

AQUA-BASE

watermakers

Série ESB



12 VCC
ESB 301 / 601
35 l/h / 65 l/h

24 VCC
ESB 302 / 602
35 l/h / 65 l/h

p3 MANUEL UTILISATEUR 
P13 OWNER MANUAL 
p23 MANUAL DE UTILIZACIÓN 

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ATTENTION: Lisez attentivement l'intégralité de cette documentation, avant d'installer, d'utiliser ou d'entretenir le dessalinisateur AQUA-BASE. Vous éviterez ainsi les désagréments d'une opération incorrecte, dont les conséquences ne seraient pas couvertes par la garantie.

WARNING: *Read this documentation carefully in its entirety, before installation, use or maintenance of the AQUA-BASE desalination unit. In this way you will avoid incorrect operating faults which may lead to consequences that will not be covered by the guarantee.*

ATENCIÓN: Leer atentamente el documento entero antes de instalar, utilizar o mantener la desalinizadora AQUA-BASE. Así, evitará los errores debidos a una operación incorrecta cuya consecuencias no serían cobradas por la garantía.



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A – THE WATERMAKER

1 – PRESENTATION

The Watermaker is entirely hydraulic. Its only source of energy is the low-pressure water-flow provided by the booster pump. The hydraulic amplifier system automatically regulates the osmotic pressure as well as the flow of water pumped across the osmotic membrane. The **AQUA-BASE ESB** desalination unit is composed of:

- A sea strainer
- A low- pressure pump driven by an electric motor 12 or 24VCC
- A filter (with cartridge) 5µ
- The hydraulic amplifier increases pressure of seawater up to 40 / 65 bar (depends version) to allow production of fresh water through the membrane
- A reverse osmosis membrane inside the high-pressure vessel
- A set of valves for operating and servicing the unit
- A main switch to the operation of unit
- A pressure gauge LP (Low-Pressure) and HP (High-Pressure)
- Fitting Kit for R/O unit installation
- **Hull fitting and hull valve are not included in the supplies**
- Electric box Dual voltage (EXTRA).

→ See dimensions drawing in appendix

2 – CHARACTERISTICS

TYPE			ESB 301	ESB 601	ESB 302	ESB 602
Dry mass		Kg	41	49	41	49
Pipes Feeding	A1 / A2 / A3	mm	20 X 27 (Embedded steel spirale reinforcement 2 bar max) 19 X 27 (flexible 20 bar max) 19 X 27 (flexible 20 bar max) 8 x 14 (20 bar max)			
Reject	B1 / B2	mm				
Production	B3 / B4	mm				
	F	mm				
Voltage		VAC	12		24	
Pressure	(1)	bar	40 to 65 (depends version)			
Elec. Consumption		A	12	25	6	12.5
Std. Capacity	(2)	l/h	35	65	35	65

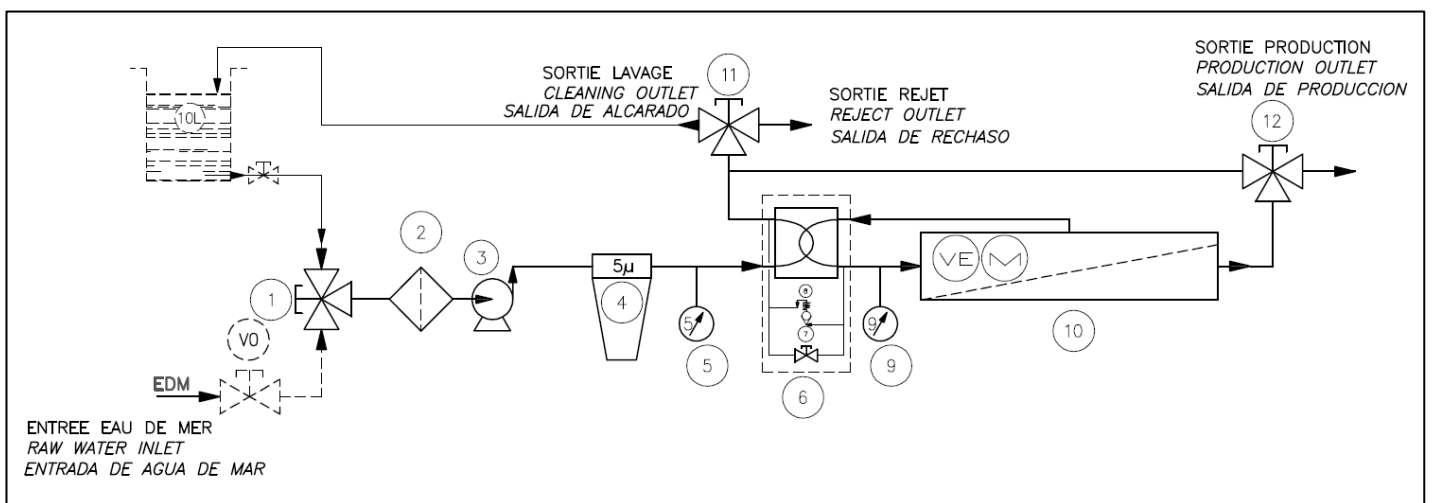
- (1) The pressure is automatically adjusted, depending on operating conditions (water salinity and temperature).
 (2) The nominal capacity is given for a new unit, nominal membranes performances, operating in standard seawater TDS 35000ppm (35g/l) and temperature 25°C. The capacity can vary from +/-10%, according to allowances given by the manufacturers of the membranes.



3 – DESCRIPTION : WATER SYSTEM – FLOW CHART

In the basic version, desalinator ESB is made up of the following elements:

REP.	DESCRIPTION	FUNCTION
EdM	Hull fitting	Always immerse in seawater, it ensures continuous seawater feeding of the unit. <i>Not included in the supplies.</i> Do not take water from the motor's cooling system. Place the hull valve (V0) as far away as possible from the rejected brine hull fitting (R).
V0	Hull valve	Situated near the hull fitting, it ensures the closing of the seawater intake. <i>Not included in the supplies.</i>
A1/A2/A3 /B1/B2	Feeding pipes	Ensures water supply to the unit through the filter (4). <i>Imperative internal diameter must be 20 (Embedded steel spirale reinforcement A1/A2/A3) and internal diameter must be 19 (B1/B2).</i>
1	Inlet valve	Manual 3-way valve ensuring water supply to the unit, either with seawater in normal operation, or with the water or chemical solution contained in a bucket during rinsing, cleaning or preservation of the membrane.
2	Sea Strainer	Small screen filter ensuring seawater filtering of large particles to protect the booster pump (LP).
3	Low Pressure Pump	Driven by an electric motor, it raises seawater pressure to the required value between 5 / 10bar. Must be installed 200mm below the water line.
4	5 μ filter	Contains a filter cartridge ensuring seawater filtering of particles greater than 5μ (essential before water enters the membrane).
5	LP Pressure Gauge	Indicates the LP pressure.
6	Hydraulic amplifier	Increases seawater pressure to produce fresh water through the R/O membrane.
7	Air bleed valve	To bleed the system at the first start-up, or after replacement of the filters. Allows operation of the unit at low pressure when opened for cleaning or preservation operations
8	Check valve	Allows discharging the excess high pressure when modification operating parameters (setting at 68 bar).
9	HP Pressure Gauge	Indicates the HP pressure.
10	R/O module	Made up of pressure-resistant vessels, containing the membrane in which the desalination of seawater is carried out.
11	Cleaning valve	By opening this valve, the valve (1) itself being turned to cleaning position, the unit can be operated in closed circuit on an auxiliary tank (or bucket) containing cleaning solution.
12	Production valve	Manual 3-way valve that routes fresh water produced to the water-tank (hose F) or rejects it to the sea (through hose C).
B3	Reject piping	Collects the concentrated brine produced by the membrane for discharge to the sea. <i>Imperative internal diameter must be 19.</i>
R	Hull fitting	Situated above the water line, ensures brine discharge to the sea. <i>Not included in the supplies (avoid installing the reject fitting in front of the seawater entry hull fitting).</i>
A3/B4	Rinsing/Cleaning/ Preservation pipes	Ensures supply of fresh water and chemical solutions stored in a bucket or a holding tank, during membrane rinsing, cleaning and preservation operations. <i>Imperative internal diameter must be 20 (Embedded steel spirale reinforcement (A3)) and internal diameter must be 19 (B4).</i>



4 – INSTALLATION OF WATERMAKER

4.1 – PREPARATION

The hull fitting and the hull valve (VO) are supplied and installed by the shipyard.

The seawater feed hull fitting (EdM) should be placed as low as possible below the water line, in an area always immersed whatever the boat's navigation speed may be.

The hull valve (VO) should be placed on the seawater supply pipes (internal 20 diameter Embedded steel spirale reinforcement), as close as possible to the hull fitting.

The reject hull fitting (R) should be placed above the water line.

→ See installation on board in anexe

4.2 – PLACING THE UNIT

- **The Hydraulic amplifier and membrane:** The main module should be bolted onto a rigid surface. The main module can be installed in either vertical or horizontal position.
- **Seawater intake:** The through-hull must correspond to the size of the hoses, as specified in the installation diagram. The through-hull must be installed as deep as possible, towards the middle of the boat. Extra care must be used if the Watermaker is operated while the boat is moving because of the risk of running dry or having the pump cavitating.
- **The sea strainer:** The sea strainer should be near to the hull valve and imperatively fully charged with seawater.
- **The 5µ filter:** The filter should be installed using the provided support, vertically against a wall. If necessary, they can be slightly tilted.
- **The auxiliary tank:** This auxiliary tank (bucket) is used for rinsing, cleaning and preservation operation. See "Watermaker shutdown".
- **The low pressure pump (LP):** The Low Pressure pump (LP) should be installed between the sea strainer and the 5µ filter and below the water line (at least 200mm) to avoid any trapped air. If this instruction is not followed, we cannot guarantee the good operation of the unit.

4.3 – ELECTRICAL CONNECTION



- The **AQUA-BASE** unit is equipped with a circuit breaker ensuring its protection and security. This doesn't ensure the protection of your installation, which should be equipped with devices conforming to the current legislation.

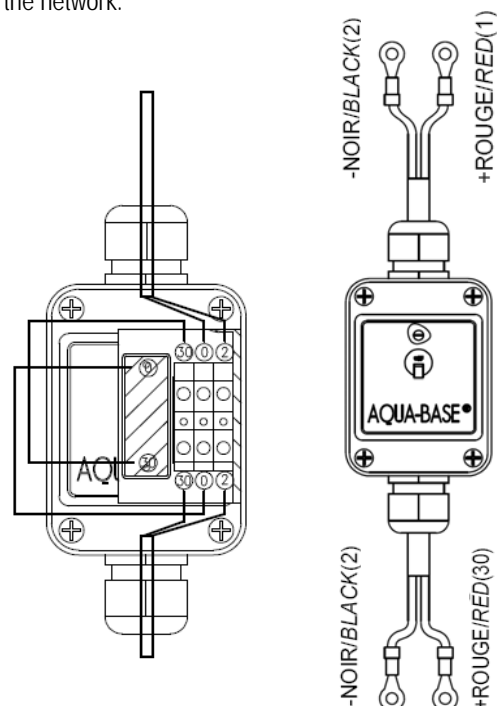
- No other equipment should be fed from the **AQUA-BASE UNIT** box.

- Check beforehand that the unit voltage corresponds with the network.

	<i>Maxi length: 10m</i>
ESB301 12VCC	2 x 6mm ² 15A maxi
ESB302 24VCC	2 x 6mm ² 8A maxi
ESB601 12VCC	2 x 10mm ² 40A maxi
ESB602 24VCC	2 x 6mm ² 30A maxi

If the wire is > 10m : contact your dealer

Warning : A decrease of wire section or an increase of length create a loss of voltage in the terminals of the electric motor, and a decrease in the performance of the system (contact your dealer if necessary)



4.4 – ELECTRICAL BOX DUAL VOLTAGE (EXTRA)

Extra electrical box dual voltage is use for functioning with 230VAC and 12/24VCC (according to the model).

Ref. Electrical box dual voltage:	ESB60	24V→825956	12V→825954
	ESB30	24V→825955	12V→825953

Nominal power: 350W

Maxi intensity:	24VCC → 825955 : 12A
	12VCC → 825953 : 25A
	24VCC → 825956 : 30A
	12VCC → 825954 : 60A



For installation, please refer to the technical documentation supplied with the dual voltage supply.

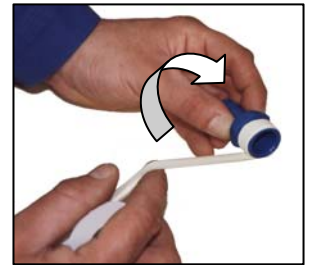
4.5 – ASSEMBLING THE FITTINGS AND PIPES

Assembling the fittings.



The fittings must be absolutely clean. Clean the fitting and its housing beforehand by removing any remaining scraps of Teflon.

Wind Teflon round the fitting thread, turning clockwise (see the picture).
Place the fitting in its housing and tighten by hand.
Ensure tightening with a slight turn of a spanner.



Assembling of pipes.

The cut, using a cutter; should be clean, without mistakes and perpendicular to the axis of the pipe.



The hoses used must be resistant to 2 bar or 20 bar minimum (see page 15). If needed, SLCE can supply the following references 717303 (hose 19x27), 717276 (hose 8x14) and 717361 (hose reinforcement 20x27) SLCE.

The produced water pipe (F) is connected to the upper part of the tank and should not touch the water.

Don't put a valve on this production pipe (because there is no rise in pressure); if a valve is installed on this tank, then it must be always open (water must be able to pass freely into the tank).



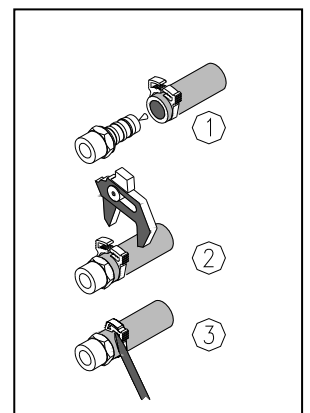
Do not immerse the piping into the tank to avoid a "siphon" effect when stopping the watermaker.

The cleaning pipe (B4) is long enough to be immersed in an auxiliary tank (10 litre tank) placed on the ground, during membrane cleaning operation.

The pipe (A3) will be placed preferably lower than the auxiliary tank (or bucket) to enable the pump to start easily.

To assemble a pipe on its fitting, proceed as shown on the figure:

- 1- Place the hose clamp, without tightening, then place the pipe on the fitting,
- 2- Slide the hose clamp to the fitting level and tighten it,
- 3- To dismantle the pipe, slide the clamp with the help of a screwdriver, then free the fitting tube.



Notice: SLCE is not liable for any flexible hose breakage problem between the booster pump outlet and the exchanger inlet, if the flexible hose used has not been validated by our technical service.

B – THE LP PUMP

1 – LP PUMP INSTALLATION

The booster pump must be installed 200mm below the water line, between the hull valve and the filter 5 μ (as indicated in Fig. installation on board in Appendix). There should be no air accumulation.

Essential to use the pipe provided by SLCE respecting the diameters and type of hose (see installation drawing board 110121-08).

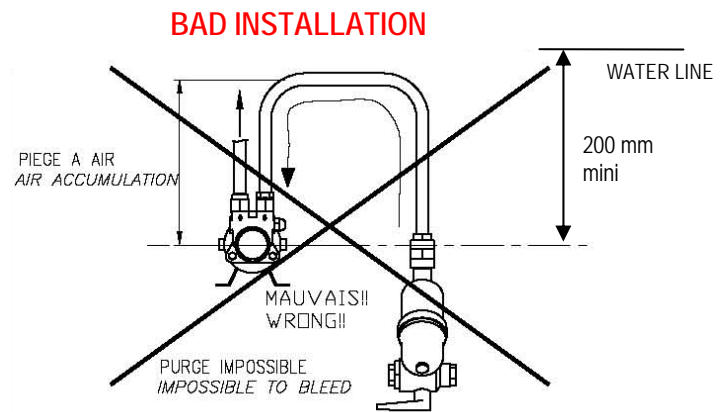
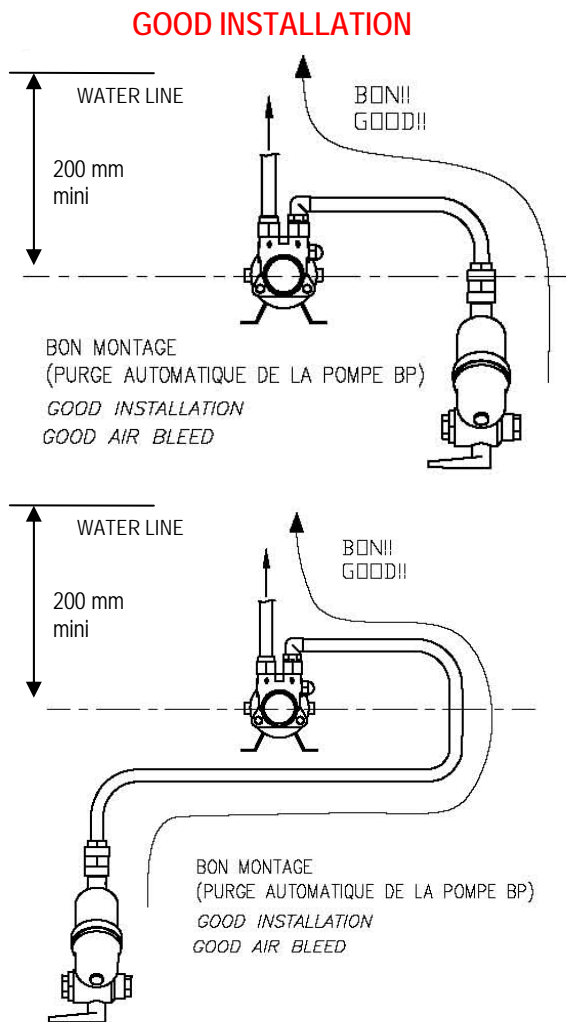
If the pump is placed too far or too high compared to the hull fitting, cavitation is possible. Cavitation produces jangling that might completely destroy the pump.



This type of LP pump prohibits operation without water. It's important that the pump must be installed below the water line, between the hull valve (V0) and the filter 5 μ (4).

Some examples of LP pump installation:

- The pump is imperatively at 200 mm below the water line,
- The hull valve (V0) should be placed below the LP pump,
- The rising line should be installed above the LP pump, so as to avoid air accumulation or trapped air.



2 – LP PUMP – TYPE

Exists differents pumps according to the unit :

Rep	Référence	Désignation
3	605031	Booster pump 330L
	656200-90	Electric motor 12VCC-125W
	656224-90	Electric motor 12VCC-150W
	605032	Booster pump 660 L
	605033	Booster pump 1000 L
	6-56.202-90	Electric motor 12VCC-460W
	6-56.203-90	Electric motor 24VCC-550W
A1/A2/A3	717361	Flexible hose steel spirale 20x27
B1/B2	717303	Flexible 19x27
	719234	Straight M 1/2" x 19 ribbed
	719242	Splined elbow M 1/2" x 19

The feed-wire is connected conforming to the electric diagram page 16

2.1 – MAINTENANCE OF THE PUMP

The only required maintenance of the pump, is to flush it with fresh water during cleaning operation of the unit.

NB: A rinsing of the LP pump-barrel with fresh water before an operating stop for more than 3 days increases considerably the life of the LP pump.

C – STARTING THE WATERMAKER

1 – FIRST START-UP

Carry out this procedure when the watermaker is started for the first time or during restart after a general stop of many days. (Notably, following a preservation procedure: biocide in the membranes)

Carrying out the start up procedure, and then returning the report form located at the end of this booklet to the factory (duly completed, dated and signed) is MANDATORY FOR THE APPLICATION OF GUARANTEE. Never start the watermaker in a polluted area: oil will clog membranes and chlorine will destroy membranes (risk not covered by the guarantee).

1. Check the correct connection (pump, filter...) and the tightening of all water system fittings.
2. Check the presence of the 5 μ cartridge in the filter (not clogged).
3. Check tightening of electrical connections.
4. Check that the electrical voltage supplied corresponds with that of the **AQUA-BASE** unit, and that the available power-supply is sufficient.
5. Open the seawater inlet valve (V0) and the reject (R).
6. Put the valve (1) in seawater-supply position and the cleaning valve (11) must be in the reject position (back to the sea).
7. Open the air bleed valve (7) of the hydraulic amplifier (6).
8. Rotate the production valve (12) to the reject position (valve in reject position).
9. Put the unit ON by opening the main breaker on "ON" (1).
10. Once the unit is purged of air, the seawater must be able to circulate freely without air bubbles.



DRY OPERATION FOR MORE THAN 30 SECONDS WOULD IRREVERSIBLY DAMAGE THE PUMP.

11. Leave the prefiltration and the amplifier working for 5 minutes, shut the air bleed valve (7). The pressure increases progressively in the system up to 40 / 65 bar (depends version), the production of fresh water is stable after a few minutes.
12. During the first 10 minutes the produced water is brackish, the produced water must be rejected during this period to eliminate any trace of biocide present in the membrane and the unit (storage manufactures). At the end of 10 minutes, rotate the production valve (12) position to route fresh water to the watertank.
13. Report the start-up operations on the form found at the end of the book in appendix. Return the copy back to the factory

2 – NORMAL STARTING

1. Open the hull seawater valve (V0) and the reject (R).
2. Check that the strainer (2) and the 5 μ filter are not clogged.
3. Put the inlet valve (1) towards the pump and the cleaning valve (11) in reject position.
4. Rotate the production valve (12) to the reject position (valve in reject position).
5. Put the unit ON by opening the main breaker on "ON" (1). (If there is no brine rejection and seawater circulation, start again by bleeding the system: bleed the pump and the hydraulic amplifier).
6. The LP pressure has to be between 5 and 10 bar, check the **AQUA-BASE** unit is operating (HP pressure between 40 and 65 bar) and the production water is operating.
7. After a few minutes, rotate the production valve (12) to the production position to route fresh water to the watertank.



3 – STOPPING THE WATERMAKER

There is a different procedure after a stop:

- **Rinsing:** Ensure rinsing of the membrane with fresh water (recommended at every stop) and increase the membrane life : carry out a rinsing when the watermaker is stopped for 2 weeks maximum.
- **Cleaning:** Ensure quality of the membrane performance after chemicals cleaning : carry out a cleaning every year (or each 1000 Hours).
- **Preservation:** Ensure preservation of the membrane with the biocide solution, it is required when the watermaker is stopped for more than 2 weeks, preservation solution should be renewed every year.
- **Wintering:** Carry out cleaning and preservation of the watermaker (for a long term period of non-use, clean and renew the preservation solution every year).

3.1 – SIMPLE STOP

- Turn OFF the unit by closing the main breaker on "OFF" (0).
- After stop of the unit, shut the hull valve (V0).

NB: It is strongly advised to carry out fresh water rinsing each time you stop the unit, this guarantees the longevity of the membrane and avoids oxidation of metal parts by electrolysis.

If the unit is stopped for a short time (less than 2 weeks) proceed with rinsing (See 3.2).

If it is stopped for a long time, proceed with preservation (See 3.3).

3.2 – STOPPING WITH FRESH WATER FLUSH

Fresh water flush should be carried out before stopping the unit (< 2 weeks). In case of a long stop period, proceed with the preservation operation.

1. Turn OFF the unit by closing the main breaker on "OFF" (0).
2. Take 10 liters of water from the principal tank, fill the auxiliary tank (bucket) (without chlorine because can damage the membrane).
3. Position the inlet valve (1) so as to take water from the auxiliary tank (bucket) and direct it towards the LP pump.
4. Put the cleaning valve (11) in reject position.
5. Put the production valve (12) to reject position.
6. Put the unit ON by opening the main breaker on "ON" (1). **Check the level of water in the auxiliary tank (or bucket).**
7. Turn OFF the unit by closing the main breaker on "OFF" (0) before the auxiliary tank (or bucket) is empty to avoid air accumulation.
8. When pump is stopped, shut the hull valve (V0) and check valves position (initial position).

3.3 – STOPPING WITH PRESERVATION

BEFORE THE PRESERVATION PROCEDURE, DO A MEMBRANE RINSING (See 3.2)

Fresh water preservation requires the use of an auxiliary tank (or bucket), which should be perfectly clean and FREE OF ANY TRACES OF GREASY SUBSTANCES. Preservation should imperatively be carried out before stopping the unit over a long period (more than 2 weeks).

1. Use the preservation liquid (BIOCIDE) - reference **AQUA-BASE**, Ref. 752002-20.
2. Turn OFF the unit by closing the main breaker on "OFF" (0).
3. Take 10 liters of water from the principal tank, fill the auxiliary tank (bucket) and add the preservation liquid BIOCIDE: mix with the water.

If the unit is to be stored at a temperature below 0°C, 20% of AQUA-BASE ANTI-FREEZE® ref.752004 must be added to the preservation solution, during its preparation.

4. Position the inlet valve (1) so as to take water from the auxiliary tank (bucket) and direct it towards the LP pump.
5. Open the air bleed valve (7) of the hydraulic amplifier (6).
6. Put the cleaning valve (11) in reject position
7. Put the production valve (12) to reject position.
8. Put the unit ON by opening the main breaker on "ON" (1). **Check the level of water in the auxiliary tank (or bucket).**
9. Turn OFF the unit by closing the main breaker on "OFF" (0) before the auxiliary tank (or bucket) is empty to avoid air accumulation.
10. When pump is stopped, shut the hull valve (V0) and check valves position (initial position).

N.B : In order to avoid the PRESERVATION procedure during immobilisation of the unit, operate the unit for a few minutes every week. It is strongly advised to carry out rinsing by fresh water every time the unit is stopped, as this guarantees the longevity of the membrane and avoids oxidation of metal parts by electro corrosion.



3.4 – STOPPING WITH WINTERING PROCEDURE : CLEANING + PRESERVATION (LONG TIME STOP)

1. Use the **AQUA-BASE** wintering kit, which contains 1 cleaning solution + 1 preservation solution + filter 5µ.
2. Rinse the membranes with fresh water as described in chapter (See 3.2 previous page).

Cleaning

3. Fill the auxiliary tank (or bucket) with 10 litres of dechlorinated fresh water.
4. Prepare the cleaning solution 752003-MC11 (see 752037-EXP10) by mixing it in the auxiliary tank (or bucket).
5. Check the cleaning pipes connexions (B4) and (A3) in outlet/inlet of the auxiliary tank (or bucket) and open the cleaning valve (11) to cleaning position.
6. Position the inlet valve (1) so as to take water from the auxiliary tank (bucket).
7. Open the air bleed valve (7) of the hydraulic amplifier (6).
8. Put the production valve (12) to reject position.
9. Put the unit ON by opening the main breaker on "ON" (1), operating in closed circuit.
10. Let the unit works in closed circuit for 20 minutes.
11. After this time, turn OFF the unit by closing the main breaker on "OFF" (0).
12. When the unit stops, empty the solution out of the auxiliary tank (or bucket) and clean it with fresh water.
13. Position the cleaning valve (11) in the reject position.
14. Rinse the membranes as described in chapter 3.2 previous page.
15. Take 10 liters of water from the principal tank, fill the auxiliary tank (bucket) (without chlorine because can damage the membrane).
16. Prepare the cleaning solution 752003-MC3 (see 752037-EXP10) by mixing it in the auxiliary tank (or bucket).
17. Open the cleaning valve (11) to cleaning position.
18. Put the unit ON by opening the main breaker on "ON" (1), operating in closed circuit.
19. Let the unit works in closed circuit for 20 minutes.
20. After this time, turn OFF the unit by closing the main breaker on "OFF" (0).
21. When the unit stops, empty the solution out of the auxiliary tank (or bucket) and clean it with fresh water.
22. Position the cleaning valve (11) in the reject position.
23. Rinse the membranes as described in chapter 3.2 previous page.

Preservation

24. Fill the auxiliary tank with 10 litres of fresh water and add the **AQUA-BASE** preservation solution BIOCIDE, Ref. 752002-20 and mix.
If the unit is to be stored at a temperature below 0°C, 20% of AQUA-BASE ANTI-FREEZE® ref.752004 must be added to the preservation solution, during its preparation.
25. Position the inlet valve (1) so as to take water from the auxiliary tank (bucket) and direct it towards the LP pump.
26. Open the air bleed valve (7) of the hydraulic amplifier (6).
27. Position the cleaning valve (11) in the reject position.
28. Put the production valve (12) to reject position.
29. Put the unit ON by opening the main breaker on "ON" (1). **Check the level of water in the auxiliary tank (or bucket).**
30. Turn OFF the unit by closing the main breaker on "OFF" (0) before the auxiliary tank (or bucket) is empty to avoid air accumulation.
31. When pump is stopped, shut the hull valve (V0) and check valves position (initial position).
32. Whatever their condition, empty the filter (4) to avoid any bacteriological proliferation and if needs be, replace the filtration cartridge (If you put the old cartridge back, wait until they are dry).
33. It is necessary that water remains in the membrane, make sure it cannot freeze (in the case of a possible risk, add to the storage solution, the anti-freeze solution Ref. 752004 (See chapter 3.3 previous page).



If the unit is to be stored at a temperature below 0°C, 20% of AQUA-BASE ANTI-FREEZE® ref.752004 must be added to the preservation solution, during its preparation.

NB : PRESERVATION OF THE PROCON PUMP : It is necessary to preserve the PROCON pump (with glycerine), for this, refer to the Technical Note NT0809 (at the end of the technical handbook).

D – WATERMAKER MAINTENANCE

The **AQUA-BASE** unit must be regularly maintained in order to avoid the occurrence of defects, which could affect its efficiency, its operation and its reliability. The intervals between maintenance of the **AQUA-BASE** unit depend on the frequency and conditions of use.

1 – MAINTENANCE SCHEDULE

OPERATION	FREQUENCY	Minimum	NECESSARY SPARE PARTS
Replacement of filter cartridge	When it is clogged and at wintering	1 / year	711019
Cleaning the prime filter	When it is clogged	1 / week	
Cleaning the membrane	Each year at wintering	1 / year	752037-EXP10

On this basis the user will adapt his own maintenance schedule, which will depend on his personal use of the unit.

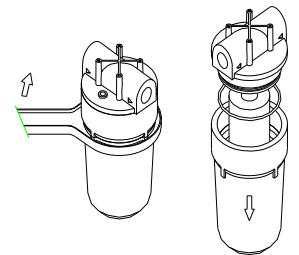
2 – SPARE PARTS FOR ONE YEAR

The spare parts set, for one year **AQUA-BASE**, Ref 752054, contains all the necessary parts for servicing the **AQUA-BASE** desalination unit.

QTE/QTY	REFERENCE	DESCRIPTION
4	711019	Filter element 5µ-10"
1	752037-EXP10	MC11 Alkaline cleaner & MC3 Acid cleaner
2	752002-20	Storage solution

3 – REPLACEMENT OF THE FILTER CARTRIDGE (Unit stopped)

1. Turn OFF the unit by closing the main breaker on "OFF" (0).
2. Close the hull valve (V0).
3. Open the filter by unscrewing the tightening nut using the filter spanner.
4. Free the used cartridges by setting down the filter bowl.
5. Replace the used cartridges with a genuine new one (green colour).
6. Wipe and lightly oil the seal with food fat.
7. Reset the filter after having checked the cartridge position.
8. Screw the tightening nut by hand.



4 – CLEANING OF THE MEMBRANE

□ When should the membrane be cleaned?

Cleaning of the membrane is necessary once a year (see chapter D : Maintenance schedule)

In normal operation, the R/O membrane can be clogged by mineral and organic deposits, which accumulate until they cause a drop in fresh water production quality and quantity. The membrane should be cleaned each time the quantity or the quality of the produced water changes excessively. Before proceeding with membrane cleaning check that the change in performance has no other cause, such as:

- Low seawater temperature,
- Filter clogged, water system badly drained, leading to lack of water at the pump,
- Inefficient operation of the HP pump: leaks, wear,...



Cleaning of the membrane can only be carried out when it's inside the pressure vessel. Never take a membrane out of its pressure vessel.

□ How should the membrane be cleaned? → See the 3.4 – Wintering procedure « Cleaning »

In case of long term wintering, proceed with preservation operation.

NOTA : Membrane cleaning can be done in the factory or by your agent in a more thorough way, on a specialised bench. Contact your agent or the factory directly.

□ When should the membrane be replaced?

A membrane has a lifetime of about 5 years. Then, as the plastic materials harden, the pores retighten and production will decrease. Then, you must replace the membrane. If the membrane has accidentally taken in fuel or oil, it must be replaced. The membrane is one of the more fragile elements of the watermaker, it is necessary to take care of them by respecting the maintenance requirements.

To replace a reverse osmosis membrane, please contact us directly or through one of our dealers, to obtain the membrane replacement specification sheet, by telling us the serial number of the membrane.

ATTENTION : Ce RAPPORT doit être complété après la mise en service de l'appareil AQUA-BASE, puis retourné à l'usine à l'adresse suivante :

WARNING: This REPORT should be completed after starting up of the AQUA-BASE unit, then returned to the factory at the following address:

ATENCIÓN: Este INFORME se debe cumplimentar debidamente después de la puesta en marcha del AQUA-BASE y enviar al fabricante a la dirección siguiente:

**SLCE
SERVICE TECHNIQUE
149 RUE SALVADOR DALI
CS8002 CAUDAN – 56607 LANESTER CEDEX - FRANCE**

LE NON-RETOUR EN USINE DE CE RAPPORT COMPLETE, DATE ET SIGNE, SUSPENDRAIT L'APPLICATION DE LA GARANTIE.

IF THIS REPORT, COMPLETED, DATED AND SIGNED, IS NOT RETURNED TO THE FACTORY, THE GUARANTEE WILL BE SUSPENDED.

LA NO-DEVOLUCIÓN DE ESTE INFORME DEBIDAMENTE CUMPLIMENTADO, CON FECHA Y FIRMA ANULARÍA LA APLICACIÓN DE LA GARANTIA

AQUA-BASE

Type / Type / Tipo

N° de série Series N° N° de série	
Tension Voltage Voltaje	V
Options Options Opciones	
Client Client Cliente	
Utilisateur User Usuario	
Type & Nom du bateau Type & Name of the boat Tipo y nombre de la embarcación	

Contrôle circuits BP LP circuits control Control circuito BP	
Fonctionnement Vanne de Rinçage Rinsing valve operating Funcionamiento válvula de aclarado	
Pression Pressure Presión	bar
Options Extras Opciones	
Options Extras Opciones	

VISA TECHNICIEN VISA TECHNICIAN VISA TÉCNICO	
CONTROLE SLCE	

Date / Date / Fecha	
Lieu / Place / Sitio	
Agent / Agent / Agente	
Technicien / Technician / Técnico	

ALIMENTATION ELECTRIQUE / ELECTRIC SUPPLY / ALIMENTACIÓN ELÉCTRICA

Capacity of the batteries Capacidad de las baterías	Ah
Intensity supplied by the generator Intensidad generador	A

EAU DE MER / SEAWATER / AGUA DE MAR

Salinité mesurée Measured salinity Salinidad medida	mg/l
Température Temperature Temperatura	°C

EAU PRODUITE / WATER PRODUCED / AGUA PRODUCIDA

Salinité mesurée Measured salinity Salinidad medida	mg/l
Débit mesuré Measured product flow Caudal medido	l/h

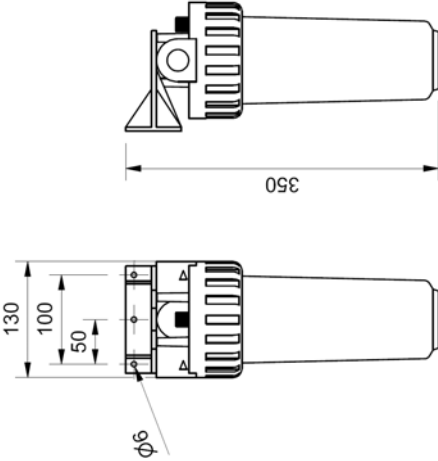


PIECES DE RECHANGE / SPARE PARTS / PIEZAS DE RECAMBIOS

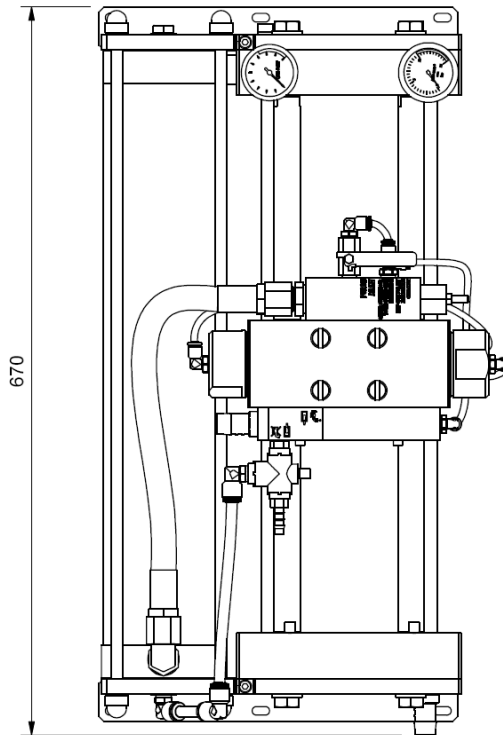
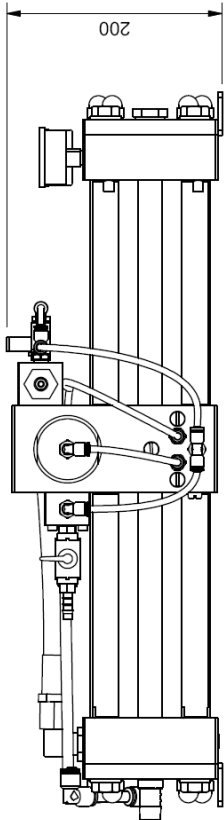
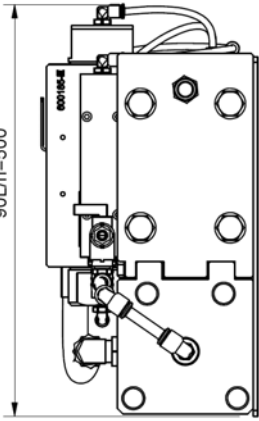
Rep	Ref	Designation	Description	Descripción	Modèle
1 & 11	711040	VANNE MANUELLE 3 X F3/4" RX	3 X F3/4" MANUAL VALVE RX	VÁLVULA 3 VIAS 3F3/4" RX	
2	711075	FILTRE CREPINE PP MM 3/4" 400µ	PLASTIC COARSE STRAINER MM3/4" 400µ	FILTRO DESAGUE PLAST MM3/4" 400µ	
3	605031	POMPE BP 330L ESW30	LP PUMP 330L ESW30	BOMBA BP 330L ESW30	30L/H
	656200-90	MOTEUR CC 12V 125W 1650 tr/mn	MOTOR 12VDC 125W 1650 tr/mn	MOTOR 12VCC 125W 1650 tr/mn	30L/H
	656224-90	MOTEUR CC 24V 150W 1700 tr/mn	MOTOR 24VDC 150W 1700 tr/mn	MOTOR 24VCC 150W 1700 tr/mn	30L/H
	605032	POMPE BP 660L ESW60	LP PUMP 660L ESW60	BOMBA BP 660L ESW60	60L/H
	6-56.202-90	MOTEUR 12V 460W 1650 tr/mn	MOTOR 12VDC 460W 1650 tr/mn	MOTOR 12VCC 460W 1650 tr/mn	60L/H
	6-56.203-90	MOTEUR 24V 550W 1650 tr/mn	MOTOR 24VDC 550W 1650 tr/mn	MOTOR 24VCC 550W 1650 tr/mn	60L/H
	605031-10	KIT REPARATION POMPE 330L/H	REPAIR KIT PUMP 330L/H	KIT DE REPARACIÓN BOMBA 330L / H	30L/H
	605032-10	KIT REPARATION POMPE 660L/H	REPAIR KIT PUMP 660L/H	KIT DE REPARACIÓN BOMBA 660L / H	60L/H
4	710010-03	JOINT TOR. 91,44x5,33 NBR70SH	SEAL 91,44x5,33 NBR70SH	JUNTA TOR. 91,44x5,33 NBR70SH	
	711024	FILTRE 10" FF3/4 PN8	10" FILTER FF3/4PN8	FILTRO 10" FF3/4 PN8	
	711019	CARTOUCHE 10"- 5 MICRONS	10"- 5 MICRONS FILTER ELEMENT	CARTUCHO 10" 5µ	
5	610022	MANO 0-16 B.M1/4G Ø40	HP GAUGE 0-16B 1/4G Ø40	MANO 0-16B M1/4G Ø40	
6	110121-40	S/E ESW AQ-B RECUPERATEUR D'ENERGIE	S/E ESW ENERGY RECOVERY	S/E ESW AQ-B AMPLIFICADOR DE PRESION	
	110121-10	KIT JOINTS ET BAGUES ESW	O-RING KIT ESW	KIT DE JUNTA ESW	
	110121-11	KIT REPARATION DISTRIBUTEUR ESW	DISTRIBUTOR REPAIR KIT ESB/ESW	KIT DE REPARACIÓN AMPLIFICADOR ESW	
	710018-82	KIT CLAPETS ESW	VALVES KIT ESW	KIT VÁLVULA DE COMPROBACION ESW	
7	719201	VANNE ARRET INOX FF 1/4"G	SHUT-OFF VALVE SS316 FF1/4"G	VÁLVULA FF 1/4" G	
	718092	DROIT INOX MM 1/4" GAZ	SS STRAIGHT MM 1/4" GAZ	ACERO DERECHO INOXIDABLE MM 1/4 " GAS	
9	610023	MANO 0-100B M1/4G Ø40 INOX	HP GAUGE 0-100B 1/4G Ø40 INOX	MANO 0-100B M1/4G Ø40 INOX	
10	711205	MEMBRANE 4"-21 SW	4"-21 SW R/O MEMBRANE	MEMBRANA 4"-21 SW	
11	711040	VANNE MANUELLE 3 VOIES F3/4" RX	3 X F3/4" MANUAL VALVE RX	VÁLVULA 3 VIAS F3/4" RX	
12	719318-01	VANNE 3 VOIES 3x1/4	3-WAY VALVE 3x1/4"	VÁLVULA 3 VÍAS	
	722062	DISJONCTEUR CC 20A UNI	MAINS SWITCH DC 20A UNI	DISYUNTOR 20A UNI	30L/H 12VCC
	722064	DISJONCTEUR CC 40A UNI	MAINS SWITCH DC 40A	DISYUNTOR 40A	60L/H 12VCC
	722068	DISJONCTEUR CC 8A UNI	MAINS SWITCH DC 8A	DISYUNTOR 8A	30L/H 24VCC
	722063	DISJONCTEUR CC 30A UNI	MAINS SWITCH DC 30A	DISYUNTOR 30A	60L/H 24VCC
	880050	COFFRET ELECTRIQUE ESB301 12V	ESB301 CONTROL BOX 12VDC	CUADRO DE MANDO ESB301 12VCC	30L/H 12VCC
	880051	COFFRET ELECTRIQUE ESB302 24V	ESB302 CONTROL BOX 24VDC	CUADRO DE MANDO ESB302 24VCC	30L/H 24VCC
	880052	COFFRET ELECTRIQUE ESB601 12V	ESB601 CONTROL BOX 12VDC	CUADRO DE MANDO ESB601 12VCC	60L/H 12VCC
	880053	COFFRET ELECTRIQUE ESB602 24V	ESB602 CONTROL BOX 24VDC	CUADRO DE MANDO ESB602 24VCC	60L/H 24VCC
	825953	OPTION ALIM BITENSION 230-12 25A	EXTRA CONTROL BOX 230-12 25A	OPCIÓN CUADRO DE MANDO 230-12 25A	ESB301
	825954	OPTION ALIM BITENSION 230-12 60A	EXTRA CONTROL BOX 230-12 60A	OPCIÓN CUADRO DE MANDO 230-12 60A	ESB601
	825955	OPTION ALIM BITENSION 230-24 12A	EXTRA CONTROL BOX 230-24 12A	OPCIÓN CUADRO DE MANDO 230-24 12A	ESB302
	825956	OPTION ALIM BITENSION 230-24 30A	EXTRA CONTROL BOX 230-24 30A	OPCIÓN CUADRO DE MANDO 230-24 30A	ESB602

DIMENSIONS / DIMENSIONS / DIMENSIONES

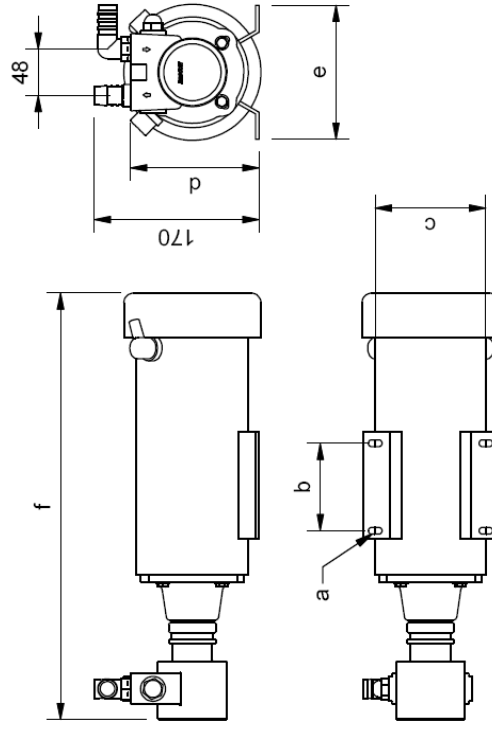
**FILTRE A CARTOUCHE / CARTRIDGE
FILTER / CARTUCHO DE FILTRO**



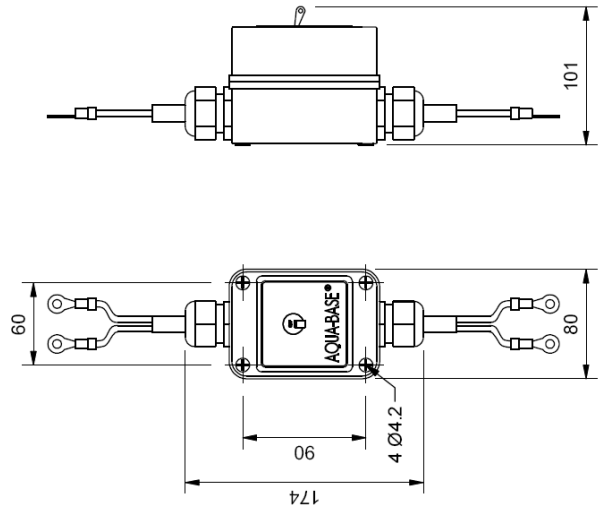
30L/h et 60L/h=380
90L/h=500



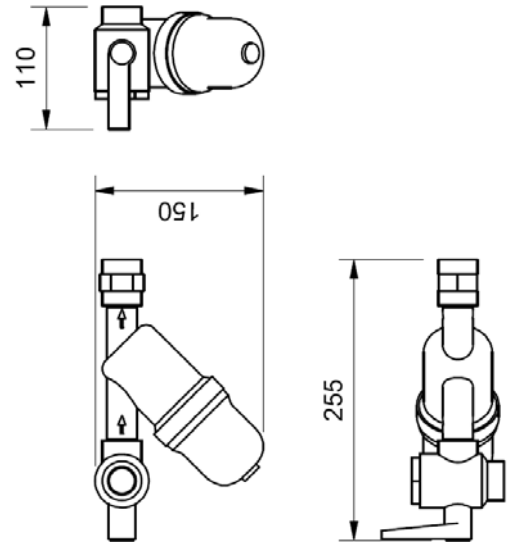
POMPE DE GAVAGE / BOOSTER PUMP / BOMBA BP



**COFFRET ELECTRIQUE / CONTROL
BOX / CUADRO DE MANDO**



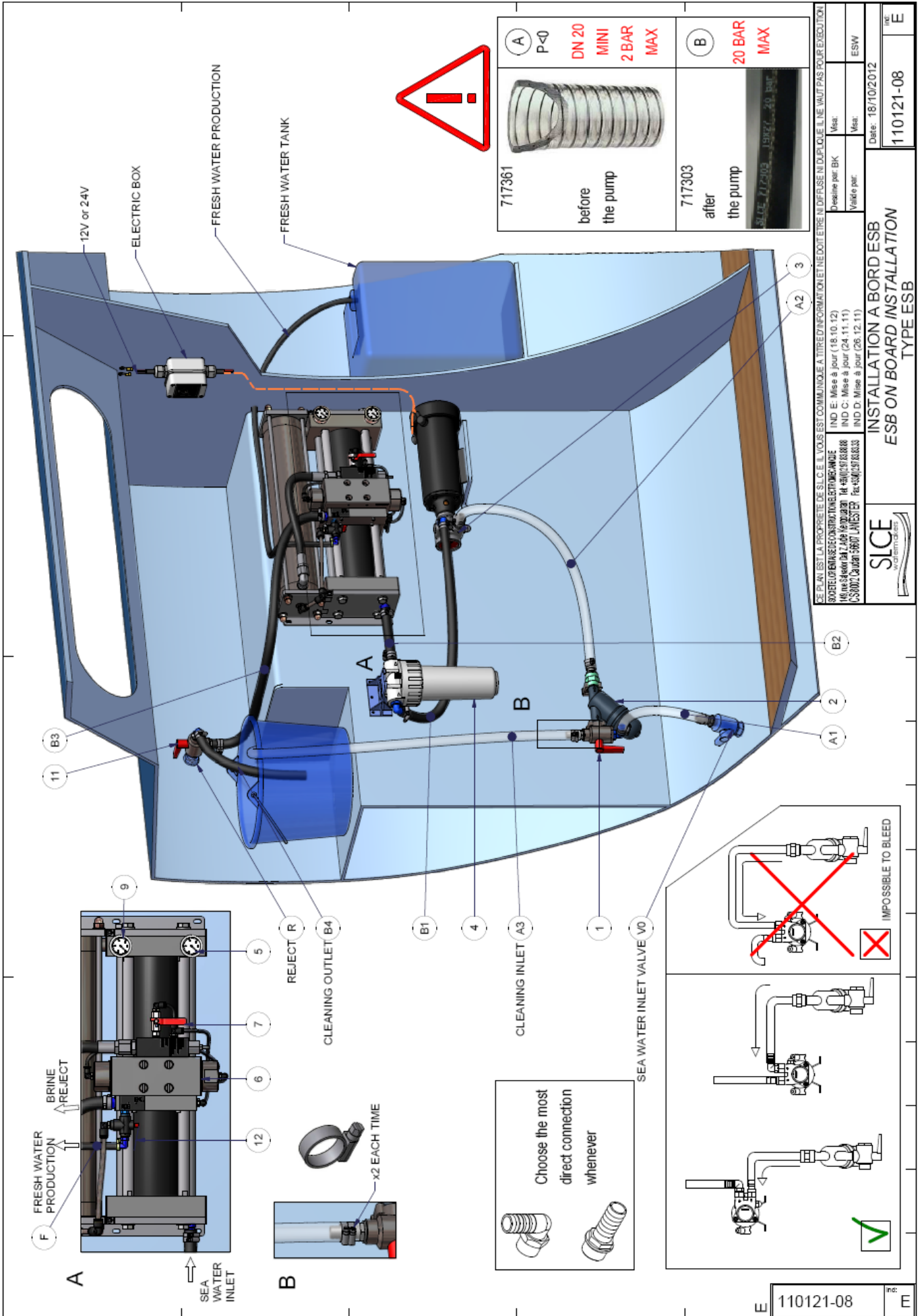
CREPINE / STRAINER / FILTRO





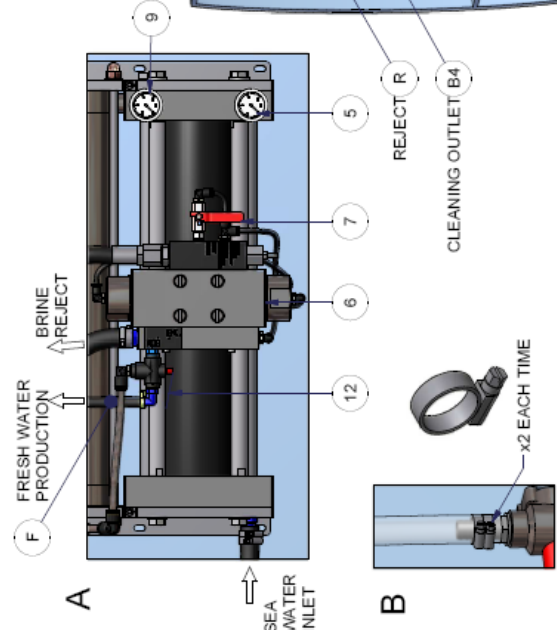
Pompe / Pump / Bomba : 30/60/90L/H

cote	30L/h	60L/h	90L/h
a	407	lum 7x14	
b	70	90	
c	90	113	
d	111	131	
e	110	140	
f	330	440	


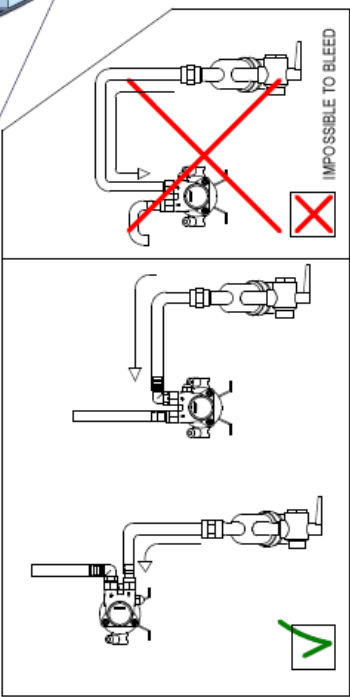
INSTALLATION A BORD / INSTALLATION ON BOARD / INSTALACION



(A) P<0 DN 20 MINI 2 BAR MAX	(B) 20 BAR MAX
717361 before the pump 	717303 after the pump 



Choose the most direct connection whenever

DE PLAN EST LA PROPRIETE DE S.L.C.E.L. VOUS EST COMMUNIQUE A TITRE D'INFORMATION LET NE DOTERIE EN DIFFUSE EN DUPLIQUE IL NE VAUT PAS POUR EXECUTION

SOCIETE SICE CONSTRUCTION INDUSTRIELLE
14 rue Saxe de BAZ, 449 10 00 280 14 43 00 00 88 88
CS 30012 Couron 59607 LANCHESTER Fax: 43 00 97 83 83 33

IND. E. Mise à jour (18.10.12)
IND. C. Mise à jour (24.11.11)
IND. D. Mise à jour (26.12.11)

Dréa: par BK
Vale: ESW
Date: 18/10/2012

SICE
watermakers

INSTALLATION A BORD ESB
ESB ON BOARD / INSTALLATION
TYPE ESB

110121-08



NOTE TECHNIQUE

NT-0809

**Stockage pompe PROCON /
Preservation PROCON pump / Mantenimiento de la bomba PROCON**





Il est conseillé de rincer systématiquement l'appareil à chaque arrêt (voir manuel utilisateur livré avec l'appareil).
It is advised to systematically rinse the unit every time it is stopped (see user manual delivered with the unit).
Se aconseja aclarar sistemáticamente la máquina cada vez que se pare (ver manual).

Pour un hivernage d'une pompe procon / For procon pump wintering / Para el invernaje de la bomba procon
Référence produit de stockage 752004 (1 litre) / Ref preservation product : 752004 (1 litre) / Ref del producto de almacenaje : 752004 (1 litro)

Faire une solution à 50% (eau+glycerine) / Make a solution at 50% (water+glycerine) / Preparar una solución al 50% (agua+glicerina)

Pour un stockage de la pompe PROCON / For a preservation of the PROCON pump / Para una mantenimiento de la bomba PROCON :

<p>1 – Basculer la vanne d'alimentation (1) pour prendre le produit de stockage glycerine (pré-rempli) dans le réservoir auxiliaire (bidon).</p> <p>1 – Turn the feeding valve (1) to take the glycerine storage product (post fill) in the auxiliary tank.</p> <p>1 – Poner la válvula de entrada (1) para tomar la solución de almacenaje glicerina (posterior la llenado) del tanque auxiliar</p>	
<p>2 – Desserrer le bol de filtre à cartouche et retirer la cartouche. Placer un récipient sous le filtre pour récupérer le produit de stockage lors du fonctionnement. Le produit ne pénètre donc pas dans l'appareil.</p> <p>2 – Un-screw the bowl of the cartridge filter and remove the cartridge. Place a tank under the filter to retrieve the storage product during operation. The product will not then penetrate into the unit.</p> <p>2 – Desenroscar la tapa del recipiente del filtro y retirarlo. Eliminar los residuos con una cubeta.</p>	
<p>3 – Démarrer l'appareil en appuyant sur le bouton « MARCHE » (30), laisser couler le volume du bidon pour que la pompe soit bien remplie de glycerine puis l'arrêter avec le bouton « ARRET » (31).</p> <p>3 – Start the unit by pressing the "ON" (30) button, use the auxiliary tank water to fill the pump with glycerine, and stop the unit by pressing the "OFF" (31) button.</p> <p>3 – Poner en marcha la máquina pulsando "ON" (30) . Utilice el depósito auxiliar para cebar la bomba con glicerina , y detenga la máquina pulsando "OFF" (31).</p>	

<p>Date de MàJ / Up to date: 04/08/2011</p>	<p>VISA</p>	<p>U:\TECHNIQUE\8-NOTES TECHNIQUES\1-NT (note technique)\01-Originaux\WORD\10309-Préservation pompe procon.doc</p>
<p>STOCKAGE POMPE PROCON / PRESERVATION PROCON PUMP / MANTENIMIENTO DE LA BOMBA PROCON</p>		<p>NT-0809</p>



CONTACT YOUR DEALER/AGENT:
CONTACTA SU AGENTE:



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CS8002 CAUDAN – 56607 LANESTER CEDEX – France –
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