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## Why AQUA Nautica?

1. Superior quality at most affordable price
2. 12V - 24V models
3. 85% less energy consumption than standard hi-pressure watermakers
4. No need for generator.
5. quiet operation. Less than 64 db at 1m distance.
6. Very little maintenance.
7. Total absence of vibration
8. Simple to use: no need to adjust pressures. Entirely hydraulically operated, the machine is automatically self-regulating according to operating conditions
9. Very easy installation

## INTRODUCTION:

Reverse osmosis desalination was first developed more than 60 years ago. But the original process required a lot of power. By recovering 90% of the energy lost in conventional reverse osmosis systems, we've made small desalinators practical, so you can have fresh water when and where you need it.

### Conventional Reverse Osmosis Desalination

When saltwater is pressured through a membrane at high pressure usually at 55 bar, pure water will pass through the membrane, but salts will not. The membrane blocks contaminants such as salts, viruses and bacteria, separating them from the pure water. When seawater is pressurized through a membrane, only 10% passes through as pure water.

In a conventional system, the remaining waste brine stream, still under high pressure, is discharged overboard.

For every liter of pure water made, up to ten liters of seawater must be pressurized! So, 90% of the energy used in conventional reverse osmosis is lost!

**AQUA Nautica Energy Recovery pump** recover and effectively re-use the energy wasted in conventional reverse osmosis. The waste brine stream contains up to 90% of the used energy. By recovering this energy, we are able to dramatically reduce the power needed to desalt seawater. To do this, we use a high pressure *energy recovery* pump. It recycles the high pressure brine by redirecting it to the backside of the pump's piston. The brine provides a power assist to the pumping operation. Seawater can then be pressurized with much less energy.

## QUALITY

In our production we use most advanced CNC machines.  
Components we use are produced by best companies in the world!  
Some of them are:



Membrane pumps - Shurflo  
Motors – Amer motor  
Sealing materials – SKF  
Rotary Wane pumps – Fluid-o-Tech  
Pressure Tanks - Zilmet  
Membranes - MANN+HUMMEL  
Relief valves; Fittings – AIGNEP  
Pressure gauges – WIKA  
Hoses - ZEC



**MANN +  
HUMMEL**



## Safety warnings

### **It is essentially important to read carefully this manual.**

#### **The Importance of Using De-Chlorinated Water**

Freshwater containing chlorine will damage your watermaker membranes.

When flushing or preserving your system, always use fresh de-chlorinated water.

This can be obtained by:

- a) Running a freshwater hose through a carbon filter (available from AQUA Nautica d.o.o.)
- b) Using water already produced by your watermaker
- c) Leaving an open bucket of fresh tap water to stand for 24 hours to allow the chlorine to evaporate

### **Avoid running the system if the vessel is in contaminated water!!!**

**Don't** use a thru-hull installed high on your vessel's hull for your source of seawater intake. This is especially important for sailboats. Even a normal amount of heel when under sail can cause the thru-hull to be out of the water, allowing air into the intake system. A rolling anchorage can do the same.

**Don't** locate the pump assembly above materials that could be damaged if it leaked.

**Don't** locate the pump assembly near to sleeping quarters, bunks, or other areas that are normally "quiet" areas for yourself or crew members.

**CAUTION:** Under no circumstances should the product water line be allowed to become blocked while the system is running. Do not install shut-off valves anywhere in this line.

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

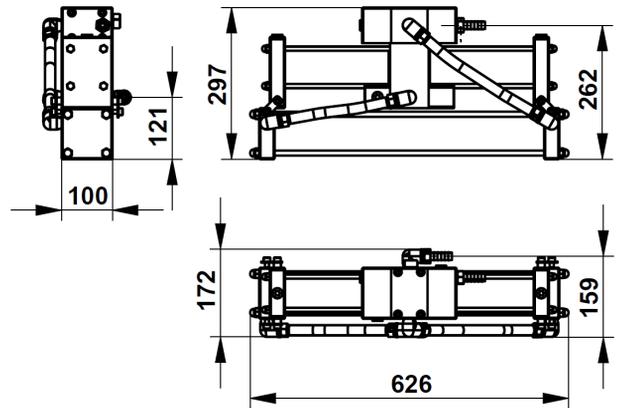
**CAUTION:** If there is any leaks on the plastic threads, do not attempt to re-seal fittings by further tightening as this could damage the thread. Remove the fitting, apply new Teflon tape, insert the fitting and hand tighten plus  $\frac{1}{4}$  turn.

## Products Specifications and dimensions:

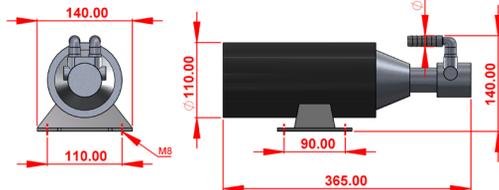
**SILENT!**

### AQUA 30 PRO

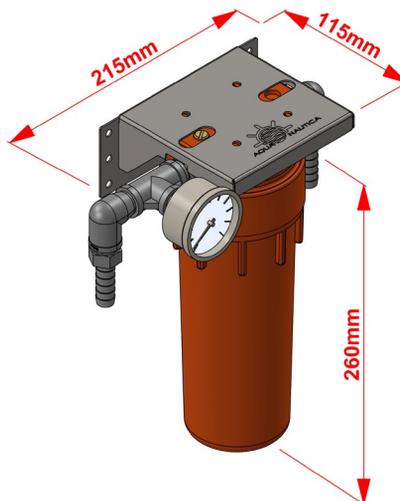
- Power Requirements:** 11 amps @ 12 VDC; 5.5 amps @ 24 VDC\*
- Rate of Water Production:** 30 liters/hr. (7.9 U.S. gal./hr) ±15% at 13.8 VDC
- Feed Water Flow Rate:** 300 liters/hr. (79 U.S. gal./hr)
- Reverse Osmosis performance varies with the feed water temperature. The rated performance is tested at 26°C / 80°F water temperature at a salinity of 33g/ltr.
- Salt Rejection:** min. 99.5%
- Product Water TDS Range:** less than 500ppm TDS
- Salinity Range:** up to 50,000ppm TDS (NaCl)
- PH Range:** 4 – 11
- Chlorine Tolerance:** <0,1ppm
- Operating Pressure:** 55 bar (800psi)
- Feed Water Temperature Range:** min. 0.5°C/33°F, max 45°C/113°F
- Weight:** 25 kg dry without water hoses and cables



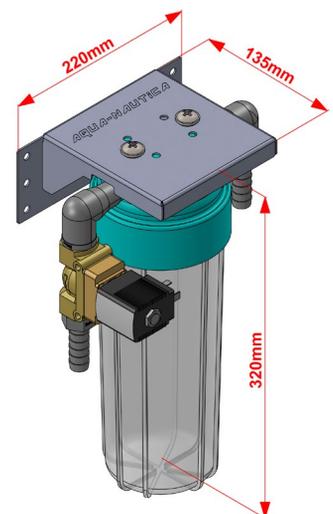
### Pump P-30



### Filter set



### Flushing kit

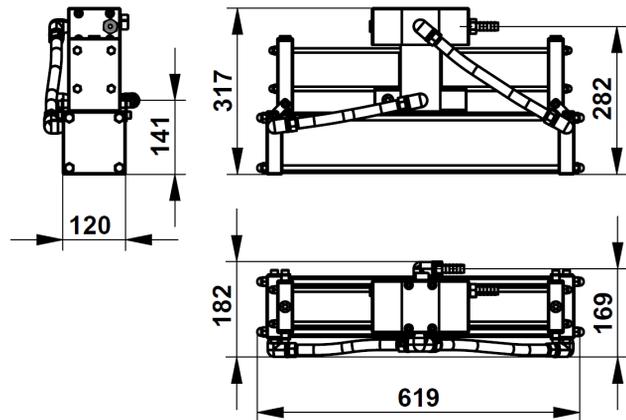


## Products Specifications and dimensions:

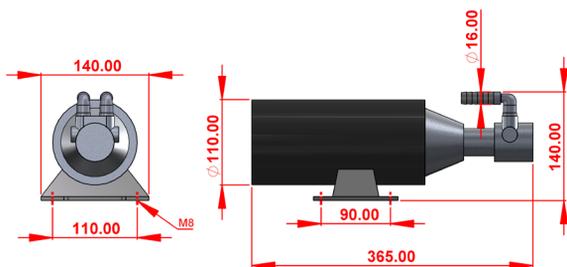
**SILENT!**

### AQUA 60 PRO

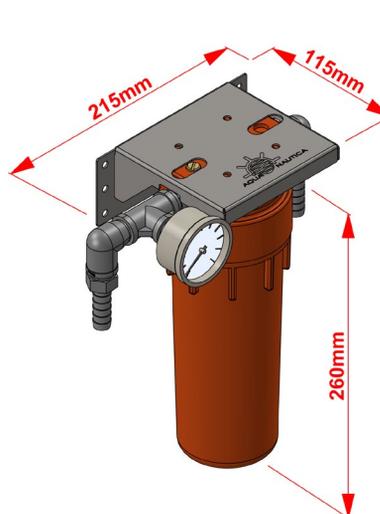
- Power Requirements:** 24 amps @ 12 VDC; 12 amps @ 24 VDC\*
  - Rate of Water Production:** 65 liters/hr. (17.1 U.S. gal./hr) ±15% at 13.8 VDC
  - Feed Water Flow Rate:** 650 liters/hr. (171 U.S. gal./hr)
- Reverse Osmosis performance varies with the feed water temperature. The rated performance is tested at 26°C / 80°F water temperature at a salinity of 33g/ltr.
- Salt Rejection:** min. 99.5%
  - Product Water TDS Range:** less than 500ppm TDS
  - Salinity Range:** up to 50,000ppm TDS (NaCl)
  - PH Range:** 4 – 11
  - Chlorine Tolerance:** <0,1ppm
  - Membrane operating Pressure:** 55 bar (800psi)
  - Feed Water Temperature Range:** min. 0.5°C/33°F, max 45°C/113°F
  - Weight:** 30 kg dry without water hoses and cables



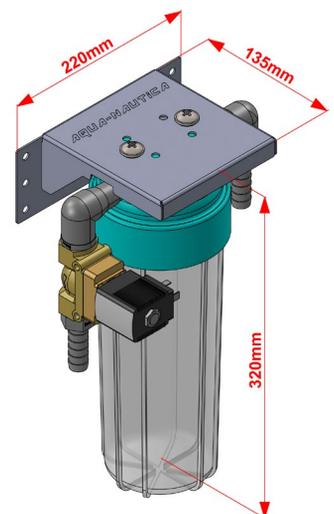
Pump P-65



Filter unit P-65



Flushing kit

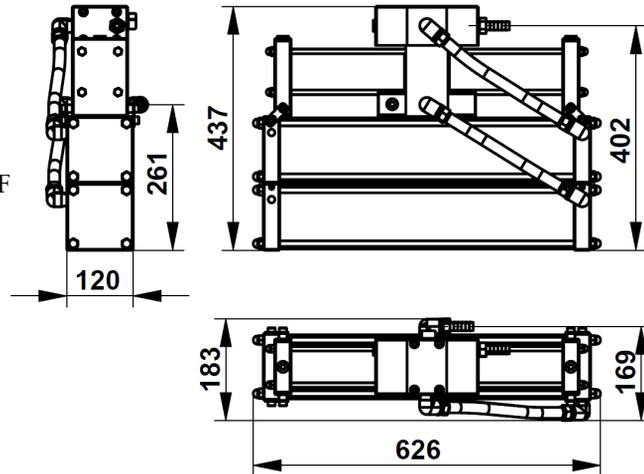


## Products Specifications and dimensions:

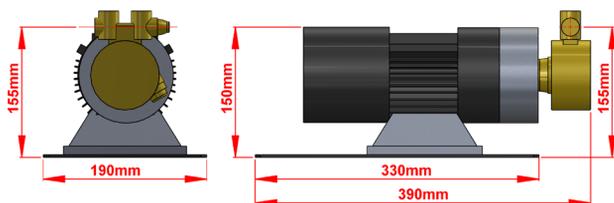
**SILENT!**

### AQUA 110 PRO

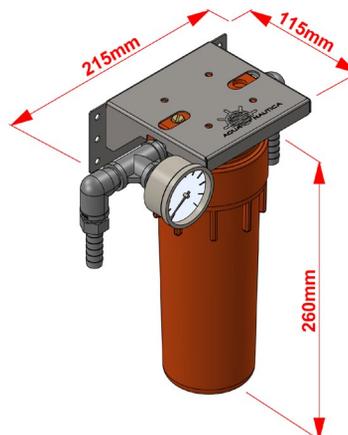
- Power Requirements:** 40 amps @ 12 VDC; 20 amps @ 24 VDC\*
- Rate of Water Production:** 110 liters/hr. (29 U.S. gal./hr) ±15% at 13,8 VDC
- Feed Water Flow Rate:** 1000 liters/hr. (264 U.S. gal./hr)
- Reverse Osmosis performance varies with the feed water temperature. The rated performance is tested at 26°C / 80°F water temperature at a salinity of 33g/ltr.
- Salt Rejection:** min. 99.5%
- Product Water TDS Range:** less than 500ppm TDS
- Salinity Range:** up to 50,000ppm TDS (NaCl)
- PH Range:** 4 – 11
- Chlorine Tolerance:** <0,1ppm
- Membrane operating Pressure:** 50 bar (800psi)
- Feed Water Temperature Range:** min. 0.5°C/33°F, max 45°C/113°F
- Weight:** 40 kg dry without water hoses and cables



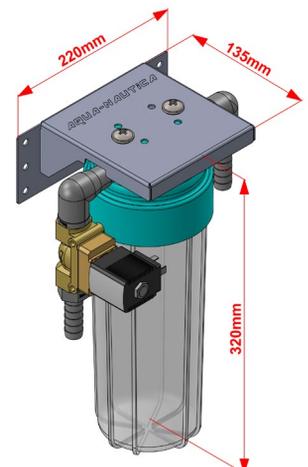
Pump P-100



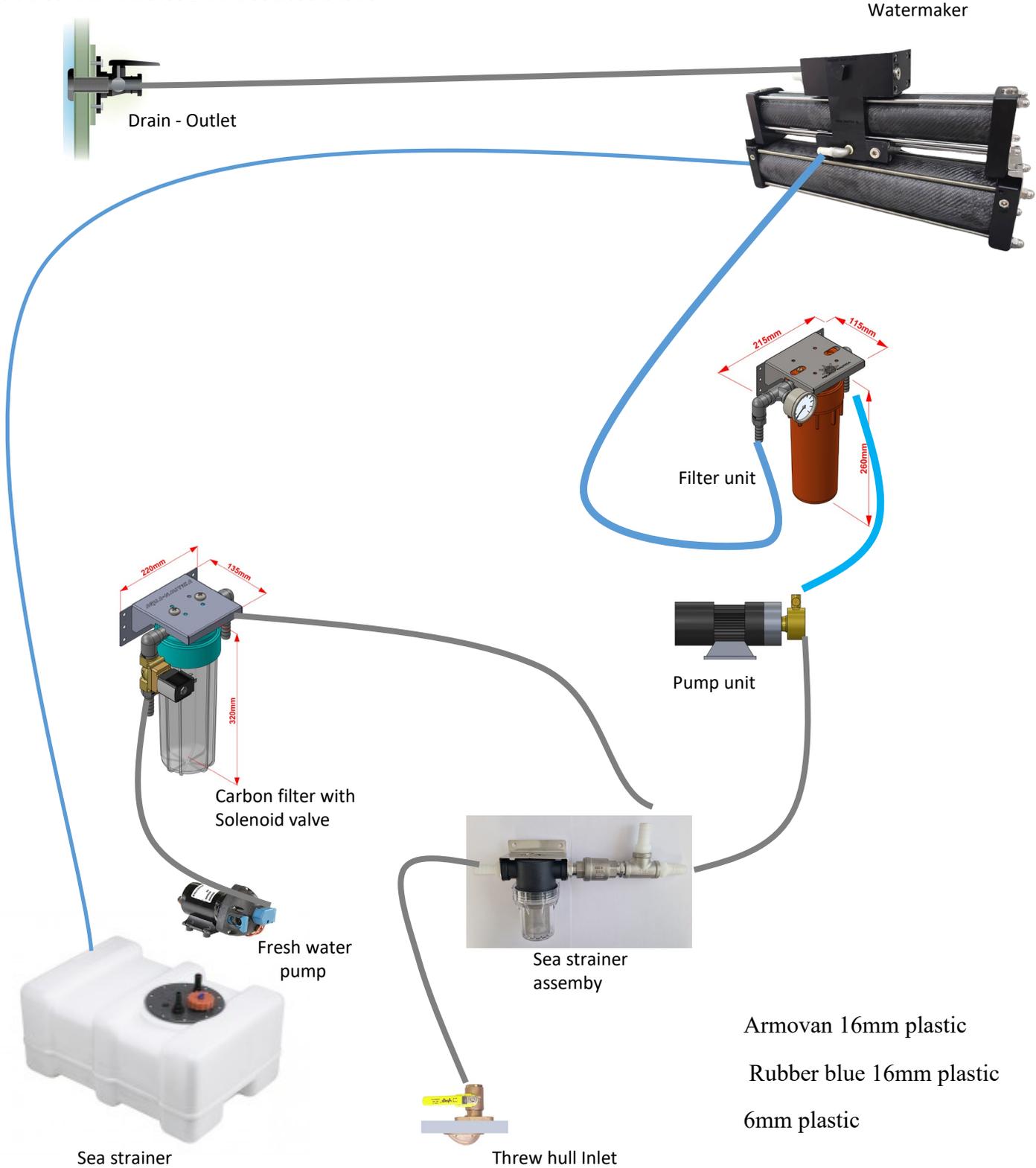
Filter unit P-100

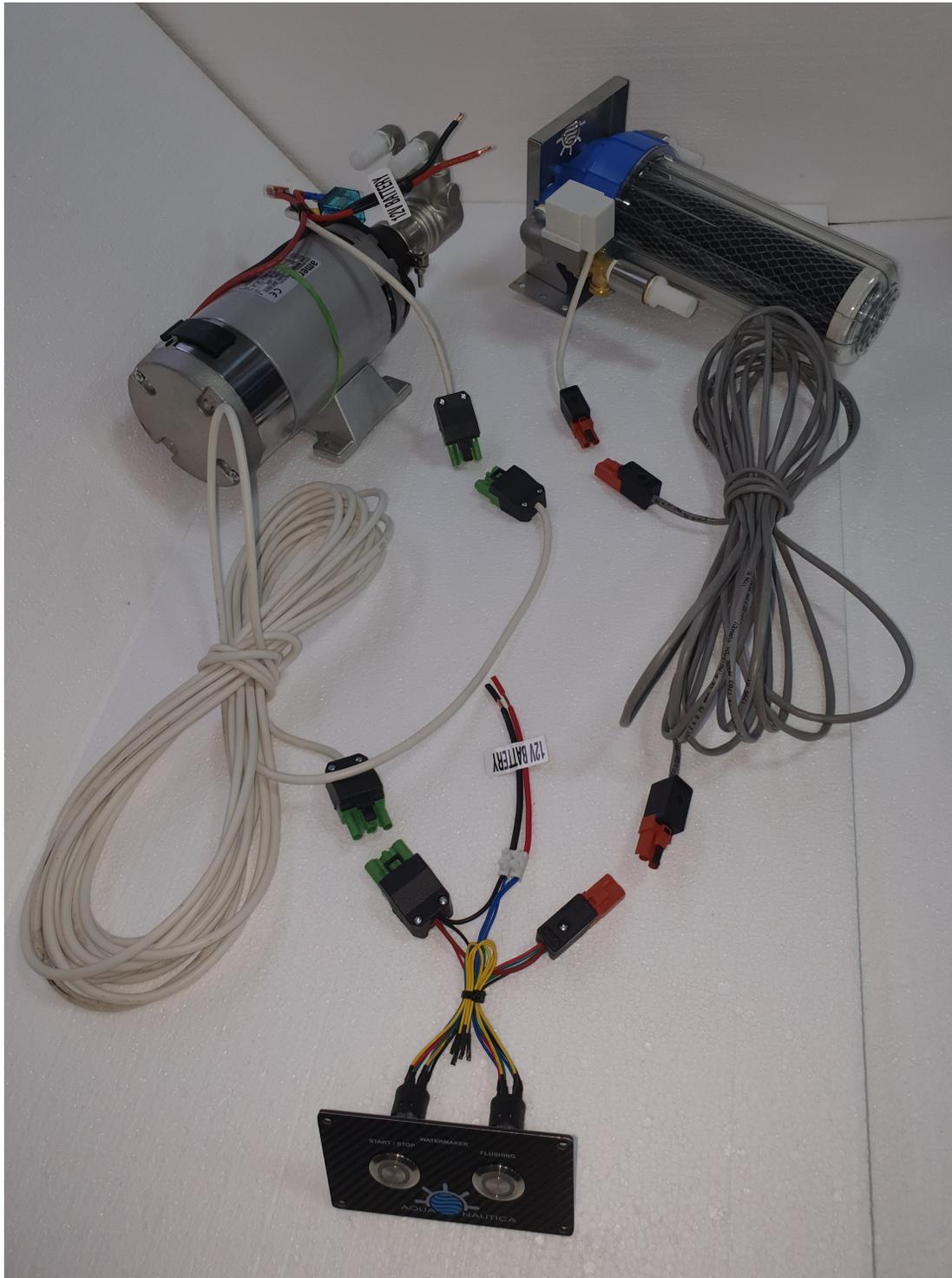


Flushing kit



## How to connect schematic:





## Wiring

Wiring of AQUA Nautica watermaker is very easy.

Just connect 2 cables with connectors to Display, pump and flashing unit. ( you can not make mistake – connectors are different )

Red and black wires must be connected with 12 Volts Battery. Red is + Black is –

Red and black wires for display can be 2,5mm,

Red and black wires for pump should be 6mm or more. Depending of amperage and length.

**Please check that male connectors are well plugged in female connectors.**

## INSTALATION:

- Avoid tight hose bends and excessive runs.
- Install feed pump module as low as possible.
- Do not mount components over electrical devices.
- **Avoid getting dirt or debris into the piping or hoses during assembly.** A small bit of debris can stop the system!

### Thru-hull Not Supplied



**Thru-hull Location:** The system must be connected to a dedicated 1/2" to 3/4" forward facing scoop-type intake thru-hull and seacock.

Install the thru-hull intake as far below the waterline and as close to centerline as possible to avoid contamination and air entering the system. Do not install the intake close to, or down-stream of, a head discharge, behind the keel, stabilizer fins, or other underwater fixtures.

Thru-hulls in the bow area are susceptible to air intake in rough conditions. Sharing a thru-hull can introduce unforeseen problems such as intermittent flow restrictions, air bubbles, contaminants, and will void the warranty. For racing boats and high speed boats traveling above 15 knots, a retractable snorkel-type thru-hull fitting is preferred because it picks up water away from the hull.

**The brine discharge thru-hull** should be mounted above the waterline, along or just above the boot stripe, to minimize water lift and back pressure.

Double clamp all hose connections below the waterline.

Avoid restrictions or long runs on the entire inlet side of the plumbing from the thru-hull to the feed pump module.

Secure the piping away from moving objects such as engine belts and hatches. Prevent chafe on the tubing as required. Test and inspect all piping and hose clamps after several hours of operation.

**Pipe Fitting Instructions:** To seal plastic-to-plastic fittings, wrap 6 to 8 layers of Teflon tape over their threads. Hold the fitting in your left hand and tightly wrap the threads clockwise. For smoother assembly, do not tape the first (starting) threads.

### Wiring

- Pay attention to wire size or system performance will be impaired
- Perform wiring to CE or applicable standards

### CAUTION

*The pump group must be installed in a ventilated place, in order to facilitate the cooling of the electric motor.*

### ATTENTION

*The external surface of motor of the pump can reach high temperature; therefore, it is recommended to avoid possible contacts with inflammable liquids and materials.*

### NOTE

*Once an installation plan has been made it is recommended to make a schematic drawing of the hydraulic and electric connections and attach them to the manual for future reference*

Please, be aware that strainer assembly is not sealed. Use Teflon tape to seal all fittings on the strainer. **On the housing and on check valve, flow direction is clearly marked with direction arrows!!!** In strainer plastic transparent housing, there is silicone gasket. Be careful not to loose it.



## NEW UNIT FIRST START AND TESTING

**Avoid running system if the vessel is in contaminated water!!!**

**Warning! Damage may occur if the purge sequence is bypassed and the membrane is pressurized with storage chemical in it!**

First check:

1. Check that thru-hull inlet and the brine discharge valves are open.
2. Check that all of your hose connections are tight.
3. **Open relief valve!!!**
4. Turn on flushing button for a 3 minutes then turn off.
5. Turn on pump ( ON buton on the display) and after a 15 minutes slowly close relief valve. It need time to wash propylene glycol from membrane.
6. Watch out pressure. ( normally it should be between 8-10 bar. )
7. After 30 minutes of work you can connect it to fresh water reservoir.
8. There are at least 50 liters of water in your fresh water tank for priming.



**Relief valve opened**



**Relief valve closed**

## RELIEF VALVE

**Should be always closed except:**

1. When priming first time ( it is much more easy for pump to prime with opened relief valve )
2. During long term storage procedure ( preparing for long term of inactivity )
3. After long term storage ( to remove propylene glycol from membrane )
4. When replacing filters

**THE HIGH-PRESSURE GAUGE** can be installed on the membrane housing. This will allow you to monitor the pressure inside the membrane. On the membrane housing (a long carbon tube), there are two metal plugs marked HP, located on the left and right sides. Depending on the layout of your desalination system on board, you can choose either the left or right side for installing your high-pressure gauge.

Apply Teflon tape to the gauge's thread. Release the pressure from the Clark pump by opening the relief valve by turning it counterclockwise. Carefully unscrew the selected plug on the membrane housing.

Screw in the high-pressure gauge and tighten it, but not too much to avoid damaging the thread. Close the relief valve and, during the use of the desalination system, check the pressure reading on the gauge.

We highly recommend regular pressure monitoring on the membrane. The optimal pressure value is between 50 and 60 bars. If you notice that the pressure drops below 50 bars, an adjustment is required. On the low-pressure pump (Amer / Fluidotech), at its end, near the inlet and outlet water pipes, there is a pressure adjustment screw. By turning it very slightly in one direction or the other, you will adjust the pressure on the high-pressure pump and consequently on the membrane gauge.

Regular monitoring and maintaining the pressure above 50 bars will extend the lifespan of your membrane and preserve the quality of the produced water.



## MAINTENANCE

1. Check visually and clean strainer if necessary every 5-10 days  
Tight it with hand only!  
Be careful not to lose silicon gasket



2. Inspect ( replace ) 5 micron white cartridge filter every 100 – 150 hours of use.  
Clean the bowl.  
Lube O-ring, lube beginning of thread. Use Vaseline or any food grade grease. After change, open relief valve 2 min. to enable air to go out.

Unscrew the filter housing counter clockwise with plastic key ( see the picture )



Active carbon filter should be replaced once per year

Unscrew the filter housing counter clockwise with plastic key ( see the picture )



## General

Periodically inspect the entire system for leakage and chafing. Repair any leaks as soon as you find them. Some crystal formation around the Clark Pump blocks is normal. Wipe down any salt encrusted areas with a damp cloth.

Watermakers are at their best when run regularly. Biological fouling in the membrane is more likely when a watermaker sits idle. A warm environment will cause more growth than a cold environment. A fresh water flush after every use is recommended.

You may notice that the system output is higher when charging your batteries, as the watermaker is voltage sensitive.

## FRESH WATER FLUSH PROCEDURE

You should fresh water flush your watermaker after every use. 2-3 min. is enough. Remember that you need to run the system almost a half hour to make enough fresh water for one flush. The fresh water flush prepares your watermaker for a shut down period of seven to ten days. (in hot climate 3-4 days) It can be repeated indefinitely as an alternative to the chemical long term storage of the membrane element.

Aqua Nautica watermakers should be stored with propylene glycol if freezing is likely to occur. Propylene glycol can be used in any climate, and treatment is effective for one year. Propylene glycol is a food-grade antifreeze used to winterize RV's, boats, and cabins. Do not use ethylene glycol automotive antifreeze, which is toxic and will damage the system.

The propylene glycol formulations sold in marine and RV stores are usually diluted with water. The water remaining in the watermaker before the storage procedure will further dilute the antifreeze, reducing the microbial protection and increasing the temperature at which the mixture will freeze.

Complete microbial preservative protection requires a 30% solution of propylene glycol, so care must be taken that the solution remaining in the watermaker during long term storage is at least 30%, even if freeze protection is not required. For these reasons we recommend that all pickling be carried out with a 50% or greater concentration.

Propylene glycol can be difficult to flush from a membrane, especially after extended storage periods. This results in high salinity water (high PPM) and residual flavor in the product water. We recommend flushing the system WITH THE PRESSURE RELIEF VALVE OPEN for 4-6 hours after storage with propylene glycol—the longer the better. If, after extended flushing, you still experience low product water quality, cleaning with SC-2 usually removes all traces of propylene glycol and returns the salinity to the level it was before storage with propylene glycol.

## CLEANERS

Cleaning can be detrimental to the membrane and shorten its life. Avoid unnecessary cleaning, and avoid cleaning as a diagnostic tool.

**SC-2** is an alkaline cleaner used to remove light oil, grime and biological growth. It is most effective if heated to 120 deg. F (49 deg. C), which is difficult on a boat. In most cases the water quality will increase in PPM (salinity) after an SC-2 cleaning. After a few hours it should re-cover to near the level it produced before the cleaning.

**SC-3** is an acid cleaner used to remove mineral and scale deposits. In most cases this is used first and if there is no improvement, go on to the SC-2. SC-3 will in most cases lower the product PPM and overall pressures. Scaling is a slow process that may take several months or years. SC-3 is less harmful to the membrane and will almost always improve the performance of an older membrane.

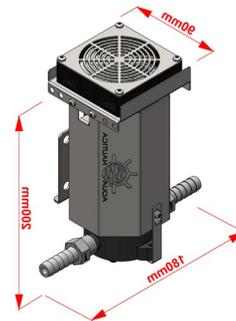
## MEMBRANE STORAGE PROCEDURE WITH PROPYLENE GLYCOL

The procedure for the preservation of membranes must be made every time the plant remains shutdown for more than 10 days.

In some case where the outside temperature exceeds 35 °C, we recommend making the procedure after three days of stop.

To perform the procedure of membranes preservation, you must follow the steps described below:

- Press Flushing and wait for 5 minutes.
- Turn off flushing.
- Close seacock and outlet valve....
- **Open relief valve**
- Prepare one bucket and ad in it 2 liters of food grade propylene glycol, 2 liters of non chlorinated water
- Connect one 16mm hose to drain (outlet) port and other side put into a bucket.
- Connect one 16mm hose to pump inlet port and other side put into a bucket. Now you created closed Loop.
- Start watermaker. Let it work next 15 min with **relief valve open!!!!** Otherwise, membrane will be damaged!
- Turn off watermaker
- Leave the plant full of this solution
- Take off added hoses and put back old hoses to previous condition.
- Your watermaker is now protected from biological growth and freezing for one year

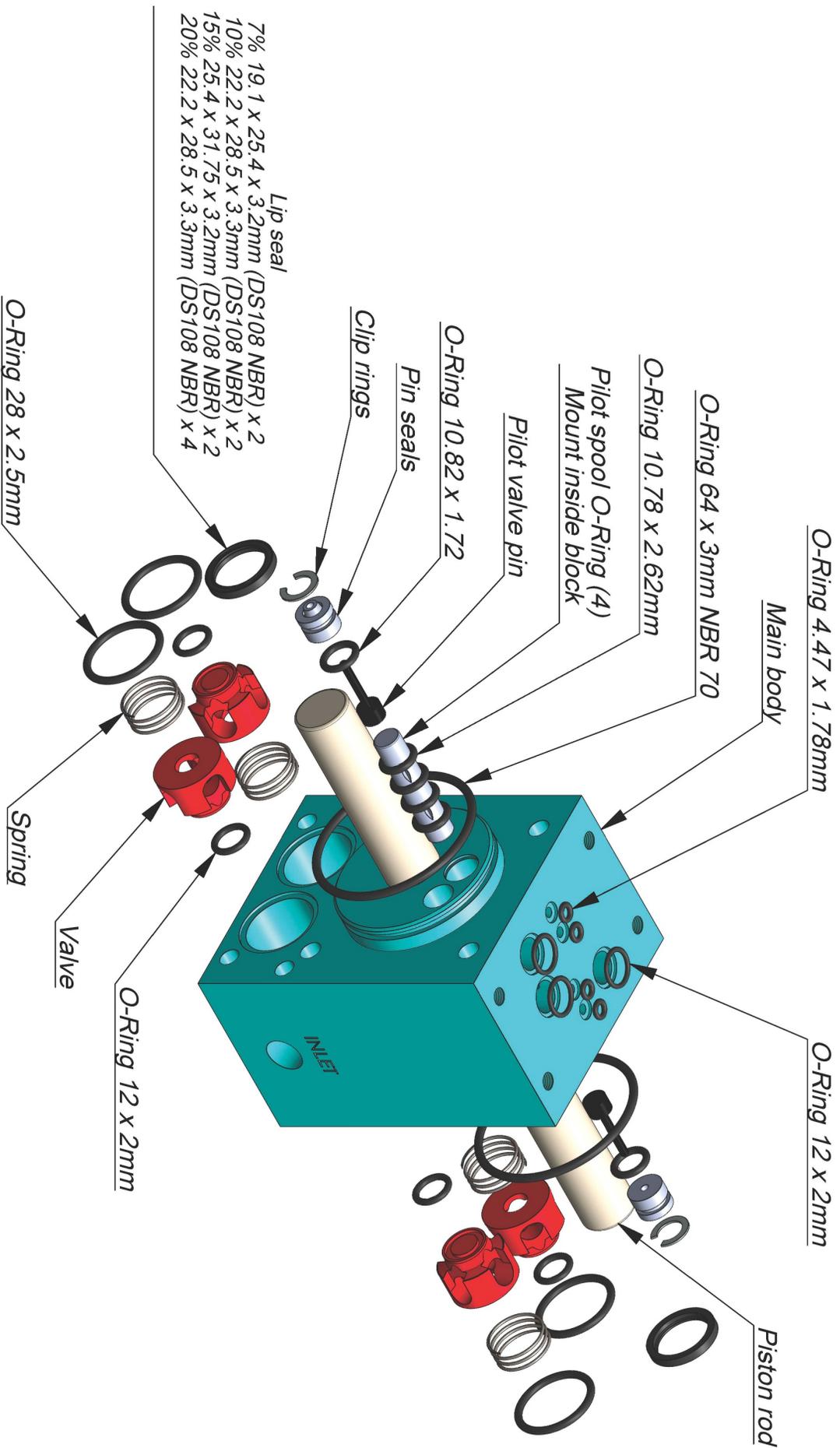


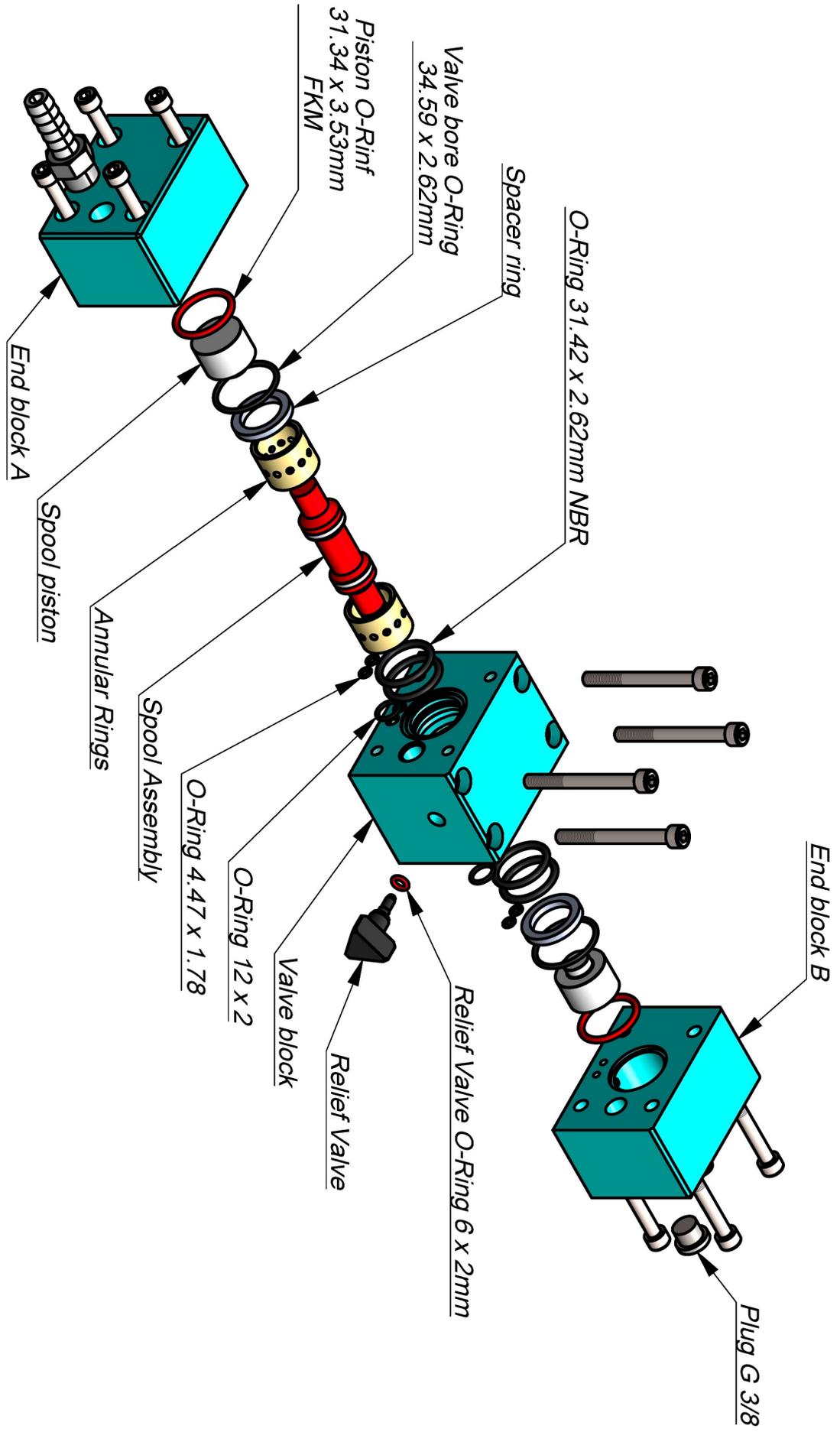
## Piping scheme for long term storage

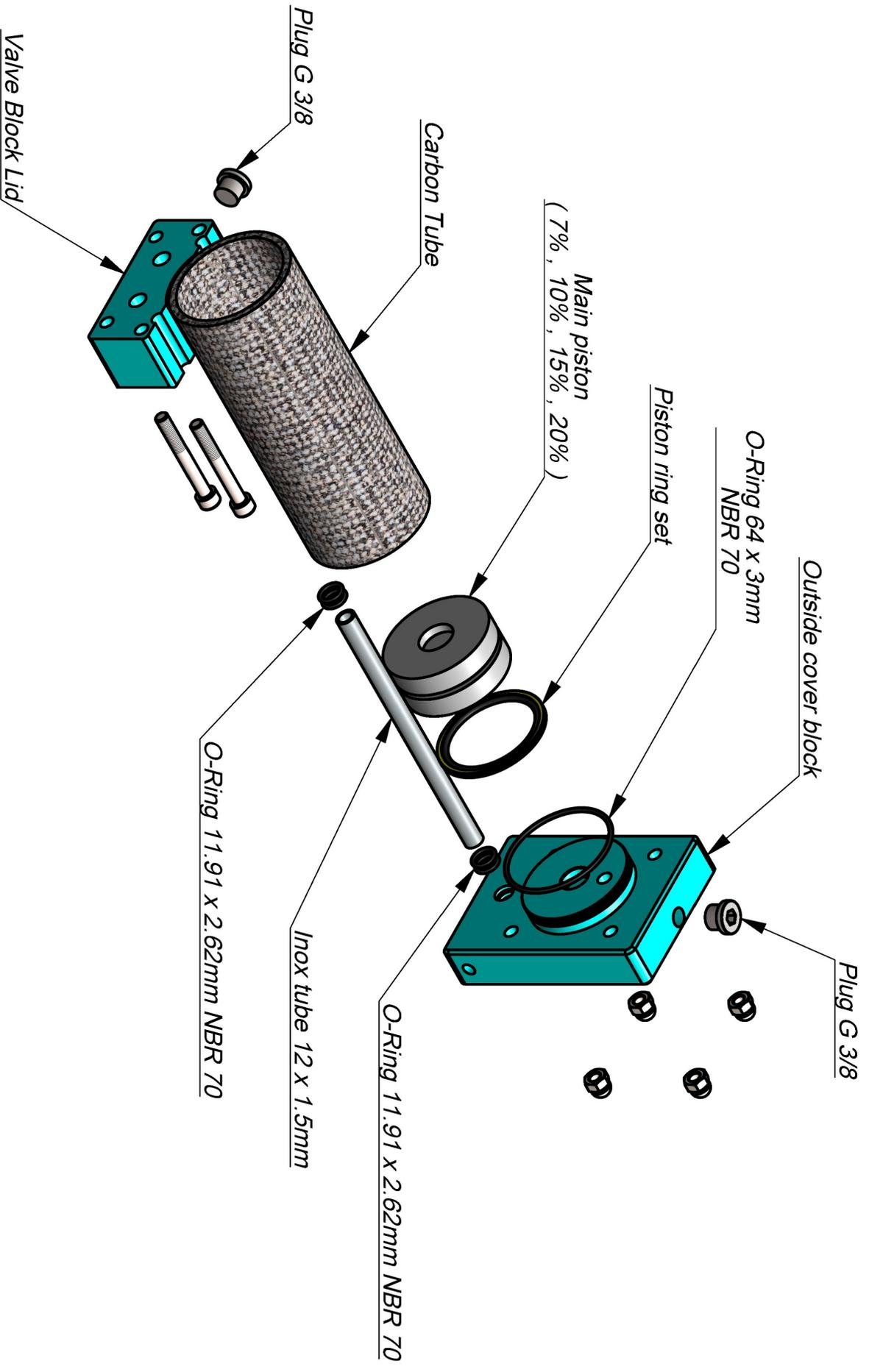
## FIRST START UP AFTER LONG TIME STORAGE

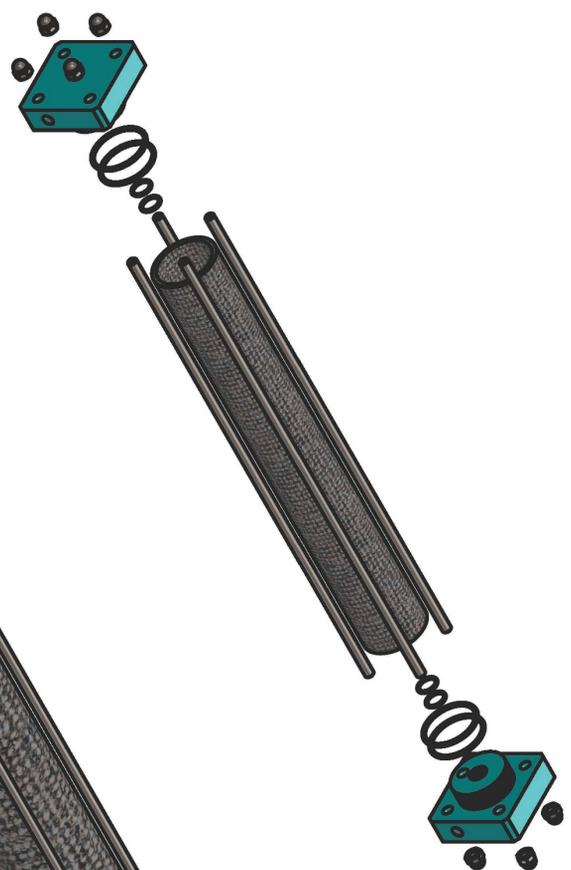
**Test to see if biological growth has occurred:** Before running the system, remove the pre-filters and examine their condition. If the filter housings are full of smelly, discolored water, the system was not properly stored. Install clean pre-filters

- Open inlet seacock and the brine discharge valve.
- Check that all of your hose connections are tight.
- Open relief valve!!!
- Turn on flushing for a 3 minute then turn off.
- Turn on watermaker and after a 15 min. slowly close relief valve.
- Watch out pressure. ( normally it should be between 8-10 bar. )
- After 30 minutes of work you can connect it to fresh water reservoir.



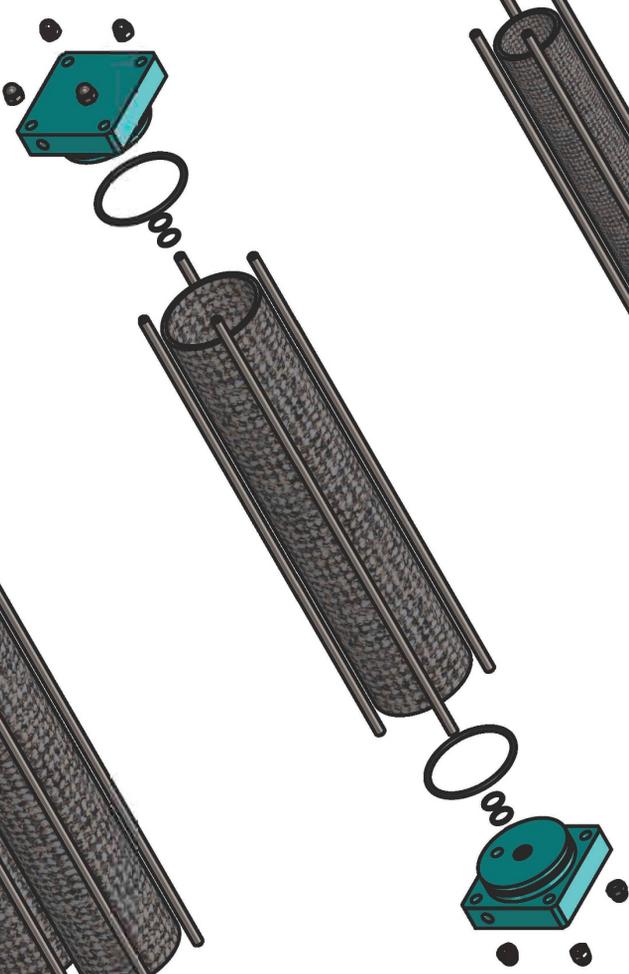






AQUA 30 PRO  
56 X 3.5mm ( 4 pcs )  
18 x 2.6 ( 4 pcs )

This diagram shows the exploded view of the AQUA 30 PRO. It consists of a single cylindrical mesh filter held between two teal-colored end caps. The end caps are secured with four screws each. A spring is positioned between the filter and the top end cap, and another spring is between the filter and the bottom end cap. Two O-rings are shown between the filter and the end caps to ensure a tight seal.



AQUA 60 PRO  
92 X 5mm ( 2 pcs )  
18 x 2.6 ( 4 pcs )

This diagram shows the exploded view of the AQUA 60 PRO. It features two cylindrical mesh filters held between two teal-colored end caps. The end caps are secured with four screws each. A spring is located between the top filter and the top end cap, and another spring is between the bottom filter and the bottom end cap. Two O-rings are shown between the filters and the end caps.



AQUA 110 PRO  
92 X 5mm ( 4 pcs )  
18 x 2.6 ( 8 pcs )

This diagram shows the exploded view of the AQUA 110 PRO. It contains four cylindrical mesh filters held between two teal-colored end caps. The end caps are secured with four screws each. A spring is positioned between the top two filters and the top end cap, and another spring is between the bottom two filters and the bottom end cap. Two O-rings are shown between the filters and the end caps.

# Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 1334701/02**

Certificate Holder:



**AQUA NAUTICA D.O.O.**  
Miroslava Jovanovića 17  
11160 Belgrade  
Republic of Serbia

including the locations according to annex

Scope: Production of marine watermakers.

Proof has been furnished by means of an audit that the requirements of ISO 9001:2015 are met.

Validity:

The certificate is valid from 2025-11-16 until 2028-11-15  
First certification 2019

2025-11-16



TÜV Rheinland Cert GmbH  
Am Grauen Stein · 51105 Köln

## EC Declaration of Conformity



Producer:  
AQUA Nautica d.o.o.  
Miroslava Jovanovića 17  
11160 Belgrade  
SERBIA

We declare that our products:  
Automatic oil burners: AQUA 30 PRO; AQUA 60 PRO; AQUA 110 PRO

Correspond to all relevant regulations of the following directives:

- Machinery Directive 2006/42 / EC, in force since December 29, 2009
- Low Voltage Directive 73/23 / EEC and subsequent amendments and additions: 93/68 / CEE implemented by the Law of 18 October 1997 n. 791
- Electromagnetic Compatibility Directive 89/336 / EEC and subsequent amendments and additions: 93/31 / CEE implemented with D.L. December 4, 1992 n. 476
- Standards UNI EN 292/1 and 292/2 (safety of machinery)
- Supply of Machinery (Safety) Regulations 2008 - S.I. 2008:1597
- Electrical Equipment (Safety) Regulations 2016 - S.I. 2016:1101
- Electromagnetic Compatibility Regulations 2016 - S.I. 2016:1091

In Belgrade  
28. Januar 2026



Director  
Milan Cincovic

## AQUA NAUTICA WATERMAKER LIMITED WARRANTY

AQUA Nautica d.o.o. for a period of twenty-four (24) months from the date of shipment that the AQUA Nautica watermaker will perform according to specifications. AQUA Nautica's liability under this warranty shall be limited to repair or replacement of the watermaker at AQUA Nautica's option. Under no circumstances shall AQUA Nautica d.o.o. 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 the event of a defect, malfunction, or failure during the warranty period, AQUA Nautica d.o.o. will repair or replace, at its option, the product or component therein which, upon examination by AQUA Nautica, shall appear to be defective, or not up to factory specifications.

To obtain warranty service, the defective product or part must be returned to AQUA Nautica's 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 subjected to misuse, neglect, accident, improper installation, or used in violation of instructions furnished by AQUA Nautica d.o.o.

AQUA Nautica d.o.o. reserves the right to make changes or improvements in 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. AQUA Nautica shall not be liable for damages, consequential or otherwise, resulting from the use and operation of this product or from the breach of this LIMITED WARRANTY.

This limited warranty service does not apply to normal recurring user maintenance as described below.

Sea strainer element Gauge Instrument Calibration

Pre-filter Cartridges This warranty does not

extend to the reverse osmosis membranes due to the possibility of unintentional damage by the user.

**Original Buyer:**

**Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Installed On:**

**Vessels Name and Type:** \_\_\_\_\_

**Purchased From:**

**Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Installation date:** \_\_\_\_\_

**Model No:** \_\_\_\_\_

**Serial No:** \_\_\_\_\_