

SYSTEM OPERATION INSTRUCTIONS

The reverse osmosis membrane contains a preservative solution to prevent microbiological growth. If ingested, may cause irritation of the gastro-intestinal tract, Colic, diarrhea, or other similar symptoms. Therefore, discard all the product water for at least thirty minutes of initial operation, after storage before drinking or before use in food preparations!

Do not operate the system using contaminated feed water sources (oil, chlorine or other chemicals).

Have you filled the high-pressure pump with the proper amount of oil (0.22ltr/7.5oz SAE90 gearbox oil)? Check center of show glass or dipstick.

- 1) Open the seawater intake valve (sea cock).
- 2) Open the pressure control valve, on the control panel, all the way counter-clockwise (two full rounds after the spring releases).

Caution: Never start the system with the high-pressure control valve closed.

- 3) Set the cleaning/storage valve to the pre filter position.
If the optional nylon tee with flush/storage valve is supplied, switch it to the center (closed) position.
- 4) Set the diverter valve to sample position.
- 5) Start the engine.
- 6) Switch on the boost pump (optional) and the electro magnetic clutch.
- 7) Flush the air out of the system.
Check the brine discharge at the output location.

Caution: Never allow any leaks in your hose or tube connections.

- 8) Increase the RPM of your engine and run the high pressure pump preferably at 1450RPM.
- 9) Close the pressure control valve slowly clockwise to allow air bubbles to work themselves out of the system.
- 10) Adjust the water pressure to 800 psi on the pressure gauge in the control panel. If you operate the watermaker in brackish or lake water adjust the working pressure not to exceed the specified product water rate.
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- 11) Taste the product water at your sample station or check the quality with the optional TDS meter. If the water is pure, switch the diverter valve to fill your storage tank.

SYSTEM SHUT DOWN PROCEDURE

- 1) Switch the diverter valve to sample station.
- 2) Open the pressure control valve all the way counter-clockwise.
- 3) Switch off the electro magnetic clutch and the boost pump (if installed).
- 4) Close the seawater intake valve.

FRESH WATER FLUSH PROCEDURE

If you don't use your watermaker for the next three days, you will need to flush your system with fresh water or infuse a biocide solution.

The fresh water flush prepares your watermaker for a shut down period of 7 days maximum.

- 1) Open the pressure control valve all the way counter clock wise (two full rounds after the spring releases).
- 3) Close the seawater intake valve (sea cock) or switch the cleaning/storage valve to the closed position.
- 4) Open the fresh water flush valve on the active carbon filter. If the nylon tee with the flush/storage valve is supplied switch the valve to the flush position.

Your vessel's fresh water system pump should now turn on (larger pumps will cycle on and off). For the next flush procedure, test how long it takes until the brine at the outlet becomes fresh. Allow fresh water to flow until all salt water is flushed out of the RO System.

- 5) Open the seawater intake valve (sea cock) and switch the cleaning/storage valve to the seawater position. Allow fresh water to flow until all salt water is flushed out of the pre-filter(s), boost pump and the sea strainer (approximately 30 seconds, depending on the flow rate of your vessel's fresh water system pump).
- 6) Close the seawater intake valve.

MEMBRANE STORAGE PROCEDURE

If you intend to store your watermaker for more than 7 days, growth of microorganism will degrade the RO membrane(s) performance.

The RO membrane(s) should be flushed with a biocide solution. This will preserve the membrane for long-term storage of up to one year.

1. If you have installed the optional fresh water flush system, back flush the pre-filter(s), the boost pump and the sea strainer with fresh water and remove the pre-filter cartridge(s). Close the seawater intake valve (sea cock).
2. In a clean plastic container, mix 2.5 gallons / 10 litres of un-chlorinated fresh water with 100 grams (1/3 container) of Echo Tec. Preservative # 3 (Metabisulfite) for the models 200-900. Mix 4 gallons / 15 litres of water with 150 grams (1/2 container) of preservative for the models 1200 and 1500.
3. Switch the three-way valve to the cleaning/storage position. Switch the diverter valve to the sample position.
4. Open the pressure control valve all the way counter clockwise (two full rounds after the spring releases).
5. Infuse the solution with the cleaning storage hose while running the high pressure pump at lowest RPM. Do not apply pressure. There will be no flow at the fresh water outlet.

Under best conditions your watermaker is now prepared for a shut down period of ten months.

Discard the product water for at least thirty minutes of initial operation, after storage, before drinking or before use in food preparations.