Proline Plus

reverse osmosis

PuricomEurope®

REVERSE OSMOSIS PURE WATER

INSTRUCTIONS

MANUAL

PROLINE PLUS

PROLINE PLUS PUMP

Proline Plus

reverse osmosis

Proline Plus PUMP

ECOLOGICAL

Control system for lower water consumption.

MANUAL FLUSHING VALVE

Manual valve for the washing of the membrane.

SOLENOID VALVE

With safety filter.

DIRECT ACCESS

Easy maintenance.

INSERT

Safety system in the pipe connections.

Proline Plus

MANUAL FLUSHING VALVE

Manual valve for the washing of the membrane.

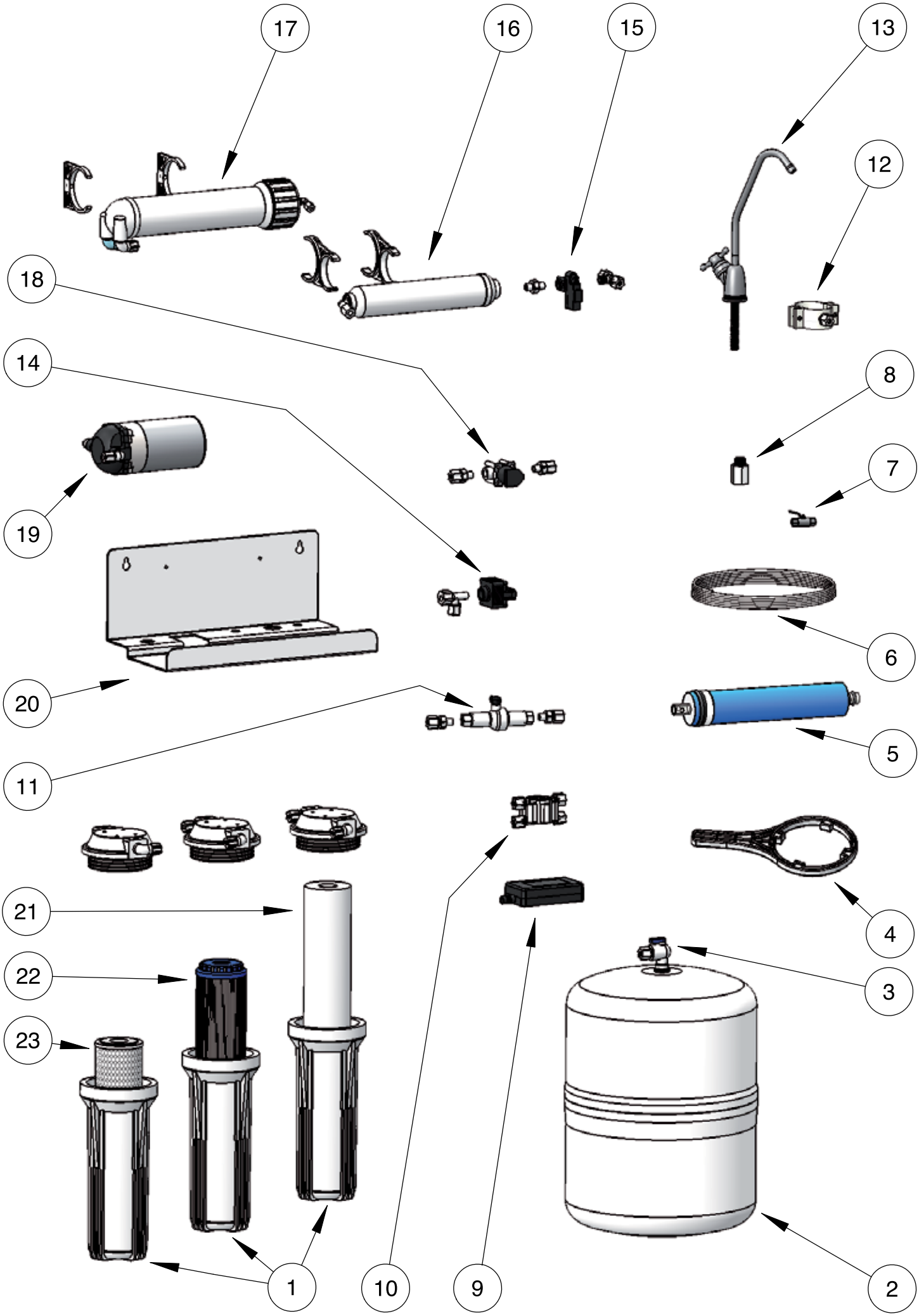
DIRECT ACCESS

Easy maintenance.

INSERT

Safety system in the pipe connections.

KEEP THIS MANUAL THAT INCLUDES THE SECTIONS OF THE SERVICE BOOK AND GUARANTEES, WITH THE OBJECTIVE OF PROVIDING YOU WITH BETTER POST-SALES SERVICE.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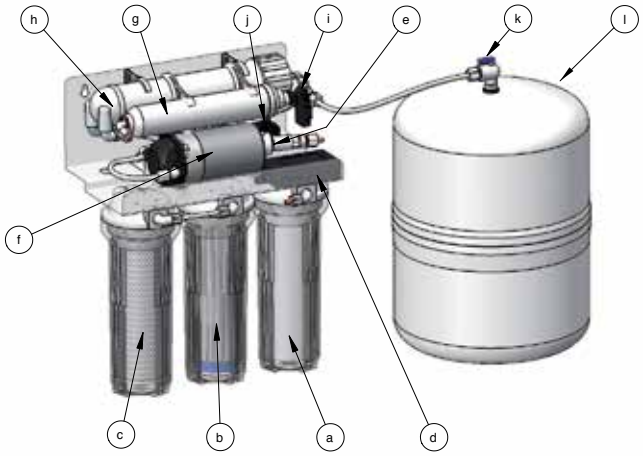
Proline Plus

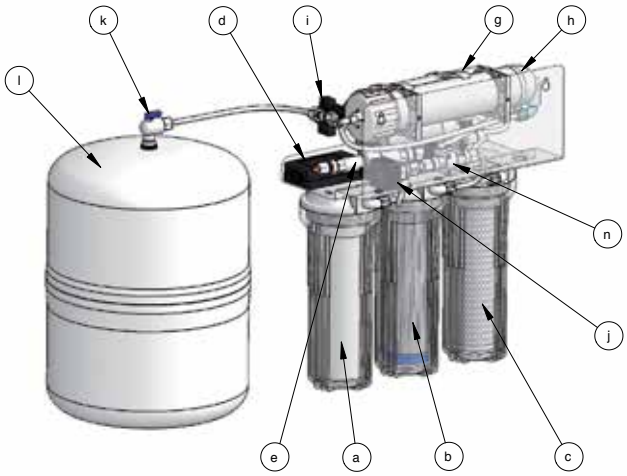
reverse osmosis

NUMBER	REF.	DESCRIPTION
1	**205800**	Filter housing 2 pieces (cap and cup)
2	**263100**	Steel reservoir tank with plastic covering
3	**263700**	1/4” ball valve for tank
4	**206600**	Filter housing wrench
5	**767201**	50 GPD membrane
6	**272000**	1/4” polythene tube
7	**205000**	1/4” ball valve 1/4” male tube
8	**264900**	3/8” – 3/8” + 1/4” drill
9	**295201**	220 – 24 V 1A transformer
10	**294400**	shut off (only in version without a pump)
11	**746700**	300 cc flow restrictor with manual ball valve
12	**264700**	1/4” drain clamp
13	**296200**	Store tap
14	**294100**	Low pressure switch
15	**294200**	High pressure switch
16	**291600**	Granulated carbon post-filter
17	**292900**	Membrane container
18	**294801**	24 V electro valve with mesh filter
19	**293500**	UP7000 24 Vdc pump
20	**-**	Metallic structure depending on model
21	**209200**	5 µm sediment filter
22	**213600**	Activated granulated carbon cartridge (GAC)
23	**214000**	Activated granulated carbon cartridge BLOCK

KEY	DESCRIPTION
a	5 µm sediment filter
b	Activated granulated carbon cartridge (GAC)
c	Activated granulated carbon cartridge BLOCK
d	Pump transformer
e	Flow restrictor with ball valve
f	UP7000 24 Vdc pump
g	Activated granulated carbon (GAC) post-filter
h	Membrane container
i	High pressure switch
j	Low pressure switch
k	Tank shut off valve
l	Reservoir tank
m	Shut off valve
n	electro-valve shut up

Proline Plus PUMP





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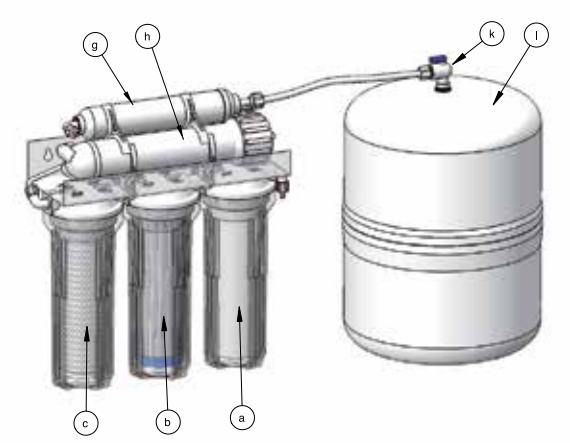
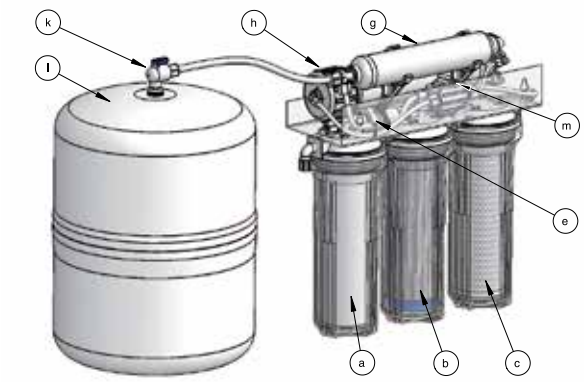




1. PRESENTATION

Welcome to your reverse osmosis PROLINE PLUS system. Thank you and congratulations. You have made a great choice in choosing the reverse osmosis PROLINE PLUS Series system.
The PROLINE PLUS series systems are some of the best domestic appliances for the improvement of the characteristics of water that you can find on the market.
The quality of the water in our environment is getting worse every day. The reality of this is what has driven us to design and manufacture this domestic reverse osmosis system in order to make water of the highest quality available to you.
Your PROLINE PLUS Series system provides you with different benefits and advantages:

- It is a physical system that does not use or add chemical products to the water.
- Provides high quality water.
- Ensures high production.
- Has low maintenance costs.
- Confortable and easy installation.

! It is important that you keep and read this manual carefully before the installation and operation of the system.
Should you have any queries about the use, installation or maintenance of this system, please contact the technical assistance service (T.A.S.) at your distributor.

2. INTRODUCTION

The PROLINE PLUS Series system provide you with a better quality of life.
You will perceive an improvement in the taste of your drinking water, and likewise in the taste of your coffees, juices or ice-cubes. Cooking with the purified water will heighten the taste of the food. Your family will have healthier water.
The water provided is water that has a LOW MINERAL CONTENT. Reverse osmosis water helps prolong the life of your domestic appliances and is ideal for steam irons, coffee makers and humidifiers.

2.1 What is natural osmosis and reverse osmosis?

Natural osmosis or direct osmosis is the most common in nature, as a semi-permeable membranes make up part of the majority of organism (for instance, plant roots, organs in our body, cellular membranes etc.)
When two solutions with different concentrations of salts are separated by a semi-permeable membrane, there is, naturally, a flow of water from the solution that has a lower concentration of salts to that of higher concentration. It is necessary to apply sufficient pressure, of the water with a higher concentration, against the membrane, in order to stop this tendency and natural flow of the system. This process is called reverse osmosis.
At present, reverse osmosis is the best method to produce pure water via a physical system (without using chemical products).
As has been explained, its working principle is based on the same as that of our own organism, where water is distributed by natural osmosis.

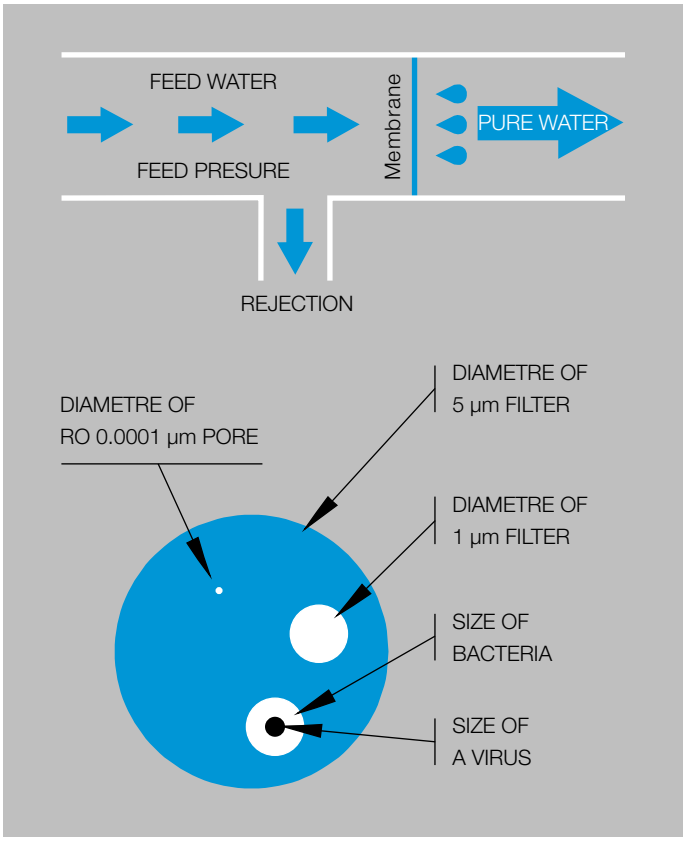
The human body is mainly made up of water:

An adult body contains between 38 and 48 litres of water, 30% of which is found in the cells. This water in the body, which is almost completely recycled every 15 days, is the basis for the transportation of nutrients, oxygen to cells, the elimination of waste and it controls the body temperature.
We consume an average of 2.2 litres of water per day, including the water found in foods.

2.2 How does the membrane of your system work?

The water that is going to be purified exerts pressure on the semi-permeable membrane, to the extent that part of the same is able to pass through the pores of the membrane (reverse osmosis water), while the remainder of the water (rejected water or that with high concentrations of salt) are diverted to the drainpipe.

Given that the diameter of the membrane pores are less than 0.0001 microns, only the water molecules and a certain amount of minerals (sodium, potassium, magnesium, etc.) are able to get through, eliminating the excess minerals that our body does not need, as well as the bacteria, heavy metals, pesticides, chemical products, etc.



2.3 Concentration of salts and other substances reduced by the reverse osmosis membrane

The chemical composition and concentration of salts and other substances of the water on entering the reverse osmosis system has an affect on the purified water.

The TFC reverse osmosis membrane of your PROLINE PLUS Series system can reduce the concentration of the elements and compounds, among others, outlined in the following tables

Inorganic

ELEMENT / COMPOUND	REDUCTION
ODIUM	90-95%
CALCIUM	93-98%
MAGNESIUM	93-98%
ALUMINIUM	93-98%
COPPER	93-98%
NICKEL	93-98%
ZINC	93-98%
BARIUM	93-98%
CARBONATES	93-98%
CHLORINE	90-95%
BICARBONATES	90-95%
NITRATES	45-55%
PHOSPHATES	93-98%
FLUORIDE	93-98%
CYANIDE	90-95%
SULPHATES	90-95%
BORON	40-45%
ARSENIC	93-98%

Organic

ELEMENT / COMPOUND	REDUCTION
HUMIC ACIDS	98%
GLUCOSE	98-99%
ACETONE	70%
ISOPROPANOL	90%
ETHYLBENZENE	71%
ETHYPHENOL	84%
TETRACHLORETHYLENE	68-80%
UREA	70%
1, 2, 4 TRICHLOROBENZE	96%
1, 1, 1 TRICHLOROTHANE	98%

2.4 The effect of pressure and temperature in a reverse osmosis system

The membrane usually rejects more than 95% of salts, however the percentage may vary depending on the quality of the water, the temperature and pressure.

Conversion factors

BY PRESSURE		
	CONVERSION FACTOR	
PRESSURE (BARS))	ON PRODUCTION	REJECTION OF SALTS
0.70	0.70	(%)
1.00	0.25	84
1.50	0.33	88
1.75	0.42	90
2.50	0.58	92
4.00	1.00	93
4.50	1.08	95
4.90	1.17	95
5.20	1.25	95
5.80	1.42	95

BY TEMPERATURE	
	CONVERSION FACTOR
TEMPERATURE (ºC)	ON PRODUCTION
6	0.38
8	0.45
10	0.52
12	0.59
14	0.66
16	0.70
18	0.77
20	0.85
22	0.88
25	1.00
28	1.09
30	1.16
32	1.23
34	1.30

The life of the membrane is evaluated by the percentage of salts rejected.

Below 70% the life of the membrane is finished. Using a conductivity metre or a TDS measurer compares the conductivity of the feed water with that which comes out of the membrane and obtains the percentage of rejection of salts.

$$\text{Rejection of salts \%} = \left(1 - \frac{\text{Conductivity of R.O. water}}{\text{Conductivity of feed water}}\right) \times 100$$

2.5 The effect of the concentration of salts in the feed water

The concentration of salts and substances in the water to be treated influences the capacity of the production of reverse osmosis water by the system, to such an extent that the greater the concentration of salts in the water to be treated, the greater the pressure that is necessary against the membrane in order to exceed the natural osmotic pressure and to guarantee a minimum flow of reverse osmosis water.

Table of pressure in relation to the TDS

MAXIMUM TDS OF FEED*	MINIMUM PRESSURE OF FEED TO MEMBRANE**
Up to 200 ppm	3.5 bars
between 200 and 500 ppm	3.8 bars
between 500 and 800 ppm	4.0 bars
between 800 and 1200 ppm	4.3 bars
between 1200 and 1500 ppm	4.5 bars
between 1500 and 1800 ppm	4.75 bars
between 1800 and 2000 ppm	5.2 bars

* The test is carried out with a 50 GPD membrane at 14 ºC, without counter-pressure, a hardness of 15 ºF and corrected salinity with NaCl.
** The pressure shown is calculated for a production of 6 l/h.

3. TECHNICAL CHARACTERISTICS

CHARACTERISTICS OF PROLINE PLUS MODEL
DIMENSIONS (height x width x depth in mm)**:** 400 x 140 x 150.
TANK (diameter x height in mm)**:** 280 x 400.
WEIGHT (kg): 13
FEED TEMPERATURE (maximum / minimum in ºC)**:** 40 / 2.
TDS FEED (maximum in ppm)**:** 2000**.
FEED PRESSURE (maximum / minimum)**:**
2.5 / 6 bars. 250-600 kPa.
NOMINAL PRODUCTION (LPD)**:** 150 LPD**.
MEMBRANE: Type 1 x 1812 50. MEMBRANE PRODUCTION: 175 LPD*. Soft water with 250 ppm. T: 25 ºC. Recovery 15%. Pressure against membrane: 3.4 bars (without counter-pressure).
PUMP: –.
MAX ACCUMULATION. (pre-charged tank at 7 PSI)**:** 19 litres.
ELECTRIC CURRENT: –.
ELECTRIC ADAPTOR: –.
MANUFACTURER: Manufactured by **PURICOM WATER IND. CORP.** (Taiwan) for: **PURICOM EUROPE**. Pol. Ind. L'Ametlla Park. C/Aiguafreda 8. 08480 L'Ametlla del Vallès. Barcelona. SPAIN. T+34 936 934 310. F+34 936 934 329.

CHARACTERISTICS OF PROLINE PLUS PUMP MODEL
DIMENSIONS (height x width x depth in mm)**:** 480 x 200 x 180.
TANK (diameter x height in mm)**:** 280 x 400.
WEIGHT (kg): 15
FEED TEMPERATURE (maximum / minimum in ºC)**:** 40 / 2.
TDS FEED (maximum in ppm): 2000**.
FEED PRESSURE (maximum / minimum)**:**
1 / 2.5 bars. 100-250 kPa.
NOMINAL PRODUCTION (LPD)**:** 150*.
MEMBRANE: Type 1 x 1812 50. MEMBRANE PRODUCTION: 175 LPD*. Soft water with 250 ppm. T: 25 ºC. Recovery 15%. Pressure against membrane: 3.4 bars (without counter-pressure).
PUMP: Booster.
MAX ACCUMULATION. (pre-charged tank at 7 PSI)**:** 19 litres.
ELECTRIC CURRENT: 220-240 V. 50 Hz. 24 W.
ELECTRIC ADAPTOR: 100-240 V. 50/60 Hz. 24 Vdc 1A.
MANUFACTURER: Manufactured by **PURICOM WATER IND. CORP.** (Taiwan) for: **PURICOM EUROPE**. Pol. Ind. L'Ametlla Park. C/Aiguafreda 8. 08480 L'Ametlla del Vallès. Barcelona. SPAIN. T+34 936 934 310. F+34 936 934 329.

*Levels may vary some +/- 20%.

**For salinity up to 2000 ppm, consult the pressure table in relation to the TDS in section 2 of the present manual.
See section 5 WARNINGS.

4. UNPACKAGING AND VERIFICATION OF CONTENTS

It is important, that prior to installing and starting the system you check the box and condition of the system, with the objective of guaranteeing that it has not been damaged during transport.

Any claims for damages during transport must be presented together with the delivery note or invoice to the distributor, attaching the name of the carrier, within a period of 24 hours following the reception of the goods.

Remove the system and accessories from its carton packaging; taking away the protection.

! Throw the plastic bags away or keep them away from children as they may cause them harm.

You shall find the following sets and elements:

COMPONENT	No.	AMOUNT
PROLINE PLUS domestic R.O. system	-	1
Reservoir tank	2	1
Faucet + Assembly accessory kit	13	1
Kit for drain connection	12	1
Wall adaptor for socket	8	1
Wire connection for power supply**	-	1
Blue manual 1/4" inlet valve	7	1
Instructions manual	-	1
White 1/4" tube	6	500 cm
Reverse osmosis membrane 50 GPD	5	1
Filter housing wrench	4	1
Tank valve 1/4" tube	3	1
Sediments filter 5 µm	21	1
Granulated carbon cartridge and flat joints	22	1
Compact carbon cartridge and flat joints	23	1
Filter housing Cup	1	3

*No. of exploded view on flap. ** ONLY PLUS PUMP MODEL.

The packaging material can be recycled and must be thrown away in the appropriate selective recycling bins or the specific centre for the collection of waste material.
The machine that you have acquired has been designed and manufactured with high quality materials and components that can be recycled and re-used. This product can not be thrown away into the usual urban rubbish. When you want to throw the machine away, it must be taken to a specific local centre for the collection of materials, indicating that it has electric and electronic components (only in PROLINE PLUS PUMP models).

In order to obtain more information about how to dispose of your electrical and electronic machine once they have fulfilled their use, contact the local authorities, the management of urban waste service or the establishment from which you acquired the machine.
The proper collection and treatment of the machines that can no longer be used, contributes to the preservation of natural resources and also to avoiding potential public health risks.

5. WARNINGS

! The domestic systems of the PROLINE PLUS series, ARE NOT water PURIFIERS.
Should the water to be treated come from a public water supply (and as such complies with the legislation in force European Directive 98/83/EC), the domestic systems of the PROLINE PLUS series, significantly improve the quality of the water.

! Should the water to be treated not come from a public water supply, that is, from an unknown source, a physical-chemical and bacterial analysis of the water shall be necessary, with the objective of ensuring its proper purification applying the proper techniques and systems appropriate for each case, PRIOR TO THE INSTALLATION of the system.
Contact your distributor in order to obtain advice about the most appropriate treatment for you.

5.1 Conditions for the proper working of the system

- Do not use hot water in the system (T > 40 ºC).
- The room temperature must be between 4 ºC and 45 ºC.
- The PROLINE PLUS PUMP series system incorporates a pump. Should the system pressure be superior to 3 bars, a plessure regulator should be attached prior to water entering the system, set at a maximum pressure of 2.5 bars. (Ref. 577603).
- There is no pump incorporated into the PROLINE PLUS series system. The installation of a system without pump is recommended when the system pressure is higher than 3 bars.
- For water with a salt content higher than 2000 ppm contact your distributor.
- It is recommended that you soften the water to be treated or that has a maximum hardness of 15 ºF with the objective of obtaining the optimum performance of the system.
- Should the water to be treated have a level of hardness superior to 15 ºF, the life of the membrane may be reduced and also the performance of the system. It is recommended that you brush the membrane for 15 seconds once a day (Read section 9.3 *Flushing*, which describes how it should be carried out).
- Should the water to be treated contain:
  - high concentrations of iron and magnesium (higher than 1 ppm on average in the rejection of the machinery),
  - prolonged hyperchlorisations.
  - sludge or turbidity superior to 3 NTUs,
  - a concentration of nitrates superior to 100 ppm.
  - a concentration of sulphates superior to 250 ppm,
  - contact your distributor so that they can recommend the most appropriate pre-treatment for you, and as such ensure the proper working of the machine, avoid damage to components and guarantee the quality of the water supplied.

5.2 Installation of the system

• Should it be necessary to condition the installation of the home in order to install the system in the foreseen location, it must be carried out in accordance with the national legistation in face.
• The PROLINE PLUS PUMP series system needs an electrical socket that is at least 1 metre away.
• The location foreseen for its installation must have sufficient space for the machine itself, its accessories, connections, and to carry out maintenance comfortably.
• Under no circumstances must the system be installed outdoor.
• The systems should not be installed next to a heat source or where it receives a direct flow of hot air (dryer, refrigerator, etc.)
• The surroundings and setting where the system and tap are to be installed must meet appropriate hygiene-sanitary conditions.
• Avoid external drips from pipes, drains etc. onto the machinery.

5.3 Start-up and maintenance

• The PROLINE PLUS series systems, needs to undergo periodic maintenance carried out by qualified technical personnel, with the objective of guaranteeing the quality of the water produced and supplied.
• The consumable elements must be substituted with the frequency indicated by the manufacturer (See section 9. Maintenance).
• The system must be hygienised periodically and prior to its start up.
• Following the start up, the first two deposits must be thrown away.
• The system must be maintained by qualified technical personnel, carried out under the proper hygienic conditions, with the objective of reducing the risk of internal contamination of the machine and its hydraulic system. (For more information contact the technical service of your distributor).

5.4 Use of the system

• When you are going to be away from home for more than a week close the water inlet, empty it and disconnect the electric current. On your return connect the electric current of the same, open the inlet and empty the reservoir tank twice before consuming the water.
• Following a prolonged period (more than a month) during which the system has not been in operation or produced water, contact your distributer in order to carry out the proper hygienisation and maintenance.
• In order to improve the performance of the system, extract full jugs and bottles and avoid the occasional extraction of glasses.
• Special attention must be paid to the regular cleaning and hygiene of the faucet of the reverse osmosis system, and especially during the periodic maintenance. Use the Oxibac spray (Ref. 65220) for this and disposable kitchen paper or a multiuse cloth for cleaning the kitchen.

5.5 Recommendations for the correct use of the reverse osmosis water

• If you want to feed any other consumption point with osmosis water (such as a fridge with an ice-cube dispenser, another faucet, etc.), the piping should not be done with a metal tube, as this will give the water a bad taste. Use a similar plastic tube (Ref. 272000).
• The water supplied by the domestic reverse osmosis systems has a LOW SALT CONTENT. The mineral salts required by the human body are provided by food, especially by dairy products and to a lesser degree by the water we drink.

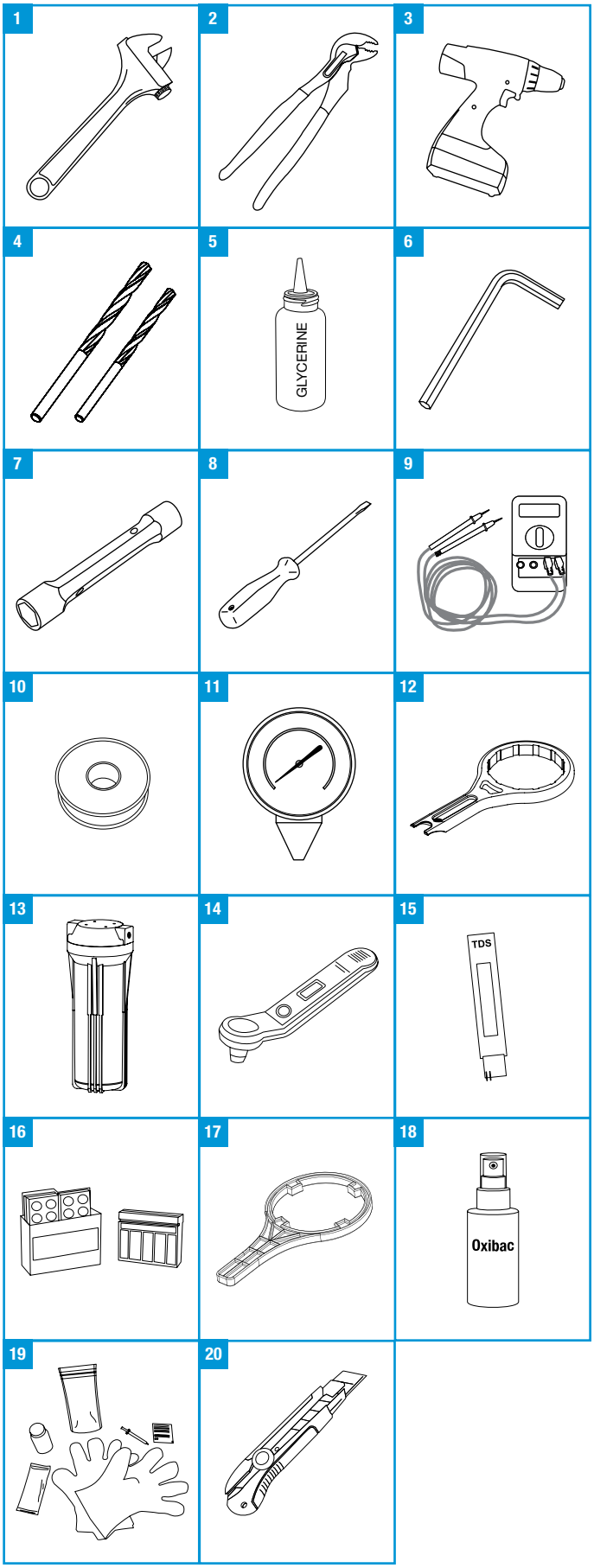
6. INSTALLATION OF THE SYSTEM

The installation of your PROLINE PLUS reverse osmosis system must be carried out by qualified personnel from an authorised technical service. Follow the recommendations in Section 5 of this manual.

Given that the appliance that you are going to install improves the quality of the water that you are going to consume and is considered a food, all of the tools that you are going to use for the assembly and installation must be clean and under no circumstances contaminated or impregnated with grease, oils or rust. The work must be carried out under adequate hygienic conditions, taking the necessary precautions with everything related to the materials that are going to be in contact with the water to be treated or consumed. (For more information contact the distributor).

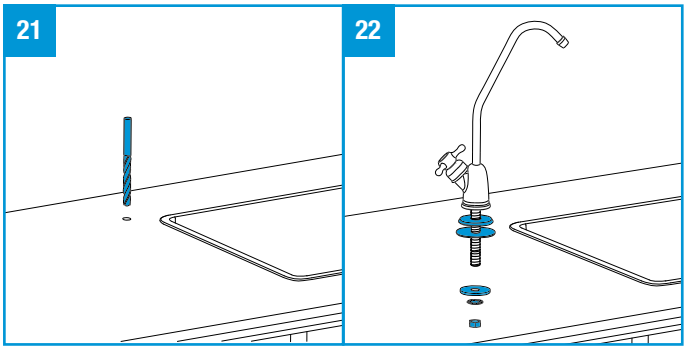
The most usual place for the installation of the system is under the sink in the kitchen or in a cupboard next to it.

TOOLS FOR INSTALLATION, MAINTENANCE AND START-UP:		
TOOL	REFERENCE	IMAGE
Adjustable wrench	-	1
Vice grip pliers	-	2
Drill	-	3
12 and 6 mm drill bits	-	4
Edible glycerine	-	5
No. 2 Allen wrench	-	6
No. 14/15 mm double socket wrench	-	7
Flat-head screw driver	-	8
Electric multi-metre	-	9
Teflon tape	-	10
Pressure gauge	Ref. 270700	11
Membrane housing wrench	Ref. 206601	12
Filter housing + 2 x 1/4" connections	Refs. 205200 + 277100	13
Portable pressure measurer	Ref. 268100	14
Portable conductivity measurer	Ref. 267900	15
Chlorine analyser	Ref. 271700	16
Filter housing wrench	Ref. 206600	17
Oxibac spray	Ref. 652200	18
Hygienisation kit	Ref. 743303	19
CONTENTS: test holder, gloves, 2.5 ml syringe, paper towels, Jar for mixing and OSMOBAC disinfectant		
Cutter		20
Contact your distributor		



6. Installation of the system

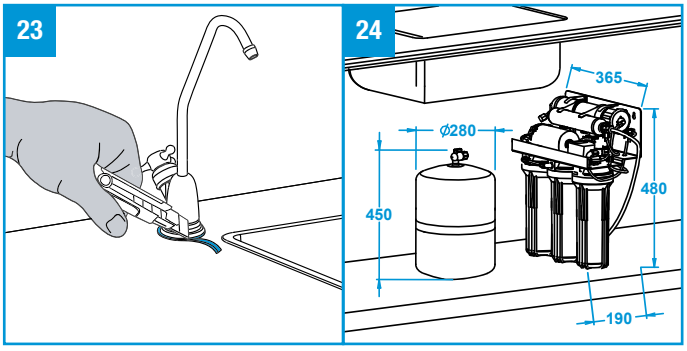
1. Once it has been decided whether to put the tap on the counter top or sink (usually in the corner), a hole is drilled in the same with the 12 mm bit, to pass the connecting pipe through **Image 21.**
Use the metal escutcheon to choose the location of the drill. If the metal escutcheon of the tap creates any difficulty in its assembly due to the geometrics of the counter-top or fridge, use the rubber joint supplied instead of the metal escutcheon in order to assemble the tap.



! Choose the bit and the type of drill that is appropriate for the material in question.

2. Prior to this, insert the metal escutcheon and a thick flat rubber joint into the connecting pipe (these must be on the upper part of the counter-top). Then pass the threaded connecting pipe through the hole. Once this is done, on the bottom end of the connecting pipe you connect: the rigid plastic washer, the grower washer and the hexagonal nut.
They should be tightened together with the No. 14/15 mm square wrench, until the tap is completely static and properly positioned.
The tap will be positioned as required after the final tightening (it is recommended that the tap handle is orientated towards the exterior of the counter top). **Image 22.** If the counter-top is thicker than that of the connecting pipe of the tap, you can use the tap extension (Ref. 261900). Finally, cut the left over part of the wide flat joint with a cutter in relation to the escutcheon. **Image 23.**

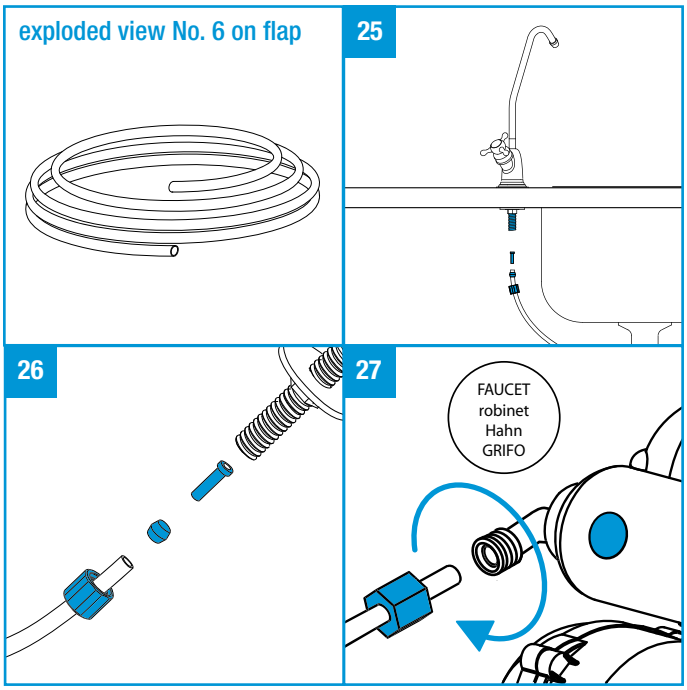
3. Choose the location of the system and also foresee the space required for the reservoir tank. **Image 24.**
Fix the system to the wall using the brackets of the lower part of the same and the proper screws.
It is recommended that the cups are situated on the floor, with the objective of not straining the cupboard wall once the system is filled with water.



4. Using the white 1/4" tube, **exploded view No. 6 on flap**, connect the tap with the connector marked "faucet-grifo". Prior to this cut the tube to the required length.

! In order to carry out all of the connections, foresee a longer tube, so as to facilitate the movement of the system once installed, without out having to disconnect unnecessarily or make access to the same more difficult.

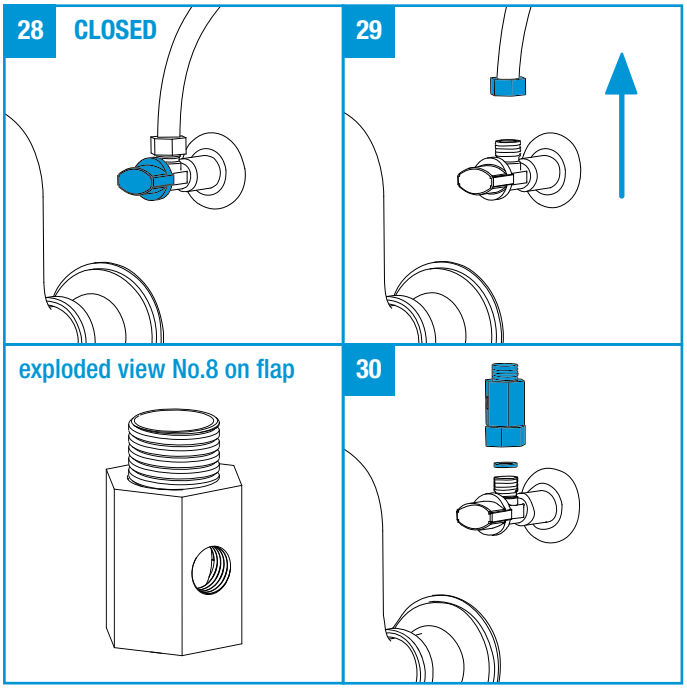
Carry out the connection of the tap via inserting the metallic nut, biconic and through the end of the 1/4" tube. **Images 25 and 26.** Introduce the end of the tube into the interior of the tap connector and screw the nut using the T-bar or until you are sure it has been connected properly.
Carry out the connection to the system in the connector marked "faucet-grifo"
Unscrew the nut from the connector, remove the protector, introduce the screw into the end of the 1/4" tube coming out of the tap and screw it into the connector of the system. **Image 27.**



5. Following this you should make the hydraulic connection of the appliance to the system. As the system is under pressure the stopcock situated in the cold water outlet must be closed. **Image 28.**
Depending on how old the installation is, there may be no right angle valve and that it is necessary to turn off the general stopcock in the home.
Immediately afterwards, depressurise the installation by turning on the tap of the sink and wait until water comes out of it.

! Make sure that the connection to the appliance is going to be carried out in the cold water pipe connection. If the connection is made in the hot water pipe it may damage important components of the system. (Generally the cold water pipe connection is found to the right).

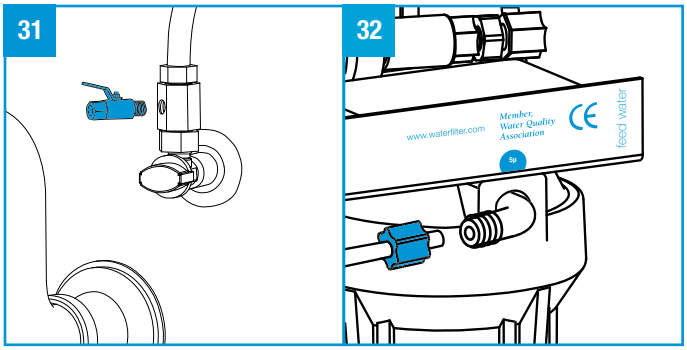
Unscrew the connection of the hose or the flexible pipe, **image 29**. Have a recipient or cloth ready to collect or wipe up the water that may come out of the flexible pipe when you unscrew it. Insert it into the connection in the wall and the valve or flexible pipe to the 1/2" wall adaptor, **exploded view No. 8 on flap**.
The flat 1/2" joint that is inserted makes it unnecessary to use a sealant. (Teflon wire, liquid Teflon, hemp twine, etc.), **image 30**.
Assemble the 1/4" manual in-let valve in overlap in the left hole of the wall adapter. **Image 31**.



A sealant should be added to this valve to ensure that it has been assembled correctly and that it is water-tight. The use of Teflon is recommended, as it is a clean, quick sealant and safe on brass threads. The two connectors (1/2" and 1/4") must be screwed in with a monkey wrench until you are sure that it is properly assembled and water-tight. Subsequently, in the male connector of the 1/2" adapter connect the flexible pipe (usually female).

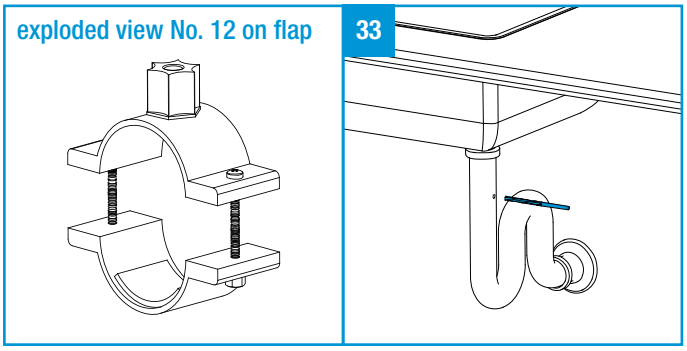
! Should it be necessary to install a special component, it should not be iron or contain iron components as on rusting these can reduce the performance of the appliance.

To ensure the proper installation and water-tightness of the connections made, open the right angle entry valve (or where applicable the general stopcock), first making sure that the tap of the reverse osmosis appliance on the counter-top has been turned off. Once the stopcock is open, turn on the tap on the counter-top to bleed the air that may be inside (beware of any spurts or splashes of water).
Check the 1/4" valve, as depending on how old it is and the material used in the assembly of the interior installation of the house, in some cases, it becomes blocked due to the incrustations there are in the installation and which come loose once there is water coming through and pressure.
Next, the white 1/4" tube is connected, between the stopcock and the connection of the appliance marked "feed water/entrada", **image 32**. Make sure of the correct entry into the tube and tightening of the corresponding nuts. The 1/4" feed valve must remain closed until the end of the installation of the machine.

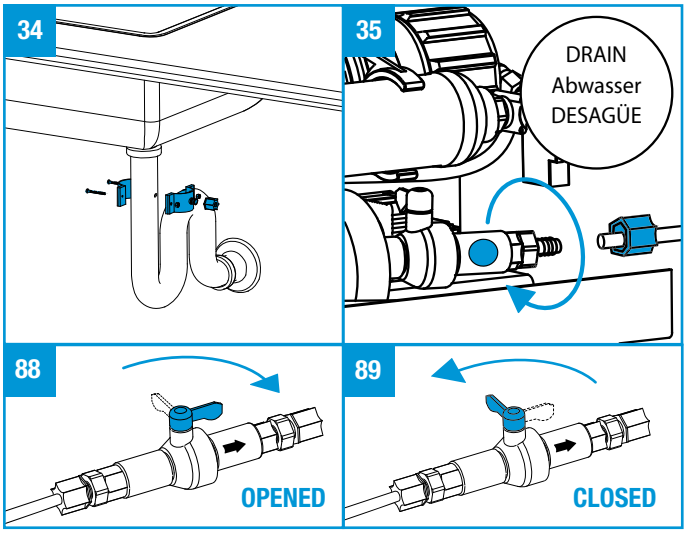


6. Subsequently, the drain clamp must be assembled, **exploded view No. 12 on flap**. Bear in mind that this clamp is designed to be assembled on a 40 mm diameter drainpipe tube. Should this not be the diameter of the drainpipe tube, contact your components supplier to make the correct connection.
Using the drill, and this time a 6 mm bit, make a hole between the mouth of the drainpipe of the sink and the u-bend (it is recommended that you do it in the upper part of the tub, so that any rubbish thrown away from the sink does

not obstruct the hole or water flow outlet). Envisage the space necessary for the assembly of the clamp, **image 33**.
Next the drainpipe collar shall be assembled, but making sure that the hole that you have made is completely aligned over the front part of the 1/4" connector (part where the square pad goes), done by putting the bit, used for making the 6 mm hole there, through the hole there is between the clamp and the drainpipe; thereby avoiding any obstacle to the passing of water towards the same.

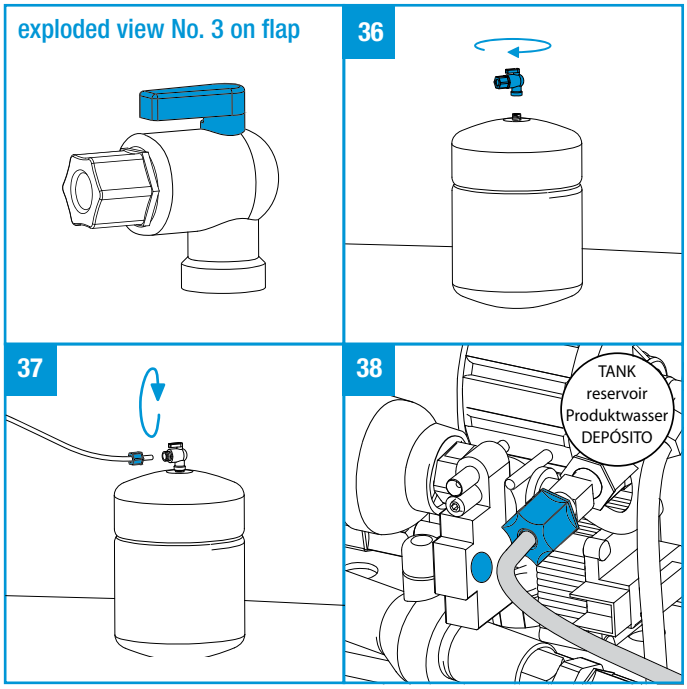


Put the nuts in the socket on the bottom part of the clamp and afterwards put in the corresponding screws. The nuts must be screwed in carefully and progressively, alternating between the two. Try not to force the components. **Image 34.**
The 1/4" tube must be connected, between the thread of the drainpipe clamp and the connection of the machined marked "drain-desagüe", **image 35**.
Use the wrench to ensure that the tube in the nut of the drainpipe clamp is tightened properly (for the proper positioning of the tube in relation to the nut, this should stick out of the front part of the same some 2 mm).



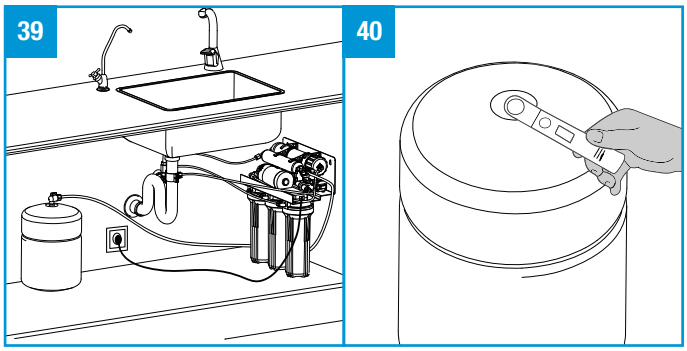
Remember flushing valve must remaind closed!!

7. Make the connection of the reservoir tank and the connector of the machine marked "tank/depósito" using the 1/4" tube. To do this, put Teflon on the connector of the tank and screw on, over this, the right-angle valve **exploded view No.12 on flap and image 36.** Connect the 1/4" tube to said right-angled valve. **Image 37.**
You should connect the other end of the 1/4" tube to the connector of the machine marked "tank/depósito". **Image 38.**



8. If necessary a socket shall be put in near to the machine (< 1 m) for the electrical feed of the same, according to the National legislation in force (only in the PROLINE PUMP PLUS) **image 39**.

9. Make sure that all of the connections have been screwed in properly.
Remember that when the pressure is superior to 3 kg/cm^2, a pressure regulator should be inserted into the feed tube to the machine (Ref.577603), set at a pressure of 2.5 kg/cm^2.



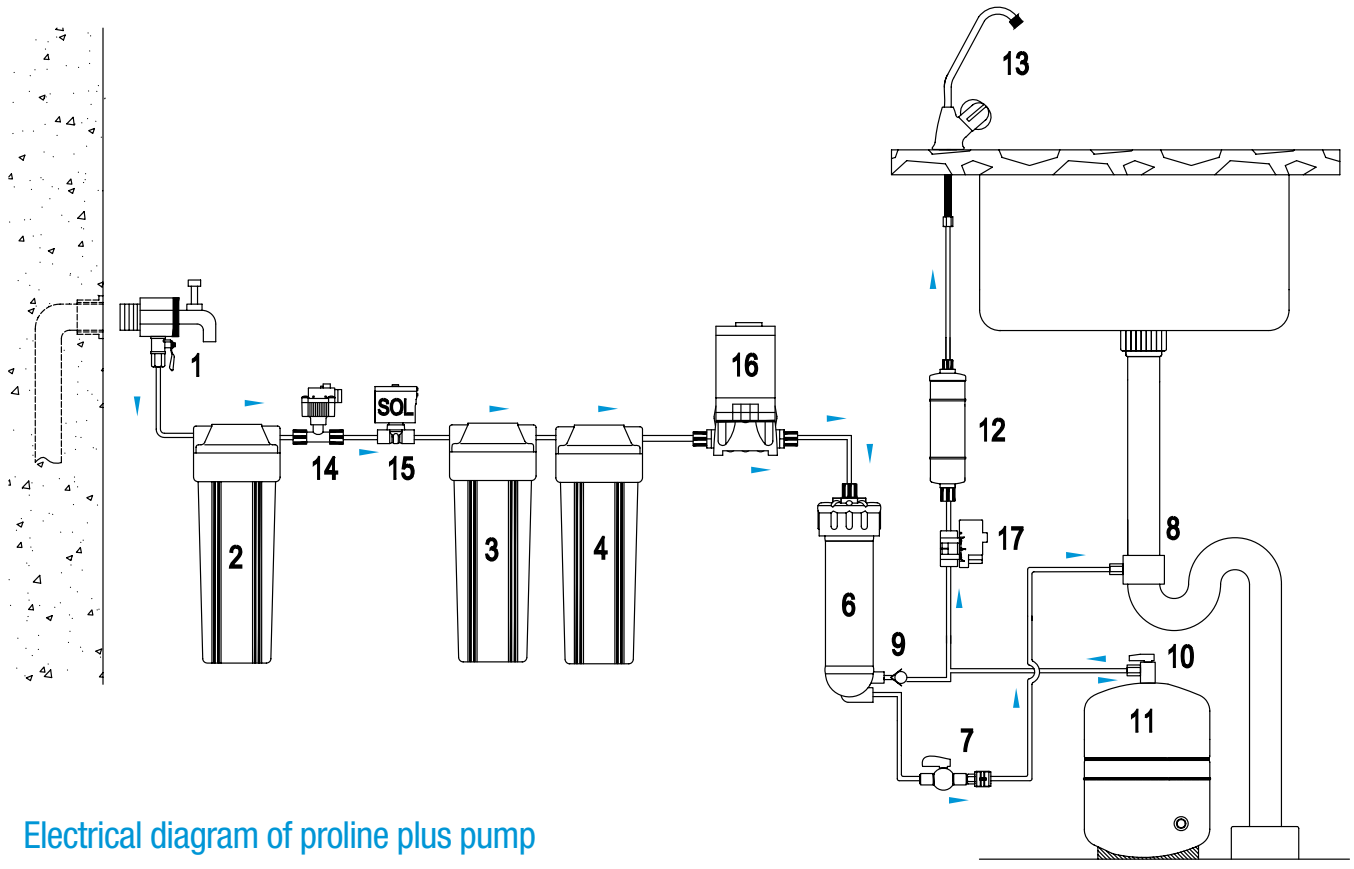
10. Should you wish to feed any other consumer point (tap, fridge with ice-cube dispenser, etc.) use a 1/4" plastic conductor Ref. 272000) and a 1/4" te (Ref. 279300) for every extra pipe connection you need.

11. Check that the pressure of the reservoir tank is 0.5 bars (7 P.S.I.), using the portable pressure gauge and the valve that is at the bottom of the tank. If this is not the case, fill or empty the pressurised tank until you achieve the indicated pressure. **Image 40.**

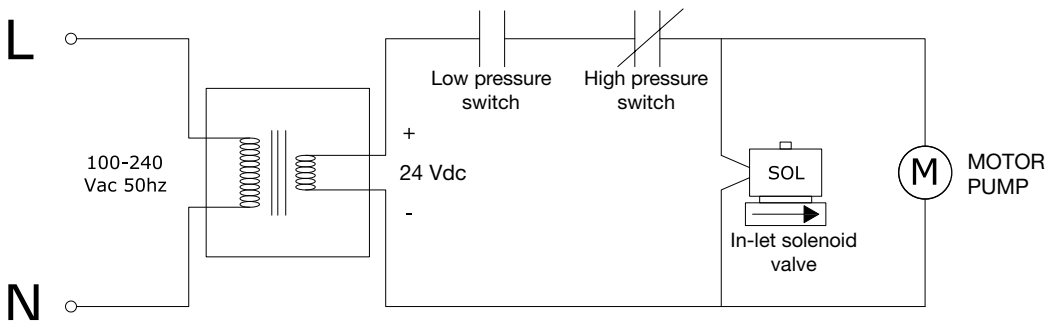
7. OPERATION OF THE PROLINE PLUS SYSTEMS

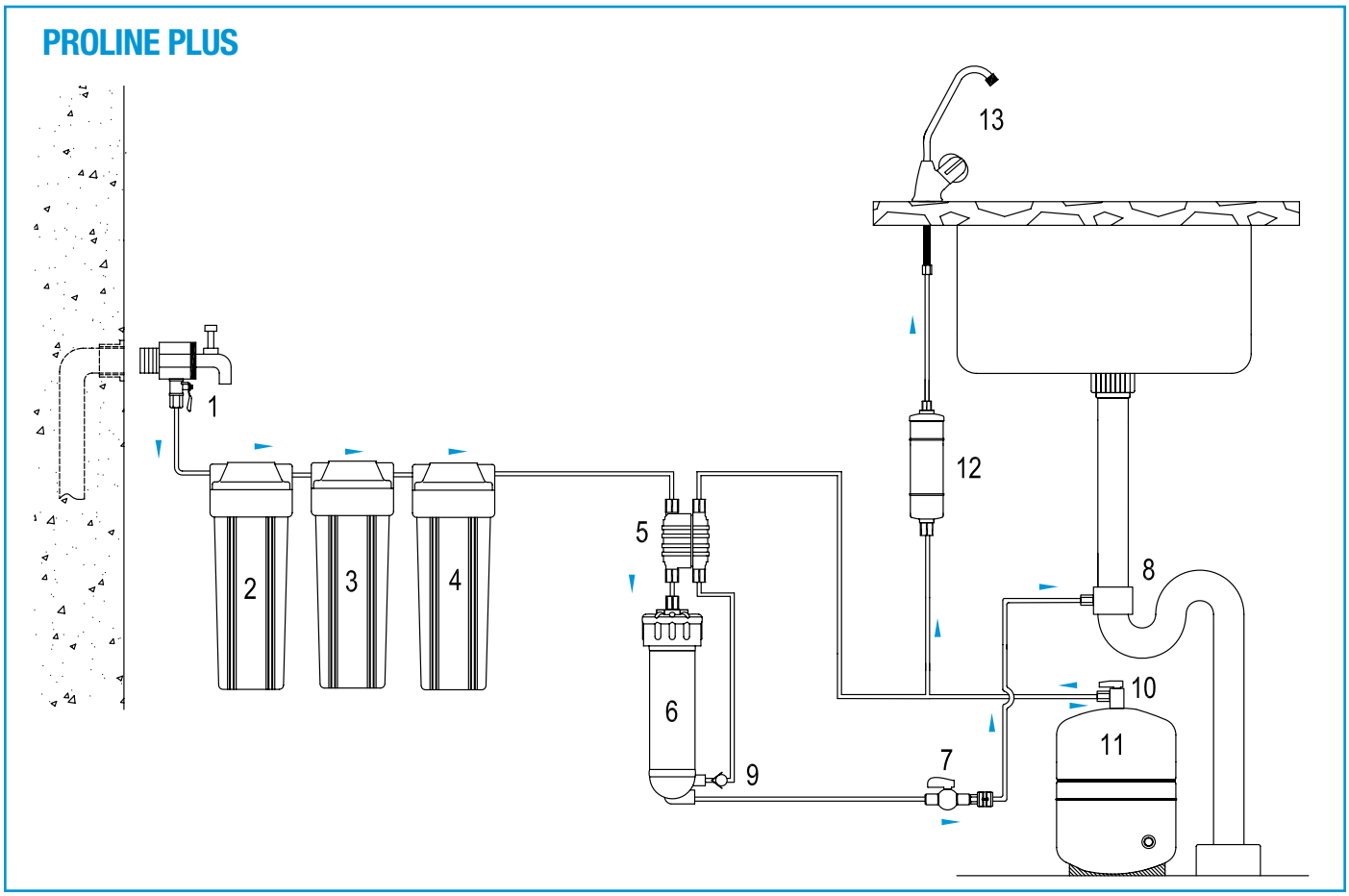
VALID LIST FOR PROLINE PLUS PUMP AND PROLINE PLUS			
1	Connection kit and manual valve	10	Manual valve of reservoir tank
2	Turbidity filter	11	Pressurised reservoir tank
3	Granulated Active Carbon filter (GAC)	12	Activated carbon post-filter
4	Pressed Activated Carbon filter (BLOCK)	13	Counter-top tap
5	Shut off valve	14	Low pressure switch
6	Reverse Osmosis membrane	15	Shut off electro-valve
7	Restrictor with manual wash valve	16	Booster pump
8	Connection to the drain	17	High pressure switch
9	Check valve		

PROLINE PLUS PUMP



Electrical diagram of proline plus pump





7.1 Description of the operation

The water in the system to be treated, goes through the manual in-let valve **(1)** and enter in the appliance going through the turbidity filter **(2)**, carbon filter (GAC) **(3)** and carbon filter BLOCK **(4)**.

In this phase of filtration, the particles in suspension, the chlorine, its derivatives and other organic substances are retained.

The passing of the water towards the interior of the system is controlled via the shut off valve **(5)** or via the electro shut-off valve **(15)** in the PROLINE PLUS PUMP models.

The water, after leaving the filtration phase, is pushed towards the reverse osmosis membrane **(6)** via the pump **(16)** (only in the PROLINE PLUS PUMP).

The PROLINE PLUS PUMP models incorporates a minimum pressure switch **(14)** that protects the pump, against falls in pressure in the system, stopping the operation and closing the electro in-let valve **(15)** when this situation is detected. The water pressure against the membrane makes the reverse osmosis process possible. On the one hand, the reverse osmosis water, after going through a check valve **(9)** is stored in a reservoir tank **(11)** and, on the other hand, the water with excess salts and unwanted substances go to the drain **(8)** for their elimination through the flow limiter **(7)**.

When the reservoir tank is full the water to the system is cut off using the shut off valve **(5)**. In the case of the PROLINE PUMP PLUS model, the high pressure switch **(17)** detects that the tank has filled up, stopping the pump **(16)** and closing the electro in-let valve **(14)**.

On getting water from the appliance tap **(13)**, the water accumulated in the tank **(11)** passes through a carbon post-filter **(12)** the objective of which is the elimination of possible colours and tastes that the water can retain before being dispensed.

The PROLINE PLUS series systems have a manual brush valve or a membrane wash **(7)**. Turn this valve the amount of times indicated, following the steps described in section 9.3 (*Flushing*) of this manual.

8. MAINTENANCE AND CONSUMABLES

It is important for the maintenance of your system to be carried out by the official service of the PROLINE PLUS series, which will use original spare parts and offer you information, a maintenance contract and service guarantee.
Any manipulation of the system or use of a spare part that is not original by a company or person that does is not a member of our distributors shall invalidate the guarantee of your system as well as that of your official distributor.

***WARNING:** Some of the components of your system, such as the sediments pre-filter, the granulated carbon filters, the reverse osmosis membrane and the granulated carbon post-filters, are consumable and last for a limited time.*

The period they last depends on the quality of the local water, on specific aspects such as the external turbidity, high chlorine levels, excess iron, etc.

! With the objective of guaranteeing the quality of the water supplied by your system, it should have regular maintenance checks carried out by qualified technicians.

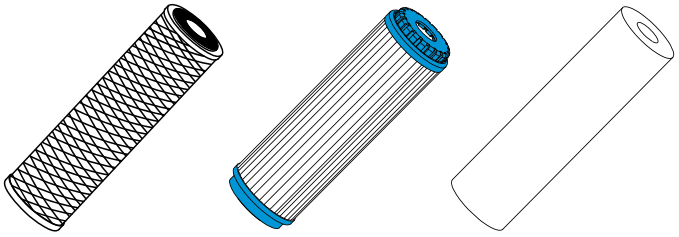
MAINTENANCE RECOMMENDATIONS BY YOUR OFFICIAL PROLINE PLUS SERIES DISTRIBUTOR	
Pre-filter sediments:	Maximum 12 months
GAC and BLOCK carbon filters:	Maximum 12 months
Reserve osmosis membrane:	Every 3 years approx. in so soft water < 15 ºF
Post-filters:	From 12 to 24 months
Hygienisation:	Every 6-12 months. Each time components in contact with water from the system are accessed or water has not been consumed for more than a month.

NOTE: The membrane must be substituted if a specific compound is higher than the maximum advisable permitted limit for drinking water, European directive (98/83/EC).

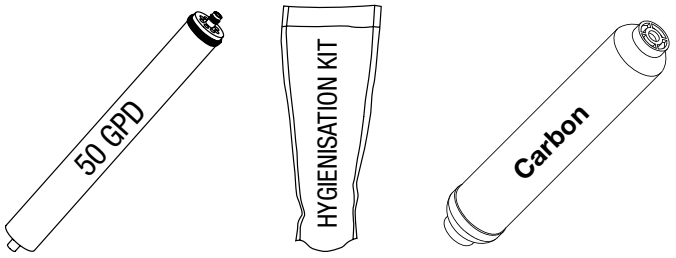
An excess of a compound (total chlorine, turbidity, hardness etc.) can lead to a reduction in the life of the filters and certain components.
The maintenance tips are guidelines. Your official distributors of the PROLINE PLUS series will determine the duration of the consumables in relation to the quality of the water and the foreseen consumption.

! Take hygienic precautions during the manipulation of the consumables and after removing them from their packaging

ORIGINAL PROLINE PLUS CONSUMABLES



Carbon block post-filter. **Ref. 214000**	GAC carbon pre-filter **REF. 213600**	5 µm sediments filter **REF. 209200**



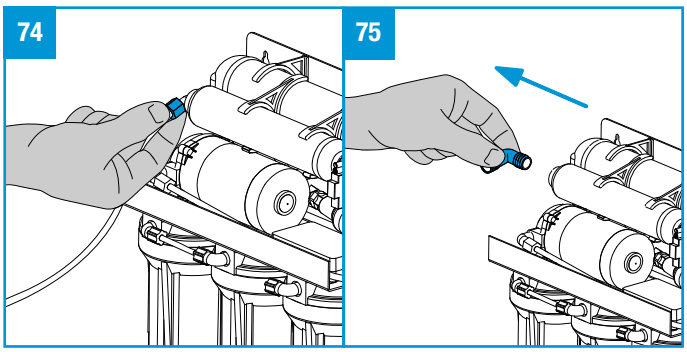
50 GPD membrane **REF. 767201**	Hygienisation kit **REF. 743303**	Activated carbon post-filter **REF. 291600**

See the hygienic conditions to take into consideration during the manipulation of the system described in the sections above.

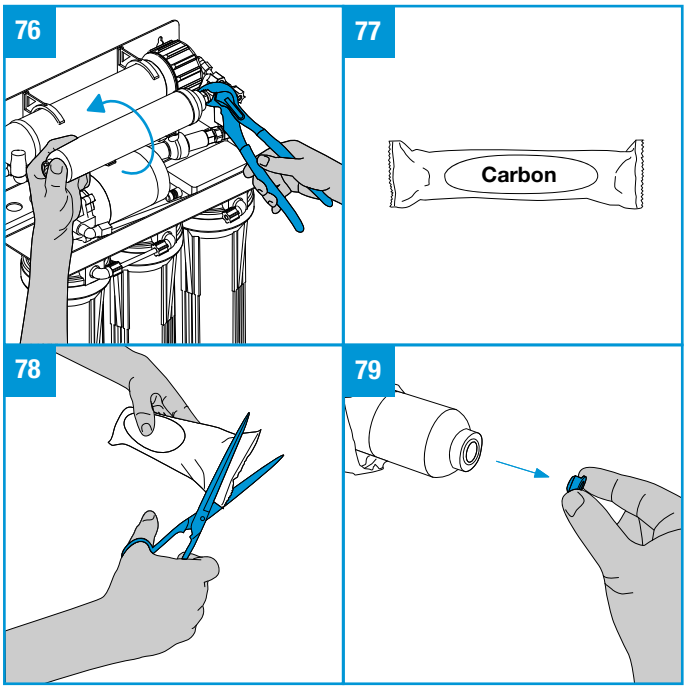
8.1 Maintenance

1. Close the manual in-let valve, empty the tank of the system by opening the tap and disconnect it form the electric current. (PROLINE PLUS PUMP version).

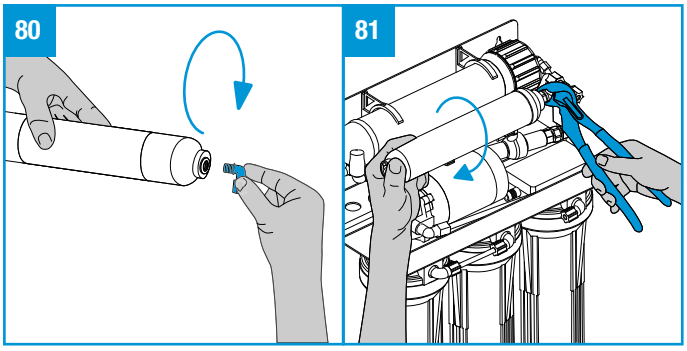
2. Following this, replace the post-filter (if applicable or if you have not done so before).
Disconnect the tube, **image 74**, and unscrew the connectors at both sides of the post-filter, **images 75 and 76**. Try to avoid



forcing the other components. In the case of the PROLINE PLUS PUMP model, fix the in-let nipple with the vice grip pliers, to avoid it unscrewing in relation to the pressure switch, and on a par with the post-filter with the other hand.
Unwrap and take out the protective caps and assemble the new post-filter, **images 77, 78 and 79**.
Make sure you assemble in the correct position. Screw the outlet elbow, previously disassemble, respecting the original

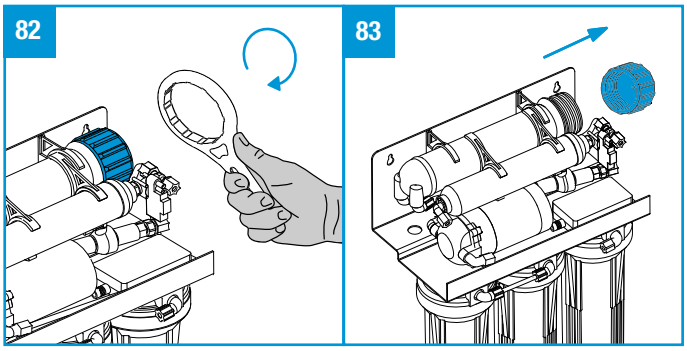


position (entrance and exit), **image 80**. Both connectors should have been covered with teflon beforehand (use teflon tape). In the model with a pump, screw the post-filter to the male of the exit of the maximum switch, avoid the male turning in relation to the switch, **image 81** having covered it with Teflon.

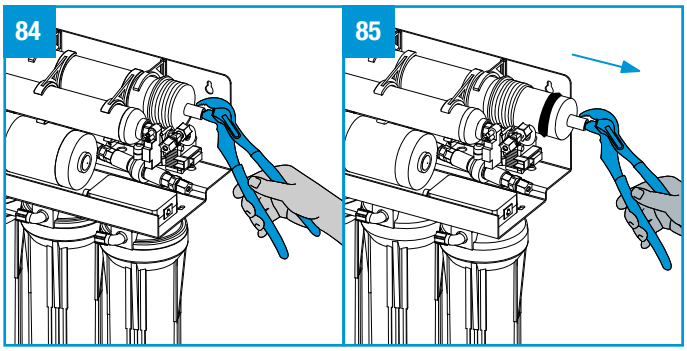


Finish screwing the post-filter and its outlet elbow so that this is properly positioned, with the objective of avoiding forcing the 1/4" exit tube. Connect this tube using its 1/4" nut of the exit of the post-filter.

6. Extract the membrane from inside the membrane housing, **images 82 and 83** and apply the hygienisation procedure described in section 7 (*Start-up and hygienisation*).



Use the membrane housing wrench to disassemble the top and the vice grip pliers to extract the interior membrane. **Images 84 and 85.**



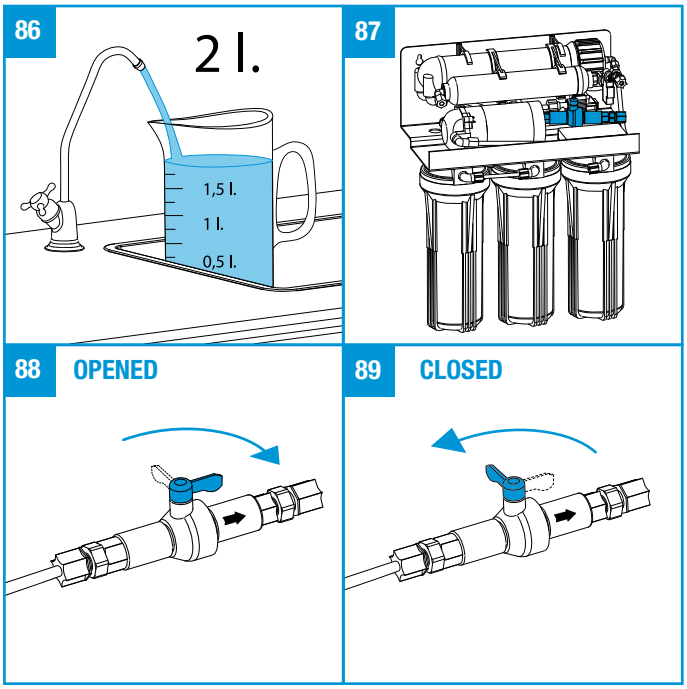
7. Replace the filtering cartridges, disassembling the filter-housing cups following the procedure outlined in section 7 (*Start-up and hygienisation*). Repeat the steps for the cleaning of the filters described in section 7.

8.2 Hygienisation

It is recommended that you carry out a hygienisation of the system similar to that described in Section 7, (*Start-up and hygienisation*), each time the six-monthly or yearly maintenance check is carried out (depending on use, water quality or evaluation of your distributor), as well as each time that the components in contact with water in the system are manipulated and following a large period without producing water (more than one month).

8.3 Flushing

Flush the membrane once a day to clean it of any deposits or incrustations it may have on its surface. This flushing will remove these elements and they will be eliminated down the drain.
For this, after the continuous extraction of more than 2 litres of water, **image 86**, open the 15" cleaning valve manually and close it immediately afterwards. **Images 87, 88 and 89.** By this simple action, you are able to prolong the life of your membrane.



9. IDENTIFICATION GUIDE AND PROBLEM RESOLUTION

SYMPTOM	CAUSE	SOLUTION
1. Leak from tap.	Turn off components worn.	Substitution of tap.
	Joint pinched or worn.	Change joints.
2. Exterior leak to the system in sink cupboard.	By base of tap.	Check condition of tap and if necessary substitute it.
	In drain.	Tighten or replace.
	In feed.	Check to see if there is sufficient teflon in the in-let valve or substitute it.
	In feed tubes of the system.	They are tightened too close to the wall. Do not have holding pins. They are in bad condition. (substitute them) or not pushed into connectors enough.
3. No production.	There is no water supply.	Wait until supply returns.
	Electro in-let valve closed.	Check condition of coil and clean it. Change it, if necessary.
	Pre-filter blocked.	Change filter.
	Membrane is saturated.	Change membrane. Check condition of restrictor.
	Valve cleaned /restrictors.	If blocked, clean or substitute. Clean or substitute.
	There is no electricity supply.	Check supply in the house. Check the tension at the exit of the transformer. (if there isn't any, change it).
4. Little production.	Low pressure in the membrane feed.	Check system pressure, and where necessary put in pump and minimum pressure switch.
	In-let valve partially closed.	Open it.
	Tank valve closed.	Open it.
	Air tank empty.	Check tank pressure and if necessary pressurise up to 7 PSI.
	Water tank has a hole/s.	Check if water is coming out of the air valve. Substitution of the same.
	Pre-filter very dirty.	Look at flow of the post-filter outlet and if this is the case, substitute it.
	Membrane with tip of joint pinched.	If pinched, substitute the membrane.
	Membrane very obstructed.	Check production flow. If there is very little, and pressure is good, substitute it.
	Pump in very bad condition.	Check that the pump generates between 6 and 7 Kg. /cm^2 at the entrance of the membrane carrier. If this is not the case, substitute the head.
	Excessive rejection.	Check the flow of the restrictor, and if necessary substitute it.
5. Excessive production.	Membrane housing in bad condition.	Rejection and production may be connected. Substitute it.
	Membrane housing empty.	Put in membrane.
	Nut joints in bad condition.	Production and rejection connected. Substitute joints or membrane
	Connection of piping not carried out properly.	Check system flow.
6. High T.D.S.	Membrane housing in bad condition.	Production and rejection connected. Substitute membrane and/or joints.
7. Metallic, bitter or acidic taste.	Water has low pH.	Put in re-mineralising post-filter before closing.
8. Plastic or synthetic taste.	Post-filter saturated.	Change post-filter.
9. Unpleaseant taste or smell.	Contamination.	Change filters, membrane and hygienisation.
10. Colour of water is whitish.	Air in the system.	Wait. There is no problem.

SYMPTOM	CAUSE	SOLUTION
11. The rejection never stops.	Electro in-let valve dirty or deteriorated.	Check if rejection stops with the reverse osmosis system unplugged. Should it not, clean or substitute.
	Excess feed pressure.	Put in a pressure regulator.
	Tank has little air.	Check that there is 0.5 Kg/cm^2 or 7 PSI air pressure with an empty tank.
	Deteriorated check valve.	Substitute.
	Maximum pressure switch badly regulated or broken.	Check regulation and where applicable substitute.
	Wash valve open.	Clean if dirty. If in bad condition substitute it.
12. Appliance starts sporadically, without consuming water.	Stop valve in bad condition.	Substitute.
	Leak somewhere in the product or tap.	Repair product or substitute the tap.
	Excessive feed pressure.	Put in feed pressure gauge.
13. Osmosis does not start.	There is no water supply.	Check the general stopcock and the system feed.
	There is no electric current.	Check general electricity supply. Check the tension at the exit of the Transformer and change if necessary. Check the electric wiring. Check the condition of and proper Connection of the switches.
	Electro-valve not in good condition.	Electro-valve punctured or coil burnt. Replace it.
14. Appliance constantly stops and starts.	Very low feed pressure. (lower than 0.75 bar).	Jump low pressure switch.
	Minimum switch in bad condition.	Substitute it.
	Electro-valve coil in bad condition.	Substitute it.
	Short circuit in a component or in the wiring.	Find it, repair and/or substitute it.
15. The pump works but generates no pressure.	Diaphragm in bad condition.	Substitute the diaphragm or change completely.
	Transformer in bad condition.	Check and substitute.

DATE	TYPE OF SERVICE	NAME, SIGNATURE AND STAMP OF AUTHORISED TECHNICIAN	
/ /	☐ COMPLETE MAINTENANCE		
/ /	☐ REPAIR		
/ /	☐ HYGIENISATION		
/ /	☐ OTHERS		
/ /	☐ COMPLETE MAINTENANCE		
/ /	☐ REPAIR		
/ /	☐ HYGIENISATION		
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/ /	☐ HYGIENISATION		
/ /	☐ OTHERS		

GUARANTEE CERTIFICATE OF PROLINE PLUS SERIES

SYSTEM GUARANTEE

PURICOM EUROPE guarantees their systems for two (2) years against any manufacturing defect, in accordance with that laid down in Law 23/2003, 10 July, Guarantees in Consumer Goods Sales. The guarantee comprises the repair and substitution of defective parts by authorised personnel by the Distributor or the official Technical Assistance Service (T.A.S.), in the place of installation or in their workshops. Including the labour and shipping costs should they arise. It does not include the substitution of parts that have suffered usual wear and tear, lack of maintenance, hits etc. due to the improper use of the system outside specifications provided or in those cases where it has been modified or prepared by personnel that do not belong to the company or official. The substituted parts under guarantee remain the property of **PURICOM EUROPE**. The term of the guarantee starts on the date of purchase of the system in your **PURICOM EUROPE** Distributor. For whatsoever claim under the guarantee you are required to provide receipt of purchase. Should you suffer any problem with the system while it is under guarantee, contact your Distributor for the substitution of the defective part and in order to guarantee the proper working of the system. **PURICOM EUROPE** has the exclusive responsibility to replace or repair the defective parts. Compensation or other expenses are not covered.

GUARANTEE OF INSTALLATION AND PUTTING INTO OPERATION

The distributor guarantees that the system installed is appropriate for the improvement of the quality of your water in particular, according to technical specifications of the system, indications given by the manufacturer and legislation presently in force. The installer guarantees the proper installation and putting into operation of the system, having followed the indications provided by the manufacturer and legislation presently in force.

COMPANY AND/OR AUTHORISED INSTALLER:

Company and/or installer, date and signature:

NOTE FOR COMPANY AND/OR AUTHORISED TECHNICIAN/INSTALLER: *The information marked (*) must be filled in by the technician installer and transcribed by him from the INSTALLATION AND PUTTING INTO OPERATION REGISTRATION SHEET OF THE SYSTEM.*

The system is installed and in operation to the satisfaction of the client and for the record:

*Previous treatment of the RO system:

*Feed hardness of RO system [ºF]:

*TDS of RO system feed [ppm]:

*Pressure of RO system feed [bar]:

*TDS water produced (Tap) [ppm]:

*Result of the installation sheet and putting into operation

☐ CORRECT: ☐ OTHERS:

The owner of the system has been properly and clearly informed of the use, manipulation and maintenance required by the system in order to guarantee that it works properly and the quality of the water produced. To such effect they were offered a maintenance contract.

*Ref. Maintenance contract

☐ ACCEPT the maintenance contract.

☐ DO NOT ACCEPT the maintenance contract.

Should you require information, to report a breakdown or that the system is not working properly, maintenance application or technical assistance, first read the sections on working, detection and resolution of problems in this manual and then contact the distributor or company that sold you the system.

S/O — Adhesive label

P/N — for identification

S/N — of system installed

SHEET REGISTERING THE INSTALLATION AND PUTTING INTO OPERATION OF THE EQUIPMENT

NOTES FOR THE TECHNICIAN/INSTALLER: *Read the present manual carefully. Should you have any doubts, please contact your distributor's technical attention service (T.A.S.).*
The information marked (*) must be completed by the technician installer and he/she must copy them him/herself to the GUARANTEE CERTIFICATE SHEET.
The installer/distributor must keep this sheet and Ionfilter may request it, with the objective of improving the post-sales service and customer service to the client.
The technician carrying out the installation and putting the equipment into operation must have the appropriate technical capacity.

S/O

P/N

S/N

Adhesive label for identification of system installed

INFORMATION CONCERNING THE APPLICATION OF THE EQUIPMENT:

Origin of the water to be treated:

- ☐ Public network supply.
- ☐ Others:

*Previous treatment of the RO equipment:

*Feed hardness of equipment RO [ºF]:

*TDS hardness of equipment RO [ppm]:

*Feed pressure of the equipment RO [bar]:

Chlorine concentration in the feed of the equipment RO [ppm]:

pH in the feed of the equipment:

CONTROL OF THE INSTALLATION STEPS:

- ☐ Washing of carbon pre-filters.
- ☐ Washing of carbon post-filters.
- ☐ Membrane assembly.
- ☐ Hygienisation according to described protocol.
- ☐ Concentration of chlorine in tap after flushing:
- ☐ Checking of flow restrictor.
- ☐ High pressure switch setting.
- ☐ Revision and couplings.
- ☐ Watertightness of pressurised system.
- ☐ *TDS water produced (work top tap) [ppm]:
- ☐ Provide clear information about the proper use, manipulation and maintenance of the equipment in order to guarantee the proper working of the same and the quality of the water produced. Given the importance of the proper maintenance of the equipment in order to guarantee the quality of the water produced, the owner must be offered a contract for maintenance to be executed by technicians with the capacity to do so.

COMMENTS

*Results of installation and putting into operation.

- ☐ CORRECT (system installed and working properly. Water produced adequate for the application)
- ☐ OTHERS

IDENTIFICATION OF AUTHORISED TECHNICIAL/INSTALLER:

Company and/or installer, date and signature:

ACCEPTANCE OF THE OWNER OF THE SYSTEM:

I have been informed clearly of the use, manipulation and maintenance that the system installed requires, having been offered a maintenance contract and informed of how to contact Customer Services, should I need to ask for information, or to report a breakdown or that the system is not working properly, request maintenance or a technician.

Comments

*** Ref. Maintenance contract**

- ☐ ACCEPT the maintenance contract
- ☐ DO NOT ACCEPT the maintenance contract

Model/Ref.:

Owner Mr/Miss/Mrs

Street:

Telephone No.s:

City:

Province: P.C.:

Date and signature:

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