SO1100K

LCD VERSION

MANUAL FOR INSTALLATION, USE AND MAINTENANCE

SO1100K
LCD VERSION

INVERSE OSMOSIS SYSTEM
FOR THE HOME PROCESSING OF POTABLE WATER
AS SPECIFIED IN THE
LAW DECREE 31/2001 AND ITS SUBSEQUENT
MODIFICATIONS

complying with the decrees

Ministero della Salute

n. 25/2012 and n. 174 / 2004

SUMMARY

(slips form)

THANKS!

Congratulations on choosing SO1100K, the new most advanced cleanser now on sale based on the Inverse Osmosis principle.

This equipment is designed for professional use and is suitable for home need: it ensures high performances, it is extremely soundless and takes up minimal space.

It is completely produced in the pursuit of “made in Italy” with components and materials of top quality.

It is the result of the great work of Italian engineering and manpower that guarantee the highest safety and reliability.

SO1100K is completely automatic.

The natural osmosis process removes every possible polluter supplying healthy and pure tap water as the spring one, ideal for home use as drinking, cooking and fruits and vegetables washing.

Your recipes will be much more tasty and water will not be the more neglected ingredient but the more natural one!

You will give your contribute against the environmental pollution removing plastic and glass bottles, reducing the domestic waste and the air pollution caused by thousands of trucks everyday carrying water container on our roots.

From today on you will avoid to stress yourself with shopping and carrying heavy bottles of water and other packed beverage.

1. MANUAL AIM

This user manual contains clear and essential information for installation, proper operation and accurate maintenance of the equipment.

Understanding such information is critical for hazardless and safe operations.

You will find all useful procedures in case of emergency situations that can happen during the equipment usage.

Warning

Please read carefully and follow these instructions, in particular the safety rules in order to guarantee a perfect working of the equipment.

The lack of consent as regards these instructions should damage, the device and the consumer.

In such case the warranty shall be null and void.

2. GENERAL VIEW

Fig. A

2.1 Explanation

A - SYSTEM
B - TAP
C - SPHERE VALVE
C_1 - WASTE CONNECTION
D - PIPES CONNECTION
E - LINK UP PATTERN
F - DISPLAY

Fig. B

Fig. C

Fig. $C_1$1

Fig. D

Fig. E

Fig. F

3. DECLARATION OF CONFORMITY

CE

The system indicated in this instructions manual conforms to the following Europe an Directives, included last modifications, and subsequent national legislation 2 006/95/ EC (Low Voltage), 2004/108/EC (Electric-magnetic compatibility), and complies with the following rules:

- **En 62238 (2008)** Electric-magnetic Fields
- **En 60335-1** Home equipments and similar ones safety
- **En 55014-1_2** Electric-magnetic compatibility
- **En 61000 - 03/02/2006**
- **En 61000 - 03/03/2008**

As regards all the components that can be in contact with foodstuffs this system conforms to:

- **D.M. 25/2012** of the Department of Health of.
- Ministerial Decree. 174 of 6 April 2004 about "the assignation of materials in contact with water for food usage".

It is suitable for waters processing as pointed out in the Legislative Decree 31/2001 and its subsequent modifications.

Any other use is not in conformity if not approved in writing by our technical service center.

MANUFACTURER:

CE conformity depends on the product integrity and compliances with assemblage instructions as indicated in the manual for installation, use and maintenance.

CE conformity shall be null and void in case of unauthorized modifications.

4. A GUIDE TO THE INSTRUCTIONS BOOKLET

These symbols will help you in quickly finding the most important information :

Safety information

Useful advices

Information about environmental safety

This equipment conforms to the following CEE Directives:
- *2006/95/EC (Low Voltage)*
- *2004/108/EC (Electromagnetic Compatibility)*

This equipment uses parts that conform to the NSF Laws (Foodstuffs)

The equipment exploits the inverse Osmosis principle as described in this booklet.

5. BEFORE USING THE EQUIPMENT

Keep these operating instructions in a safe place and attach them to the equipment for any further reference. When selling the device to a third party, give these operating instructions to the new consumer in order to be aware of the equipment working, all warnings and the compulsory manufacturer's slips according to Laws in force (see Healthy Brief).

Before using the equipment read carefully this operating manual.
Understanding all its information and warnings is critical for proper installation and use.

Check the equipment for damage after you have taken it out of its packaging.
If in doubt about its integrity, contact the retailer within 24h.

Only a technician can install the equipment and arrange the hydraulic and electric connection according to the manufacturer's instructions and the local laws in force. The electric pattern shall be equipped with an efficient current-tap according to Law (46/90).

Before every kind of maintenance and cleaning, unplug the device. Do not unplug the device by pulling on the power cord.

After the installation be certain that the equipment does not lean against the power lead.

Construction and execution due to technological progress are subject to change without notice.

FOR YOUR SAFETY

These warnings have been edited for your safety and for everyone will use your equipment.

Please read them carefully before installing and using the equipment.

6. GENERAL WARNINGS

- The equipment fits only for waters processing as specified in the Legislative Decree 31/2001 and its subsequent modifications. Any other use not approved by our technical service center is improper.

- Under warranty all technical modifications are forbidden without the authorization of our technical service center.
  In such case warranty shall be null and void.
  Even in case of non-periodical maintenance of the device and use of non-original spare parts warranty shall be null and void.

- The equipment shall not be removed from its placement by unauthorized staff.

- Do not use caustic products, acids, steel wools to clean it.

- Do not clean with jet stream or high pressure.

- As by Law Decree 25/2012, the equipment shall be installed by skilled technicians according to Law Decree 46/90. During the installation the technician shall verify every possible leak, even internal.
  It is heartily recommended to commit only technicians specialized in feeding water processing, in particular for relative calibrations (saltiness, residual hardness, etc.).

- The manufacturer accepts no liability for damages caused by repairs that are not carried out at an authorized service center.

- The manufacturer accepts no liability for damages caused by an improper use of the equipment.

- The manufacturer accepts no liability for damages caused by changes, accessories or every non original spare parts not in conformity with the equipment, especially when changing its natural working.
  The manufacturer accepts no liability for the supplied water quality in case of tampering with any components of the equipment by unauthorized staff.

CHILDREN'S SAFETY

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

SAFETY WARNINGS

Any kind of operation shall follow these safety precautions.

- Read carefully the user manual.

- Before the installation verify the following conditions.
  In case of high concentrations of suspended solids, install directly a water filter before the system.
  The lack of water filtering and the removal of suspended particles may limit its efficiency.
- The presence of sulphydric acid or iron or filterable solids in the processing water may cause the creation of a patina on the quartz pipe area that shall be periodically removed according to the processing water features (models with U.V. - optional).
- The processing water shall have the features indicated in the Legislative Decree 31/2001 and its subsequent modifications.
- The equipment shall always be installed after the autoclave or the water meter and after every filtering or processing water system.
- The fitter shall know the Law Decree 25/2012 and follow all the information for inaccurate installation. The manufacturer accepts no liability for the lack of components needed for the installation.
  Such components should not be part of the equipment supply.
- Be certain that the water meter is at the equipment head and arrange sample points for further analysis and check before and after the processing system.
- At its very first use the processing water shall be flushed for about 15-20 minutes in order to remove possible waste of all the components.
- When it has been inoperative for a long time it is recommended to sanitize (see “Sanitizing” on page 25).
- Before any intervention on the electric parts, always switch off the device.

- Use limits : input water free chlorine max 0,02 mg/l, manganese max 0.05 parts per million, muddiness 1 NUTS max 5, Surface-active agents absent, oil absent, Coli bacteria absent, Ferruginous quality absent (check conditions TDS max 1500 parts per million).

- The removal of foreign elements is about the 90%. It can change till the 15-20% according to the environmental conditions during its usage and/or according to the characteristics of used membranes.

7. WATER PROCESSING

The equipment exploits input water according to the Directive 98/83/CE of 3/11/98, that is the Legislative Decree 31/2001.

Processing phase is ideally divided into these following steps:

- PRE-FILTERING (MICRO FILTERING)
- INVERSE OSMOSIS
- U.V. RAYS BACTERICIDAL

(OPTIONAL, when the preventive water analysis indicates it is necessary).

7.1 Pre-filtering

This is the first step.

Input water passes by a filter for the so-called micro filtering. This is a very important step since it allows to separate water from particles bigger than 5 micron and from possible chemical elements (chlorine for example) that could damage membranes of the osmosis group. The filtering elements associate the well-known technology of depth filters to a planned idea that removes the whole nucleus in order to get an efficient and ecological solution during operations with elevate capacities. The filtering element is made up of polypropylene with a low loss charge so that on equal capacity less filtering elements are needed. The filtering elements are produced according to the highest quality standard and comply with the directives of the Department of Health.

7.2 Inverse Osmosis

This is the second step.

Water deriving from the pre-filtering is sent to the osmotic membranes made up of plant fibers (polyamide and/or cellulose) and kept naturally.

These membranes have firstly passed the acceptability test for use of the U.S. FDA (Food and Trust Administration) and the NSF (Not Sophistication Food), the most important independent and international check court for food sophistication.

As concerns the osmosis principle look at page 16

7.3 UV bactericidal (optional)

This is the third step.

Thanks to ultra violet rays coming from an U.V. lamp, a possible bacterial residual charge in the filtered water is removed.

8. INVERSE OSMOSIS

8.1 The Osmosis principle

Osmosis is a common natural phenomenon and it is very important in life processes. According to this principle, a low salt concentration (pure water) passes by a particular membrane – the so-called semi-permeable – towards an high salt concentration.

Thanks to an external pressure the phenomenon is inverted and the inverse osmosis process starts. In this way you can obtain pure water from a water with an high concentration of foreign elements.

This is a naturally pure and light water as the spring one.

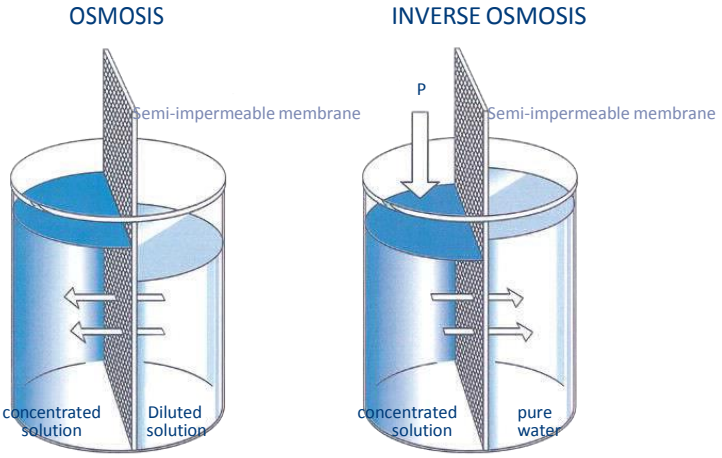
Inverse osmosis removes the foreign elements thanks to semi-impermeable membranes.

These particular structures let the water flow, removing melting mineral elements, pollute elements, virus and bacteria.

Using a container divided into two departments through a semi-impermeable membrane, it is clear how pure water A goes into the salt solution B thanks to the osmosis principle and how it increases its level till an hydrostatic pressure value - the so-called osmotic pressure of solution B.

In this way solution B balances the entire system and stop the flowing of pure water.

When an higher pressure than the osmotic one is applied to salt solution B pure water tends to A and here is the inverse osmosis phenomenon (that is opposite to the natural phenomenon).



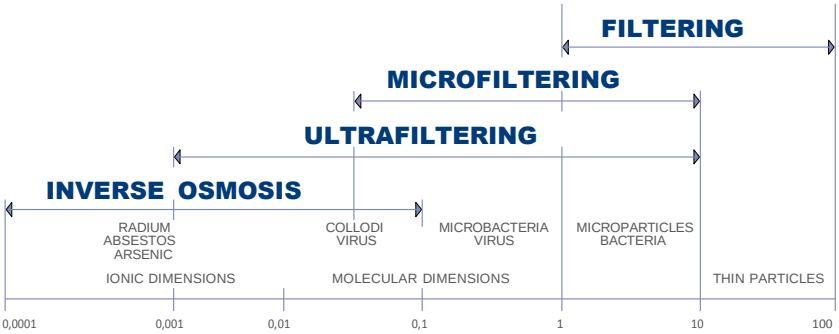
The inverse osmosis processing forces water through a semi-impermeable membrane to separate the melted foreign bodies, either organic or inorganic.

The osmotic membranes have an infinitesimal pores dimension according to Angstrom scale (1Å = 1/1000.000.000 meters). That is why the inverse osmosis can be seen as a very strong filtering process.

Actually it is not an ordinary filtering but an "orbital one".

During the ordinary filtering the whole water solution is forced through a filtering mean and any kind of impurities not so small to pass through it, is kept or entrapped from the mean itself.

On the contrary the orbital filtering works through two different input streams: "concentrate", a stream containing rejected impurities that do not pass through the membranes and the "permeated" stream that is forced through the membranes.



SIZE PORES IN MICRON

INVERSE OSMOSIS, is a physical phenomenon and it is possible thanks to the characteristics of semi-impermeable membranes.

It does not need the usage of chemical elements like other filtering systems.

These membranes can have various geometrical shapes and can be made up of various materials. It depends on different needs and usage conditions.

INVERSE OSMOSIS diminishes and even completely removes the whole waste of water that is the most significant element to check water quality.

Such a value corresponds to the MINERAL SALTS quality and other melted ELEMENTS, and its measure unit is mg/l (milligram per liter).

Please remember that "low mineral" indicates low-mineral salts water (fixed waste inferior to 500 mg/l), as to say particularly pure and light waters like the spring ones and indicated for being purifying and diuretic.

MINERAL SALT are divided into two different categories:

ORGANIC MINERAL SALTS that can be assimilated by humans and deriving from the animal and plant kingdom, INORGANIC MINERAL SALTS that cannot be assimilated by humans, deriving from the mineral kingdom and environmental pollution.

MOST OF MINERAL SALTS in water are inorganic and consequently they cannot be assimilated.

Their removal is so important for human body.

The osmotic water is light and pure, typical feature of the low-salts water, and it has beneficial diuretic and detoxify effects.

AN HEALTHY HUMAN BODY depends first of all on drinking pure water.

The equipment has a regulation system for residual saltiness (REMIX).

You can regulate the fixed residual of water at your liking.

There is an exclusive system (REMINER - optional) that allows to enrich purified water with natural calcium and magnesium mineral salts.

System make use of the “Inverse Osmosis with Direct Production” The inverse Osmosis differs from the traditional Osmosis process since it does not accumulate water.

This is not an irrelevant condition!!! When pure water is not accumulated, the bacterial flora is not present in the container and consequently in water since pure water can be easily assailable by external agents. Moreover the “ INVERSE OSMOSIS WITH DIRECT PRODUCTION” can supply water without pause and you never have an empty container.

That is the reason why this kind of processing works at its best.

Systems are rational and contemporary systems and they last a long time, granting an high quality water.

They can remove nitrates, atrazina, asbestos, heavy metals, bacteria, virus, pesticides, chloride, suspended particles, etc. The obtained water is so pure, light, with a good taste typical of the low-mineral waters, that is fit for drinking, cooking, washing fruits and vegetables, making beverage, tea, coffee, etc.

Impurities abatement

Osmosis systems that are based on the inverse osmosis principle remove water impurities with these percentages:

SUBSTANCE	ABATEMENT	SUBSTANCE	ABATEMENT
Asbestos	*93 – 99*	*Phosphate*	*96 – 98*
Sodium	*92 – 98*	*Cyanide*	*85 – 95*
Manganese	*96 – 98*	*Sulphate*	*96 – 98*
Iron	*96 – 98*	*Hyposulphite*	*96 – 98*
Aluminium	*96 – 98*	*Silicate*	*92 – 96*
Copper	*96 – 98*	*Silica*	*80 – 90*
Nickel	*96 – 98*	*Nitrate*	*90 – 95*
Cadmium	*93 – 97*	*Boron*	*50 - 70*
Silver	*93 – 96*	*Borate*	*30 – 50*
Zinc	*96 – 98*	*Fluoride*	*92 – 95*
Mercury	*94 – 97*	*Polyphosphate*	*96 – 98*
Hardness	*93 – 97*	*Orthophosphate*	*96 – 98*
Radioactivity	*93 – 97*	*Chromium*	*85 – 95*
Chloride	*92 – 95*	*Bacteria*	*+ 99*
Ammonium	*80 – 90*	*Lead*	*95 - 98*
Bromide	*90 – 95*		

PLEASE NOTE: following abatement percentages are not specific.
The real abatement depends above all on the precise chemical composition, temperature, pressure and salt content of water. (from "1994 applied Membranes, Inc.").

9. INSTALLATION

9.1 Instructions for handling and carrying the equipment

Even if accurately packed, the equipment shall be handled with care.

9.2 Positioning

Before installing the equipment, check if you have space enough to easily unpack the spare parts, for doing maintenance and for the usage of check devices.

According to Laws in force 46/90, only authorized technicians shall install the equipment after changes in the hydraulic system of the installation placement.

This equipment was planned to be installed in an hygienically safe place and far from freezing and sprinkle current (for example rain).

Please check the presence of a power lead (see electric features) near to the equipment where to plug in the adapter/transformer.

The equipment shall always be installed after the autoclave and the water meter and after any filtering or water processing device.

Please check the water controlled designation of origin. Be aware not to modify the equipment features.

The manufacturer accepts no liability for damages caused by modifications, accessories or any kind of devices that are not clearly scheduled in this user manual.

9.3 Instructions for installation

- Remove the lateral panel releasing the screw on the upper part of the panel, so that you can check the right locking of the connections and avoid possible water leaks.
- Connect all parts following the instructions on the equipment stickers (see picture 1 page 22).
  ENTRANCE indicates the connection to the feeding water
  PURE indicates sharpened water to be connected to the tap or a cooler and/or a carbon dioxide adder.
  DRAWING indicates pollute output water to be wasted.
- The pressure of feeding water shall not be higher than 5 Bar and not lower than 1,5 Bar. It shall have a minimum capacity of 300 liters per hour. (See the installation scheme).
- Install an input interception valve and arrange sample points for water analysis before and after the processing system.

9.4 Pressurizing

After connecting the pipes, gradually pressurize the equipment checking there are no leaks.

Open the tap and let the water flow in order to eject the air. If the equipment is in protection for the lack of water on your first attempt, try again.

9.5 Electric connection

Only connect the equipment to a suitable power outlet.

ATTENTION: be certain that the electrical outlet is of a voltage corresponding to that indicated on the equipment sticker (see figure page 7).

WARNING : open the equipment electric panel only in presence of technicians.

10. INSTALLATION PATTERN

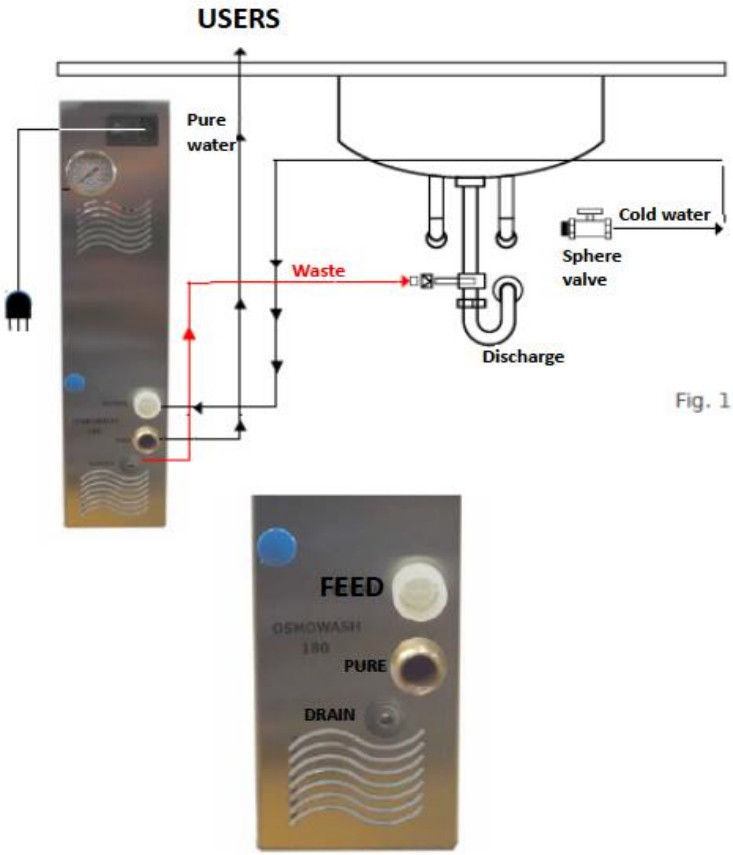


Fig. 1

11. ORDINARY AND EXTRAORDINARY MAINTENANCE

A periodical maintenance is needed to keep the features of a drinking water.
Always remove the power cable from the power outlet before any intervention of extraordinary maintenance.

If a malfunction occurs, do not try to repair the equipment by yourself. You could be in danger and you could damage the equipment. Always follow the instructions given in this booklet. If you cannot find the information you need, call the nearest Service Center. Maintenance can exclusively be done by an authorized Service Center. Specialization is important:
an ordinary plumber deals with water mains, faucets and similar things whereas a technician deals with water for home use!

Always ask for original spare parts.

Functional reliability and best performances can be granted only with original spare parts (if necessary they can be adapted according to your input water needs) .

Always remember that you are getting water for food usage!

WARNING

Under warranty no intervention is accepted without the authorization of our Service Bureau. In other case the warranty shall be null and void.
A periodical ordinary and extraordinary maintenance is compulsorily needed, (See the “Healthy Brief, maintenance register” section page. 36), and it can be done only by an authorized technician that will fill the reference form for any kind of intervention.

The manufacturer accepts no reliability as regards the water quality in case of not periodical maintenance and filling of the relatives forms.
In such cases the warranty shall be null and void.

The equipment components need a periodical replace and it is not possible to predetermine their real last: quality of the input water is a critical standard (water high quality means a long lasting component).

The equipment working is completely automatic and maintenance is very low. Only the periodical replace of the filtering cartridge is necessary.

The osmotic membranes last depends on the water features, usage conditions and other different variables.

11.2 Pre-filters replace

The pre-filter with cartridge shall be replaced within 12 months according to the normative in force, even in case of a limited usage or complete inactivity.

In case of an ordinary home usage, “FILTER MAINTENANCE” on the display indicates you have to replace the pre-filter.

The device has an internal system measuring the quantity of water that has been produced. When the filter is going to exhaust, the relative signal is activated on the display.

Replace the filter within 12 months or when the quantity of water is over.

The change intervals are different according to the local feeding water features.

MODALITIES FOR CARTRIDGES CHANGE

- Unplug the system
- Unhook the connection filter. During this intervention you cannot avoid water leaks.
- Place the new cartridge, verify its right placement and the connection locking.
- Check if there are water leaks and in such cases be certain that the anti-flooding sensor is not wet.

Please note that the equipment is not starting if the anti-flooding sensor is wet. Be certain that the sensor is completely dry.

MEMBRANES CHANGE

Membranes in proper container (vessel) shall be periodically checked, above all if the signal “WATER DELIVER : SERVICE” is displayed.

It could in fact indicate a damage in the membranes.

Membranes shall be generally changed when water production is inferior to the 50% of the nominal one.

The change intervals significantly depend on the local features of water and on the usage conditions.

MODALITIES FOR MEMBRANES CHANGE

- Unplug the system.
- Disconnect the pipe of feeding water that is placed on the vessel top containing the membrane and pull it out. During this interventions leak of the water in the vessel is inevitable.
- Arrange an appropriate picking up container underneath the equipment.
- Place the new membrane, check a good placement of the O-Ring and screw down the top of the vessel.

Check for water leaks and in such case be certain that the anti-flooding sensor is not wet.

12. SANITIZING

12.1 Pipes sanitizing

The equipment sanitizing is necessary in case of a long inactivity. An hypochlorite solution can be used to sanitize the pipes.

Its quantity and concentrations depend on the equipment dimensions and on the characteristics of the supplying equipment (as an indication all the sample points, above all the most far from the equipment, shall return free chloride for 0.2 parts per million in about 30 minutes).

The capacity of free chloride can be measured by special kits on sale. Remove the pre-filtering to avoid that the anti-encrusting solution is hold back. It would loose its efficacy.

- Spread the obtained liquid through the withdrawing of the sanitizing product in about 10 liters of the osmotic water that has been obtained through the complete locking of the pressure valve that regulates saltiness and calibrating the internal pressure of the system till a maximum of 3 bar
- Reconnect the waste pipe.
- To restart the equipment, follow the explained procedure at points: "EQUIPMENT START UP AND SANITIZING"

12.2 The equipment sanitizing

Remove the pre-filter to avoid that the sanitizing solution is hold back and looses its efficacy.

Use a sanitizing product or solution for medical devices that disinfect and sterilize in cold conditions and use devices fit for home processing of drinking waters according to the Ministerial Decree 25/2012

Spread the watered down liquid in 10 liters of osmotic water hovering it from a picking up container with the same equipment pump.

The pump pressure shall not be greater than 1,5 ~ 2 bar.

The equipment waste and production that need to be sanitized will connect each other in a closed-circuit inside the same sample container.

This operation can be periodically repeated according to the needs.

PLEASE NOTE - it is recommended an anti-encrusting product when using a diluted sodium hypochlorite liquid during the membranes cleaning.

After all the sanitizing operations it is recommended to let a lot of water flow from the connected utilities till the complete disposal of the sterilized solutions .

When water has an sanitizing waste solution of 0.2 parts per million, it is however completely drinking.

The sanitizing solution could not fit for industrial usage or for fish tanks water. This water flow is important during the start up because it also removes the impurities created during the washing up.

Only technicians can arrange the equipment sanitizing.

13. INACTIVITY

In case of planned inactivity for a long spell of time, it is recommended to close water from the water meter or the general entrance.

There are no particular warnings in case of a short time inactivity. Only let water flow when restarting.

The equipment has an anti-stagnancy system that works when the device is connected to water and power current.

In anticipation of a long inactivity, call the nearest service center to arrange the removal and conservation of the inverse osmosis membranes and the restarting of the equipment according to the modality of startup.

Once you have unpacked the equipment, store it in a dry place (with no condensation) far from bad weather. The accepted temperature is 0 – 50 °C.

14. DISPOSAL

All materials are eco-compatible and recyclable. Please give your contribution for the environment and collect the items for recycling.

14.1 Inoperative devices

- No longer in use devices are not rubbish. Thanks to the waste disposal a lot of components being part of the equipment can be recycled.
- Please inquire about the disposal possibilities by your specialized retailer or your Local Council.
- Before throwing away the equipment, cut the power cable making it useless.

RESPECT THE ENVIRONMENT

- Choosing this equipment you are respecting the environment. You will no more use plastic bottles and consequently dispose of them. Thanks.

14.2 Materials

Materials used for the construction of SO1100K inverse osmosis system:

- The pre-filters containers and membranes vessel are made up of high density propylene.
- The O-Ring are made up of Viton (a polymer of fluorine).
- Pre-processing cartridges are made up of PPF or activated charcoals.
- Pipes and connections are made up of polypropylene.
- The pump is brassy.

All the materials in contact with water, are completely tested for food usage.

15. PACKING, SHIPMENT

The equipment is packed in a carton box. Unless it is necessary for shipment needs, we do not use expanded polystyrene or other packaging materials that could generate pollute waste.

NOTE : you can have a special packaging on request.

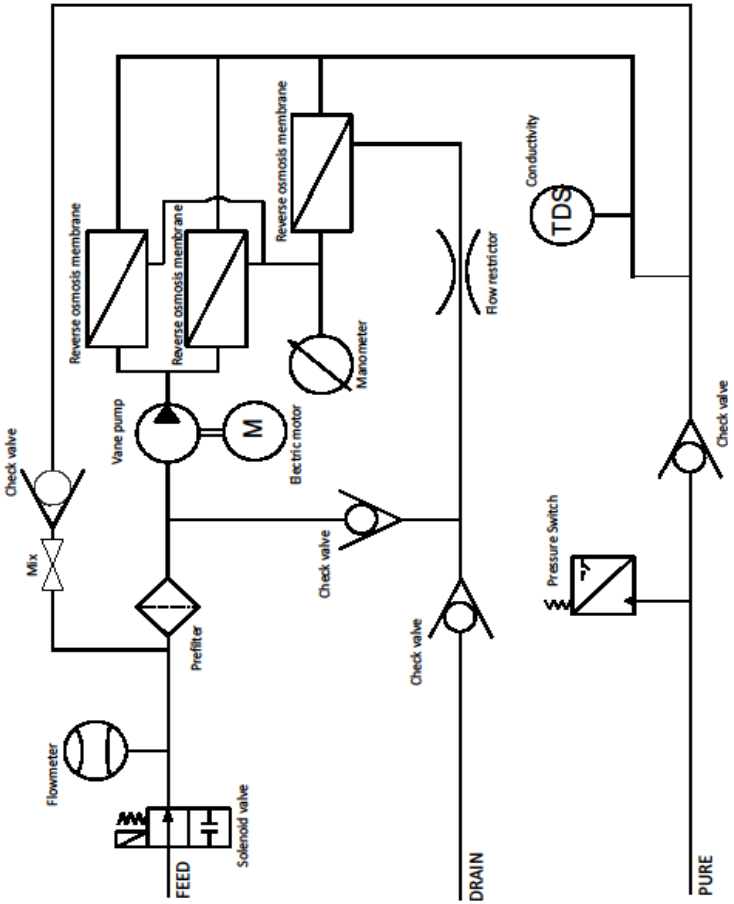
15.1 Instructions for unpacking

Any particular warning is indicated to unpack the equipment, except the ordinary care when handling fragile materials. Before removing the packing carton box be certain not to throw away some equipment parts, instruction booklets or other documentation.

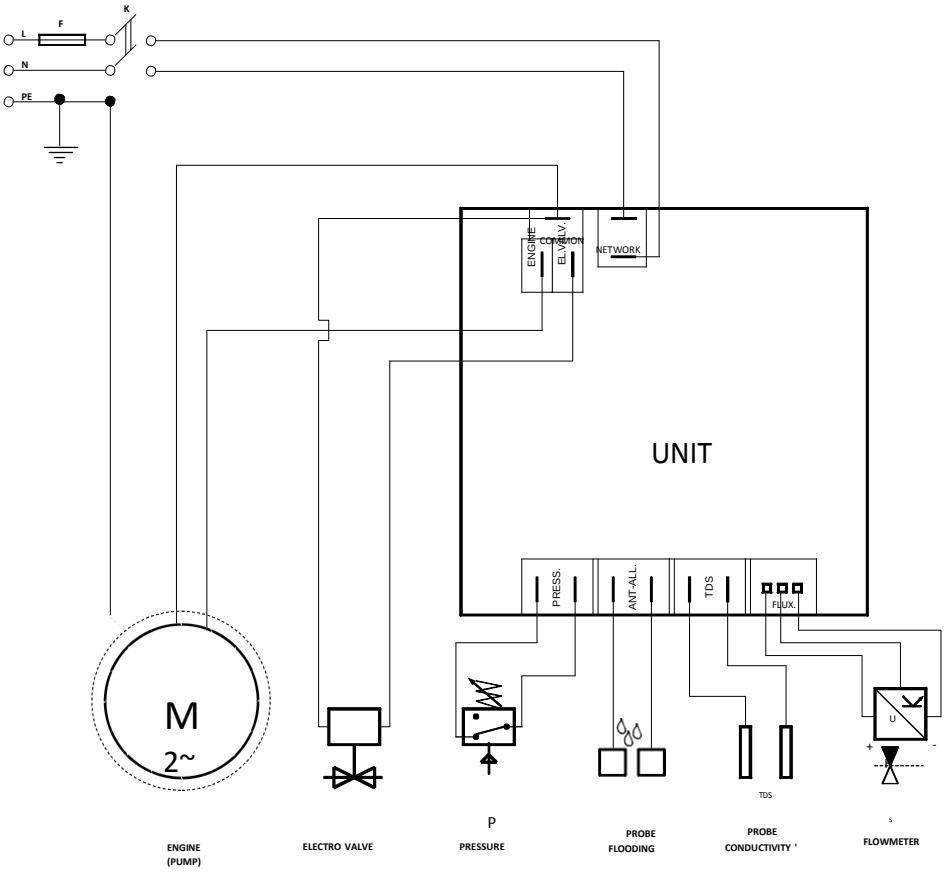
CARRYING /HANDLING

Remember to handle the equipment with care even if it is accurately packed.
After getting the equipment you shall take it out of its packaging and check kits integrity. In case of damage you shall immediately inform the courier.
Do not reverse the equipment.

16. HYDRAULIC PATTERN



17. ELECTRIC PATTERN



18. MALFUNCTION

SO1100K DOES NOT SUPPLY

CAUSE	REMEDIES
Electric power interruption	*Be certain that current continuously powers the equipment*
Defective switch	*Check the output switch.* *When it is absent replace the switch.*
Pump failure.	*Change the pump.*
Input electrical valve failure	*Change the electrical valve.*

PRODUCTION DECREASE

CAUSE	REMEDIES
Mixing valve completely closed or	*Calibrate the mixing valve*
Osmotic membrane or flow restrictor failure	*Check if the capacity of waste water is always greater than the capacity of production water. In such case change the flow restrictor or the membrane.*
Low feeding water temperature (min. 10°	*A decrease in high performances is physiological with low temperatures*
Pump failure	*Check the output pressure of the pump with a pressure gauge. Start the equipment being certain that pressure is not inferior to 9 bar; in such case remove the locking ring nut in the pump by pass and calibrate pressure. If it is inferior to 9 bar, change the pump.* (PLEASE NOTE - this system is tested for good working with a pressure of 8bar. The pump usage decreases pressure. An intervention on by pass can calibrate the right pressure till the complete usage. Pressure is acceptable till 6 bar despite a product reduction.
Input electrical valve partially locked	*Clean the filter of the electrical valve.*
Input pre-filter locked	*Be certain that the water capacity flowing out of the filter is not inferior to the pump capacity that is 300 liters per hour. In such case change the filter.*
Flow restrictor without calibration	*The system plans a flow restriction (flow restrictor) that keep the pump pressure constant. Water capacity shall always be superior than the production. In other case change the flow restrictor.*
Encrusted osmotic membrane	*The efficacy of the membranes cleaning system mostly depend on the input water characteristics. Clean the membranes during technical assistance, or change*

BAD TASTY WATER

CAUSE	REMEDIES
Mixing valve completely closed or	*Calibrate the mixing valve*
Over-disinfectant in the feeding water	*Get the pre-filter into proportion with disinfectant capacity.*

19. TECHNICAL FEATURES

GENERAL DESCRIPTION

The OSMOSIS system is made up of a pre-processing condition. The output water reaches membranes that are in proper containers (vessel) made up of polypropylene for food usage.

The pump at 460 l/min is made up of brass matched with an engine working with 300 W.

CAPACITY

SO1100K has been planned for a maximum nominal capacity of about 160 ~ 190 liters per hour (according to type and number of the membranes).

However it depends on various standard and on the feeding water quality, that can significantly change this condition.

RESIDUAL HARDNESS

According to the Laws in force, the equipment has a system (REMIX) for the regulation of the processed water saltiness and it can also change its taste.

Just spin the regulator for ordinary home usage.

Residual hardness shall be ruled according to the relative Laws in force.

Another device (REMINER - optional) enriches water with mineral salts of Calcium and Magnesium.

SIZE

Breadth 107 mm
Height 450 mm
Depth 450 mm

WEIGHT

Total weight: about 16 Kg

SUPPLY VOLTAGE

230 V

PLEASE NOTE : a tolerance of less or more 5% than the nominal tension is accepted but not recommended.

POWER

The equipment exploits a supply voltage of 400W only when it is delivering water.

ENVIRONMENTAL CONDITIONS AND WORKING LIMITS

- Minimum environmental temperature: 5° C
- Maximum environmental temperature: 50° C
- Minimum water temperature: 5 °C
- Maximum water temperature: 35 °C
- Maximum relative dampness: 95% (lack of condensation in the environment)

The feeding water pressure shall not be higher than 5 bar and not lower than 1 bar and shall have a minimum capacity of 500 liters per hour.

19.1 TESTS ON THE EQUIPMENT

Before shipment all devices are tested as regards mechanical, hydraulic and electric components.

19.2 PLANNED RULES

The electric component of the equipment has been planned and produced in observance of Law CEI 44-5, device safety, electric kit of the machine (Law 60.335/1).

20. DISPLAYING

The user interface consists of a 16-character LCD display board for 2 lines includes four command buttons and touch of a buzzer to provide all the information and display any alarm signals.

DESCRIPTION OF FUNCTION KEYS:

KEYS	FUNCTIONS		
+	Increase		
-	Decrease		
ENT	Enter	Skip to next menu	press for 10 seconds. for access to the menu "Technical"
ESC	Esc	Exit menu	press for 10 seconds. for access to the menu "Technical"

FUNCTIONALITY

EQUIPMENT IGNITION

Stoke the machine through the general switch, the type and the software version in use are displayed for 4 seconds.

The producer slogan is subsequently displayed.

The system condition is displayed after an initial test about its functionality.

WATER WITHDRAWING

The water delivering is displayed during water withdrawing.

Water withdrawing occurs through a pressure switch (switch) or button. You can choose this option in the technical menu.

When opening the tap or exciting the electric valve, the pump starts with a planning delay that avoids the pump cavitation. When the tap is closed or the button is not pushed, the pump stops and the electric valve closes with a planning delay in order to rinse the hydraulic pattern.

LACK OF WATER PROTECTION

In case of low pressure and low water stream or completely lack of water, the equipment stops after 4 seconds. The lack of water protection unlocks through the pushing of any button.

PROTECTION AGAINST FLOODING

The anti-flooding feeler indicates the presence of water through an acoustic alarm. The electric valve immediately closes and the engine stops. The anti-flooding alarm can be unlocked switching on/switching off.

CONDUCTIVITY CHECK

The conductivity feeler indicates water conductivity. When it is lower than the planned limit value, a good working is displayed.

When it is higher than the planned limit value, the alarm is displayed and the board flashes. After the delivering of at least 1 liter of water, the measuring of the conductivity value is real.

When interrupting the water supply, the board stops flashing and only a service notice remains.

The alarm is automatically reset when the conductivity value is lower than the planned threshold.

EQUIPMENT AUTO PROTECTION

The equipment protects itself and locks itself after a planned time of continuous working. The system automatically closes the electric valve and stops the engine when a tap is involuntarily open. The auto protection function unlocks through any button pushing.

FILTERS EXHAUSTION

If the withdrawing liters capacity during the delivery is bigger than the planned one or working days are longer than the planned one, on the display appears:

The equipment keeps on working. The alarm is not displayed till the subsequent switching off and switching on pushing the button "+" for 3 seconds.

The filters maintenance alarm can be reset in the technical menu.

In order to have a functional liters reset, switch off and switch on again the equipment.

USER MENU

Pressing the ESC key for 3 seconds to access the menu “user”, with which you can view data and set of statistical significance on the operation and use of the system. Once you see the first menu item you (“LANGUAGE”), you can change the setting using the + and - buttons or scroll the menu items by pressing the “ENT”.

DISPLAY	FUNCTION		RANGE	STEP
Language	*Language Section*	*Language*	*Italian, English, German, French*	
Contrast	*Setting display contrast*		*5-50*	*1*
Plant life	*Reporting autonomy*	*day; hour*		
Total Lending	*Reporting liters total*	*Liters*		
Tot. Last 30	*Report delivered liters last 30*	*Liters*		
Average Daily	*Consumer Reporting*	*Liters*		
Total Savings	*Reporting total savings*	*Euro*	*0.1-20.0*	
Month Savings	*Reporting savings per month*	*Euro*	*10-120*	
Water Cost Cent	*Setting water cost per liter*	*Cent. Euro*	*0-99*	*1*

Press “ESC” to exit the menu.

LANGUAGE

To change the language of the controller using the "+" and "-" the panel. Press "ENT" the value is copied and stored in the unit and move to the next item of the menu.

CONTRAST

To change the contrast of the controller using the "+" and "-" the panel. Press "ENT" the value is copied and stored in the unit and move to the next item of the menu.

EQUIPMENT LIFE

Displays the total time of installation of plant operation

TOTAL WATER DELIVERY

Displays the total number of gallons delivered from the plant since the installation.

LAST 30 DAYS

Display the liters dispensed in the last30 days.

AVERAGE FOR DAY

View the average daily number of delivered liters, based on data collected during the last 30 days.

TOTAL SAVINGS

See savings in euro accounted for the entire life of the plant, according to the "cost of water," described below.

SAVING MONTHS

See savings in euro accounted for in the last 30 days. , Based on the parameter "water cost"

The total savings and monthly cost is calculated on the basis of water per gallon set in the user menu.

COST OF BOTTLED WATER SET

You can set the cost of a liter of water that you would if you buy bottled water.

To set the cost of water bottled expressed in cents per liter, using the "+" and "-" the panel. Press "ENT" the value is copied and stored in the unit and move to the next item of the menu.

The total savings and monthly cost is calculated on the basis of water per gallon set in the user menu.
To change the cost per liter of water in cents using the "+" and "-" the panel. Press "ENT" the value is copied and stored in the unit.

Note - The control unit as all electronic devices is a very sensitive component such as a surge. In such a situation can occur that may stop or signal error. In these cases it is often sufficient to turn the unit off and on again after a few minutes to reset the unit that cannot work properly.

21. HEALTHY BRIEF AND MAINTENANCE REGISTER

KINDS OF INTERVENTION:

- FIRST INSTALLATION
- FIRST START UP
- PERIODICAL PRE-FILTER REPLACE
- PERIODICAL CHANGE OF THE BACTERICIDE LAMP
- SANITIZING
- INTERVENTION IN CASE OF DAMAGE (SPECIFY THE DAMAGE)
- SECOND INSTALLATION
- SECOND START UP

DATE	TYPE OF INTERVENTION	NAME	SIGNATURE

DATE	TYPE OF INTERVENTION	NAME	SIGNATURE