DESSALATOR®
WATERMAKERS - DESSALINISATEURS

AC PRO COMPACT

D90 to D200

INSTALLATION AND USER MANUAL

AUTOMATIC



90 to 200 L/h

Nominal output

230 V or 400 V

Power supply

Automatic

Model

Installation • Operation • Maintenance

ENGLISH EDITION

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www.dessalator.com

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I LEGAL NOTICE
Manufacturer and contact details

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1 COMPONENTS
1 Component identification

Seawater inlet valve



- Must be placed as low as possible in the boat so as to avoid drawing in any air.
- Must be installed towards the back for a motorboat, or centered near the keel for a sailboat. The ribs of the strainer should be placed towards the front the boat to force the entry of water by scooping during navigation.
- The strainer of the hull valve helps stop large particles at the entrance of the system.
- The sea water filter is fixed directly on the valve (photo opposite).

Bloc de préfiltres



- Must be placed as close as possible to the hull valve and, if possible, beneath the waterline to ensure a better yield/output.
- The first cartridge of 25 microns roughens the filtration, then the second cartridge of 5 microns refines the treatment.
- Comes with a tool for screwing / unscrewing the tank.
- Comes equipped with a solenoid valve for automated rinsing.

Pré-pompe eau de mer



- The pre-pump is equipped with a 3-way valve (for manual rinsing)
- Must be placed as close as possible to the hull valve and, if possible, beneath the waterline to ensure a better yield/output and must be remain accessible**.**
- On the valve, pressurized fresh water must be connected to facilitate manual rinsing and sterilization of the watermaker; see the layout diagram at the beginning of the manual**.**

Tip: Do not forget the 2 stainless steel clamps at each junction.

DO NOT PLACE THE PUMP WHERE THERE IS A RISK OF WATER SPRAYING

1.1 1 COMPONENTS Front control panel

The control panel is incorporated into the chassis (**COMPACT** version).

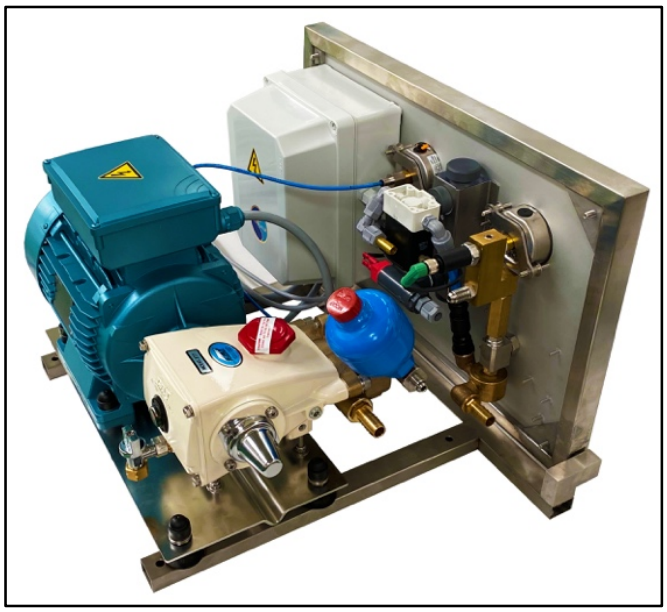
It is used to manage the operation of the watermaker and is made up of the following elements :

- A high-pressure manometer.
- A flowmeter.
- A start switch.
- A Manual or Automatic mode selection switch
- A know for pressur adjustment.
- An operating hours countern.
- Three indicator lights.



1.2 1 COMPONENTS
Motor and pump assembly

- The HP motor/pump block allows seawater to be pushed to 60-65 Bars.
- Composed of the 230 or 400 Volts motor.
- Must be installed in a ventilated space.
- The engine block is incorporated in a frame with the integrated control panel for the **COMPACT** version**.**



Membrane Block

The number of membranes depends on the desired production rate : 90 to 200 liters/hour.



1 membrane for a production of

90 liters of water per hour.
(1200x100x120mm).



2 membranes for a production of

160 liters of water per hour.
(1200x190x120mm).



3 membranes for a production of

200 liters of water per hour.
(1200x270x120mm).

1.3 1 COMPONENTS Supplied piping

- High-pressure piping from the pump to the membranes and from the membranes to the control panel. An 8-meter pipe is provided, it should be cut into two parts. The length of each part is to be determined according to the distance of the different element.

- 4 special DESSALATOR® fittings* for high-pressure piping (see assembly procedure in **Appendix A2**).
  - * Including one 90° elbow fitting for the back of the control panel, which can swivel 360°.

- Fresh water production piping going from the outlet of the membrane block to the dashboard (6 meters long).

2 2 INSTALLATION Assembly and connections

1) List of supplies necessary for assembly

- Screws (self-tapping and more).
- Stainless steel ties Ø 8-16mm, Ø 12-22mm and Ø 16-27mm.
- Electrician' plastic ties.
- *Loctite 542* liquid or *Loctite* 577 paste.
- Polyurethane sealant, Sicaflex or equivalent.
- Corrugated sheath for electric cables and high-pressure tubes.
- Braided-core flexible hose, Ø 10mm and Ø 12mm inner diameter (Tricoflex) and 3mm thick.
- Various tools (drills, saws, Ø 21mm hole saws, etc.).

2.2 2 INSTALLATION Seawater inlet

Seawater inlet valve

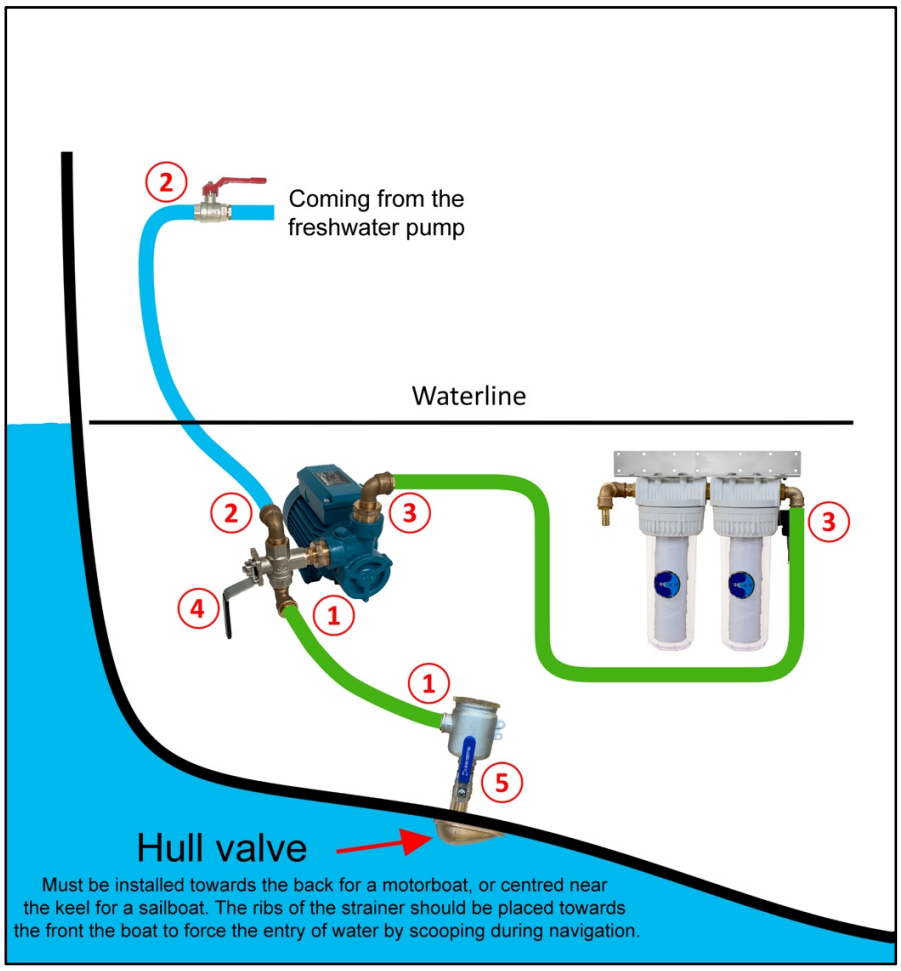
- The strainer should be placed as low as possible beneath the waterline so that it does not draw in any air. It should be placed far from the discards.
- Pierce the hull with a Ø 21mm hole saw.
- The streaks of the strainer must be placed towards the front of the boat to allow the water to naturally enter by scooping during navigation.
- Seal the junction with the hull properly using polyurethane sealant or Sicaflex. Do not forget to paint the submerged part with special underwater paint.
- The hull valve ⑤ must remain accessible for maintenance operations.
- Seal the valve/strainer and valve/hose connections with *Loctite 577*.

Sea water pre-pump

- The pre-pump must also be installed below the waterline for better production and must be easy to access.
- The pre-pump is equipped (at its suction) with a 3-way valve.
- On the 3-way valve : for seawater suction from the pre-pump (seawater inlet valve side) the connection must be made with Tricoclair-type piping with an internal Ø19mm ① and the other side of the 3-way valve (rinsing side) of internal Ø15mm ②.
- The connection for rinsing with fresh water ② must be made with water from the circuit of the pressurized fresh water unit.
- The discharge from the pre-pump to the block of pre-filters ③ must be done with *Tricoclair* type piping with an internal Ø15 mm.
- The valve handle ④ must be swung to the seawater position (see **Appendix 3** for the 3 positions of the 3-way valve
- As an option, a fixing bracket is available to fix the pre-pump to a vertical wall..

➥**Note :** For manual rinsing, switch the valve handle to the soft water position (see the 3 valve positions below) and follow the instructions in **Appendix A3**.

2.2 2 INSTALLATION
Seawater inlet · continued



Cartridge pre-filter block

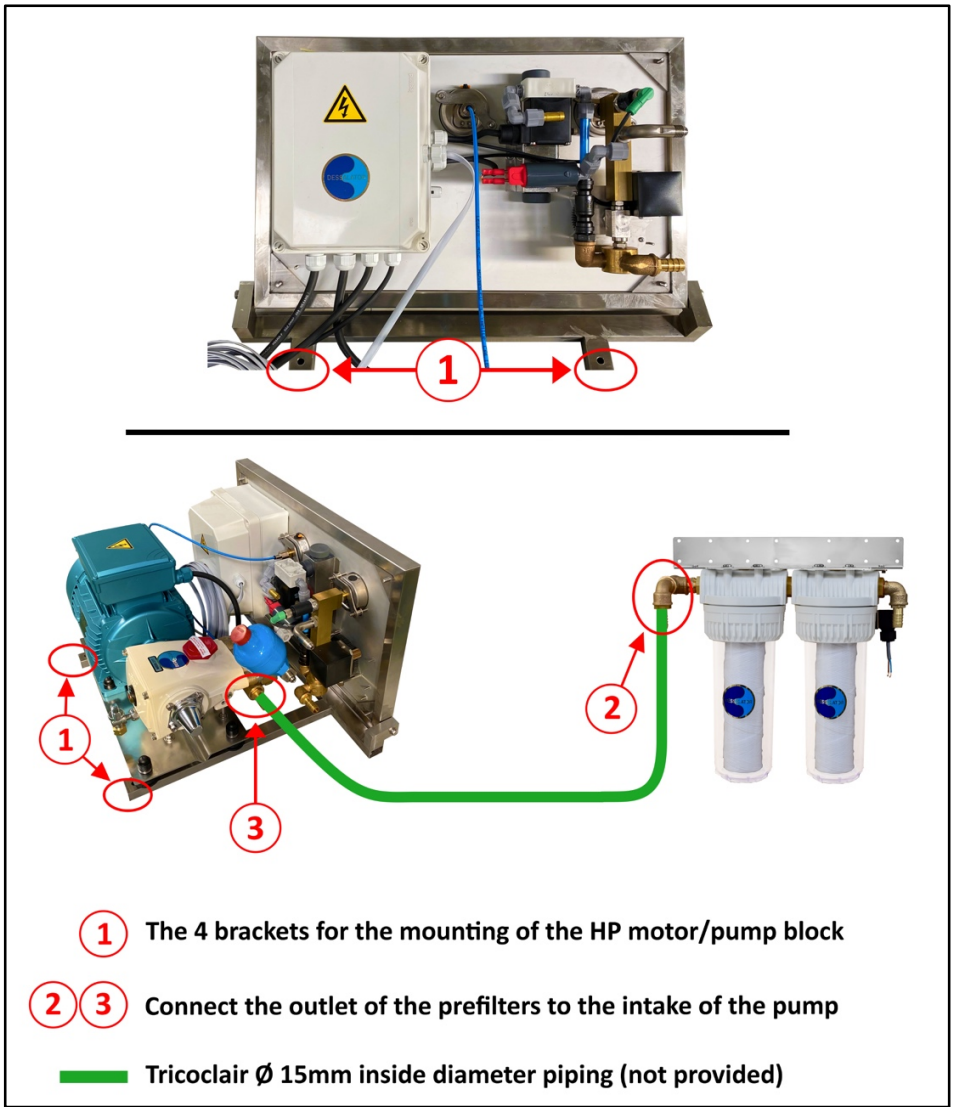
- The prefilter must also be installed beneath the waterline to ensure a better yield/output. It must be easy to access
- The fixing bracket is reversible to allow you to adjust the installation height.
- Piping connections must be made with Tricoflex Ø15 mm (inside diameter), for the entire seawater system ③ as well as the pressurized rinsing system
  → Do not forget to fasten 2 stainless steel collars on each fitting.
- Allow a minimum of 3 cm below the filter body for the clearance of the tank when opening it. A screw is provided for screwing / unscrewing it.
- A solenoid valve is mounted behind the pre-filter for automatic rinsing.

Connections

- Fasten two stainless steel collars on each connection, with the clamping heads positioned opposite one another.
- This connection can be made by tapping under a sink, a washbasin as well as on the path of pressurized cold water pipes.
- If the pipes are to pass through walls or be in contact with sharp corners, provide protection against wear and friction by inserting them into a sheath or pipe of greater diameter.

2.3 2 INSTALLATION
Motor and pump assembly

- To ensure optimal production, the assembly of the high-pressure motor block must be completed as low as possible in the boat, in a horizontal position and in an area protected from water sprays.
- Use the 2 stainless steel legs ① under the 2 motors to fix the motor block. Leave a few centimetres of wiggle room around it.
- Provide sufficient airflow for the ventilation of the motors.
- The connection of the prefilter outlet ② to the inlet of the pump on the suction-side pump ③ should be done using Tricoflex piping Ø 12mm (inside diameter) and 2 stainless steel collars at each connection.
- The connection of the pump's high-pressure head to the membrane inlet (red mark) should be done using a high-pressure hose that is cut to size (follow closely the assembly instructions in **Appendix A2**).
- Put a little liquid *Loctite* or threadlock on the male and female cones before each connection.

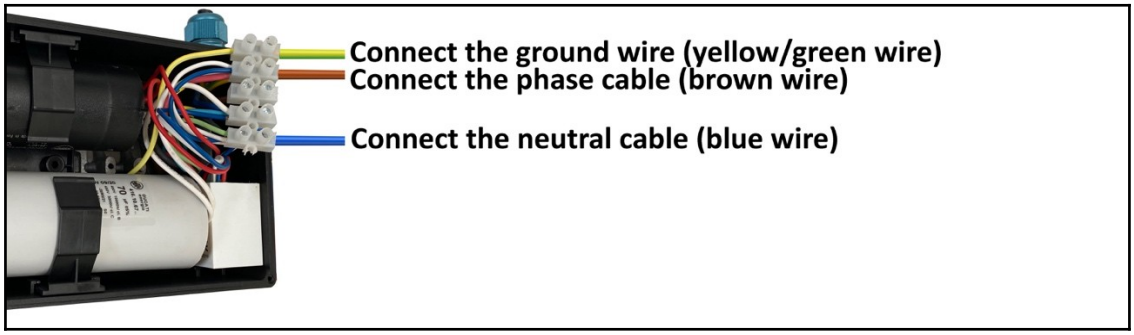


2.4 2 INSTALLATION Electrical connections

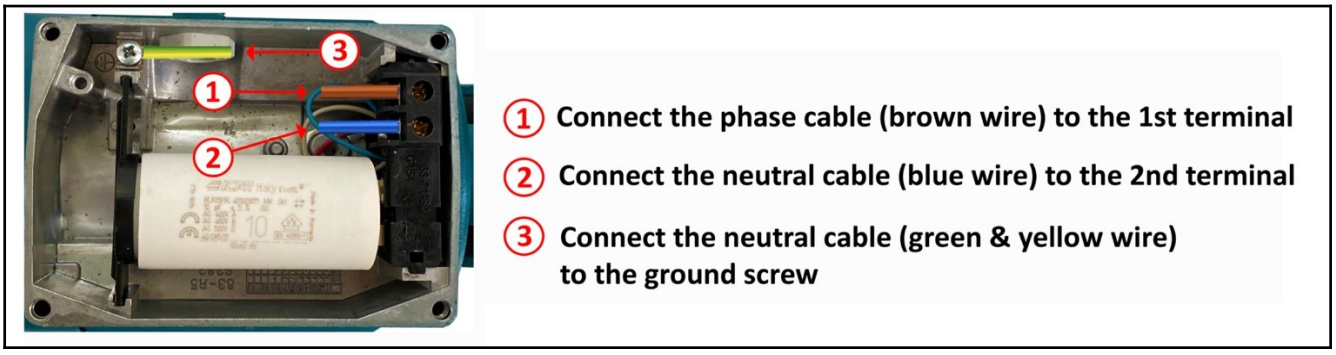
ELECTRICAL SAFETY

Never work with the power on! Turn off the power of your entire system.

The 230V (or 400V) motor connection:

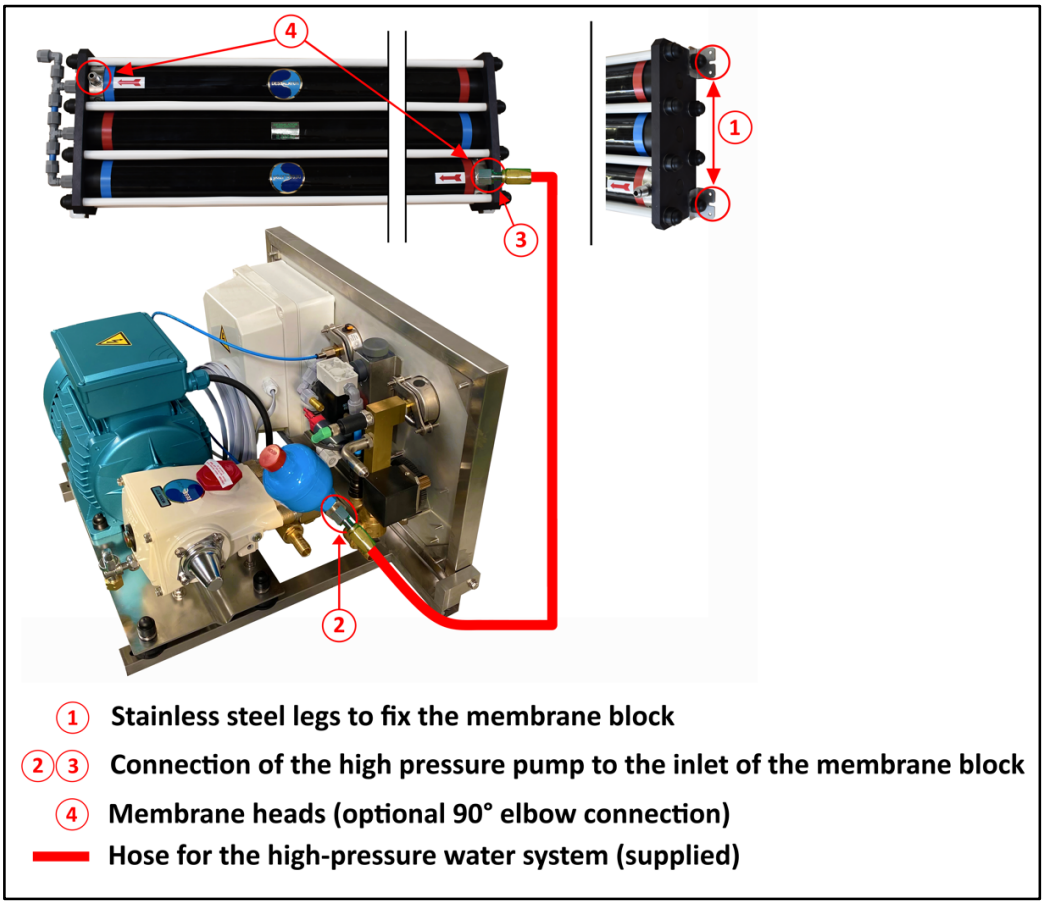


Pre-pump connection :



2.5 2 INSTALLATION Membrane assembly

- The membrane block should preferably be mounted horizontally (on the base or side). A vertical position might lead to a yield/output loss over time.
- Fastening is done using self-tapping screws in the stainless steel brackets ①.
- It is necessary to sheath the pipe connecting the output of the high pressure pump ② to the inlet of the membranes ③ because of the vibrations, which might lead to leaks if the pipe is attached or in direct contact with something.
- The installation of the high-pressure nozzles must be carried out according to their assembly instructions (see **Appendix A2**).
- Put some *Loctite* or threadlock on the 2 male and female cones before tightening.
- Available as an option: 90° elbow high-pressure nozzle for the inlet and outlet of the membranes ④.



① **Stainless steel legs to fix the membrane block**

②③ **Connection of the high pressure pump to the inlet of the membrane block**

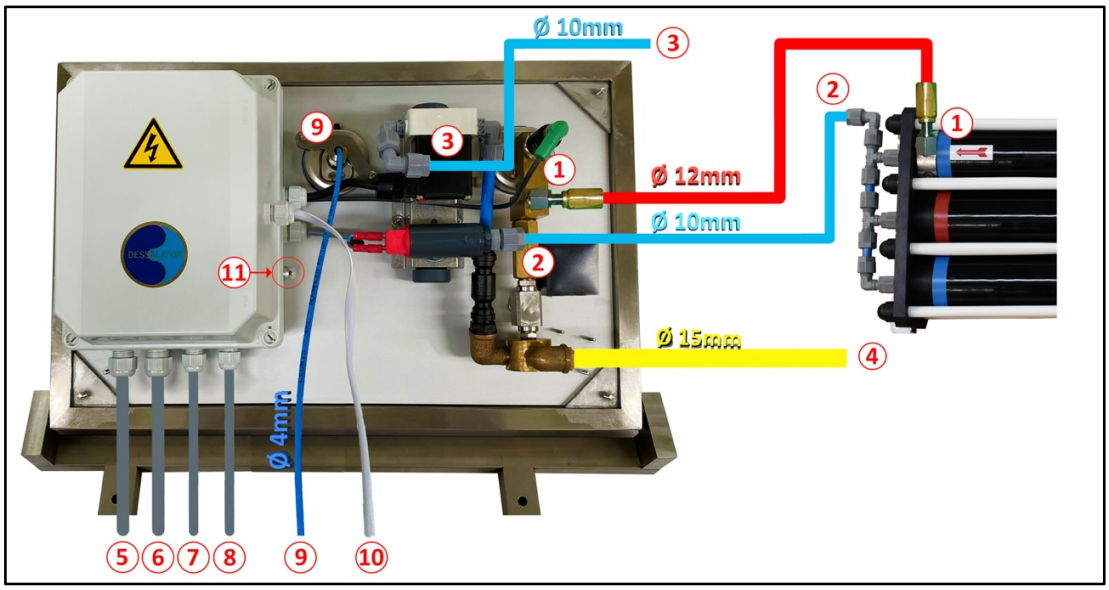
④ **Membrane heads (optional 90° elbow connection)**

Hose for the high-pressure water system (supplied)

2.6 2 INSTALLATION Control panel

The control panel must be mounted on a vertical panel.

Ensure unrestricted access to the back of the control panel, this will make connections easier. You should place it in a place where the light indicators are visible. Example: below or on the sides of cupboards, under the chart or centre table, on the front panel of a rear berth etc.



1. Hose for connecting the high-pressure membrane outlet to the high-pressure control valve on the back of the front panel. (Black high-pressure hose supplied)
2. The blue Serto hose for connecting the water outlet of the membranes to the inlet of the probe of the panel. (inside diameter Ø 10mm pipe supplied).
3. Hose for connecting the fresh water outlet of the panel to the tanks, dispensing clarinet or water inlet or with a tee provided that there is no valve on the outlet of the water tank (inside Ø 10mm pipe not supplied, use preferably Tricoclair).
4. Hose to connect the discharge of panel. To be connected preferably to a water disposal system like the evacuation of a sink, washbasin, cockpit etc. In this case, do not forget to open the drain valves during use (inside Ø 15mm pipe not supplied).
5. 230V (400V) cable power supply of the electrical box to connect to the output of the circuit breaker.
6. Motor power supply cable.
7. Pre-pump power supply cable.
8. power cable for the rinsing solenoid valve located on the pre-filters.
9. 4mm capillary tube. It connects to the LP pressure gauge and is connected to the side of the HP pump.
10. Micro-Command (ou Mini-Command) power supply cable.
11. Reset fuse if the pre-pump turbine is blocked.

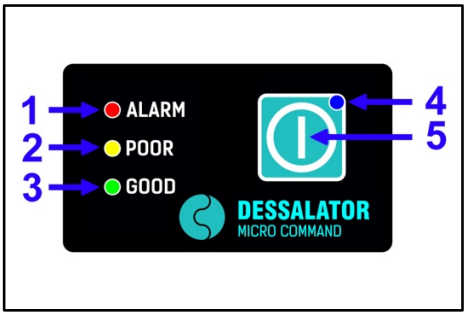
2.7 2 INSTALLATION
Micro-Command overview

General presentation:

The Dessalator® Micro Remote Control Dessalator allows you to restart, stop, perform a rinse and monitor the watermaker.

The Mini Remote is very intuitive, which is why this quick guide only describes the basic functions and is meant to serve as a convenient reference





1: RED LIGHT – ALARM

2: YELLOW LIGHT – POOR QUALITY

3: GREEN LIGHT – GOOD QUALITY

4: BLU LIGHT – STATUS LIGHT

5: ON / OFF BUTTON

➥**Note** : in the event of an alarm, the machine must be restarted from the control panel (and not from the Micro-Command).

3 START-UP
Start-up

1) Precautions before start-up

BEFORE START-UP

Before starting-up, check that the valves are open.

Mandatory:

- When using the device for the first time, after changing the filter, after the boat has been grounded or stopped for a long time, you should flush the system using fresh water by operating the three-way valve on the prefilter (see **Appendix A3**).

  Purge the system for 1 minute: watermaker must be stopped and the pressure regulator open (counterclockwise).

- Once the system is filled, put the valve back in seawater position (see **Appendix A3**).

➥**Note:** If you are not going to use the watermaker at all for a month or more, we recommend to either sterilize the membranes for storage (for a maximum duration of 6 months) or to rinse it out at least once a month.
Before starting the system back up, we recommend rinsing it out for two minutes (see **Appendix A3**).

Automatic models: a 5-second fresh-water rinse precedes start-up in AUTO or MANUAL.

3.2 3 START-UP AND CONTROLS
Starting the watermaker

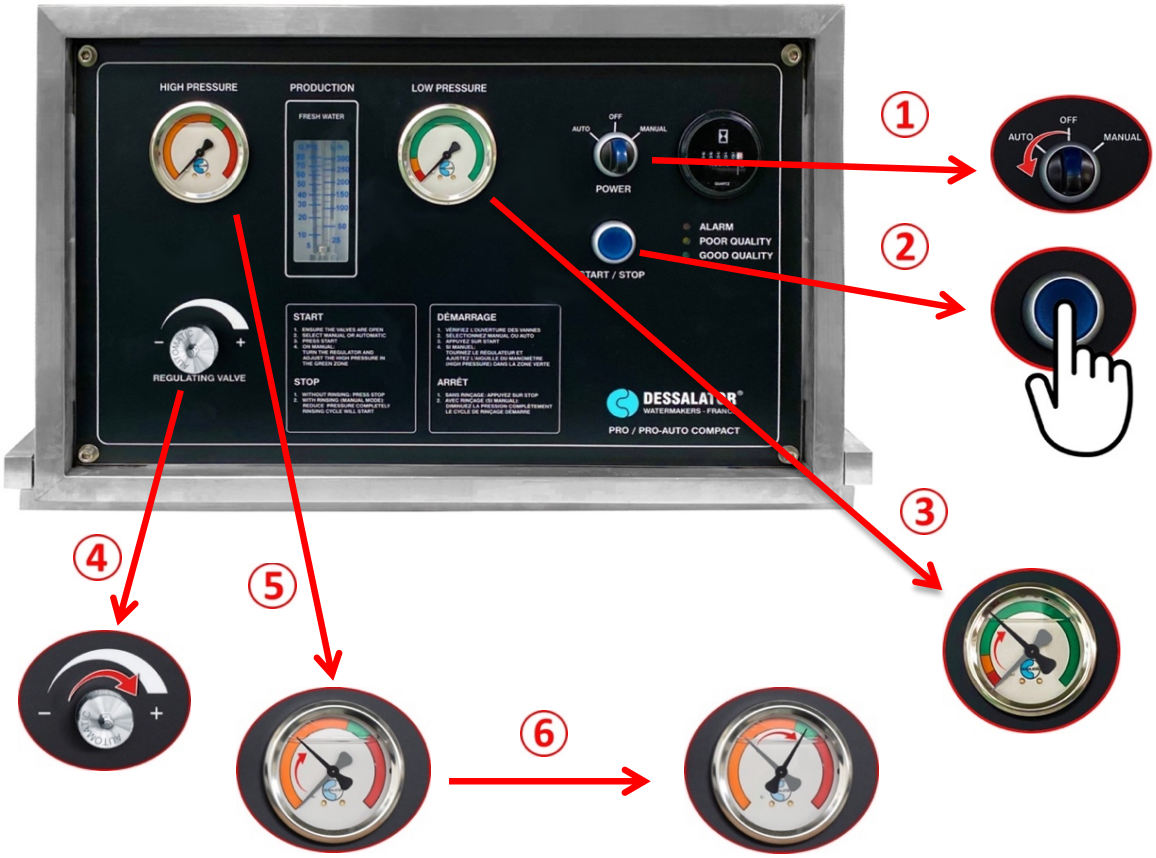
Automatic mode:

The AUTOMATIC product range is equipped with a motorized knob regulator to adjust the pressure.

- Simply set the switch ① **AUTO**.

- The pre-pump starts, the needle on the low pressure manometer ③ rises in the green zone.

- The engine has started, the pressure regulator knob ① will automatically run to increase the pressure to the orange zone ⑤ of the pressure gauge, then gradually adjust it until it reaches the green zone ⑥ on the pressure gauge. This procedure takes about 2 minutes.

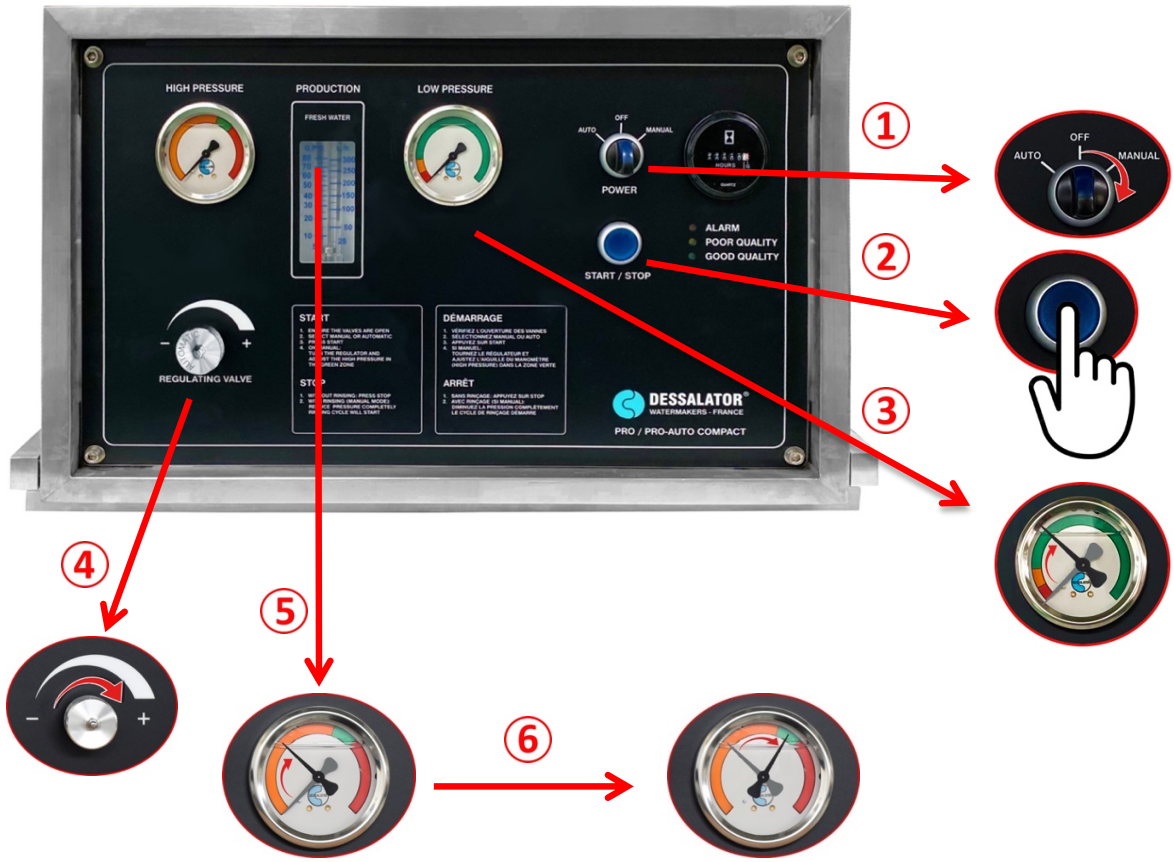


➥**Note :** The fresh water yield depends on the temperature and salinity of the sea water and the cleanliness of the 5 & 25 micron filters (in the pre-filter).

3.2 3 START-UP AND CONTROLS
Starting in manual mode

Follow the procedure below :

- Set the switch ① to **MANUAL** and press the **START** button
- The pre-pump starts, the needle on the low pressure manometer ③ rises in the green zone.
- Once the engine has started, gradually turn the pressure regulator knob ① to the right to increase the pressure towards the middle of the orange zone ⑤ then continue gradually increasing the pressure until it reaches the green zone ⑥ on the pressure gauge. **This procedure takes about 1 minute**.



➥**Note :** Too high a pressure setting stops the watermaker and turns on the red light. In this case, decrease the pressure with the pressure regulation knob ④ and repeat the startup procedure.

The fresh water yield depends on the temperature and salinity of the sea water and the cleanliness of the 5 & 25 micron filters (in the pre-filter).

3.3 3 START-UP AND CONTROLS
Shutdown without membrane rinsing

It is not necessary to rinse your membranes if you use your watermaker regularly.

Mode Automatique :

Follow the procedure below :

- Set the switch ① to **OFF**.

Mode Manual :

Follow the procedure below :

- Set the switch ① to « OFF».
- You can now lower the pressure regulator knob ② to the left (counterclockwise) until the needle of the high pressure gauge ③ is at the minimum.
- Once the knob has come to a stop, reopen the pressure regulator knob ② by only ¼ of a turn (to the right).



Beyond 10 days without use, it is best to rinse the membranes before the watermaker is started-up again (see manual rinse procedure in Appendix A3).

If watermaker is not used, the rinsing is to be renewed every month.

If the watermaker is not used completely, the membranes must be sterilized for storage (for a maximum of 6 months).

3.4 3 START-UP AND CONTROLS
Shutdown with automatic rinsing

A rinsing must be carried out if the watermaker is not going to be used for more than 10 days.

Automatic mode:

After using the watermaker, **do not turn it off**.

- While the watermaker is still running, Start turning the knob of the pressure regulator ① (counterclockwise) to engage the rinsing mechanism, the pressure of the manometer will drop.

- The watermaker will then start the rinsing procedure. The green and yellow LEDs ②on the control panel will light up, indicating that the rinsing procedure has started. It lasts 30 seconds. When the procedure is complete, the green and yellow LEDs ② will lights off and the only remaining indicator will be the flashing blue LED on the switch③. If you don't have a mini-control you can turn the switch OFF ③.



Automatic rinsing is the best way to rinse your system because it not only replaces seawater with fresh water, but it also washes your pre-filter and allows discharge to the sea through the suction through-hull all dirt and debris accumulated in the filters.

Is watermaker is not used, the rinsing is to be renewed every month.

If the watermaker is not used completely, the membranes must be sterilized for storage (for a maximum of 6 months).

3.4 3 START-UP AND CONTROLS
Automatic rinsing in manual mode

BEFORE YOU START

After using the watermaker, leave it running.

01 With the watermaker running, turn the pressure regulator knob ① counterclockwise. The pressure on the gauge will drop.

02 At the end stop, reopen the pressure regulator knob ① by only ¼ turn to the right.

03 The watermaker stops producing water and starts rinsing. The green and yellow LEDs ② light up. Rinsing lasts 30 seconds and stops automatically. The green and yellow LEDs go out, leaving the blue LED on the ON/OFF switch ③ flashing. Set the switch to OFF.



Automatic rinsing replaces seawater with fresh water, washes the prefilter and discharges trapped dirt and debris to sea through the suction through-hull.

WHEN NOT IN USE

Repeat rinsing every month. For storage, sterilize the membranes for a maximum of 6 months.

3.5 3 START-UP AND CONTROLS
Using the Micro-Command

After first starting the system from the control panel, you can use the Micro-Command to monitor the system, stop it, rinse it or restart it.



Dessalator® Micro-Command

Starting from standby



Hold the button for 2 seconds



Start-up

01 Hold the button for about 2 seconds. The blue LED flashes and the buzzer sounds twice.

02 Release the button to start the watermaker.

Monitoring production

The red, yellow and green LEDs show the same status as the control panel. The faster the yellow LED flashes, the higher the pressure. The green LED lights up once the product water is of good quality.





BUILDING PRESSURE

Build up pressure slowly to prolong membrane life. For frequent Micro-Command start-ups, use a model with automatic pressure regulation, such as a Navigator, Automatic or Pro-Auto.



On



Flashing



Off

3 START-UP AND CONTROLS
3.6 Micro-Command and shutdown

Normal shutdown



Hold the button for 2 seconds



Standby

01 Hold the button for about 2 seconds.

02 Release the button. The watermaker stops and enters standby.

Shutdown with automatic rinsing

REMOTE RINSING
Only initiate automatic rinsing remotely on a watermaker equipped with automatic pressure regulation.



Hold the button for 5 seconds



Rinsing



Standby

01 Hold the button for about 5 seconds until both the yellow and green LEDs light up and the buzzer sounds a long beep.

02 Release the button. The watermaker stops, runs the automatic rinse cycle and then enters standby.


On


Flashing


Off

4 OPERATION
4 Operating conditions

Membranes are delicate components

Reverse osmosis membranes must be carefully maintained as they are the most sensitive parts of your system. Follow the instructions given to avoid damaging them and voiding the warranty. The nominal production capacity of the watermaker is given for a temperature of 25°C for seawater and depend on the salinity of the seawater in your navigation area. Each degree below this given temperature decreases the flow rate by 2.5 to 5%.

Extremes temperatures

The membranes should not be exposed to temperatures below **0°C**. Overpressure, caused by expansion resulting from freezing, can rupture the membranes and prevent the salt from being filtered out.

The membranes must not be exposed to temperatures above **60°C**, as high temperatures may also prevent salt from being removed.

Drying out of the membranes

After the first use, the membranes should be kept immersed in liquid, either in treated seawater, in a mix of fresh water and sterilizing solution or, temporarily, in fresh water (see Sterilization methods, **Appendix A4**).

Recommendations for use

The different quality and salinity level of seawater influence the yield of the membranes.

WATER QUALITY

Do not use this system in areas where the water is muddy or polluted and at the mouth of rivers or brackish water. This will prevent clogging the prefilter and damaging the membranes.

5 MAINTENANCE
Maintenance

RISK OF FREEZING

In case of risk of frost, we recommend emptying the flowmeter located on the control panel, disconnect the output pipe (blue) and blow or inject air into this pipe while alternating pressing on the small button of the solenoid valve located at the back of the control panel. You should also protect your membranes against the cold using blankets or insulation.

1) Membranes maintenance

Over time, it is normal for the flow to drop by 10 to 15%.

If yield/output is no longer satisfactory, you should consider replacing the membranes.

The output volume of your watermaker is established within the first 24 to 48 hours of operation. The fresh water output depends on the salinity and temperature of the seawater, as well as on the working pressure of the membranes.

Rinsing the membranes can improve the yield/output.

2) Rinsing frequency of the membranes

It is therefore not necessary to rinse the membranes after each use. Rinsing them too often can lead to premature deterioration of the membranes.

There are two methods to flush the system: one manual and the other automatic.

Both methods use the water in the boat's tanks.

It is necessary to rinse the watermaker if it is not going to be used for several days.

➥Reminder: All flushing procedures should be done with the motor/pump block off. The biggest enemy of membranes is pressurized fresh water.

5.3 5 MAINTENANCE
Membrane preservation

When to preserve the membranes

Monthly flushing is generally sufficient. If the watermaker will be unused and monthly flushing is not possible, preserve the membranes. Protection lasts up to 6 months. Do not preserve more than twice a year, and flush with fresh water between treatments.

DOSAGE PRECAUTIONS
Excessive concentration can corrode the membrane end caps. Use Dessalator preservative and the dose specified for your watermaker. Using a different product or an incorrect dose voids the warranty.

With the ST2 cartridge

The ST2 cartridge is reusable. Follow the procedure in Appendix A4.

Without the ST2 cartridge · bucket method

With the watermaker stopped and the pressure regulator fully open, flush with fresh water for 10 minutes using the three-way valve. Close the valve and remove the 5-micron filter from the second prefilter. Dissolve one full sachet of preservative in 10 litres of fresh water. Close the seawater inlet seacock, disconnect its hose and place it in the bucket. Set the three-way valve to seawater. Start without increasing the pressure; restart if the safety system stops the unit before the bucket is empty. Stop the watermaker, reconnect the hose and reopen the seacock.

Without the ST2 cartridge · garden sprayer method

Prepare the stopped watermaker as above. Mix one full sachet of preservative with 10 litres of fresh water, then fill the sprayer. Pressurize it to 3 or 4 bar and inject the solution into the membrane inlet on the red-marker side.

AFTER PRESERVATION WITHOUT ST2
Three hours after preservation, flush with fresh water for 5 minutes, then close the three-way valve. Before recommissioning, flush for 15 minutes to remove the preservative. Close the valve and fit a new 5-micron filter.

3) High-pressure pump

The high-pressure pump is half filled with oil to the level indicated on the gauge. The oil used in the pump is a 15W40 or 20W40 multigrade oil. You not exceed the level (as shown on the gauge). The oil does not need to be change over time.



The tape placed on the red oil filler cap of the high pressure pump is only there for transport: it must be removed before use.

6 PARTS AND ACCESSORIES
6 Spare parts

DESSALATOR® devices, which have a high reliability and long lifetime, generally do not require costly servicing. An accident is always possible (operation with low water level, accidental overpressure, impact, etc.).

We keep the following spare and maintenance parts at your disposal:

- 5µm and 25µm 10-inch filters
- Production solenoid valve
- High pressure pump seals and valves
- High pressure hose, sold by the meter
- Nozzle for high pressure piping
- Salinity probe
- Pressure sensor

Accessories:

- Mini Remote Control
- Micro Remote Control
- Complete ST2 sterilizing cartridge
- Sterilizer in sachet
- Mineralizer cartridge
- Mineralizer in sachet
- Nipple for high pressure tube
- HP nozzle elbow

A1 APPENDIX A1 How watermakers work

How does reverse osmosis work?

Pressurized seawater enters the membranes which, similarly to "molecular sieves", only let the fresh water molecules pass.

Most of the dissolved solid particles do not cross the membranes. These residues are evacuated with the discharge water.

Reverse osmosis extracts 99% of impurities.

The drinking water produced by your reverse osmosis system can be consumed. If stored in your tanks you can, if needed, treat this water with commercially available products. Make sure to follow the manufacturer’s dosage instructions.

We sell a mineralizing cartridge if you plan to drink the produced fresh water long-term.

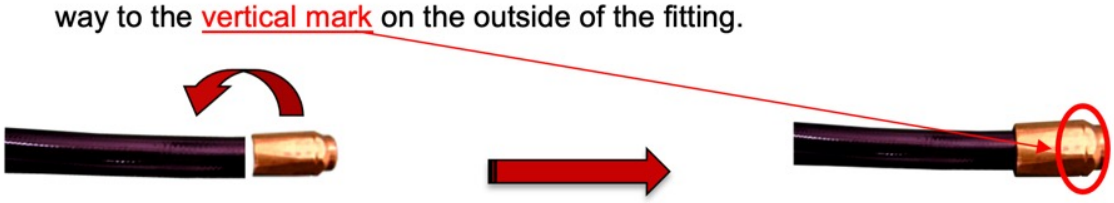
How does your watermaker work?

Seawater is draw in through the inlet valve of the thru-hull. It then passes through the 5-micron prefilter. The filtered water is then pressurized in the membrane tube by the high-pressure pump (operating pressure is in the green zone of the pressure gauge). The pressurized water passes through the orifices of the membrane surface, freed from the salt and bacteria, which are poured back into the sea along with the remainder of the solution used to self-clean the membranes. The now fresh water goes through a probe measuring the salt content: if the water is sufficiently desalinated, the 3-way valve is automatically switched to direct the fresh water to the tanks. On the other hand, if the salinity sensor registers a salt content that is too high (conductivity greater than 1,000 µSiemens), the valve will reject the output water at sea.

The amount of drinking water being produced is controlled by a flowmeter located on the control panel. The fresh water production capacity is given for a seawater temperature of 25°C. Yield is reduced by 2.5 to 5% per degree Celsius of temperature drop.

A2 APPENDIX A2 Installing the high-pressure fittings

1. Screw the brass fitting onto the high-pressure hose counter-clockwisela all the way to the vertical mark on the outside of the fitting.



2. Place the brass plug in the stainless steel nut and tighten it firmly:



3. Put a little grease on the tip of the stainless steel cone and screw it by placing it straight in the brass fitting. Stop as soon as the stainless steel thread has disappeared in the brass nozzle, i.e. about 7 mm of space between the nut and the brass fitting.



4. Unscrew the nut of the conical adapter. The nozzel is ready for the pipe from the pump to the membrane. Sheathing is with another pipe is a good idea to protect it against vibration.



5. **IMPORTANT**: Make sure that the nozzle has not clogged the pipe :
   - Either by blowing into the pipe,
   - Or by inserting a screwdriver to check that the passage is free.

Do not forget to put Loctite or threadlock on the male and female cones when reassembling.

A3 APPENDIX A3 Manual rinsing



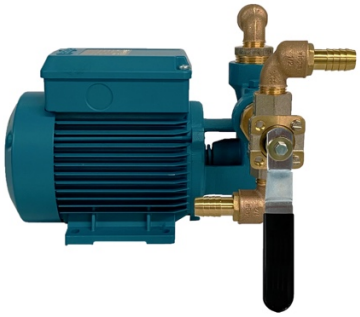
1 The valve is in the seawater position for use in desalinization mode.

2 The valve is in the closed position, to change the filter cartridge (see **Appendix 4**) or isolate the water circuit.

3 The valve is in the fresh water position for manually rinsing the circuit with fresh water or for performing sterilization (see below).

Your DESSALATOR® is equipped with automated rinsing, here is the procedure to follow if you choose manual rinsing

Normal position normale :

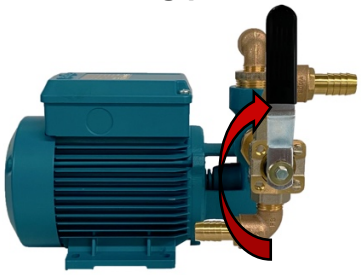


Normal seawater use position:

The valve handle is in seawater position.

For manual rinsing, tilt the handle of the 3-way valve upwards to the fresh water position (see below), let the circuit rinse for 2 minutes then reposition the valve downwards to the sea water position (see below).

Manual rinsing position :



Manual rinsing and sterilization:

Place the valve handle on the fresh water position

A4 APPENDIX A4 ST2 sterilizing cartridge

BEFORE YOU BEGIN

Keep the watermaker switched off. The ST2 cartridge is reusable.

Preparing and fitting the cartridge

01 Set the three-way valve to the rinse position. Fully open the pressure regulator by turning it counterclockwise.

02 After 5 minutes, set the three-way valve to the closed position to shut off the water supply.

03 Close the seawater inlet seacock.

04 Open the preservation cartridge, taking care not to lose the O-ring.

05 Remove the upper screen.

06 Place the foam pad at the bottom of the cartridge.

07 Pour the preservative powder into the cartridge.

08 Refit the upper screen and close the cartridge.

09 Check that the seal is correctly seated.

10 Remove the 5-micron filter from the second prefilter.

11 Fit the ST2 cartridge in place of the 5-micron filter.



Remove the 5-micron filter



Fit the ST2 cartridge

12 Close the prefilter bowl, checking that its O-ring is correctly seated.

13 Set the three-way valve to fresh water. Let the bowl fill, leaving a little powder on the foam pad. Return the valve to the closed position.

14 Three hours after preservation, set the valve to fresh water and flush the membranes for 5 minutes. Return the valve to the closed position.

Preservation lasts up to 6 months. Repeat the procedure after that time.

Before the next start-up

01 Set the three-way valve to fresh water and flush for 15 minutes.

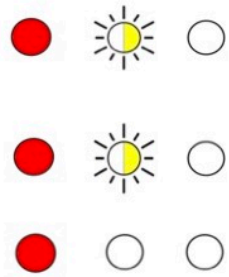
02 Return the three-way valve to the closed position to shut off the water supply.

03 Remove the ST2 cartridge and install a new 5-micron filter.

A5 APPENDIX A5 Troubleshooting

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
Leak on the pressure regulator behind the control panel	Loose control cable gland	Tighten the cable gland with a 12 mm open-end wrench.
Noisy high-pressure pump	Reduced water intake or air ingress. Incorrect pressure.	Check the pipe diameter, clamp tightness and filter cleanliness. Set the pressure in the green zone.
Oil leak on the high-pressure pump	Worn gaskets on the connecting rods	Replace the gaskets.
Insufficient water flow	Water is too cold	N/A
	Dirty prefilter	Replace the prefilter.
	Power supply is too weak	Recharge the batteries. Check the connections.
	Voltage drop in the electrical cable	Install a cable with a larger cross-section.
Water leaks under the high-pressure head	Worn gaskets	Replace the piston gaskets.
Pressure does not rise	Dirty pump valves	Remove and clean the valves in the pump head.

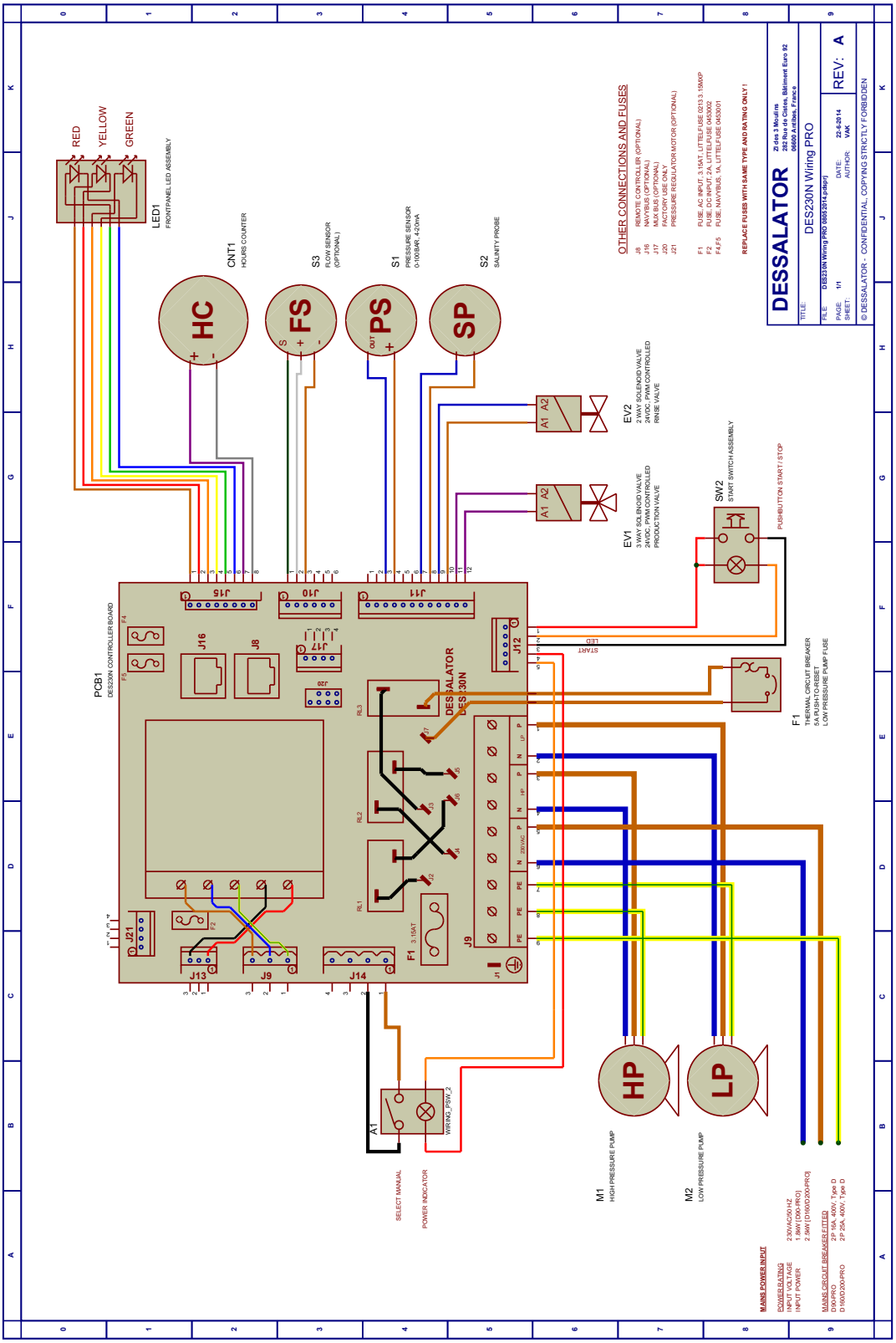
A6 APPENDIX A6 Indicator lights

INDICATOR LIGHTS	DESCRIPTIONS AND ACTIONS
	**Test upon starting-up the test** When these indicator lights remain on, please open the regulator (-) to lower the pressure.
	**The pumps are started, waiting for working pressure** Slowly turn the pressure regulator clockwise (+) until the needle of the pressure gauge is in the green area.
	**Working pressure reached, waiting for good water quality** Please wait, once the water quality is good the machine will automatically start to produce water.
	**Water production** The water quality is good, drinking water is being produced
	**Automatic rinsing** Wait until the rinse cycle finishes.
	**Low pressure** The pressure is too low
	**Alarm 1-1: down time - low pressure** Did this alarm ring after the pump started first? If so check the seawater inlet valve and the pre-filter. Restart and try again. **Alarm 1-2: No power to the pressure sensor** If this alarm sets off after the machine start, it could be a failure of the pressure sensor or the system voltage could be too low. **Alarm 2-1: Pressure too high** Switch off the watermaker, fully open the regulator (-) and restart the machine.

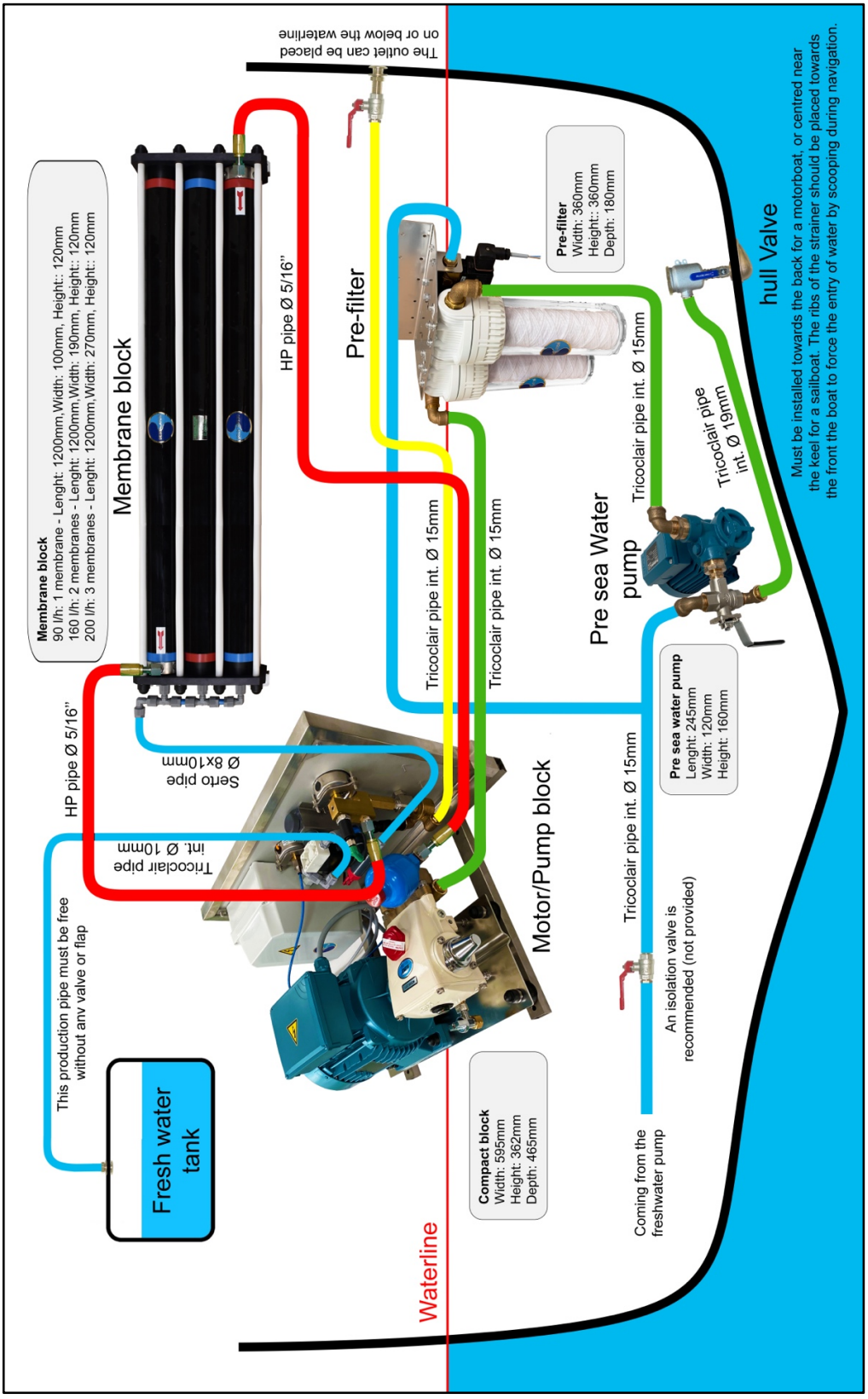
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Legend: Indicator lights are on  Indicator lights are flashing  Indicator lights are off 

A7 APPENDIX A7 Electronic board diagram



A8 APPENDIX A8 Installation schematic



C

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