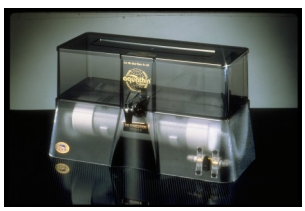


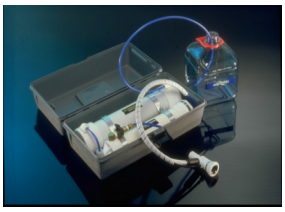

Getting Started With Your KitchenTop RO/DI Water Purification System

(In full color at www.aquathin.com)

Includes setup and maintenance information for:
KT-90, SS-90 Space Saver, and Classic Traveler

AN ISO 9001:2008 QMS
REGISTERED /CERTIFIED COMPANY
(IMS-0192 & NQA-12635)

Every effort has been made to ensure that the information in this manual is accurate. Aquathin Corporation is not responsible for printing or clerical errors.

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Dealer Name_____
Contact _____
Address _____
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Phone _____
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Introduction

Thank You *for your purchase. Aquathin turned* ***"35 in 2015" to enjoy its Pearl Anniversary*** *and its a great feeling of self satisfaction and accomplishment to be an Authorized Aquathin Dealer. You could not have picked a better time to consider the many benefits of becoming a member of the ever growing Aquathin Family. The Next Quarter Century Celebration Begins !*

Aquathin has earned 7 Patents and manufactures a broad spectrum of unique and proprietary water purification, softening and filtration systems servicing the residential, commercial and laboratory markets. Established in 1980, Aquathin now produces over 70 proprietary and trademarked devices for markets around the world through more than 600 Authorized Aquathin Dealers. Aquathin is an E.P.A. Registered manufacturer, ISO 9001:2008 Certified and recipient of the prestigious President's Excellence Award in Export from the U.S. Commerce Department and the Nation's Blue Chip Enterprise Initiative Award from the U.S. Chamber of Commerce. And we have a very impressive global client list that now includes you and your family. Recently we have launched a project two years in the making, for Authorized Aquathin Dealers to provide total home air and water security...and more. Visit the Aquathin Allergy Store online at www.aquathin.com .

Aquathin does not sell franchises nor do we charge for territories. We want to make sure that our Dealers are service oriented and knowledge driven. We know that even though we make the best water treatment systems in the world, ultimately they are only as good as the people representing them...and that is why we make the very best water treatment Dealers in world too. Your local Authorized Aquathin Dealer has received their training and continuous education from Aquathin University. You can be assured that when you purchase from an Authorized Aquathin Dealer (or factory direct in areas where we have yet to approve and establish a Dealer) you are receiving the finest equipment and technical support this industry is able to offer. Highest quality water treatment systems and support good enough for my home...my family.

And that is my promise to you ! I love my Aquathin!!

FOR THE BEST TASTE IN LIFE &

35 Years Pure Excellence

...and another Quarter Century re-inventing the water industry!
Think Aquathin...AquathinK !!
*(visit the **NEW** www.aquathin.com)*

"Alfie"
Alfred J. Lipshultz, President

P.S. Remember...the next best thing to owning an Aquathin is recommending one to a friend !

C o n t e n t s

CHAPTER 1

GETTING STARTED

Thank you for your purchase of this quality water purification system by Aquathin Corporation. Your new Aquathin patented RO/DI system combines several of the most efficient methods of water treatment to achieve a very specific result—pure water that meets the specific result — pure drinking and cooking water free of any and all dangerous contaminants.

As the new owner of an Aquathin RO/DI water purification system there is a totally new experience awaiting you. You and your family will be amazed at the delightful new taste of your tap water—it's like owning your own personal mountain spring.

This manual provides information about the application and servicing of your Aquathin RO/DI water purification system. Descriptions of the components and their functions will help to answer frequently asked questions. By thoroughly reading this manual you will be better able to operate your new system and perform simple maintenance.

SETTING UP YOUR KT-90 SYSTEM

Your Aquathin KT-90 system requires no electricity—the only requirement is adequate water pressure. This unit is designed to operate within a pressure range of 40–100 PSI. The amount of purified water produced depends

primarily on your water pressure, temperature, and the amount of Total Dissolved Solids (TDS). Normal production averages up to 24 gallons per day. If you plan to install this unit on a private well system, you should check your water pressure gauge. If the pressure is less than 40 PSI, ask a plumber to adjust and raise the pressure to the minimum level of 40 PSI. An optional booster pump (KT-PBA) is available when source pressure is severally low. Installation to comply with state and local laws and regulations.

Quick Description of Installation…

- Unpack
- Install the Spigot
- Change out the aerator on your faucet
- Attach the Quick-Connect Coupler
- Turn on the COLD water
- Produce and discard the first tank of water
- Begin enjoying the many benefits of pure, RO/DI quality water.

1) Unpack the System

As you unpack your new KT-90 unit, inspect all parts to make sure they have not been damaged in transit. If damage has occurred immediately file a claim with the freight company. Should you need to return the unit to your Authorized Aquathin Dealer, you must first obtain an RMA (Return Merchandise Authorization) number by contacting their Customer Service.

Contents include:

- Black Spigot Assembly
- Quick-Connect Faucet Aerator

- KT-90 Series System (with attached tubing and coupler)
- Owner's Manual
- Registration & Warranty Card

2) Installing The Spigot

a. Unscrew the black nut from the spigot assembly and remove one washer.

b. Push the threaded end of the black spigot through the hole in the front of the KT Cabinet.

c. Replace the washer and nut. Tighten just until firm. (It is not necessary to fully compress the washers to achieve a leak-free assembly.)

d. Rotate the spigot assembly to a vertical position.

3) Installing The Quick-Connect Faucet Aerator:

Before attaching the quick-connect aerator to your faucet, it is necessary to remove old aerators and/or filters. A new aerator, specifically designed to match your Aquathin, is provided. The aerator has outside (male) and inside (female) threads. If your faucet has outside threads

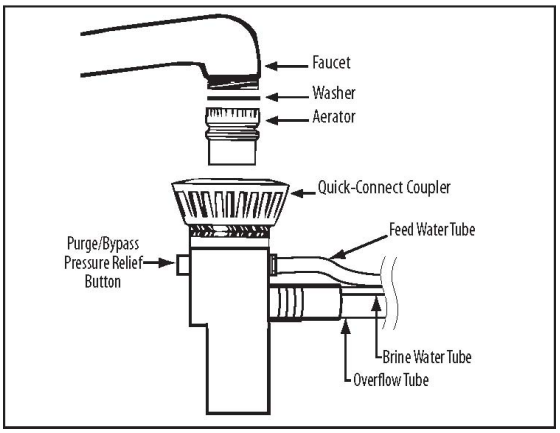


Figure 1. Quick-Connect Faucet Coupler Assembly

simply screw the new aerator onto the faucet. (See Fig. 1)

If the faucet has inside threads, screw the chrome threaded adaptor into the aerator. Place the thin black washer (also supplied) on the top of the chrome adaptor and screw the adaptor assembly into the faucet.

This combination adaptor fits most U.S. and European manufactured faucets, but in case it does not, an adaptor kit is available from Aquathin Corporation. Adapters are also available from most hardware and home improvement stores.

To tighten, wrap electrical tape or paper towel around the top outside part of the aerator to avoid scratching, then lightly grip with a pair of pliers. Do not grip the bottom of the aerator.

CAUTION: If the aerator is damaged, the quick-connect coupler will not seat properly. Water leaking from the top of the quick-connect coupler is usually due to a bent aerator or one that is not tightened sufficiently.

4) Attaching The Quick-Connect Coupler:

To attach the KitchenTop KT-90, Space Saver SS-90, or Classic Traveler RDT RO/DI unit to your faucet, push down the movable white plastic collar of the quick-connect coupler and push it over the aerator. When the collar is covering the aerator, release it and the white coupler will snap into place.

Turn the cold water on all the way. **Never use hot water as it will damage the membrane!**

You will notice a small stream of brine water coming from the bottom of the white coupler. The black handled flush valve on the front of your Aquathin is factory set to provide the proper amount of flow. Moving the handle parallel to the countertop opens the flush action. Flushing

for 2 minutes once per week is ideal (See Figure 2, next page) .

Allow the reservoir of your KT-90 system to fill completely and then drain off and discard the initial tank of water. Your Aquathin RO module is shipped with a preservative which will be flushed from the membrane by the first 2 gallons of production. Do not use this first tank of water for cooking or drinking.

5) Disconnecting your KT-90 system:

a) Turn the cold water supply completely OFF.

b) Push in the red button on the side of the quick-connect coupler. This will release the water pressure in the feed water tubing.

c) Pull the white plastic ring down and remove the coupler from the faucet.

Operating Notice

The initial filling of the water reservoir will probably seem slow. The Aquathin Reverse Osmosis element has been factory tested for rejection and flow, however, the element when new is generally “tight.” The water cavity of the pressure vessel and the De-ionization Module is initially void of water and must fill before pure water will appear in the tank. After leaving the unit connected and running for 24–36 hours the reservoir should be completely full.

Flushing:

Flushing is a proprietary feature from Aquathin, and is the single most important maintenance function you will need to perform to keep your system operating at peak efficiency. This simple operation only takes a few minutes, yet makes a great difference in the quality of the

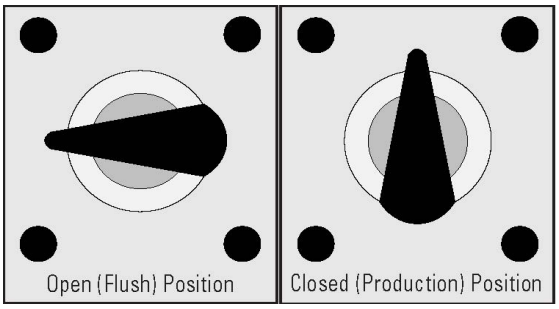


Figure 2. Front Mounted Flush Valve

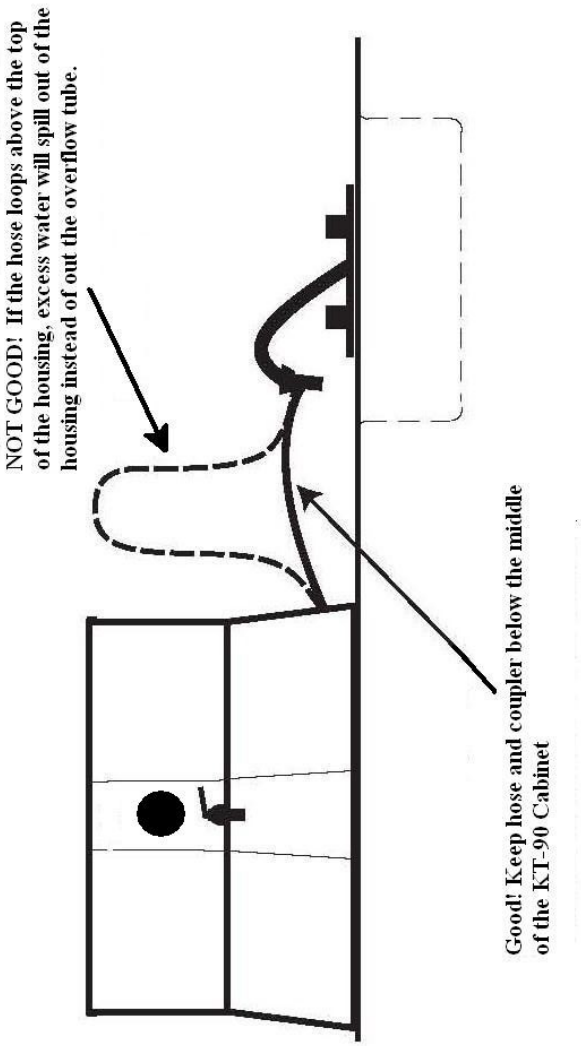
water your unit produces, and extends the service life of the Aquathin RO membrane.

a) After connecting your system to the faucet and turning the cold water on, simply move the black handled valve on the front of your KT-90, SS-90 or RDT housing parallel to the countertop. (See Figure 2 above) This will open the flush valve and allow water to rapidly flow across the surface of the Aquathin RO membrane, washing away contaminants which, if allowed to accumulate, might clog the pores of the membrane. You should notice a strong flow of water coming from the bottom of the quick-connect coupler.

b) Flushing the unit for 2 minutes once per week is ideal.

If your unit has been disconnected for 5-7 days (e.g. while you are on vacation) flush the membrane for 5-10 minutes as described above, and discard the first full tank of water.

Installation to comply with state and local laws and regulations.



CHAPTER 2

Getting to Know Your Aquathin RO/DI System

Your Aquathin includes seven unique stages in three different modules. Every system combines the proven water filtration methods of carbon adsorption, Reverse Osmosis, and De-ionization (typical for lab). By carefully manufacturing the components to match and utilize these methodologies, Aquathin Corporation is able to assure your system produces water which exceeds standards for purity.

A Look At the Seven Stages

Aquathin Carb 12, the first module, a 21/2"x12" pre-filter, contains stages one and two.

Stage One:

Water entering the unit is first subjected to a 12" bed of compression packed, steam washed, bituminous grade granular activated carbon (GAC) for removal of chlorine and adsorption of organic contaminates. Removal of chlorine at this stage protects the Aquathin proprietary polyamide thin-film-composite (TFC) Reverse Osmosis membrane downstream.

Stage Two:

Any suspended particles such as sand, rust, or other

deposits commonly found in the feed water supply are removed by a nominal 10-20 micron post filter. This protects the Aquathin Reverse Osmosis membrane from particles which might clog the pores of the membrane.

Stage Three: (second module)

Aquathin custom designs an extremely efficient spiral wound Reverse Osmosis membrane that produces up to 24 gallons of purified water per day. This membrane utilizes the unique properties of a semi-permeable material which allows passage of pure water molecules while not allowing dissolved salts, heavy metals, organics, and disease causing waterborne microorganisms to pass through. Our extraordinary membrane is designed to consistently and significantly reduce the total dissolved solids in the source water supply by greater than 97%. It also has a tremendous capacity to reject organic and biological contaminates, including disease causing waterborne microorganisms. (EPA EST. No. 52531-FL-01).

The operating parameters for this superior Aquathin custom designed Reverse Osmosis membrane are found in the Specifications section of this manual.

Stages four through seven are contained in our unique four stage, RO matched De-ionization Module.

Stage Four: (third module)

This stage includes a unique blend of proprietary De-ionization resins carefully matched to our exceptional Reverse Osmosis membrane and provides superior rejection of ions and the ionic residues of pesticides and other hydrocarbon contaminates. It is the inclusion of De-ionization resins which sets the Aquathin patented RO/DI systems apart from ordinary reverse osmosis systems. It is not enough to include any commercial grade resins; the blend of cationic and anionic resins must be a nuclear

grade and carefully engineered to match the Reverse Osmosis membrane.

Stage Five:

Following the DI resins are chambered four inches of granular activated carbon to polish the product water for a clean, fresh taste. The flow rate at this stage provides tremendous contact time to assure complete removal of any remaining organic contaminates.

Stages Six and Seven:

Stages six and seven include patented technologies designed by Aquathin Corporation to prevent the reverse migration of contaminates into the system. The inclusion of these technologies further separates your patented Aquathin RO/DI systems from other manufacturer's designs. After carefully combining the elements of the previous five stages it is essential to include this technology to assure contaminates cannot enter the system from the product water side.

COMPONENT DESCRIPTION

Following is a brief description of the main components of your Aquathin system.

Aquathin Quick-Connect Faucet Coupler Fitting (Aerator)

This fitting replaces the current aerator on your kitchen faucet. The new fitting comes with an adaptor which will allow the fitting to be applied to most existing faucet designs. (Adaptors for unique faucets can generally be obtained from any home improvement store, or from Aquathin Corporation). This part allows for connection of the heavy duty coupler and hose assembly to your faucet.

Aquathin Quick-Connect Coupler

The heavy duty quick-connect faucet coupler allows for easy connection of the Aquathin system to your water supply. This heavy duty coupler includes our unique bypass and pressure relief button which provides access to the raw tap water without having to disconnect the coupler.

Aquathin Hose Assembly

The unique three part hose assembly of your Aquathin KT-90 system includes the high pressure feed water tube, the brine water exhaust tube, and the overflow tube.

Aquathin Carb 12 Two-Stage Pre-filter

This fully encapsulated filter module contains a carefully chosen grade of granular activated carbon to remove chlorine, chloramines, and other organic contaminants along with a nominal 10-20 micron sediment filter to remove silt, sand, rust, scale and other suspended particulates.

Aquathin RO Pressure Vessel

The pressure vessel houses the Aquathin proprietary polyamide thin-film-composite Reverse Osmosis membrane. The design provides a means to collect the purified product water and an exhaust opening to drain off the concentrated brine water.

Aquathin HRO Membrane

Reverse Osmosis is a scientific method of reversing nature's biological process where a dilute or lighter solution passes through a semi-permeable membrane into a more concentrated solution. In the human body, fluids pass in and out of such membranes (cell tissues) by the phenomenon knows as osmosis, while plants absorb food and moisture from the soil in the same way. Scientists have long realized if the natural process of osmosis could

be reversed—if water from concentrated sources could be made to pass through a selective membrane and emerge as pure water, many practical applications could be developed. For instance, unwanted salts and other dissolved inorganic minerals could be removed from all kinds of water and chemical sources. The superior Aquathin HRO Reverse Osmosis membrane filters out all particles greater than .0001 microns in diameter.

Our membrane used in your Aquathin system is proprietary manufactured, custom rolled, spiral wound polyamide thin-film-composite membrane. This membrane has the ability to remove in excess of 97% of the dissolved in-organics. Rejection is based on degree of removal of sodium and chloride ions.

Although RO has a higher percentage of removal of all di, tri, and quadri-valenced elements (e.g. >99% of aluminum) any mono-valenced elements are rejected at ~97% level. The nominal remaining 3% of dissolved solids, mostly monovalent, enter the next stage of the process—the Aquathin De-ionization Module.

Aquathin De-ionization (DI) Module

De-ionization resins are a man-made plastic bead chemically made anionic (OH^-) and cationic (H^+). The resins in your Aquathin system are of nuclear grade and carefully matched to our Reverse Osmosis membrane. (As opposed to commercial grade resins typically found in water softeners.) In the Aquathin DI module, H^+ and OH^- are exchanged for the mono-valenced elements in the product water coming from the Aquathin HRO membrane. The only thing added to your Aquathin system is hydrogen ions (H^+) and hydroxyl (OH^-) ions, which combine to form H_2O, or *pure water*.

Following the DI resins are several additional inches of high grade bituminous granular activated carbon (GAC). This is included to insure the complete removal of any organic contaminant that might appear in trace form from

a partial degree of removal via RO and DI. Since we've never found any organics which are not removed either by the upstream GAC pre-filter or RO membrane, the GAC at this stage acts primarily to polish the product water for a clean, fresh taste. GAC is the most common product used to filter bottled or "spring" waters.

Finally, the end of the Aquathin DI module contains two additional proprietary stages which are in place as safeguards against any reverse migration of contaminants.

Aquathin KT-90 Housing

Injection molded using the highest grade of inert GE® plastics, the patented housing of your KT-90 system is designed to stand up to years of service without cracking, warping, or ultra-violet degradation. The patented design allows for complete drainage of all product water and includes a built-in overflow. The translucent LEXAN® top allows you to see the remaining water level without having to remove the lid.

Aquathin Built-in Flush Valve

The built-in flush valve on your Aquathin provides a quick and simple method to periodically flush the surface of the RO membrane. Simply opening the flush valve once a week for two minutes will wash away impurities that may be concentrating near the surface of the RO membrane. If not occasionally flushed from the membrane surface, impurities might concentrate and clog the pores of the membrane. Flushing the membrane insures longer service life and greater rejection of contaminates.

OPERATING PARAMETERS

To insure proper operation of your patented Aquathin RO/DI system, it is advisable to collect the following

information about your water supply. This information is generally available from your municipal water department and easily tested "free of charge" by your local Authorized Aquathin Dealer.

Pressure

In order to overcome the natural osmotic force, adequate water pressure must be available from your water supply. The osmotic force is directly proportional to the concentration of dissolved solids in the water. When the water pressure is equal to the osmotic force, there will be no movement of pure water molecules across the semi-permeable membrane. A minimum of 40 psi is recommended. (If your water pressure is below 40 psi, a booster pump is available. If you are on a private well, have your plumber raise the minimum pressure above 40 psi).

In general, the higher the pressure (up to 100 psi), the better the performance of the membrane at rejecting contaminants. Pressures below 40 psi will result in poor rejection and slower fill rates may reduce the service life of the membrane.

pH

The Aquathin HRO TFC membrane will hold up very well when the pH of the feed water is between 2 and 11. Water supplies with pH over 11 are very rarely, if ever, found. (Chlorine bleach has a pH of ~11.5.)

Chlorine and Chloramines

Chlorine is the most common substance added to municipal water supplies. Its purpose is to eliminate biological growth (i.e. chlorine is toxic). Regulations usually require there to be residual chlorine when it reaches your tap. Typically, the residual concentrations of chlorine in household water range from 0.5 to 1.0 parts-per-million (ppm).

Besides being toxic, chlorine and chloramines will degrade the TFC Reverse Osmosis membrane. Therefore, it is essential to remove chlorine from your feed water before it reaches the RO membrane. Your Aquathin RO/DI system includes a pre-filter containing a special grade of granular activated carbon (GAC) which will very effectively remove the chlorine and chloramines from your tap water. It is important to replace the pre-filter annually to insure no chlorine is reaching the membrane.

Sediment

In areas with very high sediment concentrations the pre-filter may clog prematurely. If the pre-filter becomes clogged, you will likely notice a decrease in the production rate from your system. In areas with very high sediment concentrations, it may be necessary to replace the pre-filter on a semi-annual basis. Consult with your Authorized Aquathin Dealer.

Iron

Iron concentrations greater than 0.1 mg/l can degrade overall system performance. If your water supply has iron concentrations above 0.1 mg/l, iron pretreatment is recommended for ordinary RO systems. Your patented Aquathin process will tolerate up to 3 ppm iron.

Hardness and More

Two-thirds of the water on earth is groundwater. As it travels through rock and soil it picks up particles of calcium, magnesium, iron, lead, and other minerals. For 85% of the country, that translates into “hard water”. “Hardness” refers to the amount of calcium and magnesium in the water and is measured in grains per gallon (gpg). The following guide defines your water’s hardness based on two different measurements. Our test determines the grains of hardness that can easily be converted into the ppm.

Description	Grains of Hardness	Parts per Million	Laundry Detergent Required
Soft (ideal)	0.0—1.0	0—18	1/4 dispenser
Slightly Hard	1.0—3.5	18—60	1/4 dispenser
Moderately Hard	3.5—7.0	60—120	1/2 dispenser
Hard	7.0—10.5	120—180	1/2 dispenser
Very Hard	10.5—over	180—over	Full dis-penser

Most of the problems associated with hard water are economical in nature. Hardness causes unsightly soap scum on fixtures, water spots on glasses and whitish scale deposits in your tubs and showers. Hard water means you use more soap and cleaning agents because they first have to "clean" the water before they clean anything else.

Here is a little additional information about the ordinary RO systems sold in hardware stores and wholesale clubs:

1. They state their systems must be installed on water with less than 10 grains of hardness. Otherwise you need an expensive water softener just for the RO system. Your Aquathin can be installed on hard water up to 25 grains due to the patented flush.
2. There is a disclaimer that those units may not be installed on microbiologically unsafe water. But would that not be a reason one would purchase a system? Your Aquathin will remove disease causing waterborne microorganisms

3. Their warranty is one year, but does not cover the RO membrane, yet that is the heart of the unit. When service is needed, you must ship the system out of town. Some require the membrane to be replaced every 6 months according to them. Your Aquathin carries a Lifetime Warranty except for normal filter changes and abuse.

You originally invested in your Aquathin to provide your family the very best in total home water security. There is hardly anything in this world that a man could not make a little worse or a little cheaper, and the people who consider price alone are this man's lawful prey. It's like this: we would rather explain price once than apologize for poor quality and service the rest of our life. In 1980 Aquathin made the decision at the onset; that we would never sacrifice or lower quality for price… too much depends on it. Would you prefer that your family drink from a system whose poor technology and cheap design allows them to continue to consume contaminates…or a product that provides the safest and most pure drinking and cooking water available?

I LOVE MY AQUATHIN!

CHAPTER 3

Maintenance and Servicing

Minimal work is required to keep your Aquathin in peak operating condition. As with many home appliances, it is important to keep the system clean both externally and internally. This, along with replacing the modules as recommended, will insure your unit consistently produces pure water.

Take care of your Aquathin and it will provide many years of healthful drinking and cooking water for your entire family.

Exterior Cleaning

The exterior surface of your Aquathin can be kept looking like new by occasionally cleaning the surfaces with a soft cloth. Great care was taken in the choice of material for your unit, but the cabinet cannot withstand harsh chemicals or solvents. Use a mild, non-abrasive dish washing detergent or diluted spray cleaner to remove smudges or food stains, then rinse and dry the surface. Use of abrasive scouring powders or glass cleaning products containing ammonia are not recommended.

Cleaning the Reservoir

We recommend cleaning the water reservoir every 60-

90 days.

1. Drain all the water from the reservoir.
2. Remove the cover.
3. Wash the inside of the reservoir with a mild, non-abrasive dish washing detergent, rinse thoroughly, and replace the lid.
4. Use the first tank of water after cleaning the unit for watering plants, etc. This will allow pure water to rinse away any traces of detergent remaining in the reservoir.
5. The unit is now ready to be placed back into regular service.

Flushing:

Flushing is the single most important maintenance function you will need to perform to keep your system operating at peak efficiency. This simple operation only takes a few minutes, yet makes a great difference in the quality of the water your unit produces, and extends the service life of the Aquathin RO membrane.

1. After connecting your system to the faucet and turning the cold water on, simply move the black handled valve on the front of your Aquathin parallel to the countertop. This will open the flush valve and allow water to rapidly flow across the surface of the Aquathin HRO membrane, washing away contaminants which, if allowed to accumulate, might clog the pores of the membrane. You should notice a strong flow of water coming from the bottom of the quick-connect coupler.
2. Flushing the unit for 2 minutes once per week is ideal.
3. If your unit has been disconnected for 5-7 days (e.g. while you are on vacation) flush the membrane for 5-10 minutes as described above.

FILTER REPLACEMENT

After 12 months of use, it is time to replace the 2-stage Aquathin Carb 12 pre-filter and the 4-stage Aquathin DI Module to insure your system is producing water within RO/DI parameters. Replacement modules and service can be ordered directly from your local Authorized Aquathin Dealer.

1. Disconnect the coupler from your faucet.
2. Drain all the water from the reservoir.
3. Choose a work area with a large flat surface such as a kitchen table.
4. Place a soft clean towel on the working surface—it will absorb the small amount of water that will spill from the modules as they are changed out, and it will protect the surface of both the table and your Aquathin cabinet.
5. Remove the lid
6. Turn the unit over on the towel, exposing the filter modules.

Removing the Aquathin Modules

Before proceeding, study Figure 3 below:

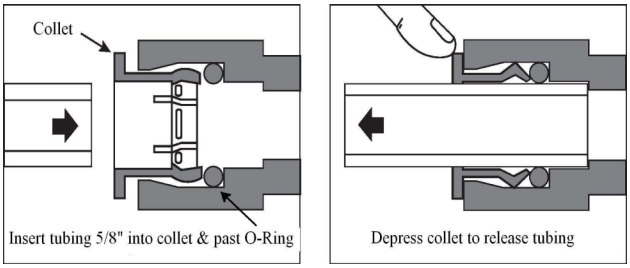


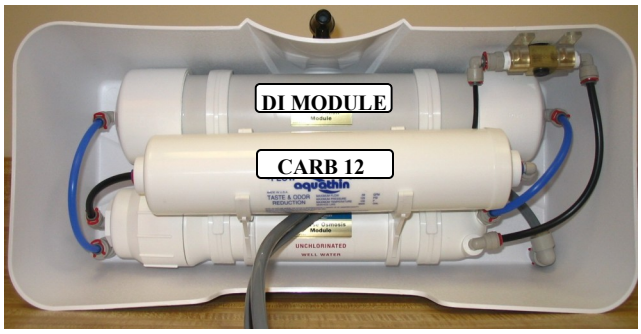
Figure 3. Speedfit Push-In Fittings

1. The first module you can see is the 2-stage Aquathin Carb 12 pre-filter. It is supported by two "Double C" clamps which are attached to the Aquathin reverse osmosis pressure vessel. At one end of the module the feed water tube enters from the hose assembly. At the other end a piece of tubing connects to the feed water inlet of the pressure vessel.

   The tubing is attached to the module using a unique push-in fitting system (figure 3). This system is designed to make connecting and disconnecting filter modules very easy while insuring a water tight connection.

   The "collet" assembly will securely hold the tubing in place under normal operating conditions. Pulling on the tubing will not cause it to release, instead the "grip" of the collet will become more secure. An O-ring behind the collet assures a leak free seal.

   To insure your system will be water-tight even after being shipped across country, we have inserted small plastic retaining clips on each fitting. These are easily removed with your fingers or, if grabbing the clip is difficult, you may wish to use a pair of needle-nose pliers. ***Figure 4. The underside of a KT-90.***



2. Remove the retaining clips from each end of the Aquathin Carb 12 pre-filter, then remove the tubing itself. You will feel some resistance as the tubing slides away from the O-ring inside the fitting.

3. With the Carb 12 free of its connections, it can now be removed from the two "Double C" clamps holding it to the RO pressure vessel. ***Note the direction of the "FLOW" arrow. You will need to install the new pre-filter module in the same orientation.***

4. After removing the Carb 12, you can easily remove the two "Double C" clamps and set them aside. With the Carb 12 pre-filter removed, you now have access to the Aquathin DI Module and the RO pressure vessel. These two modules are attached with a custom clamp arrangement secured by two wing nuts. Before removing the wing nuts, you need to disconnect several more tubes from their fittings.

5. Disconnect the tubing from each end of the Aquathin De-ionization (DI) Module. ***Note the direction of the "FLOW" arrow. You will need to install the new DI module in the same orientation.***

6. One end of the Aquathin reverse osmosis pressure vessel has two connections—one blue tube connects to the Aquathin DI Module, and one black tube connects to the Aquathin flush valve assembly. Remove the black tube from the RO pressure vessel.

7. You can now remove the two wing nuts which secure the RO pressure vessel and DI module to your Aquathin cabinet.

8. You are now ready to remove the RO pressure vessel and DI Module from the housing.

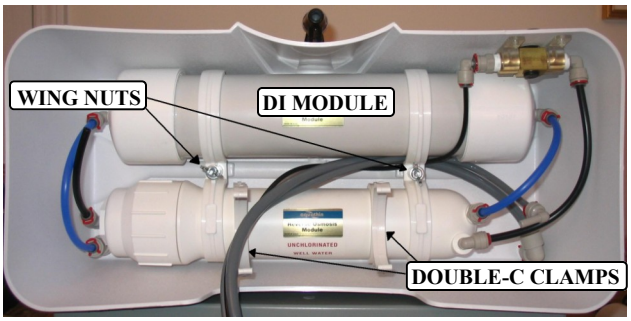


Figure 5. Position of Double-C clamps and wing nuts.

Note: If this is the first time you are replacing the DI Module, you will find both the DI Module and RO pressure vessel are secured to the clamps with double sided adhesive tape (installed to prevent shifting and damage during transit). The adhesive will release if you carefully, and slowly, rotate the DI Module away from the clamp. It is not necessary to replace the adhesive when re-assembling the system.

9. Place the new Aquathin DI Module into the housing. Re-insert the tubing which connects the reservoir to the DI Module, taking care to attach the tubing to the outlet end of the module.
10. Replace the RO pressure vessel and clamps. Re-insert the blue tubing coming from the RO pressure vessel into the inlet end of the DI Module.
11. Re-insert the black tubing into the brine water discharge port on the RO pressure vessel.
12. Replace the retaining clips.
13. Replace the two wing-nuts which secure the RO/DI clamp.
14. Snap the two “Double C” clamps back onto the RO pressure vessel.

15. Place the new Carb 12 Pre-filter into the clamps, being sure the “FLOW” arrow points the same direction as noted in step 3 above.

16. Re-insert the feed water tube from the hose assembly into the inlet end of the Carb 12. Re-insert the tubing from the RO pressure vessel inlet into the outlet end of the Carb 12. Replace the retaining clips.

17. When all filters have been replaced and all tubes have been reconnected, hook the unit up to the faucet and turn on the water. Let the unit produce water for 10–15 minutes then drain the water, invert the unit, and inspect for leaks. If any water appears at any of the tubing connections, remove the retaining clip, remove and re-insert the tubing. Replace the retaining clip. (A leaking connection is extremely rare.)

18. You can now return the unit to service. Let the reservoir fill and discard the first tank of water (use it to water plants, etc.) You are now ready to again enjoy great tasting, pure Aquathin RO/DI water for another 12 months!

CHAPTER

4

Frequently Asked Questions

Q: How long will my Aquathin Carb 12 pre-filter last before it needs to be replaced?

A: Under most normal city water conditions, the Aquathin Carb 12 is designed to function properly for 12 months, and should be replaced annually. Sediment concentrations vary greatly between municipal systems so there is no way of determining the lifetime of a filter without knowing more about the feed water. In some very rare cases, it may be necessary to replace the pre-filter more frequently.

Q: How long will my Aquathin Reverse Osmosis membrane last?

A: The Aquathin membrane's life depends on the water conditions as listed in the specification section of this manual. If all these conditions are met, the life of the membrane is generally 2–3 years. If a membrane fails or its performance becomes reduced before this time, the cause can usually be traced to feed water conditions outside the specifications.

Q: How do I know if there is a problem with the membrane?

A: The best method is to measure the resistivity

(conductivity) of the product water and compare it to the feed water. You can obtain a resistivity meter from your Authorized Aquathin Dealer or you can send samples to them for analysis. (Poor rejection rates may also be an indication of a plugged pre-filter, so check that filter first.) A large increase in the production rate is also an indication of membrane failure, and can often be traced to the membrane having been subjected to either freezing or hot water.

Q: How can I monitor the performance of the unit?

A: Your Authorized Aquathin Dealer will register your warranty card and purchase with Aquathin Corporation. Every year upon the anniversary of your installation, Aquathin Corporation and your Aquathin Dealer will mail or email an Annual Service Reminder to have your system inspected and serviced if necessary. Also, with identical feed water pressure, the production rate should remain fairly constant. If your system begins to produce water at a much faster rate, the RO membrane may have failed. If your system is producing water at a much lower rate, replacing the pre-filter is often indicated.

To monitor the overall system rejection rate, the best method is to obtain either a resistivity meter or TDS meter from your Authorized Aquathin Dealer.

Q: Will I lose valuable minerals when I drink pure water?

A: No, the body does not readily assimilate the minerals found in drinking water which are dissolved rock and "inorganic". We obtain the majority of our minerals from the foods we eat. There are many, many more chelated minerals in a piece of organic fruit or a serving of organic vegetables than in gallons of water.

Q: Will hot water ruin my RO membrane?

A: YES! Hot water over 100° F will damage the

membrane and cause poor rejection of the contaminants in your water. Make sure you use only COLD water in your Aquathin.

Q: How should I store my purified water?

A: Ask your Authorized Aquathin Dealer about clear Aquathin polycarbonate bottles.

Q: How should I store my unit when not in use?

A: If your unit is out of service for several days (while you are vacationing, for example) no special precautions are required. However, we do recommend you flush the unit for 10 minutes when you return the system to production.

Q: How can I keep informed about Aquathin?

A: "Splash News Bulletin", "Forum Q&A", "Allergic Reaction", "Biz Bank", "Tech Bank", and "Quote Bank" are all *FREE* services to all Authorized Aquathin Dealers and their Customers to keep you abreast of technology updates and industry news.

Email Aquathin at info@aquathin.com to subscribe.

Visit www.aquathin.com.

CHAPTER 5

Limited Warranty

Aquathin Corporation warrants to the original owner each Aquathin RO/DI water purification system to be free from defects in materials and workmanship for as long as you own the product.

What The Warranty Covers

Full Lifetime Warranty on all parts (excluding normal module changes or abuse).

Exceptions to Lifetime Warranty

The Lifetime Warranty does not include damage caused by or resulting from unreasonable use, including failure to provide reasonable maintenance, or incidental or consequential damages, such as water damage, mold or damage to appliances, fixtures or other equipment.

Warranty will be void if product failure or damage is due to any of the following:

1. Misuse, misapplication, neglect (e.g. inadequate filter changes), alteration, hot feed water, freezing, or accident.
2. Improper installation, operation, or servicing.
3. Use only Genuine Authorized Aquathin components to assure efficiency and to maintain your warranty

No one is authorized to change or add to this Warranty.

What We Will Do To Correct An Inconvenience

Upon notice, we will repair or replace covered defective parts, free of charge. If it is necessary to return the product to an Aquathin Dealer for service, the buyer must pay for any shipping or travel costs. Aquathin Dealer will pay for any return shipping charges in the U.S. for parts or products covered under the warranty.

An Aquathin Dealer will furnish any factory labor to make repairs on parts or products returned to the factory that are covered under the warranty.

How You Can Get Service

Contact the Aquathin Dealer Customer Service Department for instructions and authorization number (RMA#) for returning the defective part or product.

Your patented Aquathin RO/DI water purification system is a sophisticated water treatment system. Failure to use genuine Aquathin Corporation components shall void the exclusive lifetime warranty.

How State Law Relates To The Warranty

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty applies to the original purchaser and gives you specific legal rights. You may also have other rights which vary from state to state.

Specifications

Following are the recommended operating parameters for our custom rolled Reverse Osmosis membrane:

Membrane type	Aquathin Spiral Wound Polyamide Thin Film Composite (TFC)
Production	Up to 24 Gallons-Per-Day
Maximum Operating Temperature	40–100° F (4–38° C)
Operating Pressure	40–100 psi (2.75–6.9 bar)
pH Range	2.0–11.0
TDS Level, Maximum	2000 ppm
Turbidity	< 1.0 Net Turbidity (NTU)
Chlorine (Cl_2)	0.00 mg/l *
Hardness ($CaCO_3$)	< 427 mg/l
Iron (Fe)	< 3.0 mg/l
Manganese (Mn)	< 0.05 mg/l
Hydrogen Sulfide (H_2S)	0.00 mg/l

* Every system is equipped with our unique combination pre-filter to remove sediment and chlorine.

You can obtain specifics about your water supply from either your local water department or your local Authorized Aquathin Dealer. If the parameters of your water do not fall within the specified ranges as noted above, please contact your local Aquathin Dealer for further options. Production is rated at optimum temperature of 70° F, 60 PSI, and 500 ppm TDS. Actual production will vary depending on local temperature, pressure, and TDS level.

Low tap water pressure will reduce the volume and quality of the water produced by your system. In low pressure situations (<40 PSI) RO/DI values cannot be assured. The addition of a booster pump (KT-PBA) is strongly recommended.

ALWAYS USE COLD WATER—hot water will damage the TFC membrane.

The unit must not be allowed to freeze. Freezing water will expand inside the modules—damaging the membrane and potentially rupturing the filter housings. Damage of this type will void the warranty.

These systems are tested and certified by IAPMO R&T according to NSF/ANSI 58 and WQA S-300 for reduction of TDS. The concentration of TDS in water entering the system was reduced to less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 58 and WQA S-300. Testing was performed under standard laboratory conditions. Follow installation procedures and scheduled maintenance for optimum performance.

APPENDIX

B

Replacement Schedule

Below you can find the recommended replacement schedule and part numbers for the components of your Aquathin water purification system.

Replacement Components

Module	Replacement Schedule	Order No.
Sediment & GAC Pre-Filter	Annually	CARB 12
4-Stage Deioni-zation Module	Annually	ADI
Aquathin Series RO Membrane	2-3 Years (as needed)	HRO

Purchase Date: _____

Purchased From: _____

_____

Serial/Model Number:_____

Module Replaced	Date

EPA EST. NO. 52531-FL-01