

# Your Genova Boji Marine/RV Filter/Softener

The Boji Marine Filter/Softener is constructed of the finest thermoplastic materials and should provide a lifetime of trouble free use. There are no moving parts to wear out and the softener is resistant to all corrosive environments encountered in boating. The unit is designed to soften your dockside water supply, providing you with generous amounts of soft water for drinking, bathing and washing your boat.

The Boji can be installed in-line for dockside pressure water supply or can be used to fill your vessel's or RV's inboard water storage tank. The result—water suds easier, is less corrosive to inboard plumbing and minimizes unsightly stains and water spots. The Boji is also an indispensable aid in washing your boat or RV. Say good-bye to difficult to remove deposits on bright work and windows.

The Boji works the same as a conventional water softener; however, there are no time clocks, solenoids or directional valves to malfunction. No external power source is required. The unit is simply installed between the water supply source and the vessel's or RV's water supply hose. When the water is turned on, water flows through the softener, softening as it goes. That's all there is to it!



## ***This Kit Contains:***

- 1 Boji**
- 1 Prefilter Canister w/ cartridge**
- 1 Package of Regeneration Salt**
- 1 36" Hose**
- 1 6" Hose**

***Should you have any questions contact:***

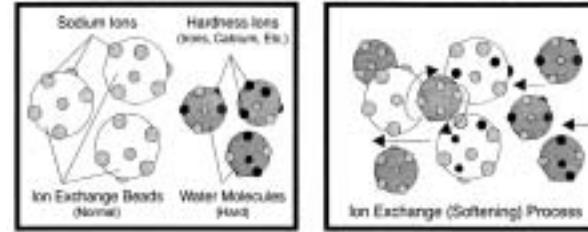
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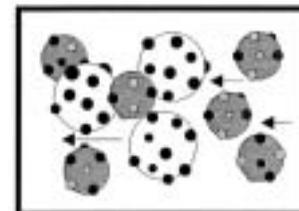


## How Your Boji Works



As the hard water passes through the Ion Exchange resin bed, an exchange of ions takes place. The hardness ions which have attracted themselves to the hard water molecules are attached to the Ion Exchange beads. As they release from the water molecules and reattach themselves to the resin beads, this causes the beads to release an equal volume of sodium ions. Once released, these sodium ions are attracted to the water molecules and attach themselves in place of the Hardness Ions previously released. In actuality, this is an instantaneous process and continues until all of the sodium ions attached to the Ion Exchange resin beads have been exchanged.

Once the sodium ions contained on the Ion Exchange resin beads have been exhausted, the water softening process ceases. Hard water entering the water softener passes through the resin bed and exits unchanged. To reactivate the water softener, the beads contained in the Ion Exchange resin bed must be "regenerated". This is accomplished by washing the Ion Exchange resin bed with a salt water solution.



### ***The Regeneration Process***

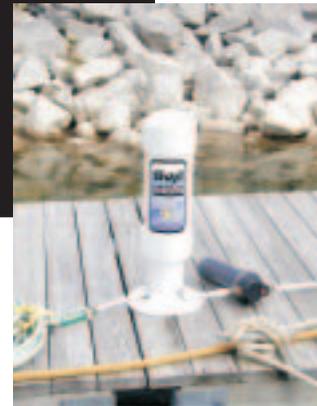
During the regeneration process, the exhausted Ion Exchange resin bed is washed with salt water. As the salt water comes in contact with the sodium depleted resin beads, another exchange of ions takes place. The Sodium ion portion of the salt (sodium chloride) molecule is broken free and reattaches itself to the closest Ion Exchange resin bead. A collected hardness ion simultaneously breaks free of the resin bead and attaches itself to the resulting chloride ion in place of the departed sodium ion, forming a new molecule. The water containing the new chloride molecules (calcium chloride, etc.) created from this exchange of ions, exits the

softener during the regeneration process, leaving the Ion Exchange resin beads replenished with their newly acquired supply of sodium ions.

# Boji

## MARINE/RV FILTER/SOFTENER

## Instructions



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## Setting Up & Using Your Boji Filter/Softner

Assemble the filter as shown in Figure 1, then hook up the water softener as shown in Figure 2.

If your unit is to be used in a marine application, it is a good idea to rig your softener with a simple safety lanyard so that it can be tied to a mooring cleat or some other stationary object on the dock to prevent its loss overboard. The lanyard can be fashioned from light rope and will also aid in handling the unit from dock to on board storage.

The Genova Boji Marine /RV Softener works in the same manner as a commercial manually operated water conditioner. There are no time clocks, solenoids or directional valves to malfunction. No external power source is required. The unit is simply installed between the water supply source and the vessel's or RV's water supply hose. A standard canister water filter, utilizing standard 3/4" M.I.P. X male and female hose fittings, can be screwed directly into the inlet of the marine softener (see fig. 2). When the water is turned on, water flows through the filter and then is allowed to flow through the softener, softening as it goes. That's all there is to it!

Depending on the hardness of the water supply source, your Marine/RV Water Softener will require periodic "regeneration" to maintain its water softening capabilities. The canister type water filter unit, previously mentioned, facilitates this regeneration process. Regeneration is easily done utilizing pure pelletized water softener salt cubes, available from a variety of local sources. You can determine if your softener needs regeneration from the following signs: the water "feels" hard—a definite increase in "water spotting" is noticed on sprayed surfaces left to dry—it becomes difficult to maintain suds while washing.

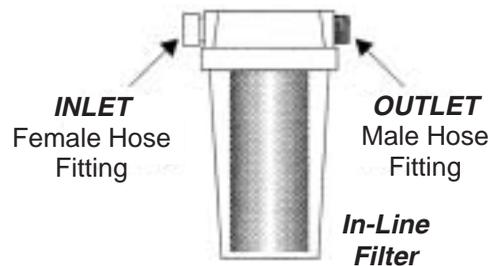


Figure 1

NOTE: If you must restrict your intake of sodium for medical reasons and will be using your Boji Marine/RV Water Softener to condition all the water supplying your boat or RV, it is recommended that you use special salt for regenerating your unit. This special "sodium-free" salt is available at most retail outlets where water softener salt is sold. It is easily recognized by its chemical name "Potassium Chloride." This special salt will function in the same manner as regular salt with one exception: the ion exchange resin contained in your Boji will be exchanging potassium instead of sodium ions for the hardness minerals it removes from your hard water supply source.

A simple test will tell you if you have "hard" water. Fill a small capped bottle 1/3 full with the water to be tested. Add one small drop of dish or similar liquid soap. Vigorously shake the capped bottle until suds layer. If the suds quickly collapse and disappear, the water is hard and your unit needs regeneration. If the suds layer remains and breaks down very slowly, the water is still soft and your softener still has capacity left before regeneration is required.

You will quickly learn the cycle of regeneration requirements based on your particular water usage and it will become easy to anticipate when the time for regeneration is approaching. It is always best to regenerate your unit before its softening powers are completely depleted.

Using Genova's Water Meter Valve (Part #WT101) enables you to determine when the Boji requires regeneration. This valve has a female hose threaded inlet and a male hose threaded outlet, enabling it to be connected directly to either the water prefilter or Boji.

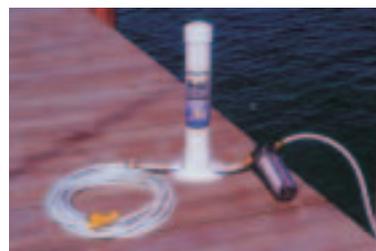


Figure 2

To use this valve, you must first determine the capacity of your Boji unit based on the hardness of the water encountered in your application. This can be accomplished in one of two ways. The simplest approach is to install the valve into the supply hose ahead of a newly regenerated Boji and set the shut off valve at its maximum setting (1600 gallons). Use the Boji unit until it becomes apparent that the unit is no longer producing soft water. Record the remaining gallons shown on the water meter and subtract that figure from 1600. The resulting number, less 50 gallons, becomes the setting you utilize on your meter after each softener regeneration. The second method of determining your softener capacity involves testing or having prior knowledge of the water's hardness in grains per gallon and dividing this number into the capacity of the particular Boji unit being utilized (this information can be found on the Boji softner). This will also allow you to determine the gallons of water which can be softened before the ion bed's exchange capacity is exhausted.

### The procedure for regenerating your softener:

Turn off the water and, after relieving the internal pressure, unscrew the prefilter canister from the water prefilter. Remove the disposable filter cartridge and set it aside for the moment. Fill the canister full of pure water softener regenerating salt cubes (nuggets) and re-assemble the canister to the water prefilter (leaving out the disposable cartridge). Disconnect the water hose from the outlet side of the water softener cylinder and turn the prefilter upside down (see figure 3). Turn on the water supply to produce a stream of water no larger than your little finger coming from the open softener outlet fitting. Wet your finger in the discharge after a few moments and taste it... You should taste a faint trace of salt if everything is operating properly. Let run until the salt in the canister has dissolved (approx. 20 minutes).



Figure 3

After the regeneration is completed, empty any residual salt pellet residue remaining in the canister and reinstall the disposable filter cartridge. Flush the unit for a few moments at full pressure to clear any residual salt from the softener. Reconnect the outlet hose to the softener, and you are back in business!

### Things to remember:

When first putting your Boji Marine/RV Water Softener into service, it is a good idea to regenerate the Ion Exchange Resin which also flushes fines and other manufacturing residue from the unit.

Remember that it takes about 3 complete fills of your on board water storage tank before you will begin to notice the advantages of softened water. It takes that long to completely flush the untreated water from the storage tank, hot water heater and distribution lines.

If you regularly use your Boji in areas that exhibit high levels of iron in the water supply (evidence by rust stains left by hard water), it is a good idea to periodically utilize one of the readily available iron cleaning salt cubes, such as "Iron Out™" for regenerating your Boji. This will assure that the Ion Exchange Resin bed does not become fouled and lose its vitality over time.

### Off season storage of your Boji Water Softener:

When preparing your Boji Water Softener for off season storage, certain precautions are necessary. First, thoroughly regenerate and flush your Boji. Then disconnect your Boji from all filters and hoses and drain thoroughly by standing the unit on end against a support. Once the unit has drained, pick it up and shake it from side to side to release the last traces of water and "fluff up" the internal ion exchange resin bed. Once this has been accomplished, your Boji unit is ready for storage.

CAUTION: Protect your Boji against freezing! If your vessel or recreational vehicle is to be stored in an area exposed to freezing temperatures, remove your Boji and store it in a warm place.

When putting your Boji back into service, it is advisable to once again regenerate your unit. A water softener conditioning nugget salt (available at your hardware or supermarket) is an excellent choice for the first regeneration of the season, as it will serve to remove any residual impurities as well as disinfect the unit's ion exchange bed.