

# RV Water



## Connections

Once again, we are attempting to take the simple task of connecting a water supply source to a RV, and once again we've found ways to make it an overly complex task. Fortunately the process isn't as elaborate as the Electrical Hookup was. (So far....) Besides, how hard can it be? Attach the hose to the faucet, the other end to the RV and turn on the water. Let's see what we can do to make this more interesting.



Hopefully, not as complex as this one. →

## Water Faucets, Hoses, Etc.

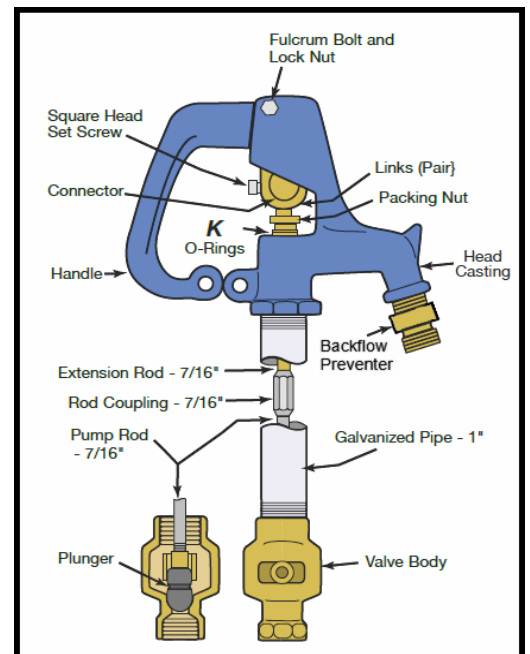
First, let's describe some of the items we will be dealing with:

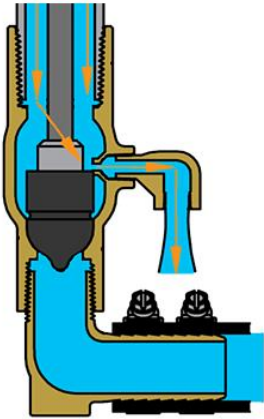


Faucets: There are a couple different types of water faucets that you will encounter in your travels. The first type is common in the south and goes by many names. Sillcock is the most common name however you may hear spigot, outdoor faucet, hydrant or hose bib. They are all different names for the same thing. They are most commonly made from corrosion-resistant brass rated up to 200psi pressure and water temperatures of up to 200°F (for hot water wash machine connections).

Many water faucets north of the freeze line use a 'Frost Proof Yard Hydrant' style faucet. These have the water valve body down in the ground below the freeze line.

Frost Proof hydrants use a pivoting top handle with a rod connected down to the valve down in the ground below the frost line.





**NOTICE:** To open the valve, pivot the handle **ALL THE WAY UP** when using. Down at the valve body in the ground, is a drain port to let the water drain back out of the vertical pipe when shut off. That way there is no water in the pipe to freeze in winter. Opening the lever valve only part way will partially divert pressurized water out of the drain port underground, wasting water.

**Back Flow Preventer** - The next item on our list is a 'Back Flow Preventer' also known as a 'Vacuum Breaker'. Many campgrounds have these installed on their faucets. The purpose is to prevent a higher pressure sources like a pressurized water tank from pushing water back into the campground's water supply, possibly contaminating it.



**TIP:** Many of the ones we've seen on our travels leak and drip, so if yours is dripping, don't worry about it.



Now we finally get to your hardware. If there is only one faucet for your site, you may want to consider adding a "Hose Y Splitter". These are very handy when you want to get some water at the post and don't want to disconnect the hose.

**TIP:** Purchase one with long valve handles making them easier to operate.

**Pressure Regulator** - Most RV manufacturers recommend water pressure be held at 45 psi or lower. Installing a pressure regulator at the faucet will also lower the pressure in your hose possibly extending the hose life. (We all need a little less pressure!).

There are several models. Simple Inline, Inline with gauge, and adjustable pressure regulator with gauge.



**WARNING: The Truma water container inlet side must be limited to 40.6 psi maximum otherwise it could be damaged. A water pressure regulator is strongly recommended.**

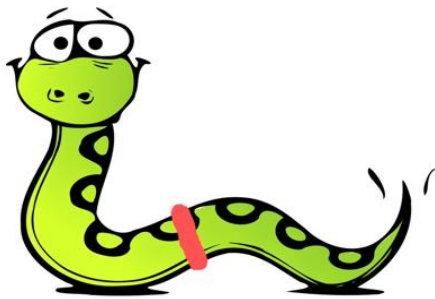
**TIP:** I like to install a pressure gauge before the regulator so I can see just how high the park water pressure is. If it is lower than the pressure regulator, you don't need to use a regulator.

**Water Filter** - Next in line is the water filter. They contain GAC (Granular Activated Carbon) filtration in combination with KDF to prevent undesirable bacteria growth when the filter is not use. The can also come with a short, flexible hose protector to reduce strain on connections.



**Drinking Water Hose** – Here you have a lot of choices. The most popular seem to be the white, Tastepure drinking water hose. There are also heated hoses for winter camping.

The hose length is a popular debate and most people opt for a 25 foot hose.



**TIP:** Simplify the coiling of your water hose (and power cord) by putting a band of tape to mark the midpoint. Instead of starting at one end and wrestling the hose/cord like wrangling an Everglades python by the tail, start coiling from the middle and work your way to one end then the other. Especially useful if you've decided to get that 50 footer. (BTW-this doesn't work very well on pythons).



**TIP:** When stowing your water hose, connect the two ends together to keep from dripping water in your van and keep dirt out of the hose.

**TIP:** We like to use some Quick Connect hose fittings to make setting up a little easier.



## Gadgets

---

Now you know I love gadgets and what kind of help file would this be without some extra toys to add to the stuff we haul around the country in our RV.

**Water Quality Tester** – This little gadget will test the purity of drinking water. It will do three different tests, Total Dissolved Solids (TDS), Electrical Conductivity (EC) and Temperature displayed on a digital readout. It will also show green for good water, red for not so good. When we find really good water, we like to fill the fresh water tank with the 'good stuff'.

**TIP:** Northern Florida is known for its many fresh water springs and the water there is the same as what people pay to get in bottles at the store (Minus the fish poop).



## Tank Fill, City Water

---



Well that was a lot of mildly useful information that may or may not ever turn up as a question on Jeopardy. Would the RV fresh water supply category be 'portable potables'? Let's move on.

### Connecting to Fresh Water

- 1 – Give the faucet a quick look to make sure all is in order and run the water for a little while to flush any rust or other stale water out of the line before you hook up. It also makes sure there's water. (It's a little frustrating leveling your RV, hooking up power and then finding the site has no running water).
- 2 – Install your "Y" diverter on the faucet or onto backflow preventer if there is one.
- 3 – Install your Pressure regulator.
- 4 – Next comes the short flex hose and your water filter.
- 5 – Connect your fresh water hose to the water filter.
- 6 – Once again, turn on the water for a few seconds to flush out any debris out of the hose.
- 7 - Our RV has the water connections on the outside in a locked compartment! (Where did I put that key?)
- 8 - Hookup the fresh water hose to the RV connection in the water box.
- 9 - Switch the water lever to CITY to supply water to the RV plumbing.
- 10 – Turn on the water at the post.
- 11 - Check for drips and leaks.

And you thought I was going to make this overly complicated didn't you? OK a little bit.

**TIP:** the water box door has a lever that will hold the door up while you work in there. It is plastic and not very sturdy but does work.

**TIP:** The water box door has a U shaped cutout and a flap you can swing out of the way to allow closing the door with the hose coming out the U shaped cutout.

## More Gadgets

---



**Water Meter** – An easy to read meter to measure how much water is flowing out of the hose. It calculates both accumulative watering volume and singular watering and accurately measures To 1/10th of a gallon.

**TIP:** A water meter is useful to see your total water usage and also very handy when you only want to partially fill your fresh water tank with a specific number of gallons.

## Winterizing

---

I have to admit, living in Florida, I have never had to do this. So if there are some gaps in the procedure, I plead ignorance. There are apparently two different methods. Antifreeze solution and blowing out the lines with compressed air.

### Antifreeze:

This method will require about 3 gallons of RV antifreeze and a short piece of garden hose. Coachmen recommends 'drinkable' RV antifreeze although I don't care to taste it!

Don't use auto radiator antifreeze! One posting I saw, the guy uses cheap vodka. I guess that is also drinkable.



- 1 – Turn off the breaker for the Truma and turn off the propane switch so the Truma won't turn on.
- 2- Drain the tanks, black, gray, and fresh water using the 'low point' drain valves.
- 3 - Drain the water heater with the previously mentioned procedure and close valves. NO ANTIFREEZE IN TRUMA!
- 4 – Close the tank drains and low point drains
- 5 - Add antifreeze using the suction hose connected to the water pump the other end in the antifreeze.
- 6 – Set the valve to Winterize and open the kitchen faucet and turn on the water pump.
- 7 - Run all the other faucets, including outside shower, until antifreeze comes out.
- 8 - Open the faucets to get antifreeze into the gray tank and the toilet to get antifreeze into the black tank.

### Air Compressor Winterizing:

You will need a blowout plug, air compressor, air pressure regulator.

- 1 – Drain the tanks, black, gray, fresh water and water heater using the 'low point' drain valves.
- 2 - Set your air compressor regulator for 30 psi and attach the blow out plug.
- 3 – Screw the blow out plug into the water inlet at the exterior water connection point.
- 4 – Set the water fill lever to City.
- 5 - With the water heater drain valve still open and others closed, blow out the water heater.
- 6 – Close the water heater drain valve and switch the inlet valves to bypass mode.
- 7 – Open faucets one at a time for hot and cold position to blow water out of each of the supply pipes.
- 8 – Continue with inside and outside showers as well as the toilet.
- 9 – Run the water pump for 15 seconds to remove any water in the pump.
- 10 – Pour a cup of RV antifreeze into each of the sinks to fill the P-traps and a cup in the toilet.
- 11 – Leave all the faucets open while storing.

## De-winterizing

---

I think this one might be simple. Since I've never had to winterize, I assume we just need to reverse the above procedure starting with the last step.....?!? Maybe not.

Here is my best guess:

- 1 – Drain the fresh water tank using the 'low point' drain valves.
- 2 – Close any open drain valves and return the Hot water heater Bypass Valves to normal configuration.
- 3 - Hookup the hose and pressure regulator to the water connection in the water box.
- 4 - Switch the water lever to CITY to supply water to the coach plumbing and turn on the water.
- 5 – Run water thru all the faucets, both showers hot & cold and toilet to flush antifreeze from the lines.



- 6 - Switch the water lever to FILL and fill up the fresh water tank.
- 7 – Turn OFF the city water and turn ON the water pump and run water thru the faucets again.
- 8 – When there is no trace of antifreeze, drain the fresh water tank
- 9 – Sanitize the water system with the following procedure.

It is also a good time to give your RV a thorough inspection:

Tires, tire pressure, spare tire, hoses, belts, smoke detector batteries, flashlights, test heater/hot water, engine fluids (oil, radiator, power steering, brake, and windshield washer), generator, date on fire extinguisher and shake it up, registration and insurance.

## Sanitize the Water System

---

**Maintaining** - a clean and fresh water system is essential for drinking, cooking, and bathing. So next we'll have a look at the all-important matter of how to sanitize your RV fresh water system.

**How often** – If you are actively using your RV, sanitizing it every 6 months is a good idea. This will ensure that the fresh water holding tank and the plumbing lines are free of any harmful bacteria or mold growth. If your RV has been in storage or not used for long periods, it's a good idea to sanitize the fresh water system each time before using the RV.



**Items Needed** - We will need a few items – Unscented Bleach, Gloves, Measuring cup and a one gallon container.

### The process:

- 1 - Close off the hot water heater valves and drain the water heater.
  - A - Use the main switch or pump switch to switch off the power to the water-pump assembly.
  - B - Open all water release points, e.g. cold and hot water faucets, showers, toilets.
 

The water container will drain via the drainage socket of the pressure relief/drain valve.
  - C - Open the pressure relief/drain valve
  - D – Close off the valves to the hot water heater. **NO BLEACH IN THE TRUMA!**
- 2 - Fill the fresh water tank in the RV with approximately 14 gallons of water.
- 3 - Add water to a gallon container and mix in 1/4 cup of bleach. (Our ratio will be 1/4 cup to 15 gallons).
- 4 - Attach your drinking water hose to the RV water inlet.
- 5 - Pour the bleach into the other end of the hose before attaching the hose to the city water faucet.
- 6 - Turn on the city water to force the bleach mixture into the fresh water tank.
- 7 - Slosh it around. Rock the RV or take it for a short drive around the block to mix the water/bleach in the tank.
- 8 - Run the faucets and shower until you smell bleach water coming out.
 

Don't forget to run some water/bleach mixture thru the outside shower as well.
- 9 - Let everything sit for about 12 hours.
- 10 - Drain the tank and open the valves back up to the hot water heater.
- 11 - Refill the tank with fresh water using your water filter and flush all the lines.
 

You will only need to flush and refill once or twice.

Extra Credit: Once all the lines are flushed and the Truma is back in the plumbing circuit, turn on the Truma hot water heater and set it to Boost setting and run it thru a cycle. This will heat the water to 140 degrees killing any bacteria in the hot water tank.

## Water Pump

---

**Specifications** – The pump in our van and many other newer vans is the Pentair Shurflo Revolution Model number 4008-101-A65. This is a four chamber pump with a maximum pressure of 55 psi. It's a 12 volt pump and requires a 10 amp slow blow fuse. It has thermal overload protection and automatic reset. At 40 psi, it can pump 1.5 gallons per minute.

**Turning on pump** – On newer coaches, the water pump is controlled by the Firefly touch panels. Older RVs may have a physical rocker switch.

**TIP:** The pump is designed for intermittent use and it is recommended that you turn the pump off when not in use. A suggestion to Firefly was to add a timer function into the programming to automatically turn off the pump after a set period of time. Sounds like a great idea.

**Adjusting the bypass pressure** – If your pump runs continually or cycles on and off when running the water, it may need the bypass pressure adjusted. You can adjust it using a **5/64 Allen wrench** into the Allen screw in the end of the pump.



### PRESSURE ADJUSTMENT



### BYPASS ADJUSTMENT

The by-pass is a spring loaded diaphragm that opens up allowing water from the discharge side back to the inlet side. The pressure switch on the pump is set to shut off at 45 psi. (Max 55 psi)

Screw in clockwise will raise the shut-off pressure. Unscrewing the set screw counterclockwise will lower the pump shut-off pressure.

**Maintenance** - Checking and cleaning the strainer if there is one installed, normal sanitizing and winterizing and occasional checking all plumbing hardware and fittings for tightness is all that is normally required. Lack of sanitizing is the number one reason for premature pump failure and poor performance over time. Lack of sanitizing will cause scale build-up on the diaphragm and valves,

## Filling Fresh Water Tank from a Jug

---



Fellow van owner, James, has discovered a procedure where you can fill the fresh water tank from a jug or bucket. The process uses the winterize hose and the shower bypass valve. Once again, I haven't tried this yet but here is how (I think) it goes.

- 1 – Configure the pump for antifreeze intake
- 2 – Set the shower water miser to bypass
- 3 – Turn on the water pump and it should suck up the water?

## Showering with Shower Miser

---

Taking a nice warm shower at the end of the day is a luxury many new vans offer. Newer models have a 'Shower Miser' hot water recycle valve that returns water to the fresh water tank while waiting for the hot water to reach the shower valves. Now this procedure is one of the shorter ones.



1 – Turn on the Truma water heater set the temperature to ECO or HOT, about 25-30 minutes before your shower.

**TIP:** ECO setting provides you with 2.64 gallons of 104 degree water for a quick 2 minute 'Navy Shower'.

HOT setting will heat the water to 140 degrees. While that may seem like a lot of very hot water, remember, there's only 2.64 gallons in the Truma. Mix that with 2.64 gallons of 70 degree water and you have 5.28 gallons at 105 degrees. That still doesn't come close to my 20 minute blazing hot showers at home.

2 - Move the Shower Miser lever to Bypass until the indicator disk changes to red color.

3 - Get naked and get in close the curtain.

4 - Move the Shower Miser lever to Shower position.

5 - Turn on the shower and adjust to a comfortable setting.

6 - I think you can handle the rest of the process from here. You did remember to close the blinds didn't you???

## Hot Water Heater

---

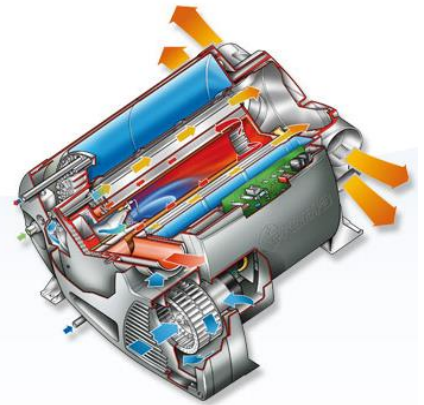
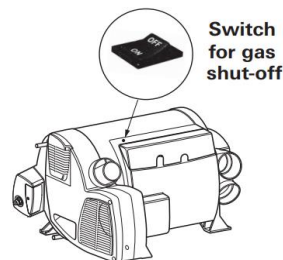
Truma Combi Specifications and Design:

The Combi is a dual function appliance for RVs that provides both heat and hot water. The combination takes up less space. It can run on propane, electric or both at the same time for rapid heating. When powered by propane, it operates off 12 volt DC. Electric heating elements are powered by 120 volt AC.

In heater mode, any water in the water container, heating is unregulated and may reach as high as 162 degrees F.

Hot water mode, the water temperature is regulated and the burner will shut off when the water reaches the selected temperature.

Truma has a propane on/off switch on the top of the unit.



**WARNING: The Truma water container inlet side must be limited to 40.6 psi maximum otherwise it could be damaged. A water pressure regulator is strongly recommended.**

**TIP:** The heating function can be used without water in the container.

Truma recommends decalcifying and cleaning the water container at least every 6 months using citric acid.

### Control Panel

See Truma Combi Quick Reference Guide



## Outdoor Shower Gadgets

---

New vans don't appear to include an actual shower head with the outdoor shower anymore. Instead, the coach manufacturers are now using a two knob water valve head and a quick connect 'slinky' hose and a garden hose nozzle.



At 6'6" tall, I really like exterior showers. Plenty of elbow room and unlimited headroom. There are a number of people that install a curtain across the open rear doors of the sprinter to create a mostly-private outdoor shower enclosure. Combine this with a solar heated water shower bag hung on a pole across the top of the doors and you're all set. An extra set of shower faucets in the back of the coach would be an ideal setup.



## Draining Fresh Water Tank

---



I think this one is going to be pretty simple. Open the door for the dump valves and you will see a several valves sticking down. Follow the pipe from the fresh water tank to the valve and open it. Don't forget to close it before filling or it will take a very, very long time to fill the tank back up.

## Packing Up

---

Coil fresh water hoses from the middle and work your way to the ends.

Connect the ends together to keep from dripping water in your RV and keep debris from getting in the hose.

Use a couple Bungee ball cords to secure the hoses, power cord, etc.



## Installing accumulator

---

Installation of a Shurflo Accumulator Tank can provide steadier water pressure and smooth out any pulsing from pump. It is fairly easy to install if you like working in tight spaces – empty space is hard to find near the pump and installing vertically is probably even harder.

The accumulator is a small tank with a rubber bladder full of air that takes up approximately 3/4 of the tank and fills with water in the remaining space.

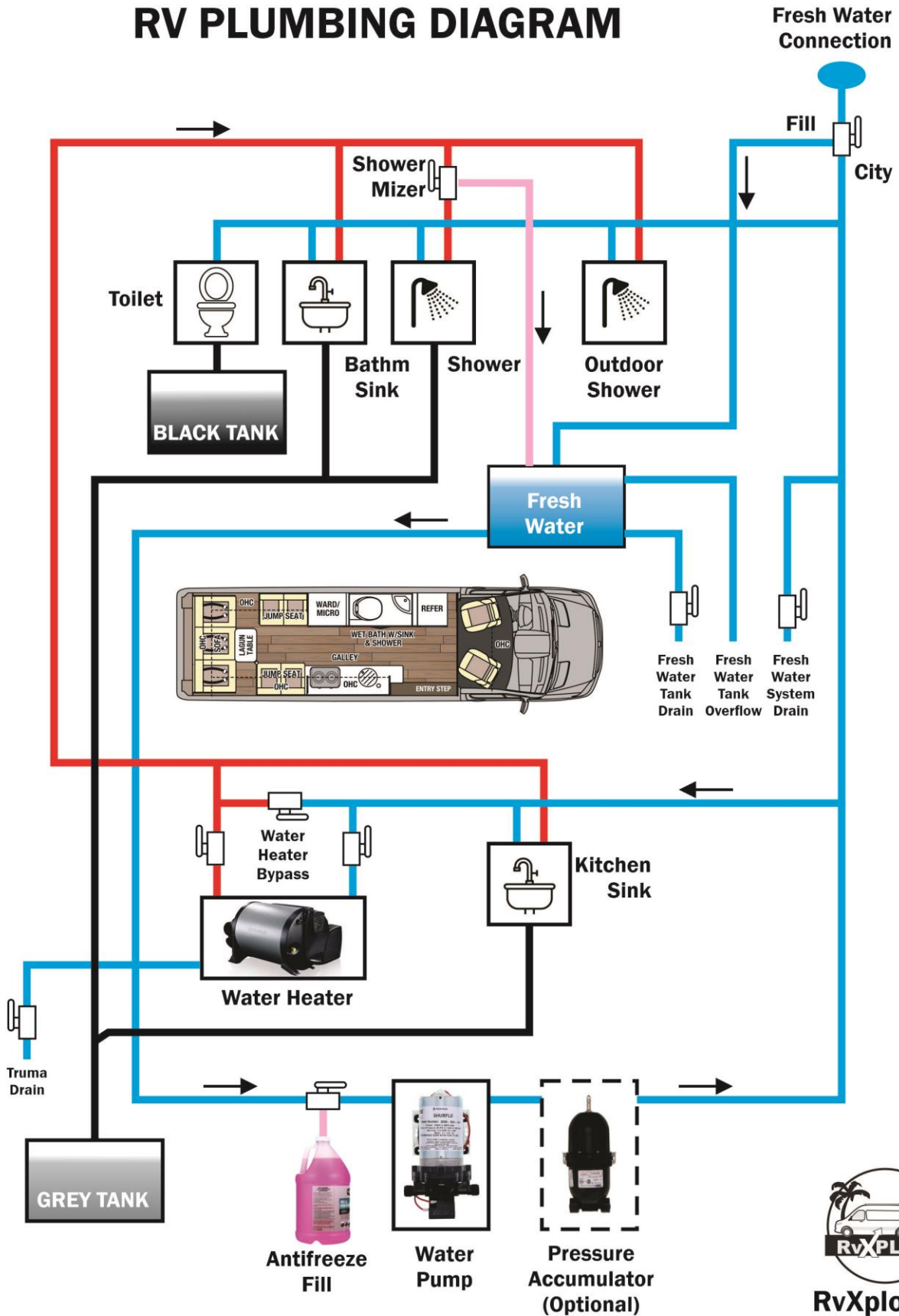
The bladder air chamber is pre-charged to 30 psi from the factory and it is recommended the pressure be checked monthly using a standard tire pressure gauge.

The plumbing connections are non-directional however it's recommended the accumulator be mounted vertically with the air valve pointed up for easy draining, sanitizing and winterizing.

<https://www.amazon.com/dp/B000N9VF6Q>



# RV PLUMBING DIAGRAM



RvXplor.us