

FAQ's

Dometic Spot Zero Reverse Osmosis Fresh Water System

What is the Spot Zero Fresh Water reverse osmosis system?

The Dometic Spot Zero is a fresh water reverse osmosis (RO) system that allows boat owners to purify dockside tap water when filling their water tanks. The system eliminates 98% of all impurities in fresh water – including hard-water minerals, heavy metals, particles, viruses, cysts, bacteria, and radioactive contaminants – creating fresh, clean drinking water. Un-potable water becomes potable, at any port, anywhere in the world.

In addition to reducing hardness by 100%, the Spot Zero Fresh Water reverse osmosis system removes 95-96% of dissolved solids, which are destructive to marine paints, coatings and other yacht finishes.

The Dometic Spot Zero is the only product on the market of its kind.

Why would I need a fresh water reverse osmosis system on my boat?

A fresh water purification system provides you and your passengers with fresh, safe water for drinking, ice-making, bathing and washing. At many ports of call, such as locations in the Caribbean, Mexico, Central and South America, dock water isn't necessarily safe to consume. Cost is another issue. In the Caribbean, for instance, marinas typically charge up to 50 cents a gallon for dock water and the quality is suspect. Having your own water purification system means you can rest assured that your vessel and passengers are getting the cleanest, safest water possible.

Another significant reason to use a fresh water reverse osmosis system is for cleaning of your boat exterior. By removing dissolved solids that create water spots, the Spot Zero RO provides a spot-free wash down with no need to go back and wipe all the surfaces dry, saving man hours and allowing owners and crew to focus on more important tasks. With the Spot Zero, water-sprayed surfaces will air dry without any wiping. This helps preserve the boat's paint and wax finishes since "wiping away" those water spots is an abrasive action, creating minute scratches and discoloration in the vessel's finishes.

All of the systems within the vessel that use or consume fresh water will benefit from the purified water. When cleaning boat interiors, purified water eliminates hard-water spots on glassware, dishes, shower doors and windows. With purified water, plumbing and appliances, such as ice-makers, faucets and fixtures, will be free of hard-water scaling, which allows them to function better and last longer.

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How does the Spot Zero work?

The Dometic Spot Zero system connects to a vessel's fresh-water dock fill line. It processes water utilizing a filtration and reverse osmosis technique, and produces purified water for use by boat owners for all purposes throughout their vessels.

The Spot Zero uses a multi-step reverse-osmosis process to purify fresh water. Filters remove sediment, granulated activated carbon removes chlorine, chloramines and heavy metals, and a semi-permeable membrane allows the passage of water but not ions or larger molecules. The result is soft, pure water.

This procedure removes the dissolved solids that create water spots, so water-sprayed surfaces will air dry clean without any wiping.

What kind of energy supply do I need?

The Spot Zero RO systems run on electricity, and you can use your on-board A/C energy supply. These systems use very little power (5 amps at 230v, 10 amps at 115v), so energy consumption is not an issue.

How much space does a Spot Zero system take up on my boat?

The Spot Zero is a modular system that can be mounted on a bulkhead or on any other available space on board your vessel. These systems have a very small footprint.

How long does it take for purified water to be produced?

You will have pure water instantaneously.

Will my Spot Zero shut down automatically when the water tank is full?

No, you must physically turn off the dock water source once you are done using the Spot Zero. Like a gas pump at the gas station, when your tank is full, you need to manually disconnect from the source.

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What is required for installation of the Spot Zero?

Your service professional can set up and configure your system for optimal performance. This will involve a connection to the water intake line, a discharge line, a product water line to the vessel's water tank, as well as connecting to a power source.

Why is the Dometic Spot Zero RO system better than a water softener?

Water spots exist when dissolved solids in water dries on finished surfaces. Water softeners utilize an ion exchange principle which, merely substitutes certain dissolved solids such as calcium and magnesium with sodium chloride. The product water from a water softener will contain roughly the same amount of total dissolved solids as the feed water, and in many cases will contain more.

Since the Spot Zero is a fresh water reverse osmosis system, 90-99% of the total dissolved solids in the water will be removed from the feed water. The fewer total dissolved solids in the product water, the fewer the impurities and spots.

Why can't I run dock water through my sea water reverse osmosis system?

Watermakers, or sea water reverse osmosis systems, utilize low-recovery, high-rejection membranes and are engineered to produce potable water from sea water, which is normally 32,000-35,000 ppm of total dissolved solids (TDS). A typical water maker recovers less than 20% of the water that is fed into it. Therefore, for every 1000 gallons of water that is processed through a watermaker, only 100-200 gallons is actually converted into fresh water. This is a very inefficient and expensive way to purify water from a shore (dock hose) source and will cause premature failure of seawater reverse osmosis membranes.

In addition, high pressure pumps on sea water systems are not designed for processing fresh water – when excessive fresh water goes through pumps designed for seawater applications, maintenance costs will be high; due to more frequent pump seal replacements.

Spot Zero Fresh Water reverse osmosis systems recover approximately 66% of the feed water while using approximately 25% of the energy of a typical seawater reverse osmosis system. Spot Zero fresh water systems are also about 80% quieter than sea water systems.

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What is the ROI on a Spot Zero RO system?

Because of the vast amount of benefits Spot Zero offers to the entire vessel, we estimate that the system will pay for itself within the first 3-6 months. A typical vessel's paint job can cost between \$50,000 and \$1,000,000 or more. A Spot Zero system protects the vessel's painted and finished surfaces by removing the TDS (total dissolved solids) from the water, which ultimately etch the paint when the vessels surfaces are washed and chamoised.

Furthermore, the vessel will now require less detergents throughout all systems such as laundry, dishes, wash downs, etc. And, showers, sinks, icemakers and fixtures are easier to maintain, which reduces costs across the board.

Can I use both a sea water system and a fresh water system?

Yes, the machines can be connected so that the water made with your sea water system can be passed through the Spot Zero RO system. This reduces parts per million of TDS to approximately 20 from 500.

When you are using both systems, the outlet of water from the sea water system acts as the intake for the Spot Zero. Your service professional can set up and configure the systems for optimal performance.

What size reverse osmosis system do I need?

Spot Zero systems come in two sizes, 2000 gallons per day (83 gallons/hour) and 3000 gallons per day (125 gallons/hour). Which size you choose depends on your water needs.

How long will a Spot Zero system last?

If you follow the owner's manual for recommended maintenance, you can reasonably expect in the range of 20 years of service from your Dometic Spot Zero RO system.

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Dometic SeaXchange Seawater Watermaker Systems

Why would I want a seawater reverse osmosis system on my boat?

Watermakers are important for safety, fuel economy and convenience.

- **Limitless fresh water supply** – Having a watermaker on your boat guarantees a limitless supply of fresh, safe water for you and your passengers. The US Coast Guard recommends 30-gallons/per person per day for drinking, showers, cooking and cleaning. When travelling on long voyages, you can rest assured that you will not run out of purified water for all your needs.
- **Safety** – At many ports of call, such as locations in the Caribbean, Mexico, Central and South America, dock water isn't safe. In the Caribbean, for instance, marinas charge up to 50 cents a gallon and the quality is suspect. Having your own watermaker means you do not have to rely on dock water and risk contaminating your vessel and your passengers.
- **Fuel Economy** – A watermaker minimizes the need to carry stored water, allowing you to travel longer distances and saving on fuel costs. When water tanks are full, vessel weight is heavy: water weighs approximately 8.3 pounds per gallon, a heavy burden to carry when you are travelling. That additional weight affects the distance you can travel with the fuel you have on board.
- **Convenience** – Watermakers not only provide clean, pure and delicious potable water, they also supply water for drinking, ice-making, showers, laundry and cooking.

What size of a watermaker do I need?

Dometic SeaXchange Sea Water Reverse Osmosis Systems come in capacities ranging from 600 to 2200 gallons per day. But it's not gallons per day you should focus on; it's gallons per hour.

To run your watermaker, you will need to operate your generator. So the real question is: How many of hours do you generally operate your generator? For example, if you run your generator for four hours per day, and need to make 100 gallons of water per day to replenish the previous day's supply, you will need a watermaker with a 25-gallon-per-hour capacity.

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What makes the Dometic SeaXchange systems different from other brands?

- **User-friendly** – The system controls are simple and self-explanatory
- **No additional accessories to buy** – When you buy a Dometic SeaXchange Sea Water Reverse Osmosis watermaker, you will get everything you need to install and run the system; there are no additional parts or components to purchase
- **Low maintenance** – With the SeaXchange, fresh water flush is automatic: When the system is turned off, it will periodically flush itself with fresh water. The automatic flush feature keeps biologicals from growing on internal parts, membranes, pumps and pre-filter housings. This will greatly extend the life of your system.
- **Economical to own, operate and maintain** – Dometic reverse osmosis systems use non-proprietary components; membranes, pre filters and pumps are standard-sized, so they are often half the price of many name brands.
- **Stainless steel motors** – Our motors are designed to be used in marine environment, so they have 316 stainless steel shafts, which means no rusting. Our high pressure pumps are also 316 stainless steel.
- **Warranty is best on the market** – We offer a 1-year parts and labor warranty, many brands do not warranty labor for repairs.
- **Extensive service and support network** – Dometic offers the most extensive service and support network of any watermaker product. Our service teams span all 50 states and nearly 100 countries. We also offer 24/7 phone support.
- **Competitive pricing** – Dometic's watermakers are price-competitive.

How does reverse osmosis work?

Feedwater is forced under pressure through a semi-permeable membrane, which removes nearly all the dissolved solids and produces fresh, potable water on the other side. This method rejects up to 99% of salts, contaminants, and pollutants.

Where will my watermaker work most efficiently?

Your watermaker is designed to produce the same high-quality, purified water anywhere – in open ocean waters, in harbors or in brackish water, regardless of temperature or level of dissolved solids in the water.

That said, the best place to use your sea water desalinization system is in open water where there is good tidal exchange. Harbor water generally contains more contaminants, particulates, fuel and other impurities, which will require you to change your pre-filters more frequently; however, the watermaker will make the same high quality product water in these conditions as well.

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How long should I expect my watermaker to last?

If you follow owner's manual for recommended maintenance, you can reasonably expect in the range of 20 years of service from your Dometic SeaXchange Sea Water Reverse Osmosis System. The SeaXchange is made of high-quality components, with stainless steel parts and an automatic fresh-water flushing mechanism to keep it clean and well running. The fresh-water flush occurs even when the owner isn't on board, providing peace of mind that your system is being maintained on an ongoing basis.

Is a watermaker noisy?

A watermaker generally creates about the same amount of noise as a generator. Considering that they run simultaneously, most people don't perceive the watermaker as being overly noisy relative to the other systems operating on a vessel.

Do Dometic watermakers take up a lot of space on your boat?

The Dometic Sea Exchange Sea Water Reverse Osmosis system measures 18.5" x 48" x 24"; weights range from 145 to 175 pounds, depending on the model you choose. Further, with our SeaXchange systems, if you don't have enough space for our framed systems, they can be converted to modular systems in a couple of easy steps. This way, you can take maximum advantage of all space you have available on board.

How long does it take for a watermaker to produce purified water?

Within minutes of starting your system, you will be making fresh water.

Can my watermaker work while my boat is underway?

In order to function, your watermaker's feed pump requires a constant flow of feed water. So be careful to keep the watermaker intake through-hull, well below the waterline. If your feed intake goes above the water line, it will air lock – requiring re-priming of the pump. This is true will all centrifugal pumps.

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How much power does a reverse osmosis system draw?

Dometic's sea water systems are energy efficient for typical systems powered by piston pumps. The operating energy requirement for SeaXchange systems is 2.25 kW. This requirement can readily be supported by most marine generator systems found on most vessels.

Will my watermaker shut down automatically when the water tank is full?

It is possible to install internal water tank level controls which will allow for automatic watermaker shut-down when the water tank is full. However, most users find that it is most convenient for the operator to monitor the vessel's water tank gauge and to manually shut the watermaker down when the vessel's water tank is full.

What is required for installation of a watermaker?

You need a dedicated thru-hull Inlet fitting and a seacock valve; an over board thru-hull discharge fitting; a product water tank fill-line connection; and an electrical circuit breaker and electrical wiring.

The intake thru-hull size is from $\frac{3}{4}$ " to 1" depending on the watermaker; it is best to use a qualified technician to install the thru-hull fitting and electrical service. Ensure that your intake thru-hull and booster pump are well below the water line for best performance.

You can install the watermaker in your engine room; in a lazarette or anywhere else you have space for it.