

MU

User Manual

Household
Softener



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0. MAIN SPECIFICATIONS

	ELECTRONIC TIMER Allows to control all parameters
	REGENERATIONS Delayed or immediate/ programming
	MIXING VALVE Allows to regulate the residual hardnes
	INTEGRATED BY-PASS Allows to isolate the system from installation
	TRANSFORMER Outside
	EASY TANK SALT FILLING Special for Softener
	MULTILINGUAL TIMMER English / French / Spanish



**KEEP THIS MANUAL THAT INCLUDES THE SERVICE BOOK AND THE GUARANTEE SECTION.
IT WILL PROVIDE YOU A BETTER POST-SALE SERVICE.**

1. PRESENTATION

The water treatment equipment that you have bought is a softener of last generation with one of the most advanced control heads in the market.

This is a system which combines the properties and advantages of the classic Denver with a more efficient water and salt consumption, thus contributing both to the protection of our environment and the household economy.

Your softener RIDER will provide you and your family the following advantages.

- **ENERGY SAVINGS:** Avoid the future incrustations in the pipes and connections.
- Great wellness sensation in the shower.
- Soft and smooth skin.
- Increases the life time of electronic devices and heating systems.
- **ECONOMIC SAVINGS:** Reduces the consumption of soaps, softeners and chemical products.
- Low cost of maintenance.
- Automatic function, your only concern is to add salt to the tank storage from time to time.

! *It is important that you keep and read this manual carefully before the installation and starting up of this equipment. If you have any doubt about the installation, use or maintenance of this equipment, please contact with the technical assistance service (T.A.S.) of your distributor.*

1.1. SOFTENER SAFETY

Your safety and other's safety are very important. We have included safety messages in this manual and on your appliance.

This is the safety alert symbol.

! *This symbol alerts you to the potential hazards that can be risky for you and for others.
All safety messages will follow the safety alert symbol or either the word "DANGER" or "WARNING".*

- **DANGER:** Severe or fatal risk if the following instructions are not immediately followed.
- **WARNING:** All safety messages provide information about the possible danger, how to reduce the risk of injury and what might happen if the instructions are not followed.

1.2. BEFORE STARTING

See '**Section 5**' before installing the water softener. Carefully follow the instructions for the installation (Warranty may be considered void, if the installation is faulty).

Please read the entire manual before undertaking installation. Then, collect all necessary materials and tools for the installation.

Check the plumbing installation.

All installations must be done according to the law in force in each region or country.

Please be careful when handling the water softener. Do not knock it over, let go of it or place it onto sharp objects.

Under no circumstances should the softener be installed outdoors, since it must be protected against sunlight and rough environmental conditions.

2. INTRODUCTION

The RIDER softeners equipments will avoid you all kind of problems caused by the hardness of the water and will reduce a lot the maintenance requested by your electrical devices. They will have a longer life.

These systems come with a residual hardness regulator as standard, which allows selecting the appropriate hardness for your home.

Its user-friendly electronic programmer will allow you to put the system into operation in an easy and fast manner.

What is hardness?

Hardness is the quantity of scaling salts present in water, which are mainly composed of low solubility salts of calcium and magnesium. The main salts causing hardness are listed below:

Calcium bicarbonate:	$\text{Ca}(\text{CO}_3\text{H})^2$
Calcium chloride:	CaCl_2
Calcium sulphate:	CaSO_4
Magnesium bicarbonate:	$\text{Mg}(\text{CO}_3\text{H})^2$
Magnesium chloride:	MgCl_2
Magnesium sulphate:	MgSO_4

These salts, due to their chemical properties, have a tendency to precipitate, producing scale on pipes and obstructing them as they accumulate.

In the same way, hardness has a high tendency to scale on the electrical resistors from heaters and to precipitate in heaters when temperature increases.

The combination of hard minerals and soap produces a soap curdling, which reduces the cleansing properties of soap.

The precipitation of hard minerals build a layer on cook-

ing utensils, connections and plumbing fixtures. It may even alter the taste of food.

Main problems:

- Precipitation on pipes, fixtures and appliances.
- Increase of the energy consumption due to the generated isolation.
- Higher soap consumption
- Reduction of the electrical appliances' service life and increase of the maintenance needed.

All these problems are greatly reduced when using a water **softening system**.

For the most part of Europe, hardness is indicated in French hydrometric degrees, but there are also other measuring units, according to each region.

Below are the most usual equivalences.

UNITS	ppm of CaCO_3	° French
1 ppm of Calcium	2,5	0,25
1 ppm of Magnesium	4,13	0,413
1 ppm de CaCO_3	1	0,1
1° French (°HF)	10	1
1° German (°d)	17,8	1,78
1° English (°e)	14,3	1,43
1 mmol/L	100	10
1 mval/L=eq/L	50	5

How does your system work?

Water softening is carried out by means of an ion exchange process. On this purpose, the system uses resins with the chemical capacity of capturing Calcium (Ca) and Magnesium (Mg) ions and removing them from water.

When Calcium and Magnesium ions are captured by the resin, two Sodium (Na) ions are released which, due to its chemical properties, produce salts with a higher solubility, thus avoiding all hardness-related problems.

Therefore, when water gets softened, its sodium level increases.

Further information on this procedure can be found in '**Section 2.8**'.

Ion exchange resins:

They are synthetic compounds, usually with a spherical shape, able to capture certain chemical substances present in water, which then exchange for other substances. Water softening uses strong cation resins, which are composed of styrene copolymers and divinylbenzene with a sulphur base.

The exchange resin charge is located inside the vessel of the softener, attending an important part of volume of the same (between 60 and 75% depending on the model). It is compulsory that one part of the vessel remains free to allow a correct regeneration of the resin bed.

During the treatment process the water gets through the multiway valve by the entrance connection, flows to the upper part of the softener through the distributor producing this way an ionic exchange inside the resin bed.

The treated water is collected by the distributor and driven through the inner tube through the vessel till the multiway valve. It is sent with the out connection till the main water pipe for consumption. In this point the system has a counter for treated water to be contabilized.

2.3 Regeneration of the system

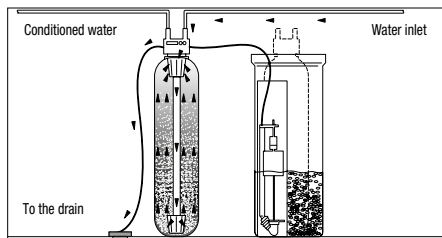
The quantity of calcium and magnesium ions that the resin may retain is limited; therefore, the water volume a water softener can treat is limited as well. The system must periodically carry out a process known as regeneration, which allows the resin to recharge with sodium ions, so it can continue softening water.

In RIDER systems the regeneration process starts automatically when the system detects that the exchange capacity is going to finish, the timer incorporated in the system allows to configure in a different way the starting of the regeneration, please see **section 6.3** in order to get more information about how the programme works.

The regeneration of a softener system is made of different parts, each with a concrete finality

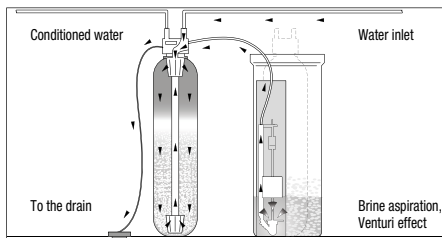
Backwashing:

The water gets into the vessel through an inferior collector, making a washing and a flogging of the resin bed and allowing, this way, the following regeneration process.



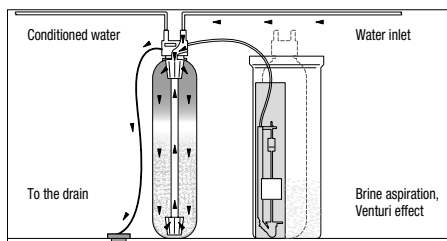
Brine aspiration:

Through an aspiration process for venturi effect the system suctions the brine liquid solution previously prepared for the regenerating tank. This salt solution is introduced into the softening vessel getting in contact with the ionic exchange resin and starting the regeneration.



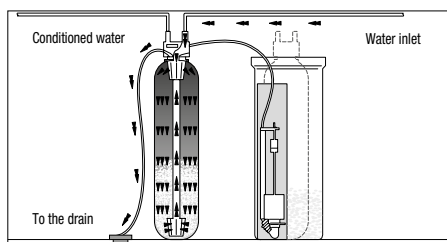
Slow rinse:

It refers to the movement in the resin bed of the salt solution previously aspirated, this way the contact of the salt with the resin is higher and the regeneration of the same is optimized.



FAST RINSE:

The water flows through the resin bed making a final wash of the same and ensuring the total removing of the salt that can be inside the vessel.



REFILLING THE BRINE TANK:

The volume of water goes automatically to the brine tank in order to prepare the necessary brine to be consumed in the next regeneration. This process is automatic, so normally it is not necessary to put more water in the brine tank (except during the starting up as shown in section 7).

NOTE: During the regeneration process the systems allows the passage of the non treated water in order to ensure the disponibility of the water to be consumed.

2.4 Regeneration rate and capacity.

The exchange capacity is the quantity of hardness that a certain resin volume can retain before getting exhausted. This value is usually expressed as °HFxm3.

The higher the resin volume of the system is, the higher will be the quantity of hardness that can be retained before the resin gets exhausted.

Depending on the quantity of sodium chloride used to regenerate each liter of resin the capacity of exchange can differ.

2.5 Work Volume

Water softeners using ion exchange must respect certain contact periods between water to be treated and resin, in order to ensure that the softening process is carried out properly.

For the RIDER equipment, please respect the minimum and maximum flow rates indicated in the Technical Characteristics section.

If the working ranges are outside the recommended ranges, the proper operation of the system will be affected (excessive loss of charge, hardness leakage, etc.)

2.6 Hardness leak

The ion exchange process on which water softening is based may be affected by different factors, which can reduce its efficiency and cause a certain level of hardness leakage.

High sodium concentration on water to be treated.

It may interfere in the exchange process.

Excessive flow rates

Since there is not enough contact time, some of the hardness may not be retained by the resin.

2.7 Residual hardness

Depending on the final use of treated water, it may be necessary to obtain fully softened water or, on the contrary, it may be desirable to leave some residual hardness.

These systems have been designed to supply fully softened water, but the by-pass integrates a residual hardness mixer, which allows the regulation of the desired hardness degree in treated water (see 'Section 7').

NOTE: For human consumption water, it is recommended to have a residual hardness between 5 and 8 °HF if pipes are made of copper, and between 8 and 10 °HF if they are made of iron (for the latter, it is also recommended to install a silicopol-phosphates filter afterwards).

2.8 Sodium increase

Most of the sodium we consume on a daily basis comes from food, specially processed food, since salt is an excellent preservative and is used as an additive in prepared products.

Sodium consumption through the water we drink is rather low when compared with that obtained from food.

WARNING: As mentioned above, water softeners reduce the Calcium and Magnesium concentration in water by replacing it for Sodium. Thus, they increase the sodium level in water.

The maximum recommended sodium level in water for human consumption is of 200 ppm. Depending on the sodium concentration and the hardness of water to be treated, it is possible that softened water contains a higher concentration of sodium than that recommended.

Should this be the case, or if water is to be consumed by persons who must follow a low-sodium diet, it is recommended to install a household reverse osmosis system to drink the water.

The table below can be used as a guideline to know the increase on sodium concentration in treated water depending on feed water hardness:

Initial hardness in water (°HF)	Sodium added by the water softener (mgNa/litre)
10	43
15	65
25	108
30	130
35	152
40	173
45	195
50	217
60	260

3. TECHNICAL SPECIFICATIONS

Model	RIDER
Code	795238
Resin volume	25 litres
Vessel	9x35
Working flow	1,0m³/h
Maximum flow	1,5m³/h
Maximum hardness	120°HF
High efficiency configuration	
Salt/regeneration	1,5 Kg Sal
Exchange capacity	96°HFxm³
Medium capacity configuration	
Salt/regeneration	3,0 Kg Sal
Exchange capacity	141°HFxm³
High capacity configuration	
Salt/regeneration	6,25 Kg Sal
Exchange capacity	175°HFxm³
Caudal mínimo	0,1 m³/h
Rango de temperaturas	4-35°C
Rango de presiones	2,5-8 bar

Pressure rating	8 bar
Electrical connection	220V/50Hz-24VAC
Rated electrical power	4W
Protection class	TIPO III

Dimensions	
Height A	1100 mm
Width B	360 mm
Depth C	530 mm



3.1. Volume of treated water according to inlet hardness

System	RIDER
HIGH efficiency:	96°HFxm³
Feed hardness	
15	6,40
25	3,84
30	3,20
35	2,74
45	2,13
55	1,75
MEDIUM capacity:	141°HFxm³
Feed hardness	
15	9,40
25	5,64
30	4,70
35	4,03
45	3,13
55	2,56
HIGH capacity:	175°HFxm³
Feed hardness	
15	11,67
25	7,00
30	5,83
35	5,00
45	3,89
55	3,18

DISTRIBUTED BY:

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4. UNPACKAGING AND CONTENTS VERIFICATION

It is important that before installing and starting the system you check the box and conditions of the material received in order to ensure that the system has not been damaged during the transport

Any claim for damages during the transport must be detailed together with the delivery note or invoice to the distributor, mentioning the name of the carrier within a maximum period of 24 hours after the goods reception.

The RIDER softeners are provided completely ensambled and have the following parts:

- Volumetric RIDER valve 850 : Automatic and made of Noryl. With isolating by-pass and mixing screw of residual hardness.
- Vessel containing the resins, made in PRFV.
- Resin for the ionic exchange, cationic type, special for softening, provided inside the vessel.
- RIDER cabinet, made of plastic, with salt capacity for multiple regenerations.
- Brine system aspiration protected with plastic funnel.
- Packaging and protection, including a presurized air balloon to avoid the vessel movements.
- Please read carefully this manual before starting installation.

! The air balloon has to be removed before proceeding the system installation.

The packaging material can be recycled and must be thrown away in the suitable recycling bins or to be delivered to 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 reused. This product must not be thrown away into the usual urban rubbish bins. When you want to throw the machine away, it must be taken to a specific local centre for the collection of materials, stating that it contains ion exchange resin.

In order to obtain more information about how to dispose of your equipment, contact the management of urban waste service or the establishment where you acquired the system.

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 RIDER series water treatment systems ARE NOT WATER PURIFIERS. Its aim is to remove the hardness from water, leaving a softened and treated water which will prevent all problems associated with hard 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 aim of ensuring its proper purification by applying the techniques and systems appropriate to each case, PRIOR TO THE INSTALLATION of the system.

5.1 Requirements for the proper working of the system

- Do not use hot water in the system ($T > 35^{\circ}\text{C}$).
- The ambient temperature must be between 4°C and 45°C .
- The system should be installed in a dry environment, free of acid vapours. Otherwise, please ensure a proper ventilation.
- Water to be treated must be properly filtered, therefore, it is recommended to install a pre-filter to guarantee the removal of suspended particles, which may be swept along by inlet water.

! Failure to install an appropriate filter would result in particles obstructing the inner holes or injectors of the system, thus affecting its proper operation.

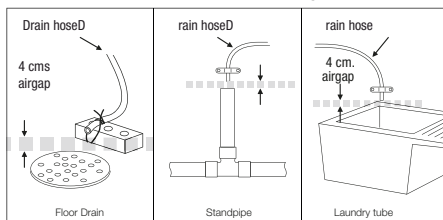
- A minimum pressure of 2.5 bars must be ensured. Should this minimum pressure not be available, a pressure system shall be installed.
- If inlet pressure is higher than 5.5 bars, a pressure regulator must be installed.

5.2 Installation

- If the water softener must treat all the water supply of your home, connect it to the general supply pipe before connecting the rest of the pipes, except for pipes supplying the outside. Taps located outside the house must supply hard water. Due to the sodium increase in softened water, it is not recommended to use it for watering, since it can negatively affect the growth of plants and vegetables.
- In the event of modifying the home/workplace in order to install the equipment in the planned location, it should be done following national guidelines for interior installations of water and electric supply.
- The installation location should have sufficient space for the machine itself, its accessories, connections and room for servicing and repair.

- The system should not be installed next to a heat source or where it receives a direct flow of hot air.

- The drain connection, where water from regeneration will be driven, must be underneath the installation if possible. Drain connection must always have a free outlet. The diameter of this connection must have a minimum size of 1". The maximum distance between the water softener and the drain intake cannot be higher than 6 m.



- Raising the drain intake above the water softener level is not recommended, since it can affect the brine suction and, thus, impair the regeneration process.

- In the event that this is deemed RIDER, it can be raised a maximum of 1.5 m, provided that the inlet pressure is higher than 4 bar.

- If the height is greater or there is not enough pressure, contact your distributor.

- Under no circumstances should the equipment be installed outdoors.

- The environment where the equipment is to be installed should adhere to any appropriate hygiene and sanitation conditions.

- Avoid any external dripping liquids from pipes, wastewater, etc. onto the equipment.

- Should softened water be supplied to a hot water or vapour generator, it will be necessary to install a dependable check valve between the water softener and the generator, in order to prevent hot water from returning to the system and damaging it.

- The existing pipelines must not have deposits of either iron or lime. Replace all pipelines containing a great amount of iron or lime deposits. In the event that pipelines are blocked with iron, install a separate iron filter unit before the water softener.

- It is recommended to install some valves for sample taking both for treated and untreated water, as close as possible to the water softener.

- If there are quick-closing valves, it is recommended to install a device to prevent water hammers.

- The softener works only on 12 volt- 50hz electrical power supplied by a direct plug-in transformer included. Please use the transformer and connect it to a floor of 220-240 V, 50Hz.

- At the same time you should be sure that the home installation is properly protected with a device like a switch or a fuse.

PRECAUTIONS:

1. Reading and review: Carefully read all procedures, guides and regulations before installing and using the RIDER water softening equipment.
2. Treatment of chemicals: Avoid the presence of flammable products or materials as a safety measure for preventing the risks of explosion and fire. Make sure to use the glue and the cleaning product for PVC in a well-ventilated area.
3. Eye protection: Wear safety goggles during the installation process to prevent any injury in your eyes, caused by the ejection of welding materials or metal and plastic chips.
4. Welding: Use adequate protective equipment to protect the exposed surfaces against the flame of the gun or an excessive temperature increase. Only use welding guns WITHOUT LEAD.
5. Grounding: When installing a plastic pipe between two metallic pipes, a grounding cable must be installed to prevent the interruption of grounding continuity.
6. Easy reach: Use a ladder for working at heights which are out of reach. If you must work at heights for a prolonged period of time, use adequate safety devices.

Note: We recommend that the installation is carried out by a qualified installer. Failure to install the equipment in accordance with this manual will render the warranty void.

- If daytime pressure is higher than 5.5 bars, night-time pressure may exceed the maximum. Please use a pressure-reducing valve if necessary (a pressure-reducing valve may reduce the flow).
- It is recommended to install a silicopolyphosphates filter in the system's outlet to protect the pipes from the corrosion of softened water.

Note: The warranty of the equipment does not cover any damages due to the freezing of the equipment. If you have questions about the RIDER water equipment or if you think that it is not working properly, contact your distributor.

5.3 Setting up and maintenance

- The system must be periodically sanitised. See 'Section 8' for further information.
- Maintenance should be carried out by qualified technicians who work under the appropriate hygienic conditions. (For further information contact the technical service of your distributor.)

6. SYSTEM INSTALLATION

RIDER installation process must be carried out by qualified technical people. Please follow the advises of section 5 and warnings of this manual.

! *Taking into account that the system that you are going to install will improve the quality of the water that it is going to be consumed and that this is considered a food, all tools used for the assembling and installation should be clean and in no case can be contaminated nor impregnated of grease, oils or oxides. The job should be carried out with the proper attitude and hygienic conditions considering all necessary precautions with everything related to the materials that are going to be in contact with the treated/to be consumed water (Please contact your distributor for more information).*

6.1 Tools and parts needed

Before starting the installation, please make sure you have all necessary tools. Read and follow the instructions included in "Section 6.2"

Screwdriver
Pliers
Tape measure
Flexible hose of ½".

If using soldered copper pipe

Tubbing cutter
Propane torch
Misc.copper pipe fittings
Lead-free solder and flux
Emery cloth
Sandpaper or steel wool

If using threaded pipe

Pipe cutter or hacksaw
Threading tool
Pipe joint compound
Misc.threaded pipe fittings

If using CPVC plastic

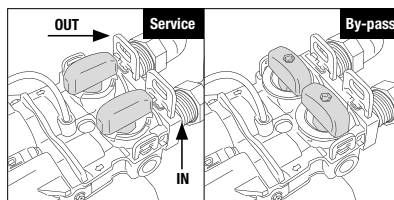
Pipe cutter
Hacksaw
Adjustable wrench
Glue for CPVC
Misc.CPVC pipe fittings

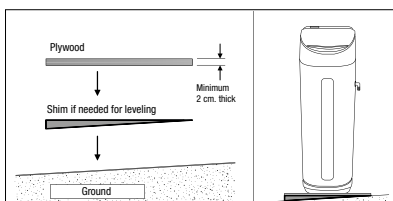
If using other

Other pipes and fittings suitable for potable water supply as required by manufacturer or local legislation.

6.2 Installation step by step

1. The system should be always installed with the by-pass valve supplied. If desired it can be installed a by-pass with 3 valves. The bypass of RIDER systems has two positions.





RECOMMENDED INSTALLATION

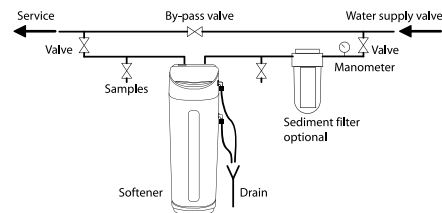
2. Close the main water supply valve, near the well pump or water meter.

3. Open all faucets to drain all water from the house pipes.

NOTE: Be sure not to drain water from the water heater because it can be damaged

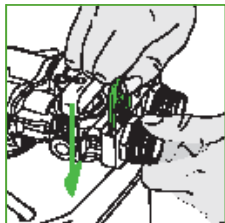
“DANGER” Excessive weight hazard. At least two people are required to move and lift salt bags. Failure to do so can result in back or other body parts injury.

4. Move the water softener into installation position. Set it on a level surface. If needed, place the water softener on a section of plywood, a minimum of 2 cm thick. Then, shim under the plywood to level the water softener. Please see picture below:



IMPORTANT: Do not place shims directly under the salt storage tank. The weight of the tank, when full of water and salt, may cause the tank to fracture at the shim.

5. You will be supplied with an in and out noryl set of connections male 1". Be sure that the clips snap firmly into place so the bypass will not pull out.



6. You should measure, cut, and loosely assemble pipe and fittings from the main water pipe to the inlet and outlet ports of the water softener valve. Be sure to keep fittings fully together, and pipes squared and straight. Check that hard water supply goes to the water softener valve inlet side.

NOTE: Inlet and outlet are marked on the valve. Trace the water flow direction to be sure.

IMPORTANTE: Be sure to fit, align and support all plumbing to prevent putting stress on the softener valve inlet and outlet. Undue stress from misaligned or unsupported plumbing may cause damage to the valve.

SOLDERED COPPER

1. Thoroughly clean and apply solder flux to all joints.
2. Make all solder connections.

NOTE: Do not solder with installation tubes attached to single valve bypass. Soldering heat will damage the valve.

IMPORTANT: When installing the copper tubes and ground clamp assembly to the single valve bypass, the ground clamp must be secured in place. If necessary tighten the screw.

THREADED PIPE

1. Apply pipe joint compound or Teflon tape to all male pipe threads.
2. Tighten all threaded joints and make all solder connections.

CPVC PLASTIC PIPE

1. Clean, prime and cement all joints, following the manufacturer's instructions.

NOTE: Do not solder with installation tubes attached to single valve bypass. Soldering heat will damage the valve.

OTHER

Follow the piping system manufacturer's instructions when using other pipe approved for potable water.

INSTALLING DRAIN HOSE

Measure, cut to needed length and connect the $\frac{1}{2}$ " drain line to the water softener valve drain fitting. Use a hose clamp to hold the hose in place.

NOTE: Run the green drain hose or copper tubing to the floor drain. Secure drain hose. This will prevent "whipping" during regenerations.

OVERFLOW INSTALLATION

Connect the storage tank overflow elbow installed in the system to a near floor drain point. This point should be no higher than the drain fitting on the salt storage tank. **NOTE:** Drain hose should be installed in a proper way just to avoid that the water overflows and returns from the drain hose.

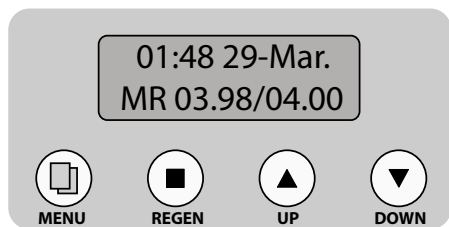
MAIN FEATURES

Digital display.

You can set up a maximum period of time without regenerations in order to avoid the water being blocked

You can chose between different types of regeneration: immediate, automatic, delayed or mixed

6.3 RIDER TIMER



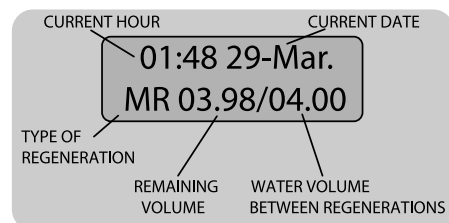
TIMER DESCRIPTION

RIDER softeners are equipped with an advanced electronic timer that can easily control the working of the system. This timer is equipped in the upper part of the cabinet.

RIDER timers supply a lot of information about the operation of the system. Moreover it allows to adjust all the internal parameters of the system.

Front part of the timer:

• **DISPLAY LCD:** It supplies information about the softener. Depending on the stage in which the system is the timer will supply different types of information:



Service: Information about softener working

Regeneration: Current stage is showed in the lcd display

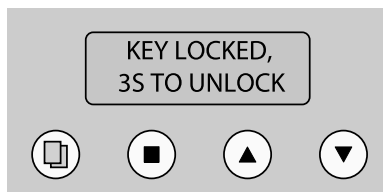
Programming: The display shows all the internal parameters and allows to modify them.

“MENU” KEY: Allows entering inside the internal programming and confirms the amended parameters in any stage of programming.

“UP” Y “DOWN” KEYS: Allow to navigate among the different parameters. In programming allow to modify the selected parameters.

“REGEN” KEY: It is used to start automatic regenerations.

PROGRAMMING BLOCKAGE: After some seconds without pressing any key the timer will be blocked automatically for safety. The following message will be showed:



To unlock the timer, please press “MENU” key for 3 seconds.

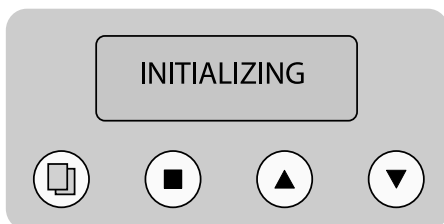
6.4 Start-up programming

RIDER softeners are configured to work with delayed regenerations (02.00 am).

Programming:

1. Connect the provided transformer to the electrical connector at the back of the system. The timer will show service position.

IMPORTANT: After connecting the system can show following message:



This message indicates that the system is placing itself in service position. If after two minutes this message is still in the display please contact your distributor.

2. Press “MENU” key for three seconds to enter into the internal programming. By pressing “UP” y “DOWN” keys the different parameters can be selected, and pressing **REGEN** key we can access to modify it (selected parameter flashes). With “UP” y “DOWN” keys we can modify the selected parameter and pressing **REGEN** key one final time the parameter will be confirmed. Parameters that you can modify are as follows:

HOOR OF DAY: Format 0:00-24:00.

LANGUAGE: Spanish or English

UNITS : Metric system or US units

TYPE OF REGENERATION: There are several as follows: Time initiated (--) Delayed regenerations according to selected frequency (Ex: Regenerates every 3 days at 02:00 am).

Meter immediate: (MI) Regenerations are stated as per treated volume of treated water. When remaining volume is 0 starts a regeneration.

Delayed regenerations: (MD) Regenerations are delayed according to volume. When the remaining volume is finished the system starts the regeneration the same day at the programmed hour.

Mixed regeneration (MR) Similar to delayed regeneration but it allows to program a maximum period of time between regenerations.

NOTE: Mixed regenerations are recommended. If you want to select another type of regeneration, please con-

$$\text{Volume(m3)} = \frac{\text{Exchange capacity (° HFxm3)}}{\text{Hardness (° HF)}}$$

tact your distributor.

SYSTEM CAPACITY: It is necessary to program the volume of the water that can be treated by the system. To calculate it please follow the indications as stated below:

Where:

EXCHANGE CAPACITY:

It is the amount of hardness that can be retained by the system. See the table below.

HARDNESS:

Hardness of inlet water in French degrees °HF.

VOLUME:

Amount of water that can be treated by the system.

THIS IS THE PARAMETER THAT SHOULD BE PROGRAMMED INTO THE SYSTEM.

RIDER

Capacity	Salt/regen.	Capacity
HIGH EFFICIENCY	1,5 Kg	96°HFxm ³
MEDIUM CAP.	3,0 Kg	141°HFxm ³
HIGH CAP.	6,25 Kg	175°HFxm ³

Example: A softener of 25 liters of resin with a hardness of 30°HF.

$$\text{Volume(m3)} = \frac{96 (^\circ \text{HFxm}^3)}{30 (^\circ \text{HF})} = 3,2 \text{ m}^3$$

3,2 m³ must be programmed inside capacity parameter.

In case of adjusting the residual hardness of treated water with a mixing screw the initial hardness should be compensated with the residual value.

Example:

Initial hardness:

30°HF

Residual hardness:

5°HF

Volume:

(m3) = 96 / (30-5) = 3,8m3

Capacity to be compensated/programmed: 3,8m3

CHECKING MENU:

By pressing “UP” y “DOWN” keys simultaneously when the system is working the display shows additional information of the softener.



REGENERATIONS:

To start a regeneration press SET/REGEN menu for 5 seconds. The display will then show the regeneration menu, where a manual or immediate regeneration may be chosen. Select it and press MENU button to start it.

REGENERATION STAGE:

Once the regeneration is started the current stage can be cancelled by pressing any key. However the stage can only be cancelled when the motor of the valve stops (the display will be flashing).

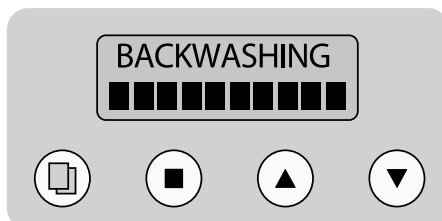
7. START UP

7.1 Hydraulic start-up

Prior to initiate the start-up of the system make sure that all previous steps regarding installation. Ensambling and programming have been correctly effected and according to the instructions of this manual and according to local regulations. To start up follow the following steps:

! Do not put salt inside the system till the end of the start-up process. In order to avoid air pressure upon the softener and the plumbing system, follow the instructions in order.

1. Put the bypass valve in “bypass” position.
2. Fully open two or more cold and treated water faucets located near the water softener.
3. Open completely two cold and treated water faucets located after the water softener. Have it opened for some minutes in order to ensure that all the trapped air is removed from the system. Check also that there are no leaks in the installation.
4. Plug the programmer to the power supply using the transformer included in the system.
5. The program must be in service, otherwise please check ‘Section 6.3’.
6. Press the ‘REGEN’ button for 3 seconds to start a regeneration. After some minutes, the system will move to the Backwash stage.



7. Slowly open the water inlet valve to allow the entrance of water inside the system. At this point, the inlet flow

must be rather low, since in this position water will come in from the bottom of the bottle and flow upwards to the drain.

8. When water starts flowing continuously through the drain, fully open the water inlet of the system. At this point, the bottle will be full of water and so a higher flow will not produce any damage. Water going out to the drain may be a bit yellowish or brown. This is completely normal, since it is due to the preservatives of the resin.

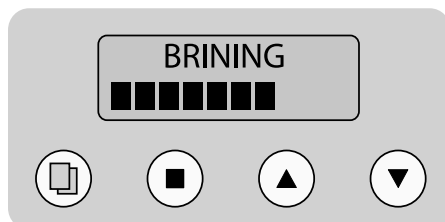
9. Please maintain this position (water flowing through the drain) until coloration disappears.

10. Close inlet valve for five minutes and all the air trapped with the resin will float to the upper part of the vessel.

11. Open inlet valve one more time for some minutes to ensure that all the air inside the vessel has been removed.

12. Cancel the current stage of the regeneration until refill stage. The brining tank will start refilling by itself. In this moment the system will end the regeneration started in **point 6**.

13. Start another regeneration. Wait until the system is placed in backwashing position nbr.6 and cancel this stage by pressing any key.



14. The softener will start to suction water from the tank (brining position). Check that the softener suctions water from the tank.

15. Cancel the remaining stages of the regeneration.

16. Put the by-pass in service position and check that the treated water has been correctly softened (see **Section 7.3**).

17. Fill the tank with salt.

18. The system is ready to work. Start-up process is finished.

! **"WARNING"** Excessive weight hazard at least two people are required to move and lift salt bags. Failure to do so can result in back or other body parts injury.

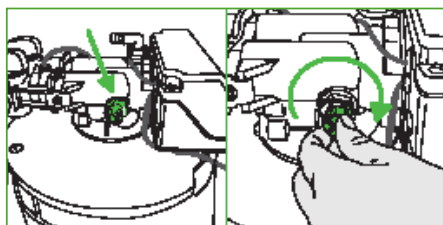
7.2 Regulation of residual hardness

As stated out in **section 2.7**, it is recommended not to supply completely softened water to household installations.

RIDER systems have a residual hardness regulator that allows to adjust the hardness quantity in the treated water.

This works making a small test of non treated water with a completely softened water.

In order to modify the residual hardness, lightly open the regulating valve, as indicated in the images below.



Now you can test the hardness of the outlet water and check that it is according to the desired values. If it is not like this adjust the regulator and check it again.

ATTENTION: The hardness regulator is supplied completely closed, so if you do not regulate it the softener will provide a totally softened water.

8. MAINTENANCE/SANITIZING

The RIDER softeners, being automatic, do not require a complex maintenance.

In order to ensure a correct working of the system it is enough to make the following checking from time to time as showed in the table below:

TESTING	PERIOD
Check the quantity of salt inside the tank:	Monthly
Check the feed hardness:	Monthly
Check the hardness of the treated water:	Monthly
Sanitizing:	Yearly
Incrustation level:	Yearly
Salt tank cleaning:	Yearly
Technical service revision:	Yearly

! *It is important not to make the sanitizing and the descaling treatment at the same time, because the chemical products can react in a dangerous way. You should alternate both processes as per indicated frequency.*

SALT FILLING

Please revise the level of the salt inside the tank.. It should be minimum: 1/3 of the tank. If the system runs out of salt before the refilling the softener will produce hard water. When finishing the checking please make sure that the cover is correctly closed.

NOTE: *In humid areas it is best to keep the salt storage level lower and refill the tank more often.*

RECOMMENDED SALT: *Coarse salt tablets or balls with less than 1% of impurities.*

NOT RECOMMENDED SALT: *Rock salt, with impurities, block, granulated, table, ice melting, or for kitchen use.*

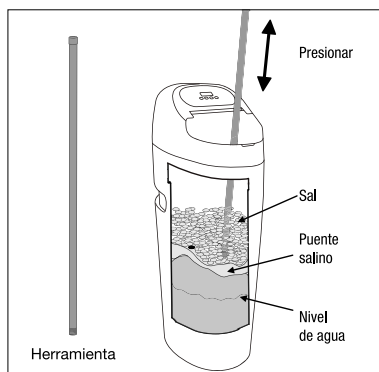
BREAKING A SALT BRIDGE

Sometimes, a hard crust or salt bridge is formed in the brine tank. It is usually caused by high humidity or the wrong kind of salt. When there is a salt bridge, and empty space forms between the water and the salt. Then the salt will not be dissolved in the water to make brine and without brine the resin bed does not regenerate and you will get hard water.

If the storage tank is full of salt, it is hard to tell if you have a salt bridge because salt is loose on top but the bridge is under it.

Take a tool or a broom handle, for instance, and hold it next to the water softener, measure the distance from the floor to the rim of the water softener. Then push the broom handle straight down into the salt. If you find a hard object, it is most likely a salt bridge. Carefully push into the bridge in several places to break it.

! **“WARNING”** *Do not use any sharp or pointed objects as you may puncture the brine tank*



SANITIZING:

Every year it is recommended to make an sanitizing process as follows:

1. Open the covers of the salt tanks and put inside about 20 a 30 ml (2 or 3 caps) of Bacwater (652100.) inside the funnel. Close again.

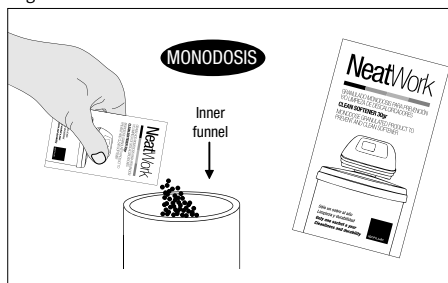


2. Make sure that the bypass valves are working.

3. The disinfection process will be done when the regeneration finishes and the disinfection solution has been extruded from the softener to the drain.

REMOVING INCRUSTATION:

Once a year it is recommended to make a cleaning with Clean Softener (611000), a product specially designed for the cleaning of your softening system. This product, because of its special formulation, will clean the resin eliminating all kind of iron and other remaining metals that represent a contamination and at the same time it will remove all possible incrustations in the inner passages of the valve.



NOTE: Follow carefully the instructions of the use of the product stated out on the label of the same.

The maintenance and sanitizing of the system should be carried out by a specialized technician qualified in hygienic conditions and following the specific indications of each product.

9. TROUBLESHOOTING GUIDE

PROBLEM	MAY CAUSE	SOLUTION
1. The timer doesn't work	1. The transformer is not connected. 2. Electric cable defective. 3. No power. 4. Defective transformer	1. Plug the transformer (power supply). 2. Replace the cable. 3. Revise the installation. 4. Replace the transformer.
2. The system regenerates at incorrect hours	Power cuts cut damage the timer programming.	Please use the manual to adjust the clock of the system.
3. Water leaks	Bad connections.	Revise/tight all connections.
4. Annoying noises / White water	Air inside the system.	Make a backwashing to eliminate the air
5. Excessive hardness of the water treated	1. Increase of hardness in inlet water. 2. Incorrect regeneration. 3. Damaged resin. 4. Lack of salt inside tank /salt bridge.	1. Check the hardness and revise timer. 2. Revise the timer. 3. Substitute the resin. 4. Fill the storage with salt /break the salt bridge
6. There is no brine aspiration	1. Not enough feed pressure. 2. Brine line blocked. 3. Blocked injectors. 4. Water inner leaks.	1. The minimum feed pressure should be of 2,5bar. 2. Clean the brine line. 3. Clean or replace the injector and the filter. 4. Revise piston, threads and separators.
7. The brine tank is overflowing	1. Incorrect timing 2. Incorrect aspiration. 3. Flow to high.	1. Please contact the distributor. 2. Revise aspiration. 3. Revise back flow.
8. The hardness of the water is not going away	1. Fail of regeneration. 2. Not enough brine. 3. Incorrect aspiration.	1. Check for loss of power and correct. 2. Keep the brine tank full of salt. 3. Revise aspiration.
9. Backwashing flow too high or too low.	1. Incorrect backwashing regulator. 2. Blocked backwashing regulator.	1. Put a proper regulator 2. Wash the backwashing regulator.
10. Non treated Water leakings during working	1. Incorrect regeneration. 2. Leaks in by-pass valve . 3. Tube o-ring damaged. 4. Incorrect regeneration cycle.	1. Make a regeneration checking that the salt amount is correct 2. Check the by-pass valve. 3. Replace the o-ring. 4. Reset the regeneration cycle
11. Resin escape from the system	1. Inner difusors damaged. 2. Damaged resin	1. Substitute damaged difusors 2. Substitute resin and revise installation
12. During working water is coming through the drain	1. O-ring and separators damaged. 2. Damaged piston. 3. Bad located piston.	1. Replace o-rings and separators. 2. Replace piston 3. Start the system again, repeat the process and if it does not work please contact your distributor.

NOTES

This image shows a full page of a handwriting practice worksheet. It consists of multiple rows of horizontal dashed lines spaced evenly down the page, providing a guide for letter height and placement. The background is plain white, and there are no margins or additional markings.

10. MAINTENANCE MANUAL

FECHA		TIPO DE SERVICIO		NOMBRE, FIRMA Y SELLO DEL TÉCNICO AUTORIZADO	
/	/	☐	PUESTA EN MARCHA		
/	/	☐	MANTENIMIENTO COMPLETO	TÉCNICO	☐ ORDINARIA
/	/	☐	REPARACIÓN	SELLO	☐ EXTRAORDINARIA
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11. EQUIPMENT INSTALLATION AND INITIAL OPERATION REGISTRATION SHEET: TECHNICIAN

! NOTES FOR TECHNICIAN: Read this manual carefully. Should you have any queries, queries please the Technical Assistance Service (TAS) of your distributor. The information marked with (*) must be fulfilled and copied by the technician from the GUARANTEE CERTIFICATE SHEET.

The technician/distributor must keep this sheet and provide it to Ionfilter if required to do so, in order to improve the after-sales service and the customer service.

The technician carrying the installation and start-up of the system must have the appropriate skills to do so.

S/N

INFORMATION CONCERNING THE USE OF THE SYSTEM:

Origin of water to be treated:

☐ Public water supply.

☐ Others:

*Pre-treatment of the system:

*Input hardness (°F):

*Treated water hardness:

*Residual hardness:

* Input pressure of the system (bar):

INSTALLATION PROCESS CONTROL:

- ☐ Assembly of pre-filter.
- ☐ Installation of isolation by-pass.
- ☐ Installation of overflow drain.
- ☐ Proper installation of drain.
- ☐ Start-up according to the protocol.
- ☐ Verification of brine suction/tank filling.
- ☐ Verification of connectors.
- ☐ Watertightness of pressurised system.
- ☐ Inlet hardness measuring.
- ☐ Programming of the system
- ☐ Outlet hardness measuring.
- ☐ Adjustment of residual hardness.

Ionfilter shall only be held responsible for the replacement of parts showing a lack of conformity. The repair of the system and the costs that may arise (labour, transport costs, travelling expenses, etc.) will be assumed by the distributor according to that agreed in the general conditions of sales and contracting, hence the distributor will not have the right to claim these costs to the manufacturer.

OBSERVATIONS

*Result of the installation and start-up:

☐ CORRECT (system is installed and works properly

Produced water is appropriate for the intended use)

☐ OTHER:

IDENTIFICATION OF THE AUTHORISED TECHNICIAN:

Company and/or installer, date and signature:

ACCEPTANCE OF THE SYSTEM'S OWNER:

I have been informed clearly about the use, manipulation and maintenance of the system, and I have been offered a maintenance contract as well as been informed on how to contact the Customer Service, in order to request information, report a breakdown or that the system is not working properly, request maintenance or the assistance of a technician.

Comments

*Ref. Maintenance contract:

☐ ACCEPTS the maintenance contract.

☐ DOES NOT ACCEPT the maintenance contract.

Model / Ref.:

Owner, Mr/Mrs/Ms:

Street:

Telephone No:

City:

County: Zip Code:

Date and signature:

12. GUARANTEE CERTIFICATE

SYSTEMS GUARANTEE:

The distributor guarantees the systems for two years against any manufacturing defect, in accordance with Law RD 1/2007, 16 november (Guarantees in Consumer Goods Sales). The guarantee covers the repair and substitution of defective parts by authorized personnel by the distributor or the official technical service (TAS), in the place of installation or in their workshops. Including the labour and shipping cost should they arise.

Puricom Europe will not cover the guarantee regarding 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 TAS. The substituted parts remain the property of Puricom Europe.

Puricom Europe will cover any kind of disconformity related to the origin or suitability of the product according to its nature and end use. Taking into account the specifications of the system it is compulsory to comply with the installation and working process in order to be able to use the guarantee. Otherwise this guarantee will not be valid. 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 setting up of the system having followed the indications provided by the manufacturer and legislation in force.

COMPANY and / or Authorised installer:

Company and/ or installer, date & signature

1 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 SETTING UP REGISTRATION SHEET OF THE SYSTEM**

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

*Previous treatment of the system:

*Feed hardness of the system (°F):

*Treated water hardness (°F):

*Residual hardness (°F):

*Pressure of the system feed (bar):

***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

☐ 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 problems resolution in this manual and then contact the distributor or company that sold you.

10. MAINTENANCE MANUAL

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