Oceanflo
DESALINATION

OF70M

oceanflo.co.nz

INTRODUCTION

Congratulations on purchasing an Oceanflo water maker. All units are fully bench-tested and delivered with Pride. Your water maker will provide you with clean and safe drinking water for many years to come. To ensure trouble-free performance please follow the simple instructions in this owners' guide. By understanding the function/ importance and normal operation of each part in the system/ the operator can readily diagnose problems when they first develop. Such problems are easily corrected and require minor adjustments. If left unattended/ a minor problem in one component may affect the rest of the system and can lead to your unit needing repair. If you have any questions regarding the installation/ operation or maintenance of your water maker, please contact your Dealer.

SPECIFICATIONS

Reverse Osmosis performance varies with the feed water temperature and salinity.
The rated performance is tested at 26C / 80F water temperature and 33g NaCl/ltr.

Rated performance: 70 LPH @ 13 vdc.
RO Membrane Type: Standard size high rejection TFC Polyamide/ thin film composite/ spiral wound, single pass reverse osmosis element.
Product Water Quality: Minimum 500 ppm TDS
Feed Water Salinity Range: Up to 50,000 ppm TDS
Chlorine Tolerance: 1000 ppm hours @ 0.1 PPM
Feed Water Pressure: 3 psi to 60 psi
Operating Pressure: 600 to 850 psi
Feed Water Temperature Range: min. 50F / 10C/ max 113F / 45C

ELECTRICAL POWER REQUIREMENTS

Running amps approx. @12vdc: 20amps, **@24vdc**: 10 amps
Circuit Breaker @12vdc: 30 amps, **@24vdc:** 15 amps

STANDARD SYSTEM COMPONENTS

1. High-efficiency self-pressure regulating pump and motor.
2. Dual Carbon fiber pressure vessels with dual 2521 membranes.
3. 5 micron and carbon filer housing assembly.
4. 3-way product diversion valve.
5. High output brushless mag drive boost pump.

INSTALLATION INSTRUCTIONS

Plumb the system according to the installation diagrams observing the notes below.

Standard hose and fittings are not supplied as they will vary from boat to boat.

Pump and motor assembly.

Mount the pump and motor assembly on a flat surface. It is advisable to have the pump in a well-ventilated area that does not get too hot, this will extend the motor life.

Note: It is normal for the motor to reach temperatures of 70 degrees Celsius.

Pre-Filters

Install the pre-filter assembly in an accessible area not above equipment that might be damaged by water, as it might spill when changing the filters.

Saltwater supply lines *(16mm Pressure flex not supplied)*

Try to minimize 90-degree bends as much as possible to help flow through the system and reduce pressure losses at the pump.

Thru-Hull (fitting not supplied)

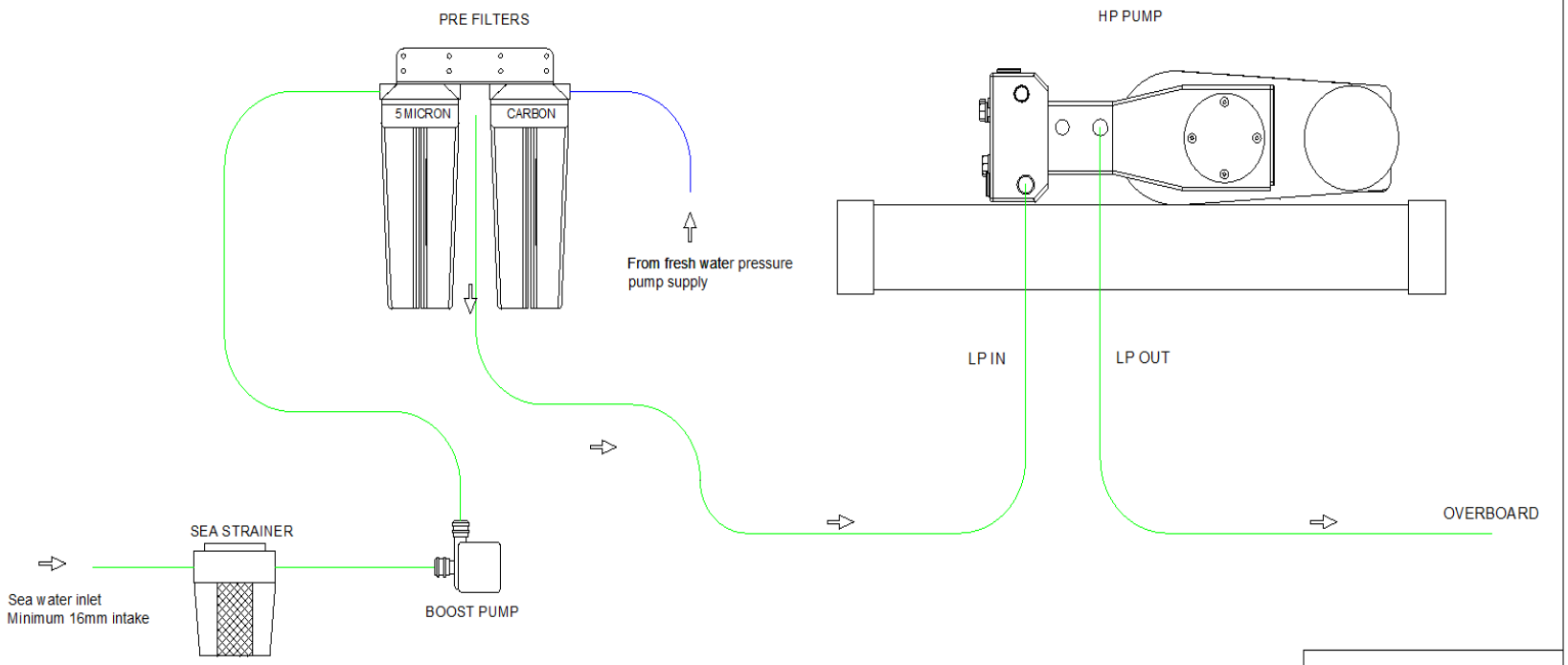
The boat's designated intake thru-hull fitting should be in an area that will always be in the water when the boat is used under normal running conditions. A thru-hull fitting with a strainer scoop could be helpful, installed with the opening facing forward it typically generates a small amount of pressure while moving through the water. Drilling a small hole in the back of the scoop will help the air escape when underway. It is important not to place the thru-hull fitting directly forward of a speedometer pickup, it is also wise not to place the intake thru-hull fitting slightly after the output of the holding tank, head or galley sink overboard discharge.

STEP 1

Plumb the salt water lines as per diagram below.
⅝ or 16mm pressure flex is used.

IMPORTANT NOTES

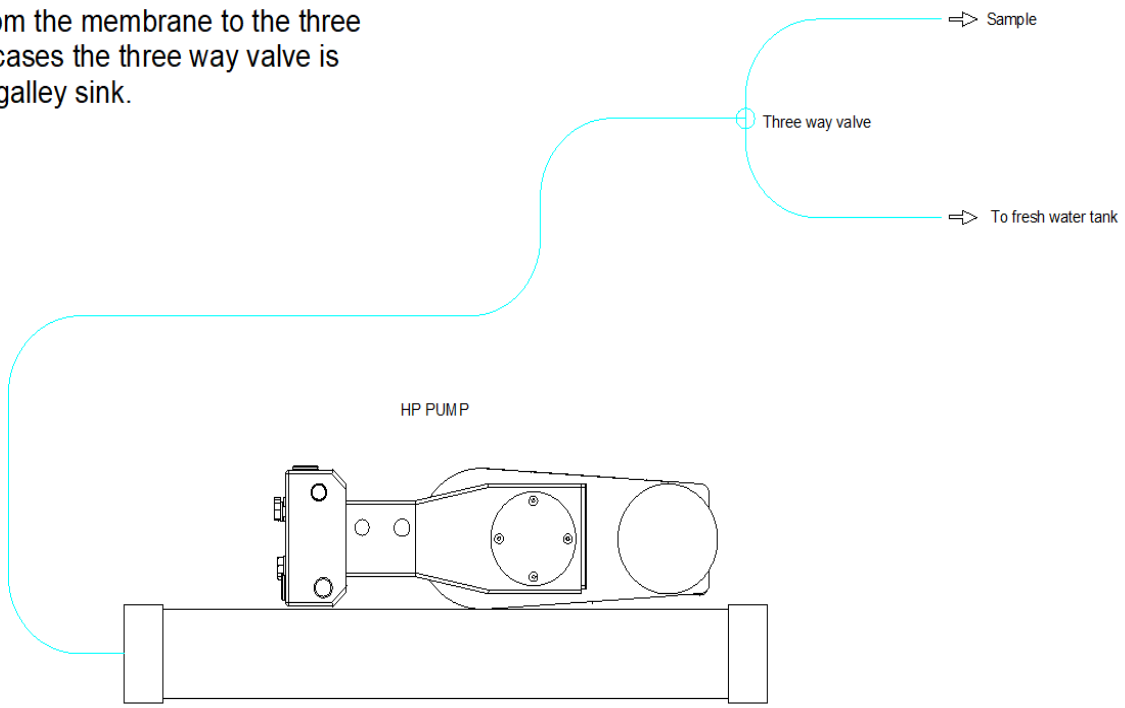
-The high pressure fittings seal with a o-ring and do not need to be done up tight. Stripping of the thread is possible, from over tighting.



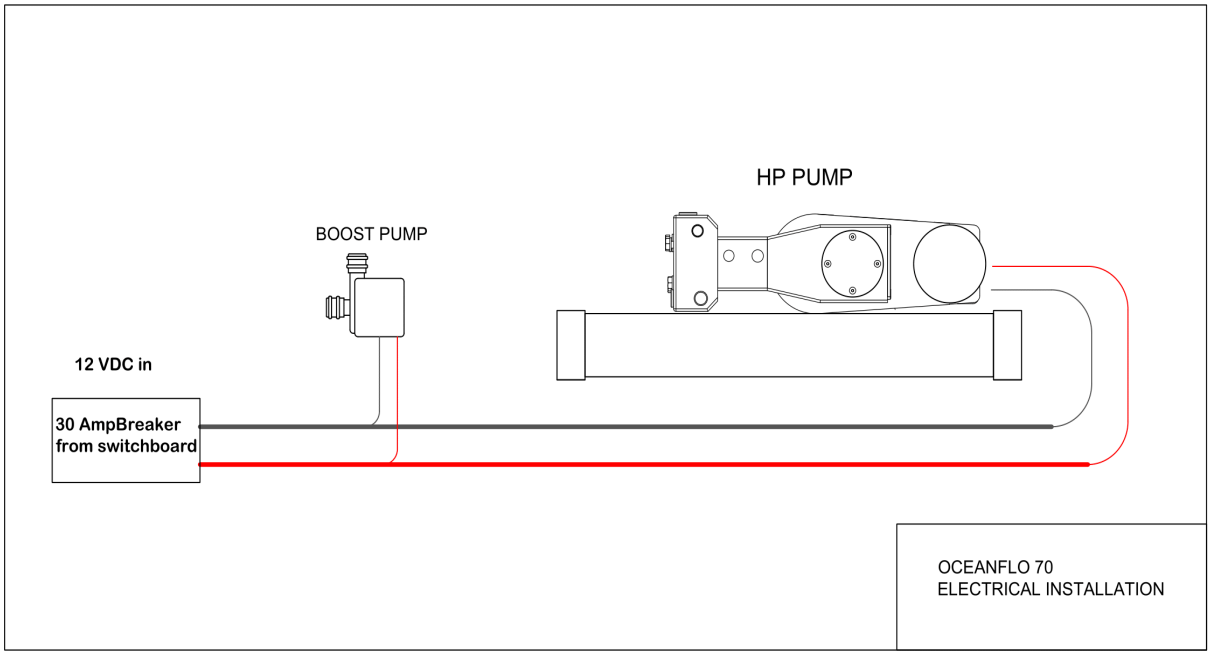
OCEANFLO 70
INSTALLATION

STEP 2

Instal the 3/8 line from the membrane to the three way valve. In most cases the three way valve is mounted under the galley sink.



ELECTRICAL



Minimum Power Supply Cable Wire Size for 12VDC, use half for 24 VDC

Lenth Of Run (M)	3	5	6	8	10	12	14
Wire Size (AWG)	10	10	8	6	6	6	4
Wire Size (mm2)	6	6	10	16	16	16	25

COMMISSIONING

Before operating the water maker for the first time, the storage chemical in the membranes must be flushed out. This must be done under low pressure with non-chlorinated water.

1. Unscrew the high-pressure gauge from the side of the pump.
2. Install the decompression fitting as per photo below.
3. The 1/8" line from the decompression fitting into a bucket.
4. Using the freshwater flush, you can now pump fresh water through the membranes at low pressure. Flush for approximately 5 minutes.
5. Remove the decompression fitting and reinstall the HP gauge.

Notes- Discard the first 10 mins of product water after flushing storage chemicals from the membranes.

-The decompression fitting is also used when storing the membranes on your watermaker. Pictured inserted below replacing the HP gauge.

OPERATION

Start-up

1. Ensure the intake valve and overboard valve is open.
2. If it is the first time being used or there is a storage chemical in the system, ensure the commissioning procedure is followed to remove the storage chemical from the system.
3. Make sure the pre filter assembly valve is set to sea water and the product water valve is set to sample.
4. Start the unit at the breaker and wait for the product water to flow from the sample valve.
5. Taste test or by using a TDS meter, check the product water quality, divert the product water to the tank using the diversion valve.

Flushing

1. Set the pre-filter valve assembly to freshwater and the product water valve to sample.
2. Power “ON” the water maker on for approximately 30 seconds where the pressure will build to approx. 200-400 PSI.
3. Return the pre-filter valve to seawater. The flush is then complete.

STORING

If the watermaker needs to be stored for an extended time (3 months plus), storage chemicals must be used (PPG). This must be done under low pressure with non-chlorinated water. Only Propylene Glycol (PPG) is used.

1. Isolate sea cock.
2. Perform an extended freshwater flush to remove all sea water from the system.
3. Remove the high-pressure gauge and install the decompression fitting as pictured on the commissioning page.
4. Mix 3L of non-chlorinated water and 3L of PPG in a bucket.
5. Put the intake, Brine outlet and decompression fitting hose in the bucket.
6. Run the watermaker for 1 minute. This will result in approx. 35% PPG concentration.
7. Following the commissioning process to re-commission the water maker and replace the filters.

Notes

Storage chemicals: Under no circumstances should sodium metabisulphite be used in the pump. This may lead to irreversible damage to the pump internals. Always use food grade Propylene Glycol (PPG) at 33% or greater concentration.

MAINTENANCE TIMETABLE

The following maintenance timetable is an estimate of the time intervals at which maintenance may be required only. This schedule must be adjusted to the regularity of usage, the condition of the intake water, the length of time the system is exposed to sea water and the total running time following each system cleaning.

Component	Maintenance required	Time interval
Sea strainer	Inspect, clean screen and house	Every 100 hours or when fouled
Seawater Pre filter	Replace or clean elements	When the pump fails to build pressure and is noisy in operation
Check oil level	15mm to 20mm from top of crankcase	Monthly
Carbon filter	Replace element	Every six months
High pressure pump	Replace the crankcase oil	After the first 50hrs then every 500 hrs. ISO68 weight hydraulic oil is used 0.5L
High pressure pump	Change HP seals	When the pump fails to build sufficient pressure
DC motor brushes	Inspect yearly	Replace when 1/2 of the brush remains
Membranes	Flush with non-chlorinated water	Every week

FILTERS

Seawater intake filter
5 Micron Pleated Sediment filter 10”Long x 2.5”OD
To be changed when the pump fails to build pressure, or the HP is noisy in operation.

Freshwater Flush filter
5 Micron Carbon Block Filter 10”Long x 2.5”OD
To be changed every 6 months.

5 Micron Pleated Sediment filter

5 Micron Carbon Block Filter

TROUBLESHOOTING GUIDE

Problem	Cause	Solution
Inability to build up pressure	-Air in the system -Blocked prefilters -Seals and pump failed -Non return valves in pump jammed	Allow more time to prime. Replace or clean filters. Replace seals. Remove and inspect 8 non-Return valves in pump
Product output below specification	-Low voltage -Blocked prefilters -Worn pump seals -Non return valves fouled/obstruction	Charge batteries Replace or clean filters. Replace seals. Remove and inspect 8 non-Return valves in pump
High product water salinity	-Membrane has reached its service life. -High seawater temperature	Replace membranes. This is normal

NOTES

Effects of voltage: With an increase in voltage the pump will increase in speed drawing more current and producing more water with a decrease in voltage the pump will slow in speed and draw less current and produce less water. 70 liters per hour is calculated at a voltage of 13 Volts DC.

Effects of water temperature: A increase in water temperature will result in a decrease in pressure and slight decrease in water quality. A decrease in water temperature will have the opposite effect. Please contact Oceanflo desalination if you wish to use the watermaker in temperatures below 10 degrees Celsius.

Effects of seawater salinity: With an increase in sea water salinity will result in higher operating pressures and more current draw. In areas with decreased salinity, such as areas close to rivers, will result in lower pressures and lower current draw.

Sea water intake: The unit should not be used where the seawater intake can take in a large amount of air. Example, when healed while sailing. This will result in poor water quality and possible damage to the pump. Always ensure that the watermaker has an uninterrupted supply.

Storage chemicals: Under no circumstances should sodium metabisulphite be used in the pump. This may lead to irreversible damage to the pump internals. Always use food grade Propylene Glycol (PPG) at 33% or greater concentration.

WARRANTY

Oceanflo Desalination warrants for a period of one year from the date of shipment.
Oceanflo Desalination liability under this warranty shall be limited to repair or replacement of the Oceanflow water maker at Oceanflo Desalination option. Under no circumstances shall Oceanflo Desalination be liable for consequential damages arising out of or in any way connected with the failure of the system to perform as set forth herein. This limited warranty is in lieu of all other expressed or implied warranties, including those of merchantability and fitness for a particular purpose.
In event of a defect malfunction or failure during the warranty. Oceanflo Desalination will repair, replace, in it's option the product or component therein which upon examination by Oceanflo Desalination shall appear to be defective, or not up to factory specifications.
To obtain warranty service, the defective product or part must be returned to Oceanflo Desalination service center. The purchaser must pay any transportation or labor expenses incurred in removing and returning the product. A return authorization must be obtained before any part or component is shipped.
The limited warranty does not extend to any system component that has been subject to misuse, neglect, accident, and proper installation, or used in violation of instructions by Oceanflo Desalination. That warranty does not extend to components on which the serial number is being removed, defaced or changed.
Oceanflo Desalination reserves the right to make changes or improvements to its product during subsequent production without incurring the obligation to install such changes or improvements on previously manufactured equipment.
The implied warranties, which the law imposes on the sale of this product, are expressly limited in duration to the time period above. Oceanflo Desalination shall not be liable for damages, consequential or otherwise, resulting from the use and operation of this product or from the breach of its limited warranty.
This limited warranty service does not apply to normal reoccurring user maintenance as described below.

Filters
Pump valve assemblies
Pre-filter cartridges
Gauge/instrument calibration
Pump crankcase oil
Pump seals and packings
Pump bushings/bearings