

USER MANUAL WATERMAKER IDROMAR MODEL NF 250 + 250



Idromar international

20098 S.GIULIANO MILANESE (MI)-Via Piemonte, 14 – Fraz.Sesto
Ulteriano

Tel.(02) 98.28.16.31 – 98.28.01.94 – Telefax (02) 98.80.955 –

E-Mail info@idromar.tv – Internet: www.idromarwatermaker.com

Cellulari.+39-335/209524 - +39-335/6630488 - +39-335/7204239

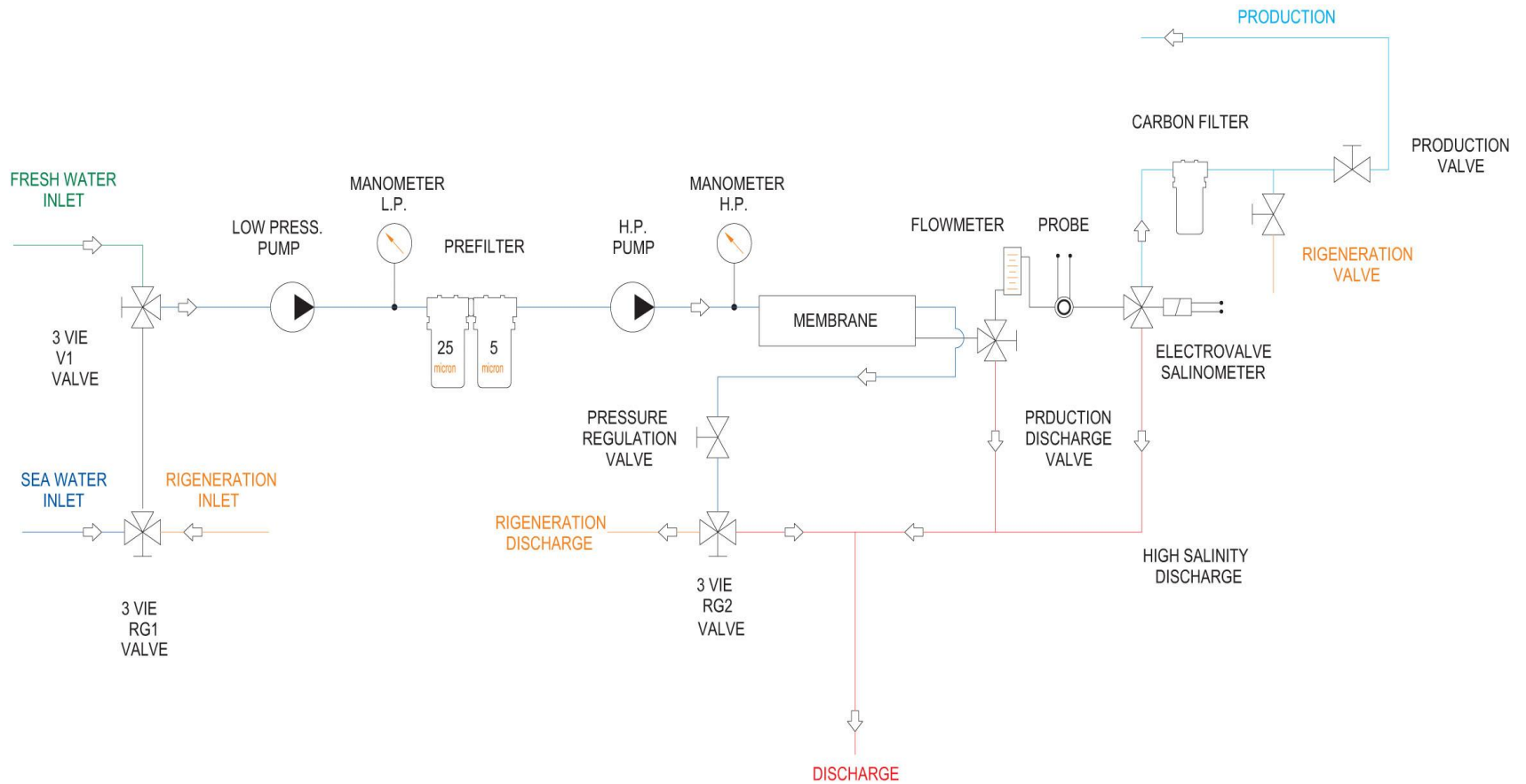


IMPORTANT:

WHEN THE WATERMAKER IS IN FUCTION DON'T OPEN THE ELECTRICAL BOX AND DON'T PUT THE HAND INSIDE THE WATERMAKER BEFORE OF ANY OPERATION STOP THE WATERMAKER BY STOP BUTTON

- 1 . The desalination plant must not run in port or close to densely populated coastlines in order to avoid premature and occasionally irreparable damage to the membrane.
The desalination plant should run offshore or while sailing, in order to avoid a frequent change of pre-processing filters, since the sea water – even if it is clear water – contains a bigger concentration of colloidal and suspended particles especially next to the coastline.
2. While manoeuvring - wherever the anchor weighing implies a displacement of the sand on the sea bed - , **the plant must be off.**
3. Keep the electric contacts positioned on pressure gauges unchanged as well as the timer positioned on the control panel, otherwise they should be out of phase.
- 4 . If the plant is kept off for over 5 days, it is indispensable to clean it with fresh water for 15 minutes (see After-production run wash).
- 5 . Periodically check the oil level in the pan of the high pressure pump. The oil change every 500 hours' running. Use oil SAE 80/90 or oil SYNECO (to order to the IDROMAR).
6. If the plant is off for over 60 days , effect a bacteriologically protective wash of the membrane (see Regeneration paragraph).
7. After each production run and a fresh-water wash, set valve V1 to vertical position (closed).

PRODUCTION FLOW AND END OF CYCLE WASH



START PRODUCTION

- 1 – Position the seawater intake valve
- 2 – Press the green start button
- 3 – Check that the pressure meter shows about 3 ATE



4 only for automatic version: After 30 seconds pressure pump starts; at this point increase the pressure until it the high reaches 60 BAR, turning the pressure control valve clockwise. The 2 red needles are the alarms for low and high pressure.



→ Max. pressure alarm

→ Min. pressure alarm

5 – The unit is now running; check production on the flow meter and salinity on the salinometer (green led correct salinity red led = salinity)

PRODUCTION RUN

Switch on the plant, the pilot lamp will light up.

Set the 3-way valve V1 to sea water intake. Be careful that the regeneration valve lever RG1 is properly positioned (towards the flow arrival)

Start the plant pushing the start button **A**, wait for some seconds until the pressure is stable, anyway above 10 BAR in order to avoid any low-pressure alarm and set pressure to 60 ATE, closing very softly the needle valve clockwise (vrp).

Henceforth the plant is running as long as it is required. If the plant stops, the lamp of the high and low pressure will light up. To re-start, push the reset button. Generally this alarm is on when some pressure defaults occur (either too low, below 10 Bar or too high above 70 Bar).

It may happen that the early water production features salinity above 800 PPM, therefore it is automatically discharged by the solenoid valve. It only happens for some minutes.

The solenoid valve automatically discharges the water production when red leds onto the salinometer (F) light up. When the green leds light up the water production is automatically pushed to the tanks.

Before stopping the production run, set softly the pressure to approx. 24 BAR. After a drop in pressure, the plant may electrically stop, pushing the production stop button.

It is important that each production run is followed by a wash as described hereunder.

If you like to taste the water during the production cycle, water can be taken in through opening the regeneration valve installed after the active carbon filter.

ALLARMS

1 - If the low pressure alarm lights up, restart the unit pressing the yellow reset button and increase the pressure until it exceeds the red needle on the meter.



2 If high pressure up - the alarm lights up, check the pressure control valve as it may be too tight, then turn it anti-clockwise (4) till the pressure drops to 60 BAR



3 - If during startup the red led of the salinometer lights up and the output water is jettisoned overboard, this is perfectly normal. After about 30 seconds when the water is the quality tanks correct quality, the green led lights up and the water goes to the tanks.



ROUTINE MAINTENANCE

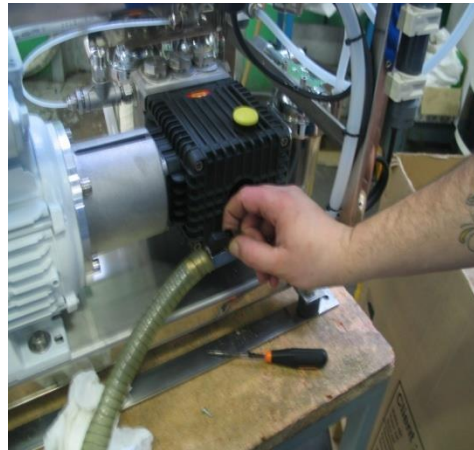
- 1** – If the unit is not in use it must be rinsed every week with fresh water as the water from the last use tends to stagnate inside the filters, causing a buildup of bacteria. By washing through with clean water the filters are kept clean and efficient.
- 2** – Check the prefilter cartridges periodically. If they have a dark colouring, they need to be replaced. This is done by unscrewing the metal ring joining the filter cup and cap.



ROUTINE MAINTENANCE

3 – Check the number of hours on the counter on the electrical panel and every 500 hours change the oil in the high pressure pump.

The discharge valve is at the rear of the high pressure pump; connect a rubber tube to the fitting on the valve and open it to drain the oil. Remove the levelling cap to allow smooth discharge. The amount of oil is about 500 grams. On completion, close the discharge valve and refill the pump via the level opening.



SPECIAL MAINTENANCE

At the end of the season special maintenance is required for the filters. This different consists in washing the filters with 2 products. The first wash is done using the powder provided which descales the filters; the second wash uses the liquid product which sterilizes the filters.

Dissolve all the CTR powder contained in a bottle, into a perfectly clean bucket and mix it with fresh water until it is totally melted.



Pour the CTR product into a 50-liter container filled with fresh water. It is important that the capacity is at least 50 liters, since the regeneration process occurs within a closed circuit, so a small volume of water might be overheated, causing serious damage to the membranes.



SPECIAL MAINTENANCE

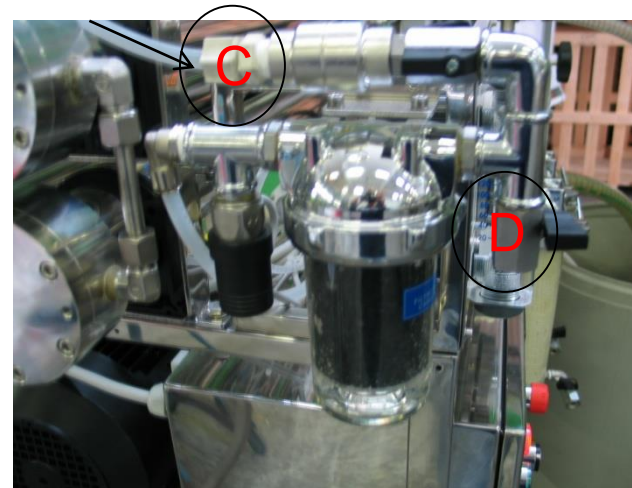
1) Connect a hose (A) (diameter 25) to the outlet connection of the regeneration tank inlet valves. Position the 3- 3 way valves so as to enable correct suction of the regeneration product.



SPECIAL MAINTENANCE

2) Connect a hose (diameter 20) to the outlet connection (B) of the 3-way sea discharge valve and position the valve lever to the hose returning to the regeneration tank.

3) Connect a hose to the outlet connection (C) of the sample-taking valve opening the sampling valve and closing the production valve (D) to the storage tank.



SPECIAL MAINTENANCE

4) Now all the hose are connected so before start the green bottom turn left the selector of the low pressure pump



At this point the machine is ready for the closed circuit filter washing cycle.

To start regeneration press the green button and regulate the pressure on the pressure gauge to around 15 ate using the VRP regulation valve.

The wash cycle lasts 30 minutes.

After washing the filters repeat the procedure using the liquid FLD product to sterilize the filters.

This second cycle lasts 10 minutes.



MEMBRANE STORAGE

If the plant is kept off for over 5 months, carry out a storage and membrane preservation processes.

Follow the same steps as required by regeneration: valves and tubes are positioned the same way.

The only difference lies in the product and the quantity of water to use.

Place 50 lt. of fresh water into the container and pour 50% of the FLD product (fluid). Be careful when you handle the product, do not smell it or rub your eyes, if you have touched the product.

Re-start the plant with unchanged pressure and make the product circulate for about 15 minutes

within a closed circuit keeping a 15 BAR pressure.

Then, empty the regeneration basin as above indicated.

At this point the regeneration and storage operations are completed, re-set valves to running position and take off the hoses used for regeneration. Keep valve V1 in horizontal position (closed).

MEMBRANE 2540

On the production side, all membranes are equipped with little red valve. In the position of the drawing, the valve sends produced water to ship's stocking.
All valves are equipped with sample drawing of produced water.
Each valve can be operated separately.



If one membrane don't produce water you have to turn down the little red valve on the membrane so you can by- pass the membrane in fault and produce the water with the other one.



ATTENTION: don't put the little red valve in horizontal position, because in this position the valve are closed and it's possible to broke the hoses.

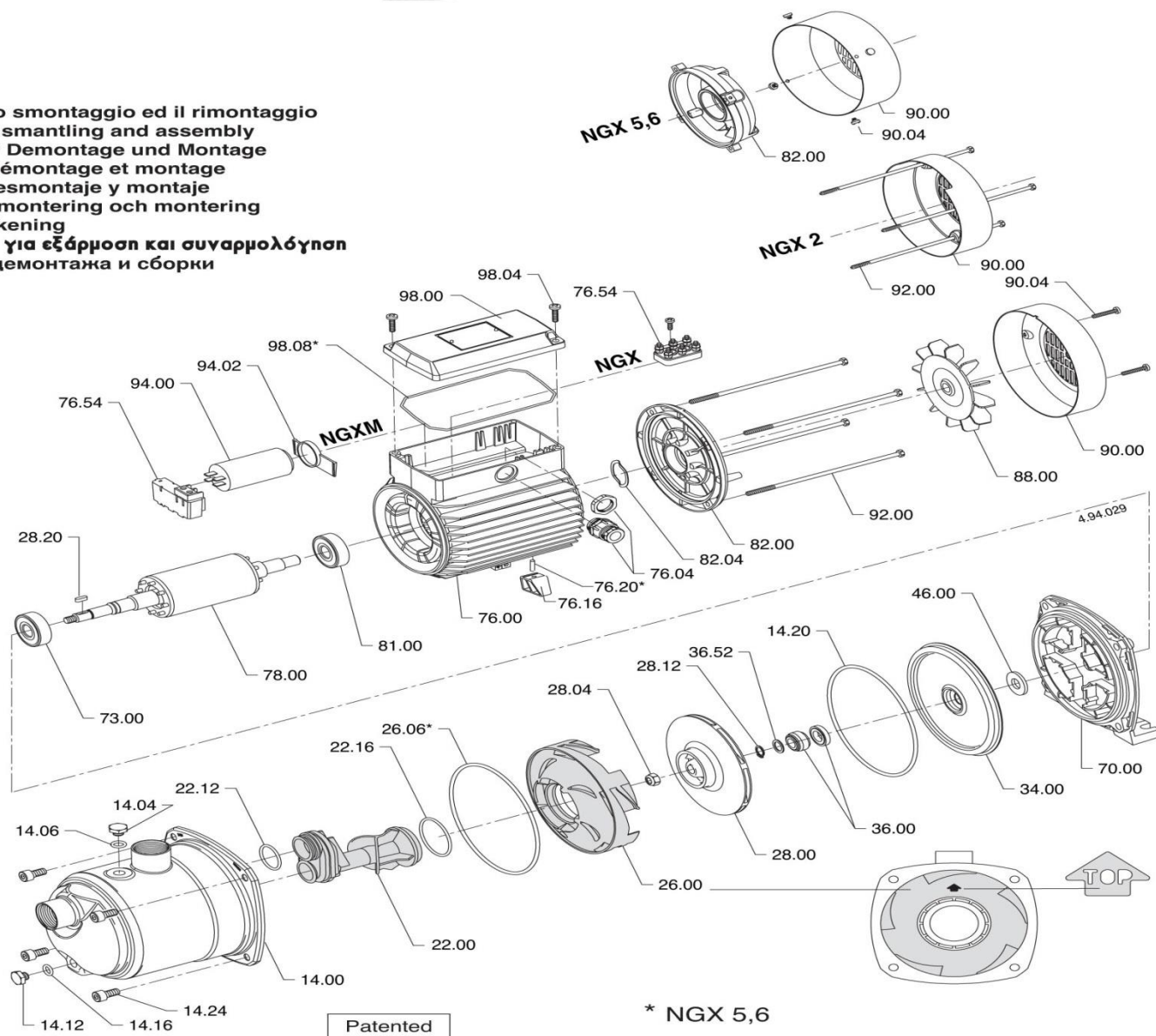
MEMBRANE REPLACEMENT

- To replace the membranes, it is necessary to unscrew the six screws which lock the plug on the vessel.
- Remove the plug pulling it towards outer side
- Extract the membrane to be replaced.
- During this operation, it is important to respect the o-ring position on the membrane. The o-ring correct position is always at the water inlet. Please take care that o-ring position is not at the concentrate discharge side.
- Put the new membrane into vessel again and put some silicon grease on the oring of both membrane and plug. Then insert the plug and screws again.
- Restart the plant and operate at 15 bar pressure for around one hour with fresh water in order to watch the membrane perfectly.

LOW PRESSURE PUMP NGX

Disegno per lo smontaggio ed il rimontaggio
 Drawing for dismantling and assembly
 Zeichnung für Demontage und Montage
 Dessin pour démontage et montage
 Dibujo para desmontaje y montaje
 Ritning för demontering och montering
 Onderdelentekening
 Σχεδιάγραμμα για εξάρθρωση και συναρμολόγηση
 Чертеж для демонтажа и сборки
 组装与分解图

NGX

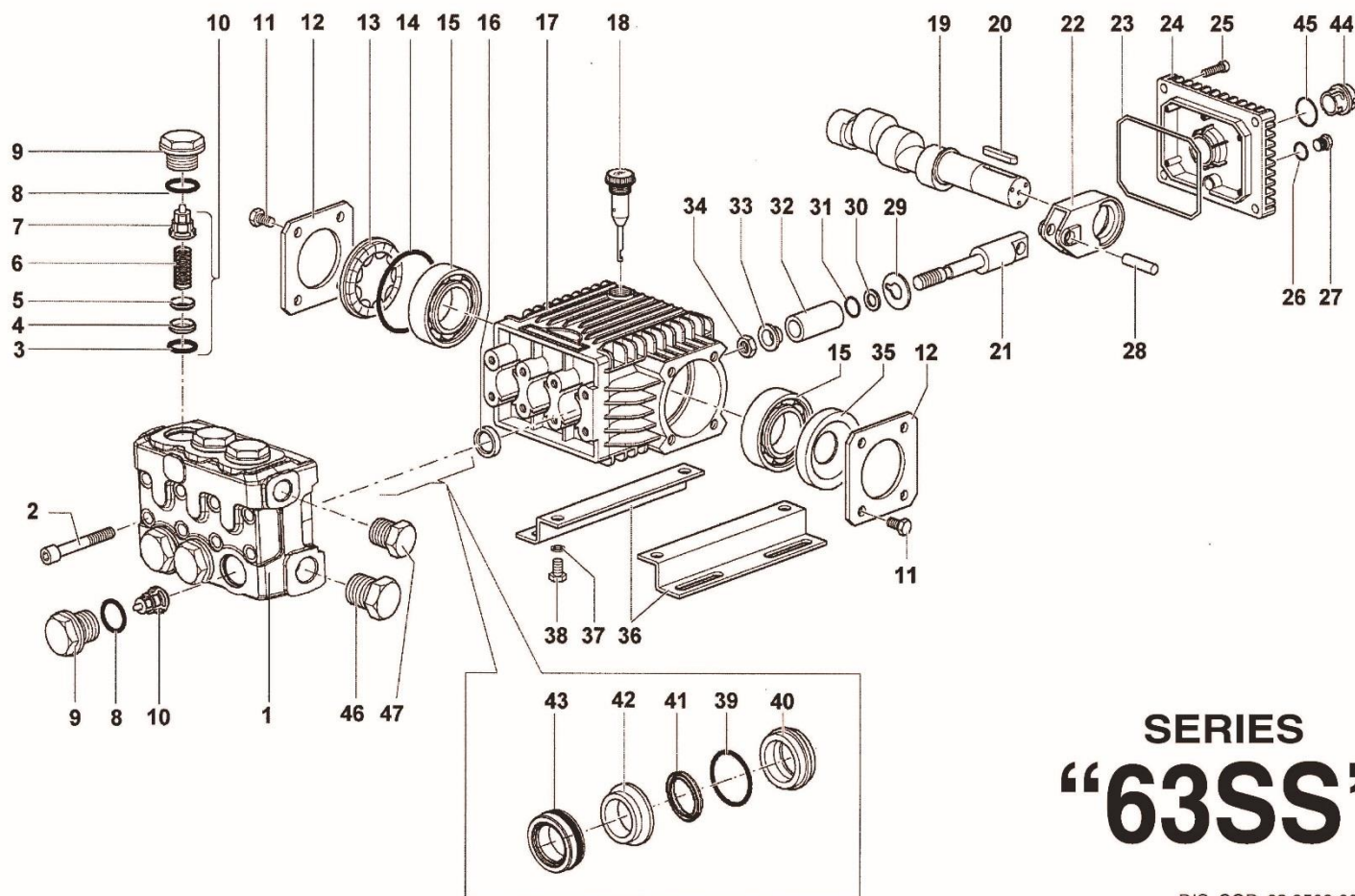


LOW PRESSURE PUMP NGX

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| Italiano ————— | | English ————— | | Deutsch ————— | | Français ————— | | 中文 ————— | |
|----------------|----------------------------|---------------|---------------------------|---------------|---------------------------|----------------|-----------------------------|----------|----------|
| Nr. | Denominazione | Nr. | Part designation | Nr. | Teile-Benennung | Nr. | Description des pièces | 位置号. | 名称 |
| 14.00 | Corpo pompa | 14.00 | Pump casing | 14.00 | Pumpengehäuse | 14.00 | Corps de pompe | 14.00 | 泵壳 |
| 14.04 | Tappo | 14.04 | Plug | 14.04 | Verschlußschraube | 14.04 | Bouchon | 14.04 | 水堵 (排水) |
| 14.12 | Tappo | 14.12 | Plug | 14.12 | Verschlußschraube | 14.12 | Bouchon | 14.12 | 水堵 |
| 14.20 | O-ring | 14.20 | O-ring | 14.20 | Runddichtring | 14.20 | Joint torique | 14.20 | O-型圈 |
| 14.24 | Vite | 14.24 | Screw | 14.24 | Schraube | 14.24 | Vis | 14.24 | 螺栓 |
| 22.00 | Eiettore | 22.00 | Ejector | 22.00 | Ejektor | 22.00 | Ejecteur | 22.00 | 射流器 |
| 22.12 | O-ring | 22.12 | O-ring | 22.12 | Runddichtring | 22.12 | Joint torique | 22.12 | O-型圈 |
| 22.16 | O-ring | 22.16 | O-ring | 22.16 | Runddichtring | 22.16 | Joint torique | 22.16 | O-型圈 |
| 26.00 | Diffusore | 26.00 | Diffuser | 26.00 | Leitrad | 26.00 | Diffuseur | 26.00 | 导叶 |
| 26.06 | O-ring | 26.06 | O-ring | 26.06 | Runddichtring | 26.06 | Joint torique | 26.06 | 导叶 |
| 28.00 | Girante | 28.00 | Impeller | 28.00 | Lauftrad | 28.00 | Roue | 28.00 | 叶轮 |
| 28.04 | Dado bloccaggio girante | 28.04 | Impeller nut | 28.04 | Lauftradmutter | 28.04 | Ecrou de roue | 28.04 | 叶轮锁母 |
| 28.12 | Anello di sicurezza | 28.12 | Circlip | 28.12 | Sicherungsring | 28.12 | Circlips | 28.12 | 挡圈 |
| 28.20 | Linguetta | 28.20 | Impeller key | 28.20 | Paßfeder | 28.20 | Clavette | 28.20 | 键 |
| 34.00 | Coperchio del corpo | 34.00 | Casing cover | 34.00 | Gehäusedeckel | 34.00 | Couvercle de corps | 34.00 | 泵壳盖 |
| 36.00 | Tenuta meccanica | 36.00 | Mechanical seal | 36.00 | Gleitringdichtung | 36.00 | Garniture mécanique | 36.00 | 机械密封 |
| 36.52 | Anello di spallamento | 36.52 | Shoulder ring | 36.52 | Schulterring | 36.52 | Bague d'appui | 36.52 | 弹簧锁圈 |
| 46.00 | Paraspruzzi | 46.00 | Deflector | 46.00 | Spritzring | 46.00 | Défecteur | 46.00 | 挡水圈 |
| 70.00 | Lanterna di raccordo | 70.00 | Lantern bracket | 70.00 | Antriebslaterne | 70.00 | Lanterne de raccordement | 70.00 | 笼形支架 |
| 73.00 | Cuscinetto | 73.00 | Ball bearing | 73.00 | Wälzlager | 73.00 | Roulement à billes | 73.00 | 泵侧轴承 |
| 76.00 | Carcassa mot. con avvolg. | 76.00 | Motor casing with winding | 76.00 | Motorgehäuse mit Wicklung | 76.00 | Carcasse avec bobinage | 76.00 | 带线包的电机壳体 |
| 76.16 | Appoggio | 76.16 | Support | 76.16 | Stütze | 76.16 | Appui | 76.16 | 支脚 |
| 76.20 | Spina elastica | 76.20 | Pin | 76.20 | Paßstift | 76.20 | Goupille d'accouplement | 76.20 | 轴带转子组 |
| 78.00 | Albero-rotore | 78.00 | Shaft with rotor packet | 78.00 | Welle mit Rotorpaket | 78.00 | Arbre-rotor | 78.00 | 风扇侧轴承 |
| 81.00 | Cuscinetto | 81.00 | Ball bearing | 81.00 | Wälzlager | 81.00 | Roulement à billes | 81.00 | 风扇侧电机端盖 |
| 82.00 | Coperchio motore | 82.00 | Motor end shield | 82.00 | Motorlagergehäuse | 82.00 | Couvercle de moteur | 82.04 | 补偿弹簧 |
| 82.04 | Molla di compensazione | 82.04 | Compensating spring | 82.04 | Federscheibe | 82.04 | Rondelle de compensation | 88.00 | 电机风扇 |
| 88.00 | Ventola | 88.00 | Motor fan | 88.00 | Lüfterrad | 88.00 | Ventilateur | 90.00 | 风扇侧端盖 |
| 90.00 | Calotta | 90.00 | Fan cover | 90.00 | Lüfter-Haube | 90.00 | Capot | 90.04 | 螺钉 |
| 90.04 | Vite | 90.04 | Screw | 90.04 | Schraube | 90.04 | Vis | 92.00 | 螺栓 |
| 92.00 | Tirante | 92.00 | Tie-bolt | 92.00 | Verbindungsschraube | 92.00 | Tirant d'assemblage | 98.00 | 接线盒盖 |
| 98.00 | Coperchio scatola morsetti | 98.00 | Terminal box cover | 98.00 | Klemmenkastendeckel | 98.00 | Couvercle de boîte à bornes | | |
| 98.08 | Guarnizione | 98.08 | Gasket | 98.08 | Flachdichtung | 98.08 | Joint plat | | |

HIGH PRESSURE PUMP 1414



SERIES
"63SS"

DIS. COD. 63.9509.00

HIGH PRESSURE PUMP 1414

| POS. | CODE CODICE | DESCRIPTION DESCRIZIONE | N. PCS. |
|-----------|-------------|--|------------------|
| 1 | 63.1216.36 | Testata pistone Ø 15 INOX | 1 |
| | 63.1219.36 | Testata pistone Ø 18 INOX | 1 |
| 2 | 99.3193.00 | Vite M 8x65 UNI 5931 INOX | 8 |
| 3 | 90.3841.00 | OR Ø 17,13x2,62 (3068) | KIT 192 6 |
| 4 | 36.2036.66 | Sede valvola - SS | KIT 192 6 |
| 5 | 36.2001.76 | Valvola | KIT 192 6 |
| 6 | 94.7373.00 | Molla Ø m. 9,4x14,8 - SS | KIT 192 6 |
| 7 | 36.2025.51 | Guida valvola | KIT 192 6 |
| 8 | 90.3847.00 | OR Ø 20,24x2,62 (3081) | 6 |
| 9 | 98.2229.00 | Tappo M 24x1,5x17 INOX | 6 |
| 10 | 36.7130.01 | Gruppo valvola - SS | KIT 192 6 |
| 11 | 99.1808.00 | Vite M 6x10 UNI 5739 - INOX | 8 |
| 12 | 63.1500.76 | Coperchio laterale carter - INOX | 2 |
| 13 | 44.2118.01 | Distanziale con indicatore | 1 |
| 14 | 90.4097.00 | OR Ø 55,56x3,53 (159) | 1 |
| 15 | 91.8331.00 | Cuscinetto a sfere 6305 | 2 |
| 16 | 90.1595.00 | Anello radiale Ø 18x26x6 | KIT 159 1 |
| 17 | 63.0100.22 | Carter | 1 |
| 18 | 98.2103.00 | Tappo carico olio G 3/8 | 1 |
| 19 | 63.0212.65 | Albero SSE1507 - SSE1411 - SSU1509 - SSU1413 | 1 |
| | 63.0216.65 | Albero SSE1509 - SSE1413 - SSU1511 - SSU1415 | 1 |
| | 63.0218.65 | Albero SSE1414 | 1 |
| 20 | 91.4892.00 | Linguetta | 1 |
| 21 | 63.0501.66 | Guida pistone - SS | 3 |
| 22 | 63.0300.22 | Biella | 3 |
| 23 | 90.3920.00 | OR Ø 101,27x2,62 (3400) | 1 |
| 24 | 63.1600.22 | Coperchio posteriore carter | 1 |
| 25 | 99.1838.00 | Vite M 6x14 UNI 5931 - INOX | 4 |

| POS. | CODE CODICE | DESCRIPTION DESCRIZIONE | N. PCS. |
|-----------|-------------|------------------------------------|----------------------|
| 26 | 90.3585.00 | OR Ø 10,82x1,78 (2043) | 1 |
| 27 | 98.2040.00 | Tappo G 1/4x9 - INOX | 1 |
| 28 | 97.7335.00 | Spinotto Ø 9x27,5 | 3 |
| 29 | 96.7076.00 | Rosetta Ø 9x25x0,5 - INOX | 3 |
| 30 | 90.5022.00 | Anello antiest. Ø 6,2x9x1,5 | 3 |
| 31 | 90.3573.00 | OR Ø 5,28x1,78 (2021) | 3 |
| 32 | 52.0400.09 | Pistone Ø 15 | 3 |
| | 44.0401.09 | Pistone Ø 18 | 3 |
| 33 | 63.2115.66 | Rosetta Ø 8 con collare - INOX | 3 |
| 34 | 92.2215.00 | Dado M 8 - SS | 3 |
| 35 | 90.1641.00 | Anello radiale Ø 25x62x10 | 1 |
| 36 | 50.2000.74 | Piedino | 2 |
| 37 | 96.7016.00 | Rosetta Ø 8,4 UNI 1751 zincata | 4 |
| 38 | 99.3037.00 | Vite M 8x16 UNI 5739 - 8.8 zincata | 4 |
| 39 | 90.3608.00 | OR Ø 28,30x1,78 (2112) | KIT 215-216 3 |
| 40 | 63.0806.66 | Anello di fondo Ø 15 - SS | KIT 215 3 |
| | 63.0807.66 | Anello di fondo Ø 18 - SS | KIT 216 3 |
| 41 | 90.2150.00 | Anello ten. alt. Ø 15x19,5 L.P. | KIT 214-215 3 |
| | 90.2200.00 | Anello ten. alt. Ø 18x22,5 L.P. | KIT 204-216 3 |
| 42 | 63.2164.66 | Anello intermedio Ø 15 - SS | KIT 215 3 |
| | 63.2165.66 | Anello intermedio Ø 18 - SS | KIT 216 3 |
| 43 | 90.2160.00 | Anello ten. alt. Ø 15x24x8,5 H.P. | KIT 214-215 3 |
| | 90.2210.00 | Anello ten. alt. Ø 18x28x10 H.P. | KIT 204-216 3 |
| 44 | 63.2100.51 | Spia livello olio | 1 |
| 45 | 90.4051.00 | OR Ø 26,58x3,53 (4106) | 1 |
| 46 | 98.2180.00 | Tappo G 1/2x10 INOX | 1 |
| 47 | 98.2100.66 | Tappo G 3/8x13 INOX | 1 |

SAND FILTER

A sand filter is used for retaining the roughest impurities contained in sea water. This filter includes 3 different and variously-sized layers of quartz sand. The filter sand lasts for at least 5 years and only needs counter-washing at least once a week.

Its cleaning simply occurs moving the lever of the valve installed onto the filter as described hereunder. While running, water comes in from the top, flows through the 3 sand layers and is sucked by an internal tube and delivered to the plant pre-cleaners. During the counter-wash, water comes in from inside and comes up to the top and is delivered to the outboard discharge.

The pre-treatment of sea water employing multi media filters is good to prepare the raw feeding water for the membrane passage to give less fouling and scaling and to provide for longest possible membrane-life and also lower cartridge consumption on the immediately after plant pre-filtration 5 and 20 micron.



SERVICE AND BACKWASHING PROCEDURE

The sand filter shall be washed once a week at least.

This washing shall be carried out as follows:

BACKWASH

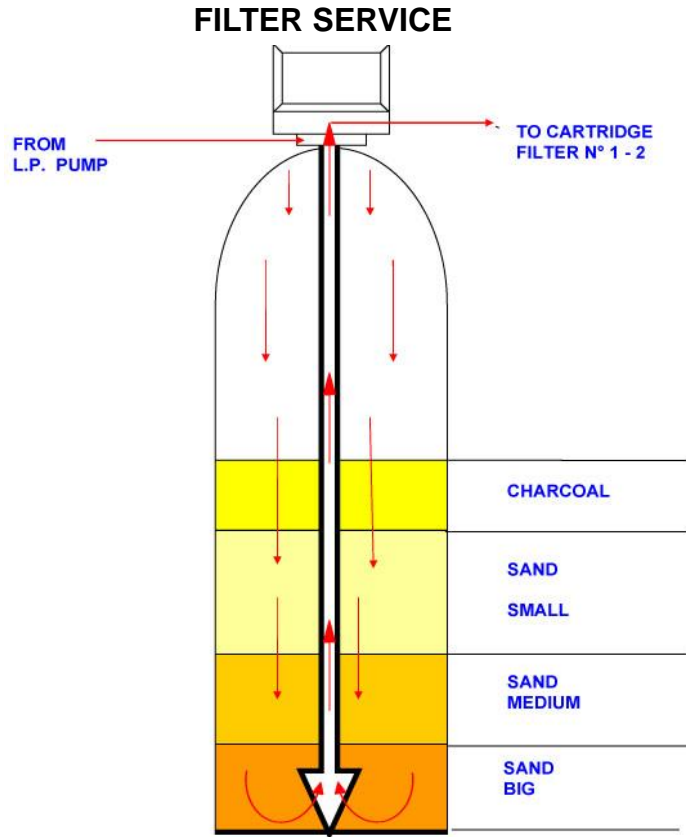
- 1) PLACE V1 VALVE IN SEA INLET POSITION
- 2) PLACE FILTER VALVE IN BACKWASH POSITION
- 3) START THE LOW PRESSURE PUMP BY SELECTOR
- TIME REQUIRED FOR THE OPERATION ABOUT 15 MINUTES

RAPID RINSE

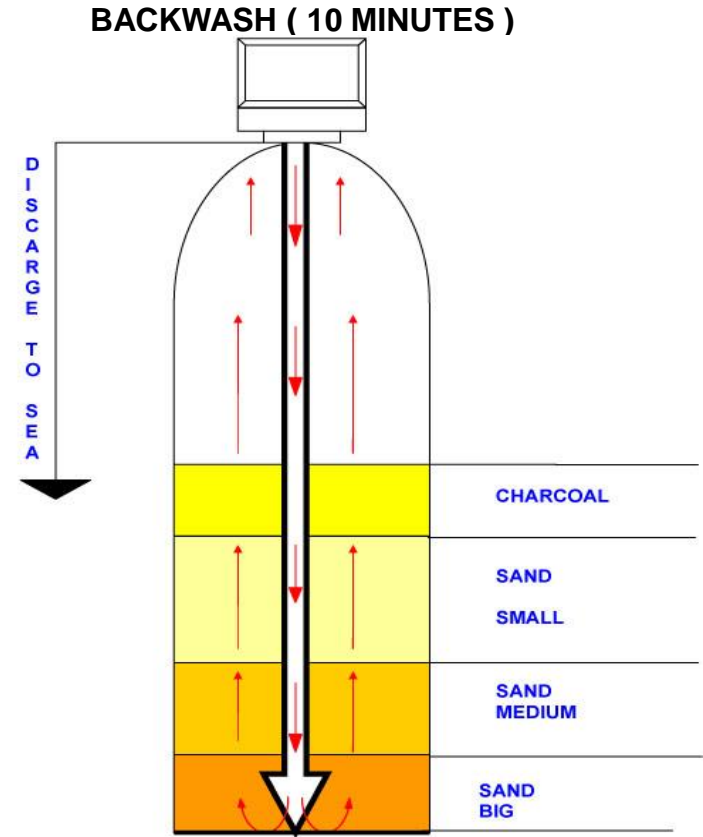
- 4) HALT LOW PRESSURE PUMP
- 5) PLACE FILTER VALVE IN RAPID RINSE POSITION
- 6) RESTART THE LOW PRESSURE PUMP
- TIME REQUIRED FOR THE OPERATION ABOUT 5 MINUTE
- 7) HALT LOW PRESSURE PUMP
- 8) PLACE FILTER VALVE IN SERVICE



SAND FILTER



Water flow with sand filter in service



Backwash is needed to remove all the large impurities that remain on the surface and in the first centimetre of sand this procedure is done putting the 2750 manual valve in Backwash position to increase the flow velocity and directly the effluent to overboard discharge.

UV STERILIZER SH 8000

The UV sterilizer is extremely effective and its main advantage is that it requires no addition of chemical substances which alter the taste of the water.

Advantages of UV filtering include:

- no chemical substances added
- no bacterial contamination
- no alteration to taste
- beneficial minerals retained

The sterilizer ensures bacteria-free water (eliminating up to 95% of bacteria that are found in water) and normally the capacity of the filter is matched to the vessel's autoclave capacity.



UV STERILIZER SH 8000

Before using the sterilizer, read this installation, use and maintenance manual fully. Knowledge of the information and instructions contained in this manual is essential for the correct installation and correct use of the system by the user.

The user must be aware of the operating mechanisms of the sterilizer as far as this falls within his competence.

It is the buyer's responsibility to ensure that users are trained and aware of all the information and instructions contained in the documentation supplied.

The sterilizer has been designed and built with mechanical and electrical security devices to protect the operator or the user from possible physical injury.

Nevertheless, the operator or user must be aware of the potential risks that exist while working with the sterilizer.

Intervention on the system by the user is only allowed within the limits of his competence and on the understanding that he has been properly trained.

The user shall be held responsible for any changes that he makes to the sterilizer.

The user is responsible for all the operations necessary to keep the sterilizer running efficiently before and during use.

Only the use of original spare parts offers guarantee functional reliability and the optimization of the performance of the sterilizer.

This type of system must be destined exclusively for the use for which it was designed, i.e.: the treatment of water used for drinking or process.

The sterilizer must not be removed from its original position.

Do not use corrosive products, acids, scouring pads or wire brushes to clean the sterilizer.

Do not wash the sterilizer with direct or high-pressure jets of water.

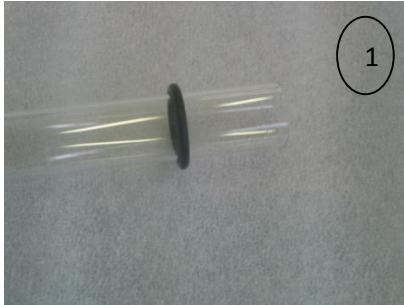
The manufacture declines all responsibility for injury or damages caused by failure to observe the contents of this manual.

The manufacture declines all responsibility for injury or damages caused by repairs carried out by people other than qualified professionals.

The manufacturer declines all responsibility for injury or damages caused by changes, accessories or devices of any kind applied to the appliance and not expressly provided for in this manual, especially if they change the original operation of the sterilizer in any way.

UV STERILIZER SH 8000

INSTRUCTION FOR MOUNTING UV LAMP



1) Insert the oring on the quartz tube



2) Insert the quartz tube inside on the sterilizer body



3) Insert the lamp inside the quartz tube





4) Attach the connector to the lamp

Note: The sterilizer should be installed by creating a bypass in order to exclude the sterilizer in the event of failure.

UV STERILIZER SH 8000

8.1 Meaning of the buttons and nomenclature of the display

 On/off button

 Reset buttons

H:00000 = Indicates the lamp life hours

HTOT:00000 = Indicates the total system life hours (cannot be reset)

Lamp1: ON= Indicates that lamp no. 1 is on

Lamp2: ON= Indicates that lamp no. 2 is on

Lamp1: OFF= Indicates that lamp no. 1 is switched off or burnt out

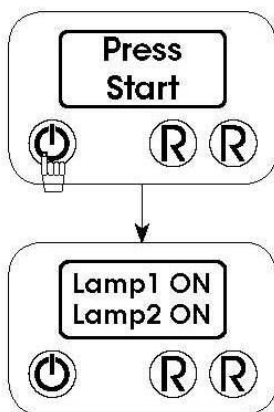
Lamp2: OFF= Indicates that lamp no. 2 is switched off or burnt out


Lumin: 100%= Indicates the lamp irradiation intensity

8.2 Starting the system

With the electric plug in the socket, the sterilizer is powered, but the lamps are switched off and the digital display indicates: "Press Start".

To switch on the lamps proceed as follows:



Press the system on button
(Symbol: )

The lamps will come on and the display will indicate, alternatively:
the lamp status (on/off),
the irradiation intensity,
the partial hours and total hours.

Ultraviolet systems guarantee the destruction of the bacteria inside the sterilization chamber. As no chemical disinfectant is added to the water to be treated, the system cannot act on any bacterial colonies inside the pipes after it.

Consequently it is fundamental to sterilize the pipes before using the water or carry out an analytical check. A sodium hypochlorite solution can be used to sanitize the pipes, dosing quantities and concentrations that depend on the size and features of the distribution system (as a rough guide, a residue of free chlorine of at least 0.2 ppm, should spend at least 30 minutes in all the drawing points, especially those furthest from the sterilizer. The free chlorine value can easily be measured using the colorimetric kits available for sale). This operation can be repeated regularly according to need and the results of the analytical tests. After completing all the sanitization operations, flush all the utilities connected to the network with water until all the sterilizing solution has been eliminated. Water with a chlorine residue of 0.2 ppm is perfectly drinkable (chlorine could however cause problems in water for special industrial use, in water for aquariums, etc.) When the system is switched on for the first time, this flushing also eliminates any impurities left inside the system following assembly.

UV STERILIZER SH 8000

14 GUIDE TO IDENTIFYING FAILURES AND ANOMALIES

"LAMP1 OFF"

Lamp no. 1 is burnt out, the red led beside the display is flashing

Replace the lamp

Electronic card burnt out/faulty

Replace the electronic card

"LAMP2 OFF"

Lamp no. 2 is burnt out, the red led beside the display is flashing

Replace the lamp

Electronic card burnt out/faulty

Replace the electronic card

The system is off

There is not electricity supply

Ensure that the electricity supply is connected

DOSING UNIT

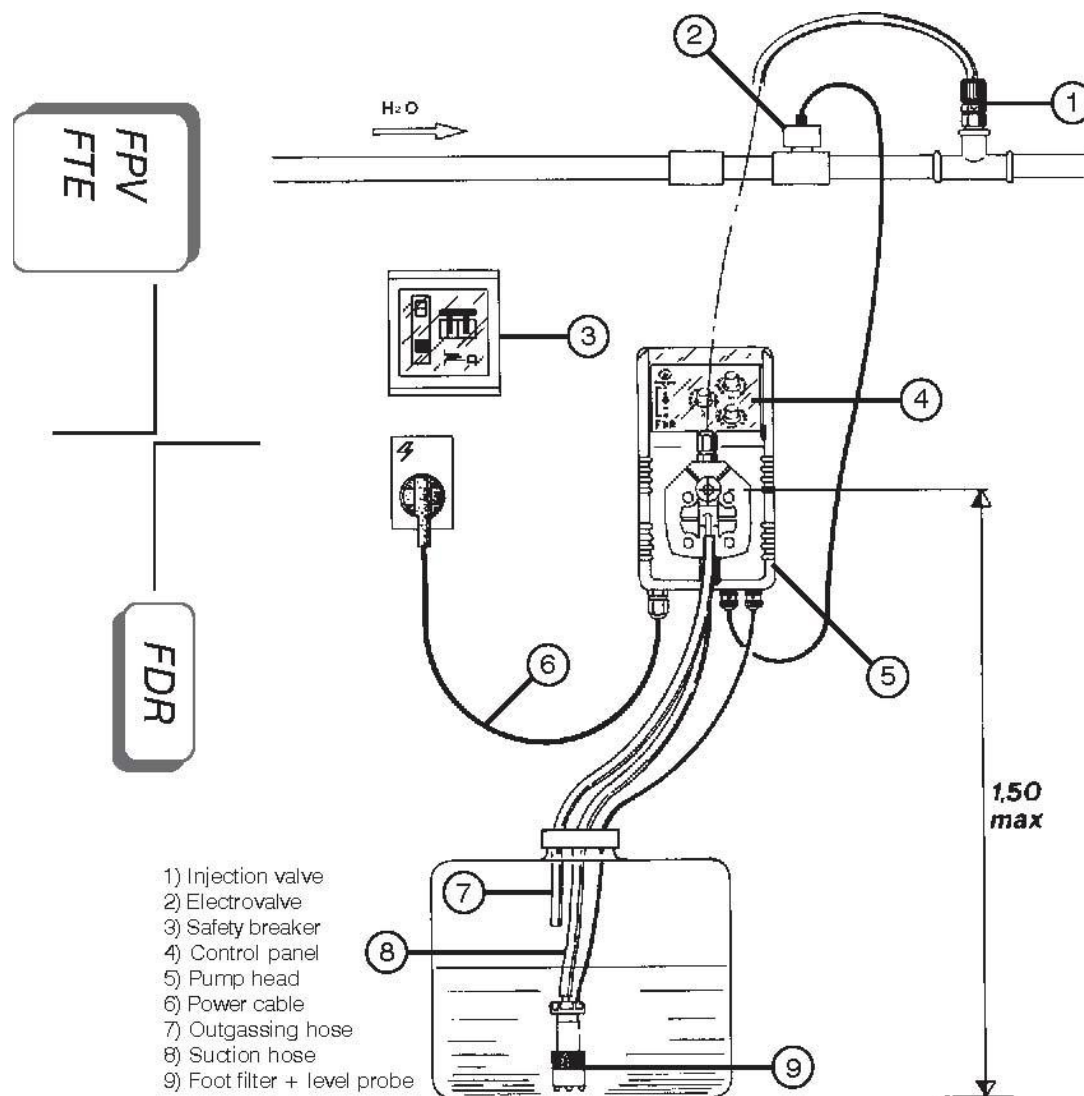
The dosing station is capable of determining or Katadin Chlorine based joni silver. Both a product that others are sterilizing, the difference in the price of the product and ability to sterilization. Chlorine maintains the sterile water for about 1 week while the Katadin for about 1 month with the Katadin advantage that the product is a colorless and odorless. That station is normally dosage accepted by the MCA which requires to be installed on the pipeline from boarding dock and the piping of water produced by watermaker.

The provision is:

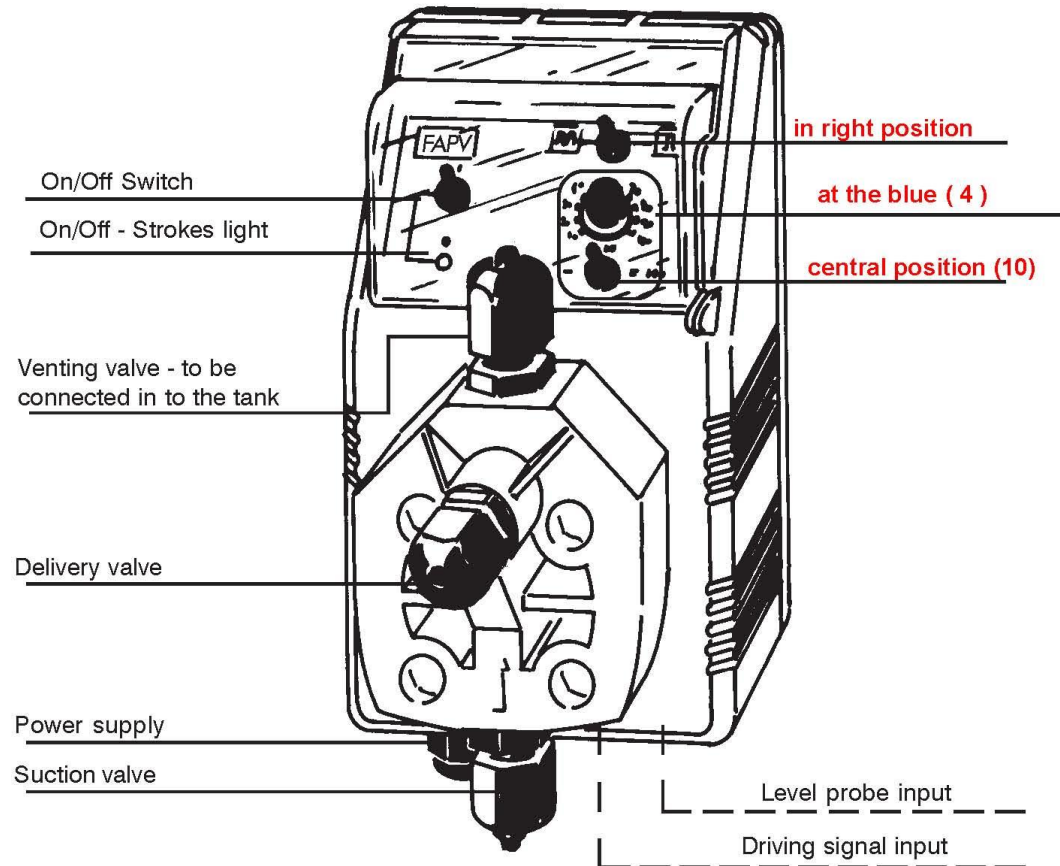
- 1 - volumetric dosing pump
- 2 - Tank for the containment of the product to be determined (10 lt)
- 3 - Alarm empty tank
- 4 - Flowmeter to be installed on the pipe diameter that will need to specify
- 5 - Injector with non-return valve to be installed in the piping will be determined where the Product
- 6 - Kit pipe and cable mt. 10 meter Relay pump



DOSING UNIT



DOSING UNIT



LAUNCHING DOSING UNIT

- Fill the container with chlorine or Katadyn
- Set on-off switch to 1 (to top)
- Set the selector Pump Capacity adjustment wide blue 5
- Set Auto Manual switch on manual (left)

At this point the pump will start to suck and you will see the liquid moving from transparent tubes.

When you see the pipes filled completely transparent to the point of injection must slide the Auto-Manual to the right.

At this point the dosage will be automatic and the pump will receive pulses from the counter on the quantity of water passing through.

Therefore, the dosage will be discontinuous, in the case of transfer of water from the harbor impulses will be more frequent as the amount of water passage is higher.

When the water to be treated will be produced by watermaker there will be a less frequent dosing as the amount of water to be treated will be lower.

QUICK TROUBLESHOOTING GUIDE

If...pump does not work and the green led is off:

- check and verify power supply;
- verify provided power supply is the same reported in the pump tag;
- check fuse integrity and eventually replace it;
- replace electronic PCB.

If...pump does not work and the red led is on:

- check and ensure product tank is not empty;
- check level probe floater, replace it if blocked down;
- remove eventual crystallized product that can block the level probe floater.

If...pump does not work and the magnet strokes:

- check and verify foot filter is not obstructed with impurities and chemical crystals;
- some air can be in the pump head. Remove it as described in the PRIMING section;
- check and ensure suction and delivery valves are not obstructed with product crystals;
- check and verify valves o-ring are not swell or damaged, it's a clear evidence of chemical incompatibility with used products (see "o-rings" section).

If...pump blows fuse after working a while:

- check and ensure supplied power is the same reported in pump tag;
- check electronic circuitry connecting it to a lamp (of the right voltages) instead of the magnet.

All connections are "quick lock" made so: it's a quick test to perform, if the lamp does not light intermittently the electronic PCB needs to be replaced;

- check and ensure magnet impedance is ($\pm 5\%$) the tag one. If not replace it.

WATERSOFTENER IDROFAST 9100

TECHNICAL SPECIFICATIONS:

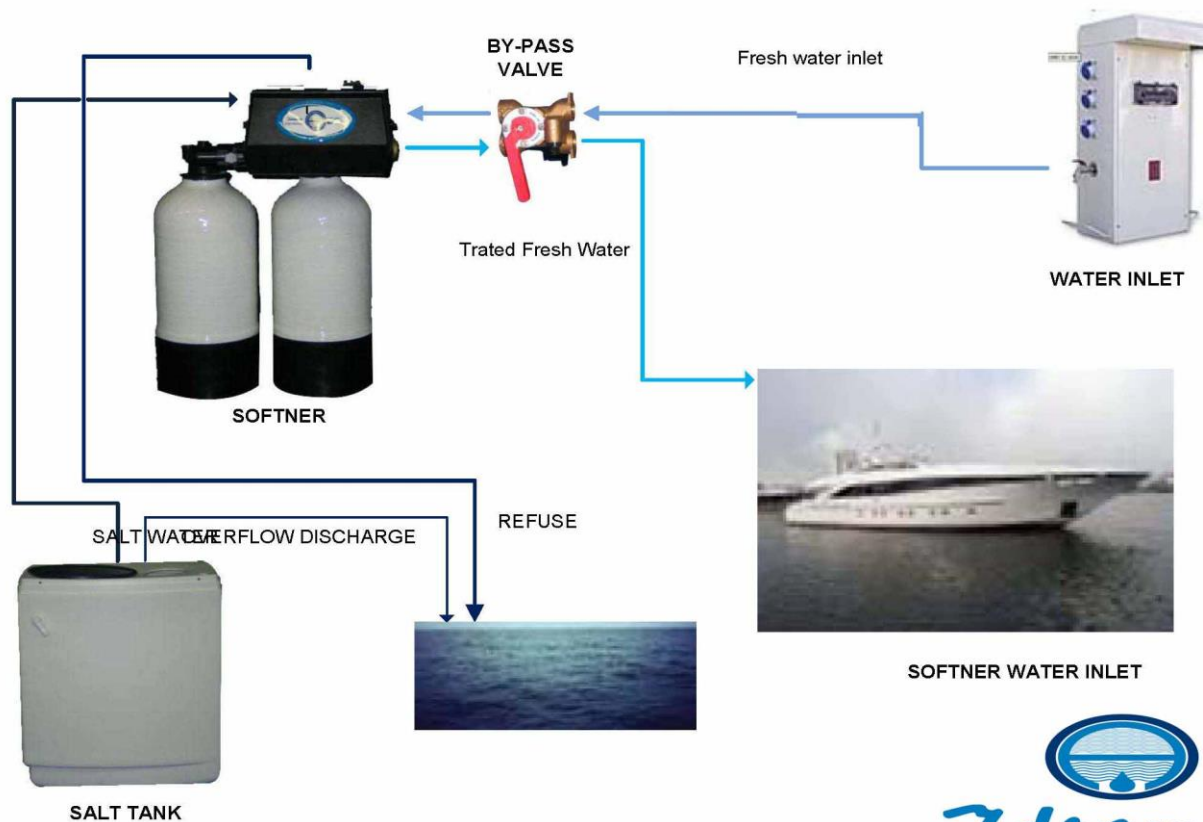
- ♣ Power Supply with built-in transformer 220V to 24V AC
- ♣ Hourly capacity 3.5 m³ / h. at 1.5 bar pressure
- ♣ operating pressure 1.5 BAR
- ♣ Maximum working pressure 5 bar
- ♣ Production softened water for every 2 mc column_a hardness at 23 ° F
- ♣ Time of regeneration for each column: 25 minutes
- ♣ Consumption salt per regeneration: 2 Kg
- ♣ Volume of resin for each column: 10 lt

ADVANTAGES:

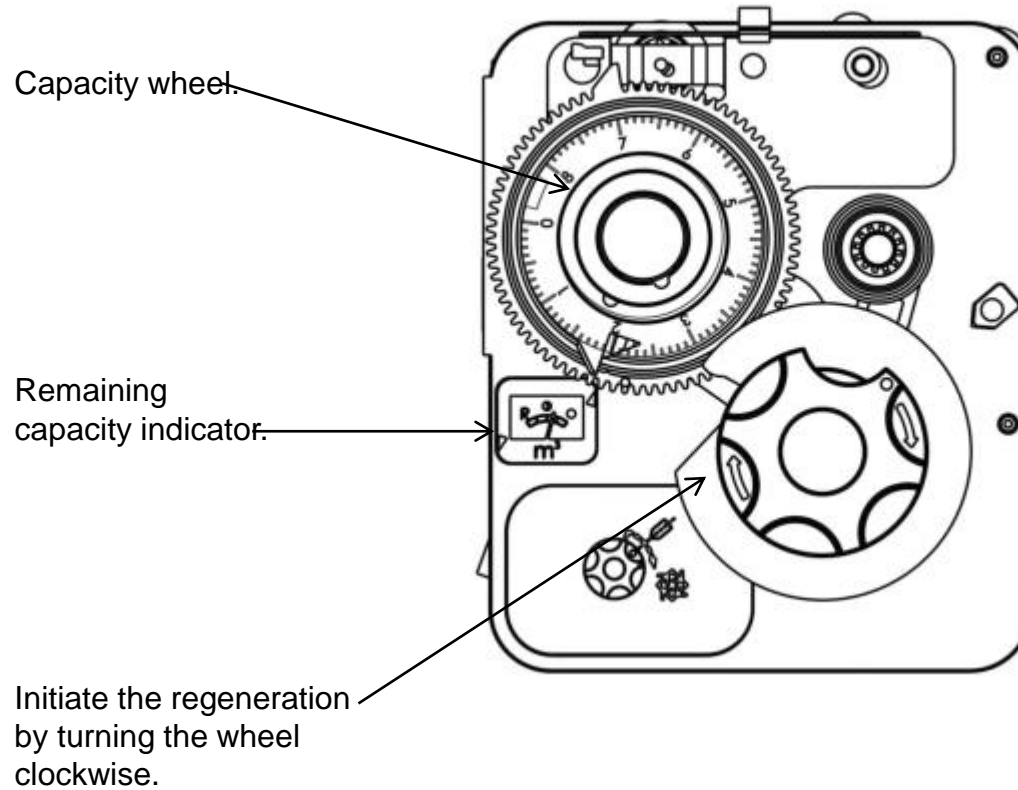
- Ability to change the regeneration based on the quality of water entering
- Safety brine valve installed in the tub of salt to prevent overflows
- Timer controls and completely non-electric and electromechanical
- tap water sample for analysis, taking inbound and produced water (kit supplied with softener analysis)
- pressure gauge for water input
- Flow Switch for control timer in case of lack of water
- Possibility of increasing the hardness residual water produced



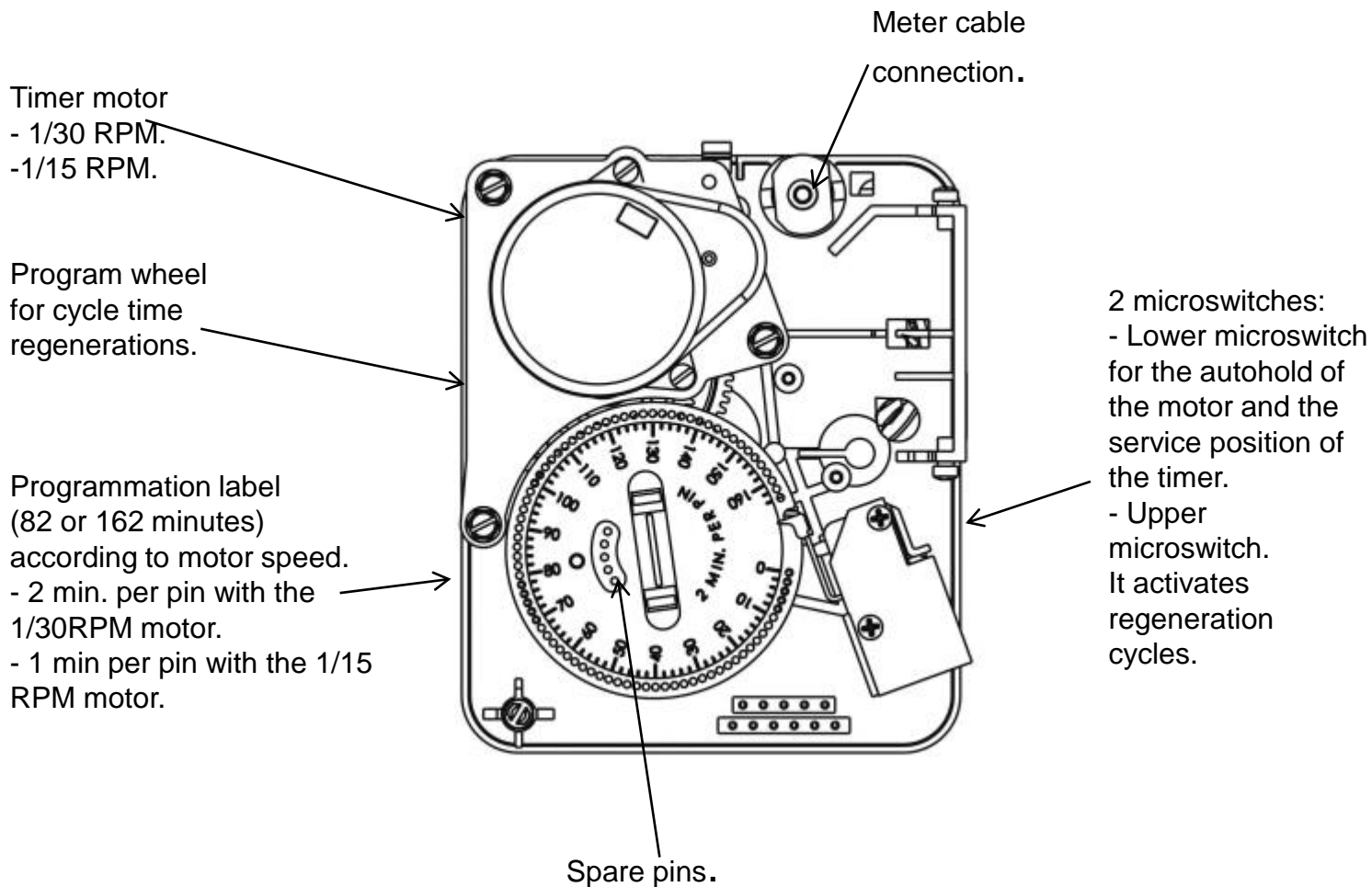
WATERSOFTENER IDROFAST 9100



WATERSOFTENER IDROFAST 9100



WATERSOFTENER IDROFAST 9100



WATERSOFTENER IDROFAST 9100 TROUBLESHOOTING

| INCIDENT | CAUSE | SOLUTION |
|---------------------------------|---|--|
| 1. Softener fails to regenerate | <ul style="list-style-type: none"> A. Interrupted power B. Defective power head C. Unplugged meter cable D. Blocked meter E. Defective motor F. Wrong programming | <ul style="list-style-type: none"> A. Restore electrics (mains, fuse) B. Change power head C. Check connections of the time rand on the meter cover. D. Clean or change meter E. Change motor F. Check programming and modify if necessary |
| 2. Softener delivers hard water | <ul style="list-style-type: none"> A. By-pass in "by-pass" position B. No salt in the brine tank C. Blocked injector and/or filter D. Not enough water in the brine tank E. Hardness arriving from hot water supply F. Leak at the distributor tube G. Internal valve leak H. Blocked meter I. Meter cable unplugged J. Wrong programming | <ul style="list-style-type: none"> A. Put by pass in "service" position B. Add salt in the brine tank and keep salt level above water level C. Clean or replace filtre or injector D. Check brine tank filling time and clean flow regulator E. Repeated flushing of the hot water tank F. Ensure the distributor tube has no cracks, Check the O'ring G. Change seals & spacers and/or piston H. Unblock the meter I. Check cable connections in the power head and on the meter cover J. Check programming and modify if necessary |

WATERSOFTENER IDROFAST 9100 TROUBLESHOOTING

| | | |
|--|--|--|
| 3. Excessive salt consumption | <p>A. Improper brine refill setting</p> <p>B. Too much water in the brine tank</p> <p>C. Wrong programming</p> | <p>A. Check use of salt and setting of brine refill.</p> <p>B. See problem n°6</p> <p>C. Check programming and modify if necessary</p> |
| 4. Water pressure drop | <p>A. Iron deposit in the softener inlet</p> <p>B. Iron deposit in the softener</p> <p>C. Valve inlet obstructed by foreign elements</p> | <p>A. Clean the inlet</p> <p>B. Clean valve and resin</p> <p>C. Remove piston and clean valve</p> |
| 5. Loss of resin Through drain line | <p>A. Top distributor missing or broken</p> <p>B. Air in water system</p> <p>C. Drain line flow control is the wrong size</p> | <p>A. Add or replace the top distributor</p> <p>B. Ensure the presence of air check system in the brine tank</p> <p>C. Ensure the drain line flow control is sized correctly</p> |
| 6. Iron presence in softener | <p>A. The resin bed is dirty</p> <p>B. Iron concentration exceeds recommended parameters</p> | <p>A. Check backwash, brine draw and brine refill. Regenerate more often and increase backwash cycle time</p> <p>B. Contact dealer</p> |

WATERSOFTENER IDROFAST 9100 TROUBLESHOOTING

| INCIDENT | CAUSE | SOLUTION |
|--------------------------------------|---|--|
| 7. Too much water in the brine tank | <ul style="list-style-type: none"> A. Plugged drain line flow control (DLFC) B. Faulty brine valve C. Wrong programming | <ul style="list-style-type: none"> A. Check flow regulator B. Change brine valve C. Check programming and modify if necessary |
| 8. Salted water in in service line | <ul style="list-style-type: none"> A. Filter and injector blocked B. Power head not operating proper cycles C. Foreign elements in brine valve D. Foreign elements in the brine line flow control (BLFC) E. Low water pressure F. Wrong programming | <ul style="list-style-type: none"> A. Clean injector and filter B. Change power head C. Change brine valve seat and clean it D. Clean BLFC E. Raise inlet pressure to 1,8 bar minimum F. Check programming and modify if necessary |
| 9. No brine draw | <ul style="list-style-type: none"> A. Plugged drain line flow control (DLFC) B. Plugged filter and injectors C. Low water pressure D. Internal valve leak E. Wrong programming F. Power head not operating properly | <ul style="list-style-type: none"> A. Clean drain line flow control B. Clean filter and injector, change if necessary C. Increase inlet pressure to 1,8 bar minimum D. Change seal, spacers and/or piston assembly E. Check programming and modify if necessary F. Change power head |
| 10. The valve regenerates constantly | <ul style="list-style-type: none"> A. Faulty power head B. Faulty microswitch or wiring loom C. Defective or badly set cycle cam | <ul style="list-style-type: none"> A. Change power head B. Change microswitch or wiring loom C. Reposition or change cycle cam |
| 11. Constant leakage to the drain | <ul style="list-style-type: none"> A. Foreign elements in the valve B. Internal valve leak C. Valve blocked in brine refill or backwash D. Defective or blocked timer motor E. Powerhead not operating properly | <ul style="list-style-type: none"> A. Clean valve and check it in the different regeneration positions B. Change seals & spacers and/or piston assembly C. Change seals & spacers and/or piston assembly D. Change motor and check gear teeth E. Change power head |

GENERAL SPARE PARTS



Regeneration kit
KIT 01



Glass cup F20



Prefilter
5 e 20 micron
10MP5
10MP20



Carbon cartridge
COA01

GENERAL SPARE PARTS



Valve kit hp pump



Seal kit hp pump



Seal kit lp pump



Oil 80W90
for hp pump

ASSISTANCE POINT

USA

AQUACLEAN MIAMI

Cell 786 348.8755 - Phone 786 223.7279

- Fax 786 348.8755

Email: pat@aquacleanmiami.com

www.aquacleanmiami.com

.CONTACT: MR. PATRICIO ARAYA

NATIONAL MARINE SUPPLIERS

Tel: 954-764-0975 Fax: 954-764-1073

info@nationalmarine.com

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NATIONAL MARINE SUPPLIERS

Tel: +5995206331

angelo@naitionalmarine.sxm.com

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TEL.: (0055) 21-7118728

FAX: (0055) 21-6102149

E-mail: psbrasil@aol.com

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MARINA DENIZ ARACLARI TIC.

TEL.: (0090) 216-3369788

or (0090) 216-3381441

FAX: (0090) 216-3374492

E-mail: marinadeniz@marinadeniz.com.tr

CONTACT: MR. DENIZ AYLAN

TURCHIA

OZER MARINE

TEL.: (0090)-212-2570030

FAX: (0090)-212-2570344

MOBILE: (0090)-533-5743280

CONTACT: MR. OZER AKARSLAN

E-MAIL: ozarakarslan@yahoo.com

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FAX: (0030) 21-04175201

CONTACT: MR. ALEX ATMATZIDIS

GINEICO

PHONE: 61.0.7.55560244

FAX: 61.0.7.55560266

E-MAIL: gineico_qld@gineico.com

AUSTRALIA

NUOVA ZELANDA

GINEICO

PHONE: 64.0.9.3777982

FAX: 64.0.9.3777804

E-MAIL: gineico_nz@gineico.com

ASSISTANCE POINT

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FAX: 0044 – 1376347706
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EMAIL: sales@timageltd.co.uk

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MOB.: +971504588627
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EMAIL: rakesh@artmarine.net

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FAX : (0033) 493-389975
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FAX : (0033) 493997605
E-mail : electricitemarine@wanadoo.fr

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FAX: 0034 971 433130
EMAIL: ferdinautic@ono.com
CONTACT: MR. FERNANDO LESMES

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ALFATEH 2000

TEL: (00385) 51272981
FAX: (00385) 51718150
MOB: (00385) 98257755
E-mail: alfateh-2000@ri.hinet.hr
CONTACT: MR. RAIKO BRNCIC

MALTA

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Sandro Navarro – Director
(+356) 21319845 | È: (+356) 9949 9589
info@marine-ref.com www.marine-ref.com

DENMARK

MS ENGINEERING A/S

TEL. +45 98 35 12 33 / +45 21 28 78 75
F. +45 98 35 12 34
E-mail. morten@msengineering.dk
CONTACT: MR. MORTEN SANDVEJ

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FAX : (00590) – 242422

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Web: www.marinecentre.net

Taiwan Cell +886 9888 34983

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email: bretteengineer@yahoo.com.hk

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TEL: +7 495 6269835 (Russia)

email: info@ua-marine.com.ua

www.ua-marine.com.ua**INDIA****YEOMAN MARINE SERVICES**

29,30,31 & 33 Neelgiri Industrial Estate,

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Fax No. (91-22) 2418 3988

Email id : yeomanms@gmail.comWebsite : www.yeomanmarine.com

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FAX: 010/2470552

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TEL: 338 4352279

EMAIL: capriati@freeinternet.it**SEA SERVICES INTERNATIONAL SRL****TRANI BT**

Office/Fax: +39 0883-380877

E-Mail: seaservicesinternational@gmail.com

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VIBO VALENCIA

TEL.: 339 1222210

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TEL.: 090/9812761

CONTACT: SIG. MANTINEO

DIESSEMARE

Messina

TEL 090 928 87 78

FAX: 090 928 48 17

CELL: 320 1531 11

IMI IMPIANTI

PALERMO

TEL.: 333 8335542

e-mail: salvo.triton@libero.it**SARDEGNA****NAUTICA ASSISTANCE****Sardegna**

TEL.: 0789/57607

FAX: 0789/595127

e-mail: info@nauticassistance.com

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