replace impeller. See <b>Impeller Access</b> on page 12.
	Check valve stuck closed.	Confirm the check valve is functioning properly; if not, repair or replace. See <b>Check Valve</b> on page 10.
	Internal hose damaged or disconnected.	Confirm the internal hose is functioning properly; if not, replace. See <b>Control Switch</b> on page 12.
	If the macerator was installed with a ball valve in the discharge line, valve may be closed.	Open ball valve.
	Air lock.	The volute has a passageway to allow trapped air to escape. This passageway must be cleaned of obstruction. See <b>Accessibility to Motorized Cartridge</b> on page 11.
	Volute inlet plugged.	Clean volute inlet, located on the bottom of the pump cartridge. See <b>Accessibility to Motorized Cartridge</b> on page 11.

Table 2. Troubleshooting Matrix (continued)

Problem	Possible Cause	Corrective Action
<b>The macerator has electrical power, safety switch is off</b>		
<b>The macerator does not start up (the macerator has electrical power, safety switch is off).</b> <ul style="list-style-type: none"> <li>Green LED is blinking.</li> </ul>	Decorative cover not installed.	Both halves of the decorative cover must be installed and fitted properly on the unit. See <b>Check Valve</b> on page 10.
	The right decorative cover (over the access cover) should have a magnet located on a post. This magnet activates a safety switch.	Replace magnet or entire right decorative cover. See <b>Check Valve</b> on page 10.
<b>The toilet has an inadequate flush volume, possible blockage of the strainer basket, or improper venting</b>		
<b>Waste build up in the toilet bowl.</b>	Inadequate water level in the reservoir tank.	Check and/or adjust the water fill mechanism so that the water level matches the reference line in the tank.
	Strainer basket requires cleaning.	Clear debris from the strainer basket. See <b>Accessibility to Motorized Cartridge</b> on page 11.
	Unit not vented correctly.	Unit must be vented properly to open air to allow water to enter the macerator tank. Confirm vent is clear. <b>Do not use a quick vent.</b>
<b>No electrical power or battery protection mode</b>		
<b>The macerator has no LEDs illuminated when power is connected (no electrical power or battery protection mode).</b> <ul style="list-style-type: none"> <li>All LEDs are off.</li> </ul>	The macerator is either not plugged in, supply breaker is turned off, or GFCI receptacle has tripped.	Check electrical power source.
	Control system in battery protection mode.	<ol style="list-style-type: none"> <li>Unplug macerator from receptacle.</li> <li>Remove the 9V battery that powers the alarm.</li> <li>Plug the macerator back into the receptacle.</li> <li>Re-install the 9V battery.</li> </ol>
<b>No electrical power</b>		
<b>The macerator does not start up.</b> <ul style="list-style-type: none"> <li>Green LED is off.</li> </ul>	The macerator is either not plugged in, supply breaker is turned off, or GFCI receptacle has tripped.	Check electrical power source.
<b>Solid debris in basket</b>		
<b>During a pumping cycle, a rattling noise is emanating from the macerator.</b>	Solid object larger than 1/2" is trapped in the cutting basket of the macerator.	The access cover should be removed for manual cleaning. See <b>Access Cover</b> on page 10.
<b>Pump is unable to evacuate tank</b>		
<b>Alarm sounds frequently (pump unable to evacuate tank).</b>	Damaged impeller.	Replace impeller. See <b>Impeller Access</b> on page 12.
	Volute inlet clogged.	Clean volute inlet. See <b>Accessibility to Motorized Cartridge</b> on page 11.
	Internal hose damaged.	Confirm the internal hose is functioning properly; if not, replace. See <b>Control Switch</b> on page 12.
	Air lock.	The volute has a passageway to allow trapped air to escape. This passageway must be cleaned of obstruction. See <b>Accessibility to Motorized Cartridge</b> on page 11.
	Application.	The pumping capacity has been exceeded by the rate of incoming water. Either reduce flow coming into the macerator or reduce the pumping head.

Table 2. Troubleshooting Matrix (continued)

Problem	Possible Cause	Corrective Action
<b>General plumbing</b>		
The macerator pulses for no apparent reason.	Water leakage from the toilet reservoir.	Check flush valve and related components in the reservoir tank.
	Check valve failure of the macerator.	The discharge flange contains a check valve that requires cleaning or replacement. See <b>Check Valve</b> on page 10.
<b>General plumbing</b>		
Water backs up into shower tray. • Alarm is not activated.	Blockage or inadequate slope of pipe.	Clear blockage in piping, or increase pitch of discharge pipe. Typically ¼" drop per foot is adequate for a gravity drain.
	The inlet flappers of the macerator are not functioning.	Clear any buildup in the macerator holding tank that is preventing the flappers from opening. See <b>Accessibility to Motorized Cartridge</b> on page 11.
<b>General plumbing</b>		
Macerator is noisy when running.	Rattling piping.	Both the discharge and vent plumbing should be secured using appropriate pipe clamping.
	Foreign object in cutter basket.	The access cover should be removed for manual cleaning. See <b>Access Cover</b> on page 10.
<b>General plumbing</b>		
During the draining of the bathtub, the alarm sounds and/or water backs up into the toilet.	The inflow is greater than the macerator can handle.	A full port ball valve should be installed between the tub and macerator. Throttle down or partially close the ball valve until the macerator can handle the drainage rate from the tub.
<b>System is backing up</b>		
Water backs up into shower tray. • Alarm is activated.	Damaged impeller.	Replace impeller. See <b>Impeller Access</b> on page 12.
	Volute inlet clogged.	Clean volute inlet. See <b>Accessibility to Motorized Cartridge</b> on page 11.
	Internal hose damaged.	Confirm the internal hose is functioning properly; if not, replace. See <b>Control Switch</b> on page 12.
	Air lock.	The volute has a passageway to allow trapped air to escape, this passageway must be cleaned of obstruction. See <b>Accessibility to Motorized Cartridge</b> on page 11.
	Incoming flow rate is greater than pump capacity.	The unit is capable of handling up to two shower heads—multiple (3 and up) shower heads must be avoided.
	Check valve failure of the macerator.	The discharge flange contains a check valve that either requires cleaning or replacement. See <b>Check Valve</b> on page 10.

## **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.**



7000 Apple Tree Avenue  
Bergen, NY 14416  
ph: 800-543-2550  
fax: 585-494-1839  
[www.LibertyPumps.com](http://www.LibertyPumps.com)