

The White Papers Series 5

Reverse Osmosis Desalinator, Frequently Asked Questions

Introduction

This document outlines frequently asked questions regarding a Reverse Osmosis Desalinator (water maker).

- W**hy do I need a Reverse Osmosis Desalinator (water maker)?
 - An on board Reverse Osmosis Desalinator (water maker) is economical and saves the boat owner money in many respects.
 - Boat wash downs with demineralized water leaves no spots, requiring no laborious drying time and protects rigging and hull. Save thousands of dollars in rigging, save hundreds of hours in labor.
 - No more buying water, no more trip diversions to buy water, no more bacterial and virus attacks.
 - Water weighs 8.3 pounds per gallon. Storing minimal amounts of water and being able to make more as needed each day reduces the weight and draft of the boat, which saves fuel and allows more space for storage or fuel tanks to take longer voyages, and get there faster.
 - With a Reverse Osmosis Desalinator (water maker) on board you will use fresh water for more things, will not have to conserve, and will enjoy your voyage much more with safety
 - You will have peace of mind, all the while saving time and money.
- W**hat capacity system is right for my boat? Why do I need so much water?
 - The typical R.O. System is generally operated for part of the day, perhaps 4 to 6 hours. In that 4 to 6 hours the water used must be made by the R.O. System. Determine what the pure water can be used for and the daily amount required for: Washing Machine; Drinking; Showers; Ice; Boat Wash downs (softened water leaves no spots); Dish Washer. Divide the total gallon usage by the amount of hours the system will be used. The resulting number is the Gallon Per Hour rating of the required R.O. System. i.e.: 150 gallons used per day divided by 5 hours operation would require a 30 gallon per hour system, or a 720 gallon per day system.
 - Marine Systems range from 7 to 263 Gallons Per Hour of operation (170 to 6,300 gallons per day). Commercial Systems range up to 50,000 Gallons Per Day.
- A**re there system differences?
 - Yes, the Seafari Series is the work Horse conventional R.O. System designed for frequent use in the typical Pleasure Craft from 40 to 100 ft. The Seafari Escape Series recovers energy and is designed for the smaller boat under 40 feet and the boats without an A.C. Generator. The Horizon Coral Sea Series are commercial rated for Mega Yachts and commercial boats.
- A**re Water makers noisy?
 - The Seafari is 10 dB's quieter than other brands.
 - The Seafari Escape is an unnoticeable hum.
- C**an I operate a System in Brackish Water Operation?
 - Yes. Brackish water will not harm the R.O. Membrane Element or System. The Seafari Escape will automatically adjust its pressure to operate in Brackish Water feed sources and produce the correct amount of product water. The Seafari's pressure can be manually adjusted to allow normal operation in Brackish Water feed sources. The resulting product water will be of very high quality.
- H**ow do I flush (store) the System?
 - Fresh water is required to "flush" or "store" the System. This is done automatically with the optional Fresh Water Flush, which protects the R.O. Membrane and system.

Reverse Osmosis Desalinator, Frequently Asked Questions (Cont'd)

7. **D**o water makers take up much space?
 - We manufacture some of the smallest and most compact systems available.
 - Refer to our brochure specifications.

8. **A**re water makers expensive?
 - A water maker is inexpensive considering the money and time saved in boat maintenance and rigging replacement if the water is used to clean the boat.
 - Our systems are competitively priced, please see our price sheet.
 - Ask your local dealer for a quote including installation

9. **W**hat is the life expectancy of the System?
 - The life expectancy is 20 years with proper maintenance, and can last the yachts lifetime.

10. **W**hat are the Power Consumption, Amperage Draw, Energy Recovery, and Power & Voltage requirements?
 - The Seafari Escape is an Energy Recovery R.O. System that draws about one ampere per gallon of water produced. The Seafari Escape is ideal for the smaller boat with no on board AC generator.
 - Each Series varies, and are as efficient as possible. Refer to brochure for specifications.
 - The Soft Motor Starter option reduces A.C. By starting load by 50% allows for lower kw generators.
 - Systems are available in any voltage configuration and power limitation.
 - Generator Size (AC Systems), and Battery Bank (DC Systems) requirements vary depending on Model. Refer to brochure for specifications.

11. **I**s there an Automatic Shut Off with a Full Water Tank or after a set time?
 - Yes, a Tank Level Switch can be installed to automatically shut the system off.
 - The Horizon Coral Sea System can also be programmed to shut down at a given point.

12. **C**an the System be remotely operated?
 - Yes, an optional Remote is available for one touch automatic operation from any location on the boat.

13. **C**an I operate the System in a Marina or Harbor?
 - Yes, a conventional Reverse Osmosis System, such as the Seafari, can be operated in Marina or Harbor waters when equipped with an Oil Water Separator which removes oil from the feed water, and with an Ultra Violet Sterilizer which sterilizes the product water.

13. **H**ow long does it take to make fresh water?
 - You will have fresh water within just a few moments of start up, almost immediately.

14. **H**ow does R.O. work, and how does the ETD work?
 - The R.O. Membrane rejects the salt, and allows the potable water to pass through. Visit our web site.
 - The Energy Transfer Device (ETD) in the Seafari Escape Series recovers energy from the pressurized brine water and transfers that energy to the pressure chamber within the ETD.
 - Refer to brochure diagram.



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