

Thank you for purchasing an Aquatic Life Twist-In (TI) Reverse Osmosis & Deionization Water Unit.

When maintained properly, this unit will provide you with years of service.



For technical assistance or warranty issues,
please contact Aquatic Life at
1-888-548-3480 or 1-818-768-6943
or email
customersupport@aquaticlife.com

Thank You!

OVERVIEW

Reverse osmosis is the process of removing contaminants from tap water using a special semi-permeable membrane. By applying water pressure across the membrane, contaminants are concentrated on one side of the membrane and filtered water on the other side of the membrane. This is why reverse osmosis units have a waste water line as well as a filtered line.

In addition to the membrane, water is filtered prior to the membrane with a sediment cartridge to remove larger particulates, and a carbon block to remove chlorine and other materials.

After water is filtered by the membrane, it passes through a color-changing resin cartridge where additional total dissolved solids (TDS) are removed from the water.

The cartridges and membrane on your unit are designed for easy installation and replacement. Each cartridge connects to the filter housing by simply inserting and twisting. It is important the cartridges be installed in the correct order to effectively filter the water.



WARNING: Please read carefully before proceeding with installation. Your failure to follow any attached instructions and operating parameters may lead to the product's failure.



WARNING: Do not drink water that has been filtered with a DI resin cartridge.

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STAGE 1 – SEDIMENT FILTER

Recommended change 3-6 months or 2,500 gallons total or 650 gallons of filtered water

The first stage of your RO unit is a five micron sediment filter that traps sediment and other particulate matter like dirt, silt and rust which will affect the taste and appearance of your water.

C

STAGE 2 – CARBON BLOCK FILTER

Recommended change 3-6 months or 2,500 gallons total or 650 gallons of filtered water (at 1 ppm chlorine)

The second stage of your RO unit is a carbon block filter. The activated carbon in the filter reduces chlorine and conditions the water prior to the RO membrane.

RO

STAGE 3 – RO MEMBRANE

Recommended change 12-24 months

The RO membrane reduces impurities known as total dissolved solids (TDS) from the water down to 1/10,000 of a micron, reducing arsenic, lead, parasitic cysts, copper and more. Because the process of filtering the high-quality water takes time, it is common to use a storage tank to collect filtered water, making it available on demand.

DI

STAGE 4 – COLOR CHANGING RESIN (DEIONIZATION)

Replace filter when resin changes color

After the water is filtered by the membrane, there is usually a small amount of total dissolved solids (TDS) left in the water. In certain non-drinking water applications, it is important to remove the remaining TDS from the water. This is accomplished by filtering the water through a resin that is charged with cation and anion resins (H+ and OH-). As the resin absorbs the TDS, it will change color. When all resin has changed color, it is time to replace the DI filter.



Contents (Model #540371)

1	TI Module (four heads on metal bracket with screws)	1	Under Sink Water Line Adapter w/Valve (1/2" Female x 1/2" Male x 1/4" Press Fit)
1	TI Sediment Filter Cartridge	1	Drain Saddle
1	TI Carbon Block Cartridge	1	Red Tubing, 1/4" x 4 FT.
1	TI RO 100 GPD Membrane Cartridge	1	Blue Tubing, 1/4" x 4 FT.
1	TI Color-changing Deionization Cartridge	1	Yellow Tubing, 1/4" x 4 FT.
1	Garden Hose/Laundry Faucet Adapter	1	Installation, Operation and Maintenance Guide
1	Common Size Kitchen/Bathroom Sink Faucet Adapter	2	Flush Cartridges

Tools & Materials Recommended for Installation

1 1/4" Adjustable Wrench	1/4" Drill Bit (for metal and plastic)
7/16" Open End Wrench	Masking Tape & Pencil
Phillips Screwdriver	Flashlight
Electric Drill	

OPERATING GUIDELINES

DO NOT use with water that is micro-biologically unsafe or of unknown quality without adequate disinfection before or after the unit.

The maximum incoming water pressure for the unit is 80 PSI.

If the pressure is more than 80 PSI, a pressure regulator is required. If the water pressure is less than 40 PSI, a booster pump is needed.

Water hardness should not exceed 10 grains per gallon or 170 parts per million.

Operating above this may shorten the membrane life.

Reverse osmosis filtered water should not be run through a copper tube.

The pure RO water can leach copper from the pipe, eventually leading to holes in the pipe.

DO NOT operate the unit unattended.



NOTE: Filter cartridges and membrane life may vary based on local water conditions and amount of use.



WARNING: This unit will remove chlorine, but **NOT chloramines**. Test your water and/or check with your local water company to find out if you have chloramines in your water.

WATER SUPPLY INSTALLATION

This Aquatic Life TI Filter unit includes three options for easy connection to a water supply.

Option 1:

Connect to a standard water faucet (often found on the exterior of houses, utility sinks, and washing machines) with the hose bib connection.



Option 2:

Connect to the 1/2" water supply line. The under-sink water line adapter connects to the sink water supply and provides a way to connect the 1/4" tubing. Hand tightening this adapter is usually sufficient. However, if needed, use a 1 1/4" adjustable wrench.



Option 3:

Your RO unit includes a special adapter that will connect to most kitchen and bathroom faucets. To install:



Remove the existing aerator on the sink faucet.



Thread-in the two-piece sink faucet adapter.



Attach the hose bib connection to the other end of the sink faucet adapter.

DRAIN SADDLE INSTALLATION

All reverse osmosis units will produce waste water. The waste water contains high concentrations of TDS, but would be acceptable to use on plants. Depending on your installation, you may want to save the waste water for other uses.

Another option is to connect the reverse osmosis waste line to the drain under a sink. We have included a drain saddle that will fit standard size sink drain pipes.

Step 1

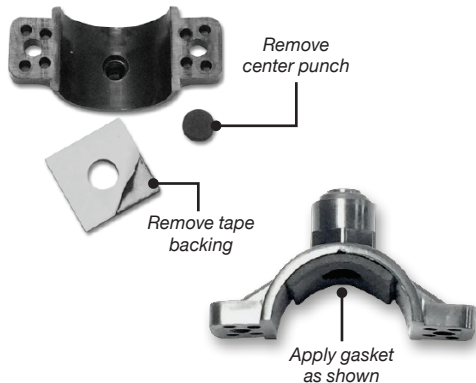
Locate all pieces of the drain saddle

- 1 – Bracket with 1/4" press fit opening
- 1 – Bracket – solid
- 2 – Screws & nuts
- 1 – Foam gasket



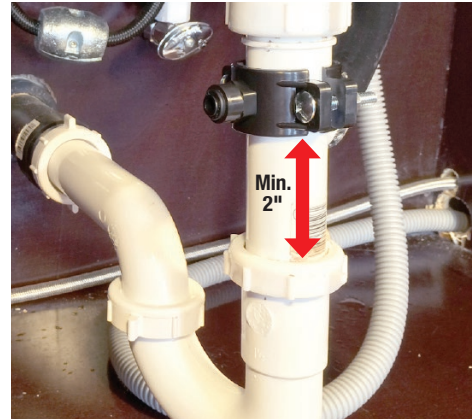
Step 2

Remove the center punch and peel tape backing from the foam gasket. Apply the gasket to bracket.



Step 3

The drain saddle must be mounted at least 2" above the nut of the p-trap or cross bar from the garbage disposal to insure proper drainage. Locate where the drain saddle will be mounted and mark with a piece of masking tape and pencil.



Step 4

Drill a 1/4" hole in the drain pipe where you marked it on the masking tape. Remove the masking tape and clear any plastic burs/shavings from the new hole in the drain pipe.



Step 5

Align the drain saddle with the drilled hole in the drain pipe using a screwdriver to ensure the holes are aligned.



Step 6

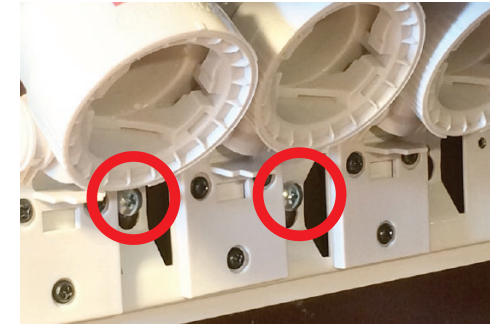
Tighten the two screws into the nuts using a Phillips screwdriver.



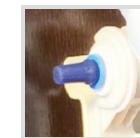
MOUNTING THE REVERSE OSMOSIS/DEIONIZATION UNIT

The Aquatic Life TI RO/DI unit is designed to be mounted to a secure surface. This will allow for the cartridges to easily be replaced as needed.

The TI module includes a metal bracket with screw holes for easy hanging.



Use screws designed for the type of surface that the TI module will hang on. Once the TI module is hanging on the screws, tighten the screws to secure the TI module.

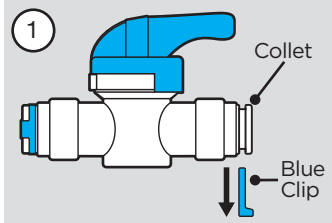


NOTE: If your model includes rubber plugs on any of the ports, it is now OK to remove the plug by simply pulling it out.

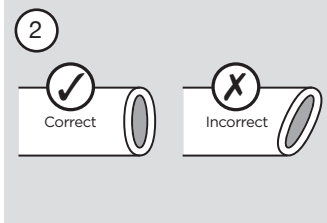


CAUTION: If installing with a garbage disposal the saddle must be above the disposal. If a second sink drain is available, install it above the cross bar on the second sink drain. Installation of the drain saddle below a disposal may cause the drain to plug.

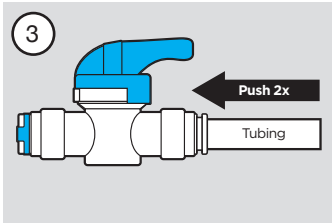
USING THE BUDDIE FIT™ PRESS FITTINGS



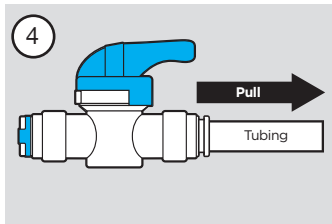
Remove the blue clip from the press fitting.



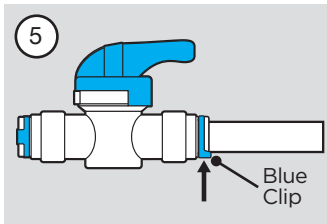
Cut tubing evenly and not at an angle.



Push the tubing into the fitting. You will hit the first stop. The tubing is still not secured properly. Push the tubing a second time and you will feel the tubing insert completely (5/8") into the press fitting.



Pull back on the tubing to ensure it is secure.



Insert the locking blue clip back onto the press fitting.



See Video



NOTE: To remove a piece of tubing, remove the blue clip and press down on the collet where the tubing enters the fitting. While the collet is depressed, remove the tubing from the fitting.



NOTE: We recommend cutting the tubing with a razor blade or something similar, so the tubing is not pinched. If the tubing is pinched, it will not seal properly. All tubing connections will have a "double push" into the connectors. You should feel a two-step insert to verify the tubing is inserted completely into the connectors.

INSTALL THE COLOR-CODED TUBING

The Aquatic Life TI units include color-coded tubing to help easily identify filtered, incoming and waste water. This also makes it easier to correctly connect the tubing to the unit.

Refer to the instructions on how to use Buddie Fit press fittings (left) before installing the tubing.

Step 1

Connect one end of the yellow tubing to the incoming water supply using one of the options below.



Step 2

Connect the other end of the yellow tubing to the port on the TI module closest to the sediment cartridge.



Step 3

Connect one end of the red tubing to the waste port on the TI module. The other end of the red tubing should be connected to the saddle drain or secured in a way to handle the waste water.



Step 4

Connect one end of the blue tubing to the filtered water port on the TI module. This is the port closest to the DI cartridge. The other end of the blue line should be plumbed to the container that will collect your reverse osmosis/resin filtered water.



CARTRIDGE INSTALLATION

Each TI cartridge uses a triple gasket seal to prevent water leaks. The cartridges are easily installed into the TI module heads by inserting the cartridge into the head and twisting to the right.

The TI module heads are equipped with a valve that automatically turns off the water supply to each filter cartridge when you remove the cartridge. To make the removal of the filter cartridges easier, the heads and cartridges can be tilted up as shown (right).



Install: Twist right



Remove: Twist left



NOTE: Return new cartridge to down position after installation.



NOTE: Cartridges must be installed in the correct order. Match the cartridge label/color to the labels on TI module heads. Failure to do so will result in loss of filter performance and can shorten the lifespan of the filter.

PREPARING CARTRIDGES FOR USE



IMPORTANT: Flush carbon & membrane cartridges prior to use.

THE CARBON CARTRIDGE MAY CONTAIN CARBON DUST THAT MUST BE FLUSHED OUT PRIOR TO INSTALLING THE MEMBRANE. If it is not rinsed, carbon dust can plug the membrane and shorten its life.

All RO membranes contain a preservative to keep them sterile. **IT IS IMPORTANT TO FLUSH THE PRESERVATIVE OUT OF THE MEMBRANE PRIOR TO USING THE FILTERED WATER.** Turn on the water to the TI unit and allow to run for 30 minutes. Discard all the water from the first 30 minutes of operation.

Flush cartridges have been included to allow for flushing of the carbon cartridge and RO membrane.

Step 1

Install a flush cartridge on the membrane and deionization heads. Run water through the sediment and carbon cartridges for five minutes or until the water runs clear.



Step 2

Remove the flush cartridge from the membrane head and install the membrane. Run water through the unit for 30 minutes to flush the preservative out of the new membrane. **DISCARD ALL WASTE AND FILTERED WATER** for the first 30 minutes.



Step 3

Remove the flush cartridge from the deionization head and install the deionization cartridge.

ADDITIONAL PURCHASE CONSIDERATIONS

Depending on your installation and application needs, you may find other Aquatic Life products helpful with this RO/DI unit. Visit www.aquaticlife.com for the complete line of Aquatic Life TI filtration products and accessories.



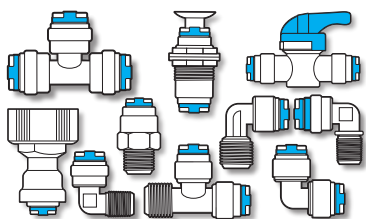
Float Valve Kit
(Item # 500300)

Fill large tanks, containers, and aquariums automatically. If using this with a reverse osmosis or RO/DI unit, you will not need any other components, as this includes the necessary auto shut-off valve, check valve and tubing.



TI Deionization Cartridge Value 4-Pack (Item # 330390)

Always have a new color-changing resin cartridge on hand plus save money with the Value Pack. Each pack includes four cartridges, making it easy to stock-up for your filtration needs.



Buddie Fit™ Press Fittings

Easily plumb 1/4" water units with these press-fit connectors. Available in a variety of connections that include adapters to threaded fittings as well as elbows, tees and check valves.



Tubing – 50 Ft rolls
Blue (Item # 500297) Red (Item # 500298)
Yellow (Item # 500299)

Ideal for applications where a longer run of tubing is required. This 1/4" polyethylene tubing is durable, flexible and easy to plumb. Available in blue, yellow and red for quick identification of supply, waste and filtered water.

REVERSE OSMOSIS FILTER BASICS

The membrane does most of the work by removing up to 95% of the TDS from your water. The sediment and carbon filters protect the membrane from the many malicious elements that shorten its life. The sediment cartridge removes suspended particles larger than 5 microns (3 times smaller than a mold spore). The carbon block removes chlorine. Timely replacement of the cartridges will increase the membrane's life.

The carbon cartridge is the most important cartridge to change frequently. The carbon cartridge can filter about 2,500 gallons of water before being replaced IF your chlorine level is 1 ppm (parts per million). With a 2 ppm you can filter 1,250 gallons of water before needing to change, with a 3 ppm you can filter 833 gallons, and so on. Any chlorine not absorbed by a spent carbon cartridge will break down your membrane, thus greatly shortening its life.

The 2,500 gallon threshold is TOTAL water that passes through the unit. The Twist-In RO Unit has an average rejection ratio of 1:3.5. That means for every 1 gallon of good water produced you will reject 3.5 gallons for a total of 4.5 gallons of water passed through the unit. At 1 ppm of chlorine, you can make about 650 gallons of good water before changing the carbon cartridge, 2 ppm you can make about 325 gallons, 3 ppm you can make about 217 gallons, and so on.

When the sediment cartridge needs to be changed, the production of water will reduce. Even with reduced water production, the cartridge will not allow anything larger than one micron to pass through the chamber. On average the sediment cartridge should be changed at every other carbon change.

With proper filter changes, the membrane could last up to two years. The membrane's

water production rating is based on 77°F water at 65 PSI. Any deviation from this will affect the water production. Reference the conversion table below. You will notice that the warmer the water, the better the production. It is not advised that you introduce water from your water heater to increase water temperature. The membrane cannot handle temps over 100°F.

Temperature Correction		Pressure Correction	
Temp. F/C	Correction Factor	Pressure PSI	Correction Factor
50/10	0.58	10	0.17
60/16	0.73	20	0.33
70/21	0.87	30	0.5
77/25	1.00	40	0.67
80/27	1.06	50	0.83
90/32	1.23	65	1
100/38	1.45	70	1.17
		80	1.33

Example

An RO membrane production rate at 77° F, 65 PSI = 100 gallons per day. What is the production rate at 50° F?

Answer

Use the temperature correction factor (from table above) = 0.58
New production flow rate at 50° F is 100 x 0.58 = 58 gallons per day.

The color changing mixed bed resin DI cartridge will absorb the remaining TDS not filtered by the membrane. When mixed bed resin is new, it is a blue green color. When it gets wet, it will change a dark blue color. When the medium is spent it will change to a light brownish tan color.

UNIT MAINTENANCE

**Recommended change 3-6 months
or 2,500 gallons total or 650 gallons
of filtered water**

TI Sediment Filter Cartridge (Item # 330377)

TI Carbon Block Cartridge (Item # 330379)

12-24 Month Maintenance

TI RO 100 GPD Membrane Cartridge
(Item # 330375)

As Required – By Visible Color Change

TI Deionization Color-Changing
Resin Cartridge (Item # 330380)

TROUBLESHOOTING

- **Leaks at the tubing connections:**
The fittings use an o-ring inside of them. This will require the tubing to be inserted past the o-ring. You will want to make sure that when inserting the tubing you feel the initial stop when the tubing first meets the o-ring and a second stop when you push past the o-ring and meet the end inside the fitting. This is what we call the “double push”. Also, make sure to cut the tubing with a razor or similar object so that the tubing is not pinched and causes the tubing to not seal properly.
- **No water production:**
Make sure the water supply is turned OFF. Remove the tubing from the elbow on top of the membrane housing, direct the tubing into a container and turn on the water. Does the water flow quickly through the cartridges? If not, the cartridges likely need to be changed.
- **Low filtered water production:**
The RO membrane is rated to produce the stated volume of water based on 65 PSI and a 77° F water supply. If you have one or both specifications out of tolerance, use the temperature correction factors from chart on previous page.



NOTE: The life span of the filter cartridges, including the membrane, are dependent on multiple factors. These include the quality of the incoming water supply (TDS levels, chlorine, etc.) as well as the amount of use. Our recommended replacement intervals are based on average usage.



TIP: Tubing should insert 5/8" inside the Press Fitting when properly installed.



MAINTENANCE REMINDERS
The Aquatic Life TI Cartridges include a place where you can write the date of installation to make it easy to know when a cartridge needs to be replaced.



PRODUCT REGISTRATION

Thank you for purchasing an Aquatic Life product—we know you'll enjoy it!

BENEFITS OF REGISTRATION:

Confirmation of Ownership

Provides a record in the event you need to contact us about your product in the future.

Your Safety

Allows us to contact you with important product notifications.

Improved Product Support

Helps us continue to tailor our products and services to meet your needs.

Register Online at www.aquaticlife.com

Lifetime Products is committed to reducing our carbon footprint and we appreciate your time in registering electronically. If you do not have access to the Internet, you can **call us at 888-548-3480**.

Twist-In 100 GPD 4-Stage RO/DI Unit

Model: 540371

Installation, Operation & Maintenance Guide



3-YEAR LIMITED WARRANTY

Lifetime Products LLC warrants that this Reverse Osmosis/ Deionization Unit (excluding cartridges and membrane) shall be free from defective components and leaks or cracks due to defects in materials or workmanship for a period of three (3) years from the date of purchase. If a defect is shown, Lifetime Products LLC will, at Lifetime Product's sole discretion, either repair or replace the product without charge. No cash refunds will be made. This warranty is provided solely to the original consumer purchaser of the product and may not be transferred or assigned. If Lifetime Products chooses to replace the equipment, Lifetime Products may replace it with reconditioned equipment. Parts used in repairing or replacing the equipment will be warranted for 90 days from the date the equipment is returned to you or the remainder of the original warranty period, whichever is longer.

This warranty does not apply to damage resulting from accident, misuse, abuse, lack of reasonable care, failure to follow safety and installation instructions.

This warranty will be void if defects occur due to failure to observe the following conditions:

The Aquatic Life TI Unit should only be connected to a potable municipal or potable well cold water supply.

Do not use with water that is of unknown quality without adequate disinfection before or after the unit.

- Incoming total dissolved solids (TDS) not to exceed 1,800 ppm.
- Incoming water to the RO cannot exceed 100°F.
- Incoming water pressure must be between 40 and 80 PSI.
- Incoming water pH must not be lower than 2 or higher than 11.
- Incoming water iron content must be less than 0.2 ppm.
- Incoming water hardness must not exceed 10 grains per gallon or 170 ppm.
- Do not use outdoors or in a location that is subjected to direct sunlight or freezing.

This warranty will not be effective unless and until the Aquatic Life product is shown to have been used in accordance with the installation and maintenance instructions accompanying the product.

THIS CONSTITUTES LIFETIME PRODUCTS ENTIRE WARRANTY AND LIFETIME PRODUCTS MAKES NO OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCT. LIFETIME PRODUCTS, LLC SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF LIFETIME PRODUCTS, LLC CANNOT LAWFULLY DISCLAIM IMPLIED WARRANTIES UNDER THIS LIMITED WARRANTY, ALL SUCH WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

LIFETIME PRODUCTS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. LIFETIME PRODUCTS, LLC EXPRESSLY DISCLAIMS ALL ALLEGED DAMAGES FOR LOSS OF MARINE LIFE, PERSONAL INJURY, AND/OR PROPERTY DAMAGE.

Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages or exclusions or limitations on the duration of implied warranties or conditions, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary by state or province.

Lifetime Products, LLC shall not have any obligations under this warranty unless the owner notifies Lifetime Products, LLC in writing of any alleged defect(s) within 30 days of discovery of the defect(s).

Any notice to Lifetime Products, LLC must be delivered by United States or electronic mail to the following address: U.S. Mail: Lifetime Products, LLC, 9710 Klingerman St., S. El Monte, CA 91733 or electronic mail: customersupport@aquaticlife.com. Lifetime Products shall be allowed a reasonable period of time to investigate any warranty claim and to perform any testing Lifetime Products deems necessary to determine the cause of the defect. This warranty shall be interpreted under the laws of the State of California.

Lifetime Products, LLC
9710 Klingerman St. | S. El Monte, CA 91733
Toll Free: 888-548-3480 | Local: 818-768-6943

customersupport@aquaticlife.com

www.aquaticlife.com