

# SewerSolution® Model V

U. S. Patent # 5588459

## Operators Manual

### !!CAUTION!!

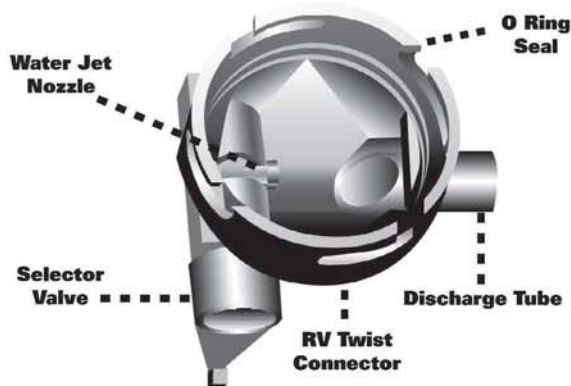
This Operators Manual contains important instructions and precautions regarding the safe operation of the SewerSolution. The manufacturer of the SewerSolution accepts no responsibility for results if these instructions and precautions are disregarded.

### !!CAUTION!!

The SewerSolution is capable of pumping human waste and toilet tissue. Do not put other items, such as facial tissue, paper towels or sanitary products into the toilet.

## Installation

The SewerSolution will fit a standard 3" twist-on sewer pipe adapter. The SewerSolution will work on vertical or horizontal sewer pipes. **Install the discharge tube at the lowest point.** See installation sheet for further info.



### !!CAUTION!!

Leave the 10 foot Discharge Hose permanently attached to the Pump. Do not remove the Discharge Hose from the Pump after each use. It is important that the Discharge Hose is securely attached to the SewerSolution Discharge Pipe to prevent unexpected leakage of waste. The hose may deform under the clamp so check the tightness of the hose clamp periodically.

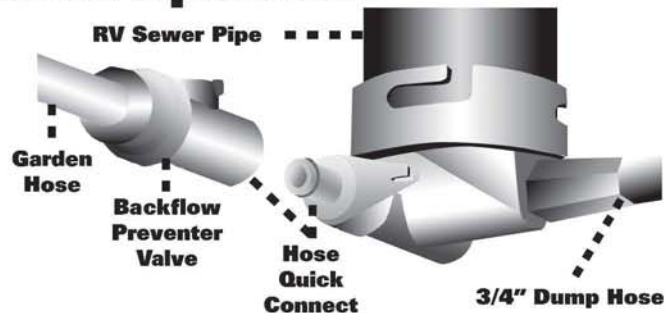
Additional Discharge Hose must have at least a 3/4" circular inside diameter. The Discharge Hose must not have restrictions, such as KINKS, flattened areas, elbows, fittings or anything that will reduce the inside diameter or obstruct flow of waste. The turns in the Discharge Hose should have a minimum radius of 5 inches at any point.

The water pressure Supply Hose should be configured as shown. Use a garden hose for the Supply Hose.

### !!CAUTION!!

Make sure that the Backflow Preventer Valve is installed as shown. Do not use the Supply Hose as a drinking water supply hose.

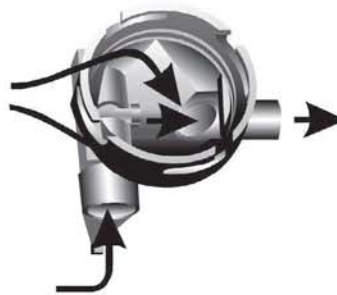
## Basic Operation



### Step One:

#### Dumping Sewage

- Attach SewerSolution to RV sewer pipe.
- Place the Discharge Hose end into the dump station receiver and fix securely in place. NOTE: The end of the Sewer Adapter kit is fitted with two black seals. The outer seal is for a 4" dump station receiver and the other for a 3" receiver. Remove the outer 4" seal to use the smaller seal.



- Rotate the selector handle until it is perpendicular to the discharge hose so that the brass nozzle in the Pump points toward the Discharge Hose.

- Connect the Supply Hose to the SewerSolution and turn on the water. Open the RV sewer discharge gate valve.

- Monitor dumping through the SewerSolution window.

### !!CAUTION!!

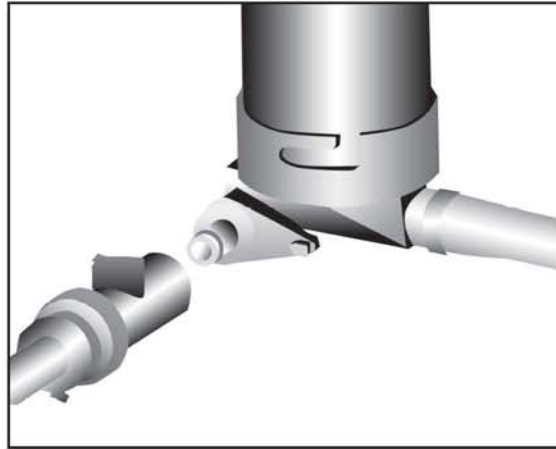
If the SewerSolution is not configured correctly, delivery of waste may be reduced to less than zero. In this case the SewerSolution will FILL the RV sewage tank instead of emptying it! When dumping be sure to verify that sewage is flowing out of the Discharge Hose and that the RV sewage tank is emptying continuously and not filling!

# Typical SewerSolution® Installations

The SewerSolution may be mounted on any sewer pipe, horizontal, vertical or in between. Install so that the discharge tube (connected to the Discharge Hose) is at the lowest point.

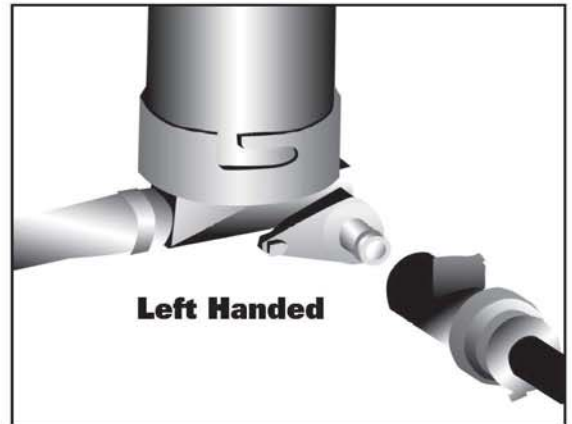


**SewerSolution® mounted on horizontal sewer pipe**

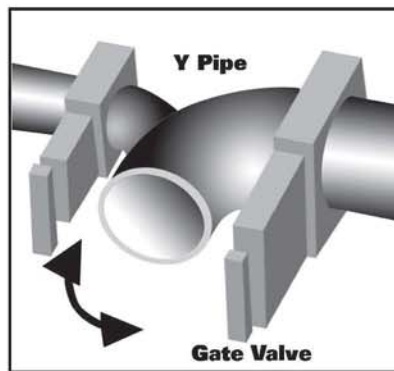
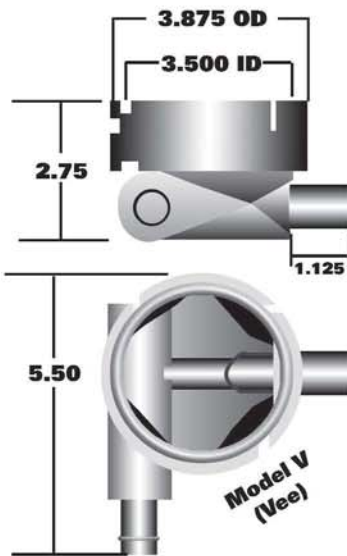


**SewerSolution® mounted on vertical sewer pipe**

The Pump can be converted to a left discharge by removing the jet nozzle, pulling out the valve and inserting on other side. Take care to help O rings thru when installing valve and be sure nozzle is reinstalled straight. Contact the factory for assistance if needed (509-493-3850).



**Left Handed**



## The Double Elbow Connection

The double elbow is a very common connection. The important thing to know is that after releasing the tension on the 8 bolts on the two gate valves. The "Y" shaped pipe between the two valves will rotate up or down.

## KEEP THE SEWERSOLUTION® CLEAN

Long term exposure to sewage will deteriorate the plastic and metal in the SewerSolution Pump. The SewerSolution is self cleaning so use the flushing action to rinse all sewage out of the Pump after each use. Also rinse the outside of the Pump with a garden hose. It is OK to leave the SewerSolution connected when hooked up and draining gray water. Otherwise, when parked or when rolling the SewerSolution should be removed, cleaned and stored.



### Step Two: Flushing the tank

(Depending on plumbing configuration, unit may not back flush tank.)

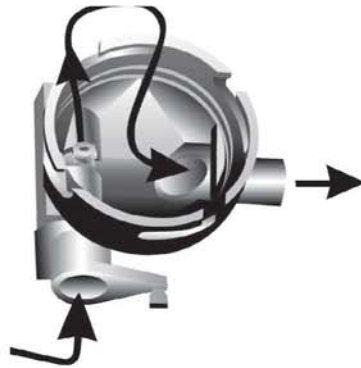
After dumping sewage, rotate Selector until it is parallel to the discharge hose and fill RV sewage tank to desired level with flush water.

**CAUTION: DO NOT OVERFILL!**

Return Selector to the dump position and pump the flush water out of the tank. This Flush and Dump cycle can be repeated as desired to get the tank clean.

### Step Three: Finishing Up

- Close the RV sewer discharge gate valve.
- Set Selector to the flush position. Allow clean water to flush the SewerSolution and Discharge Hose clean.
- Disconnect the Supply Hose from the SewerSolution. Rinse the end of the Discharge Hose. The SewerSolution system should now be completely clean.
- Remove SewerSolution Pump and replace RV sewer pipe cap.



### Using The SewerSolution® AT A FULL HOOKUP CAMPSITE

When parked at a campsite leave the Discharge Hose connected. Leave the black water valve closed (unless dumping sewage) and leave the gray water valve open to allow continuous gravity draining of gray water. Make sure the garden hose is disconnected and that the inlet plug is installed. Leaving the garden hose attached will result in leakage of gray water through the Backflow Preventer Valve. **The garden hose water supply should be disconnected when not pumping waste.**

### Special Operations

The SewerSolution is capable of pumping waste over distance or uphill by as much as 3' above the level of the tank. A minimum of 25 psi is needed for these operations. Pump delivery rate is reduced by low water pressure, a long Discharge Hose or an uphill discharge. The SewerSolution will not pump up a 3' rise AND through a 30' hose. Use as short a hose as is possible if pumping uphill. A 10' Discharge Hose is recommended for use at typical dump stations with low water pressure.

We suggest using a maximum of 30' of 3/4" Discharge Hose. If you need to pump waste longer distances over flat ground or downhill we have found that connection from the existing Discharge Hose to a 1" PVC pipe will allow you to pump up to 100 feet. Your Sewer Adapter has a fitting that allows the connection of a 1" PVC pipe.

### Precautions

#### !!!CAUTION!!!

It is a violation of public health and sanitation laws to attach a fresh water line to a source of contaminants, such as sewer or lawn chemicals, without an approved backflow preventer device. This is necessary due to the risk of the contaminants siphoning back into the potable water lines if pressure falls.

The SewerSolution should not be connected to a potable water source without an approved Backflow Preventer Valve. Please check local regulations.

- If the waste is noticed leaking from the SewerSolution, your RV gate valve is leaking. The gate valve should be repaired immediately to avoid a public health hazard!!
- The SewerSolution is not designed for continuous, gravity draining of sewage. (The SewerSolution may be used for continuous gravity drain of gray water only.)
- The SewerSolution should not be allowed to freeze unless completely dry or filled with anti-freeze.

#### !!!CAUTION!!!

**Do not cut the Discharge Hose in an attempt to re-configure or make adjustments to length. You will not be able to reattach it to the connections since the ends of the hose are heat formed.**

### Troubleshooting

If the SewerSolution is not pumping properly there are two possible causes:

Check the discharge hose. See guidelines previously mentioned. Obstructions to flow will prevent the Pump from working properly.

Next, check the water jet. When in the Dump mode a solid straight jet of water should pass through Pump discharge pipe. Obstructions can lodge in the upstream side of the jet. Backflush the jet to remove obstructions.

# SewerSolution® FAQ (frequently asked questions)

**Q #1** I need to move sewage over a long distance. Can the SewerSolution do it??

**A** Using the 3/4" ID Discharge Hose the maximum range is 30' over flat ground. You can extend the basic 10 ft. Discharge Hose with up to 100 ft. of 1" schedule 40 PVC pipe. The Sewer Adapter includes a connector for 1" PVC pipe. This allows a total of 100 ft. of range and still delivers waste at 4.5 gallons per minute. You may even be able to go further as long as the slope is flat. If the slope is downhill you can have longer range as the discharge from the Pump is all liquid.

**Q #2** Will the SewerSolution pump uphill??

**A** The SewerSolution will pump through a short hose uphill about 3' above the level of the tank. Any more than that and the rate of delivery is too slow. Try this with some caution expecting the SewerSolution to pump too much uphill will result in backflow. Your tank will fill instead of emptying. Orienting the SewerSolution discharge pipe vertically as it leaves the Pump will help.

**Q #3** Should I leave the SewerSolution permanently attached to the RV sewer pipe??

**A** We recommend that you remove the Pump from the RV sewer pipe and replace the sewer pipe cap when not connected to sewer. The main reason for this is the possibility that waste may escape if you have a leaky tank gate valve. Your RV tank gate valve should not leak. If it does you can easily replace the seals or the entire valve. The SewerSolution Pump, Discharge Hose and Sewer Adapter will coil to about 14" across. The system is self cleaning, so it is easy to store.

**Q #4** Can I use the SewerSolution to transfer waste to a mobile tank??

**A** The SewerSolution adds extra water to the discharge because it is a water powered jet Pump. The total load in the mobile tank will be about 140% to 150% of the waste pumped. In other words, if you remove 10 gallons of waste from the RV sewage tank you will have a total load of 14 to 15 gallons in the mobile tank. The actual amount of fluid added depends on length of hose and any uphill pumping. More hose and/or pumping uphill add more water to the load. Also see #11.

**Q #5** Can I use the SewerSolution with my RV pump as the water source??

**A** Lots of people do this. An average RV pump will maintain about 10 psi running the SewerSolution so it will not allow use of long Discharge Hoses or uphill pumping in this configuration. As long as you are pumping with a short hose or downhill you should be OK. Remember that you will be using up your fresh water! Also see #11.

**Q #6** How do I use the SewerSolution at a site with full hookups??

**A** The SewerSolution works great at full hookup sites. Just plug the Sewer Adapter into the campground sewer and you have a heavy duty, air tight, liquid tight system. No need to jack up the hose on a ramp as with the 3" 'stinky slinky'. Just toss the hose on the ground. Leave your gray water open and it will drain continuously. Periodically use the SewerSolution to pump out the black water. By doing this you will not have a big pipe full of raw sewage running across your campsite. The only time there is waste in the hose is the few minutes when you actually pump out the tank. Make sure that you have a properly installed Backflow Preventer Valve in your Supply Hose! (A Backflow Preventer Valve is supplied with the SewerSolution.) **When gravity draining gray water, disconnect the garden hose from the Pump and install the inlet plug to prevent leakage through the backflow valve.**

**Q #7** How do I connect the SewerSolution??

**A** The SewerSolution connects to your RV sewer pipe with the common Valterra-type twist-on fitting...just like the cap you have now. The SewerSolution connects to a regular male garden hose on the water inlet. If you have a white sewer cap, you most likely have a Thetford connector and will need a Valterra "universal adapter" to connect the SewerSolution.

**Q #8** How much Discharge Hose do I need??

**A** We recommend using a short 10 foot hose where possible, like at dump stations. The Pump delivers better and it is easier to store. Carry another 10 foot length of hose for places where you need more range. We sell a 10 foot Discharge Hose with a splicer to make this easy.

**Q #9** Will the SewerSolution clog??

**A** The normal contents of the RV sewage tank will not clog the SewerSolution. Just like on a ship the rules are "don't put anything in the head unless you have eaten it first..." Things that can lead to clogging are low water pressure (at least 25 psi for special operations), using anything other than toilet paper (no paper towels or facial tissue, please!). Check the discharge hose. Obstructions to flow will prevent the Pump from working properly. Of course, if the Pump is not operating properly, clogging can occur. Check correct action of the Jet Nozzle. First flush the Pump clean and remove from the RV sewer pipe. Disconnect the Discharge Hose and connect the garden hose. Turn on the water pressure. While set to the 'DUMP' function there should be a strong, solid stream of water shooting through the center of the Discharge Tube. If the jet is not clean back flush to remove debris.

**Q #10** My dump station doesn't have a faucet to hook up a garden hose. Can I use the SewerSolution??

**A** There is a neat little product called a 'Water Thief' that is sold by many RV dealers & accessories companies. It connects quickly to the cut-off end of a hose on one end and has a male garden hose thread on the other end. This gadget makes using the SewerSolution easy when no threaded garden hose end is available.

**Q #11** What if I don't have much water available??

**A** If you have limited water, like when you are using your RV water pump (see #5), or when you are transferring to a mobile tank (see #4), you can try siphoning. Normally the sewage outlet will be below the level of the SewerSolution. This means the liquid waste may siphon out with the water inlet shut off if you first use the SewerSolution to start the flow. Solids may accumulate in the Pump and not siphon out. You can see this in the Pump window. Just restart the Pump (water on) momentarily to clear this blockage and then stop the Pump (water off) to let siphoning resume. This method can really save water, especially if the tank contents have been sloshed by traveling. Intermittent use of the RV water pump to save water works much better if your rig is equipped with an accumulator. This will provide a high pressure blast of water to clear the Pump on demand.

**Q #12** My SewerSolution doesn't clean out my tank the way I expected. What's wrong??

**THE SEWERSOLUTION IS NOT A TANK FLUSHING GIZMO!!!!**

**A** The major strength of the SewerSolution is that it liquefies and pumps waste over a distance. It is self-cleaning and it replaces a messy job, using a 3" hose, with a tidy job using a 3/4" hose. The tank-flushing feature shoots water back up your sewer pipe like several products currently on the market. If you have a straight shot into the black water tank through the RV sewer pipe it will circulate the flush water in the tank. Otherwise, the SewerSolution allows you to fill the tank with flush water without agitating it. For proper tank flushing you need an in-the-tank-spray unit. Another good approach is to use products like Bio-Green which contain bacteria and enzymes to break down your tank contents. The SewerSolution is a Pump. It will liquefy and pump the material that enters the Pump inlet. If the waste never gets to the Pump, the waste will remain in the RV. The reason for this problem is poor plumbing design not allowing enough vertical drop to the sewer outlet. The SewerSolution works well with 'in-tank' flush nozzles that are currently available. Another good strategy, if your RV design allows it, is to put together or buy a rig like that used to flush leaves out of roof gutters. Use this to shoot water down your tank vent pipe on the roof. This will normally result in a vigorous tank flush.

A tip; if you are seeing excess water draining back down the sewer hose when backflushing; just stick a self adhesive hook on the side of your fig to allow you to hold the Discharge Hose above the level of the RV tank. This will force the water to run into the tank and not out the hose. You will need a few extra feet of hose to do this.

**Q #13** What is a 'macerator pump'?

**A** The macerator is typically an electric mechanical pump that shreds and pumps sewage. The macerator will pump further and higher than the SewerSolution. The SewerSolution has the following advantages over a macerator: the macerator is hard to install if 'hard plumbed' in. The SewerSolution is a simple bayonet twist-on installation. The macerator will not back flush tanks which the SewerSolution does. The macerator system is not self-cleaning like the SewerSolution. If the macerator becomes clogged you may have to tear it down to clear the clog. The SewerSolution rarely clogs and can often be easily cleared. The macerator has moving parts which will wear and get hair wrapped around them. The SewerSolution uses no moving parts to pump.

**Q #14** Do I still use holding tank chemicals with the SewerSolution??

**A** The SewerSolution is the best tool on the market to aid in emptying RV and marine holding tanks. It does not, however, replace necessary in-tank malodor counteractants. In addition, the use of a quality biochemical bacteria type holding tank product will serve to enhance the action of the SewerSolution and may provide for the need of less rinse water. We recommend CrestLine brand holding tank products from RVChem.

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## **WARNING**

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**Do Not use the SewerSolution® to pump anything other than liquids, human waste and toilet tissue.**

**Do Not use the SewerSolution® to pump facial tissue, paper towels, sanitary items, etc. This may lead to clogging.**

**DO NOT PRESSURIZE THE SEWERSOLUTION® PUMP.** If the SewerSolution® pump becomes clogged and the RV tank gate valves are closed, the SewerSolution® pump may become pressurized to water line pressure resulting in leakage of waste and failure of the SewerSolution®. Such misuse of the Sewer Solution® will void the Warranty.

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## **Warranty Information**

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**Products manufactured and sold by SewerSolution® are guaranteed to be free of defects in material and workmanship, under normal use and when installed and operated in accordance with the supplied Operators Manual. The manufacturer will replace at its option any part deemed defective upon examination by SewerSolution® for a period of one (1) year from date of sale.**

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## **Exceptions**

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**Common Garden Hose Fittings supplied with the SewerSolution® System are not covered by this Warranty.** These include the black backflow preventer valve (or anti-syphon valve) and the garden hose quick connect fittings. These items are easily replaced and typically available where garden hoses and plumbing fittings are sold.