CERTIFIED
UNE 149101
EQUIPMENT

VD8 VD12 VD18

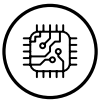
INSTRUCTION MANUAL

FOR SOFTENING EQUIPMENT

CONTENTS **P**

INSTRUCTION MANUAL
FOR SOFTENING EQUIPMENT

0. MAIN CHARACTERISTICS



ELECTRONIC PROGRAMMER
EFFICIENT AND INTELLIGENT
CONTROL

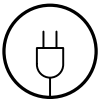
VOLUMETRIC

INTELLIGENT
REGENERATIONS

A MIXING
VALVE
ADJUSTS THE DEGREE
OF RESIDUAL HARDNESS

INTEGRATED BYPASS

ISOLATE EQUIPMENT FROM
MAINS WATER



ELECTRONIC
ADAPTER
MORE SAFETY
AND EFFICIENCY

EASY
SPECIAL SALT FILLING
FOR SOFTENERS

MULTILINGUAL
PROGRAMMER
SELECT
LANGUAGE

Please keep this manual, which includes the maintenance and warranty booklet sections, in order to provide you with better after-sales service.

1. PRESENTATION

The water treatment equipment you have acquired is a state-of-the-art water softener with one of the most advanced control valves on the market.

VD PLUS softeners quickly established themselves as an international reference in domestic softening systems, both for their quality and for their elegant design and their simple and intuitive use.
Anticipating market needs, VD PLUS water softeners are the latest evolution of the VD range.

A device that combines the virtues and advantages of the classic VD with a much more efficient consumption of water and salt.
Limescale or water hardness can cause problems in the pipes and affect the proper functioning of the equipment that uses this water, increasing its maintenance and reducing its lifespan.
This reality has prompted us to design this range of domestic softening equipment, specially designed to protect your domestic installations from the effects of limescale therein.

Your VD PLUS softening equipment will bring you and your loved ones the following benefits and advantages:

· Energy saving
· Greater feeling of well-being.
· Increases the useful life of appliances and boilers.
· Savings: Reduces the consumption of soaps and fabric softeners.
·Low maintenance cost. Automatic equipment control.

It is important that you carefully read and save the manual, before installing and commissioning the equipment. For operation or service of this equipment, contact your distributor's Technical Assistance Department (TAS).

1.1. SOFTENER SAFETY

This is the safety alert symbol:

This symbol warns you of possible circumstances that could endanger your integrity or that of third parties.

All safety messages will bear the alert symbol and either the word "**DANGER**" or "**CAUTION**".

• **DANGER:** Serious or fatal risk if the following instructions are not followed immediately.

•**CAUTION:** All safety messages will inform you of potential danger, how to reduce the risk of injury, and what can happen if you do not follow instructions.

1.2. BEFORE YOU START

See Section 5 before installing the softener. Follow the installation instructions. (Warranty will not be applicable in case of a faulty installation).

Before starting the installation, please read the entire manual. Next, gather all the materials and tools needed for installation.

Check plumbing fixtures and electrical connections.

All installations must be carried out in accordance with the regulations in force in each community or country.

Be careful when handling the softener. Do not knock it over, drop it, or place it on sharp objects.

Do not install it outdoors, always protect it from direct sunlight and adverse environmental conditions.

2. INTRODUCTION

As standard, the equipment incorporates a residual hardness regulation system that allows you to select the ideal hardness for your home.

Its simple electronic programmer allows the equipment to be commissioned quickly and easily.

2.1 WHAT IS HARDNESS?

Hardness refers to the amount of scaling salts present in the water, mainly formed by low solubility salts of calcium and magnesium. The salts that cause hardness are mainly:

Calcium Bicarbonate:	Ca(CO3H)2
Calcium Chloride:	CaCl2
Calcium Sulphate:	CaSO4
Magnesium Bicarbonate:	Mg(CO3H)2
Magnesium Chloride:	MgCl2
Magnesium Sulfate:	MgSO4

These salts, due to their chemical characteristics, tend to precipitate, become embedded in the pipes and clog them as they accumulate.

Similarly, hardness has a strong tendency to embed itself in the electrical resistors of radiators and to precipitate inside boilers, due to an increase in temperature.

The combination of hard minerals and soap prevents suds. This reduces the cleaning action of the soap.

Hard mineral precipitation forms a film on kitchen utensils, fixtures and plumbing parts. They even affect the taste of food.

Main issues

· Precipitation in pipes, fittings and equipment.

. Increased energy consumption due to the insulation caused.

· Greater consumption of soap.

. Reduced lifespan of household appliances and greater need for maintenance.

All these problems are solved by using a softening system.
In most of Europe, hardness is expressed in French degrees, but there are other units of measurement depending on the area in which we are.

The most frequent equivalences are indicated below:

UNITS	*ppm de CaCO³*	*º Français*
1ppm Calcium	2,5	0,25
1 ppm Magnesium	4,13	0,413
1 ppm di CaCO3	1	0,1
1º French (ºHF)	10	1
1º German (ºd)	17,8	1,78
1º English (ºe)	14,3	1,43
1 mmol/L	100	10
1 mval/L=meq/L	50	5

2.2 HOW YOUR EQUIPMENT WORKS

Water softening is done through an ion exchange process. For this, resins are used that have the chemical capacity to capture mainly Calcium (Ca) and Magnesium (Mg) ions, effectively removing them from the water.

At the same time that the Calcium and Magnesium ions are captured by the resin, two Sodium (Na) ions are released which, due to their chemical characteristics, form salts with much higher solubility, avoiding problems related to hardness.
Therefore, when we soften water, we increase its sodium level.
A more detailed explanation on this aspect can be found in section 2.8.
Ion exchange resins:
They are synthetic compounds, usually spherical in shape, which have the ability to capture certain chemical species present in water, exchanging them for others. In the case of descaling, strong cationic resins are used, consisting of copolymers of styrene and divinylbenzene with a sulphonated base.

The exchange resin load is located inside the column containing the water softener, occupying a large part of its total volume (between 60 and 75% depending on the model). It is essential that part of the column remains free to allow proper regeneration of the resin bed.
During the softening process, the water enters the multi-way valve through the inlet fitting, flows to the upper part of the resin tank through the upper distributor, passes through the resin bed downwardly, thus producing the ion exchange.

The treated water is collected by the lower distributor and led through the inner tube through the tank to the multi-flow valve. The treated water is sent through the outlet connection to the consumer. At this stage, the equipment incorporates a treated water meter to count it.

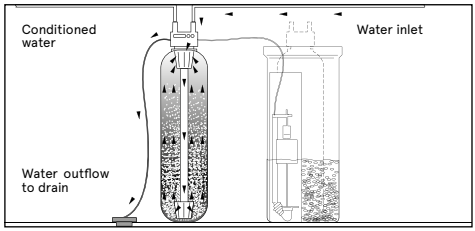
2.3 EQUIPMENT REGENERATION

The amount of calcium and magnesium ions that the resin can hold is limited, and therefore the volume of water that a softening unit can handle is also limited.

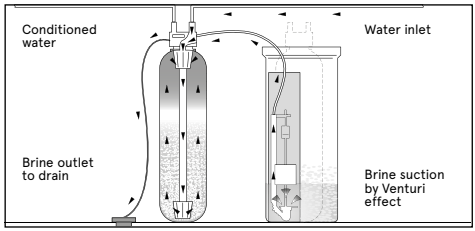
The equipment must carry out a so-called regeneration process with a certain frequency, which allows the resin to be recharged with sodium ions so that it can carry out the softening process again.
In these equipments, the regeneration process starts automatically when the programmed water volume reaches its end. The programmer allows you to configure the start of regeneration in several modes, see Section 6.3 for more information on how the programmer works.

The regeneration of a water softener consists of different stages, each of which is defined below.

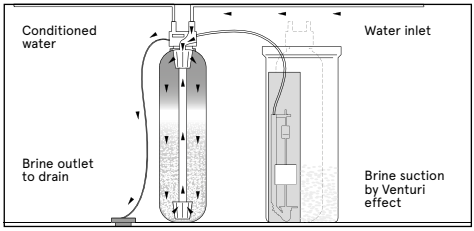
Backwash:
Water is introduced into the column through the lower manifold, flushing the suspended solids and swelling the resin bed, thus promoting the subsequent regeneration process.



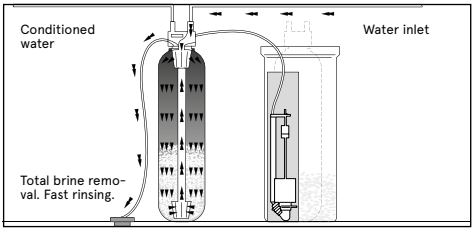
Brine suction:
Using a Venturi effect suction process, the equipment draws in the brine solution, previously prepared from the regenerating tank. This brine solution is introduced downward into the softening column, coming into contact with the ion exchange resin and proceeding to regenerate.



Slow rinse:
It consists of the displacement through the bed of resin of the previously aspirated brine solution. In this way, the contact of the brine with the resin is maximized, optimizing its regeneration.



Fast rinse:
Rinsing water is directed downwards through the resin bed, compacting it and ensuring the total elimination of brine, which could remain inside the column.



Filling the brine tank:
The volume of water required to prepare the brine consumed during the next regeneration is sent to the brine tank. This process is fully automatic, so there is no need to add water to the brine tank (except during the commissioning process, as discussed in Section 7J.

ATTENTION: during the regeneration process, the unit allows the passage of untreated water to ensure the availability of water for consumption.

2.4 DEGREE OF REGENERATION AND CAPACITY
Exchange capacity is defined as the amount of hardness that a given volume of resin can retain before being used up. This value is usually expressed as °HFxm `.
The greater the volume of resin incorporated, the greater hardness can be retained before the resin is exhausted. It is important to carefully select the equipment that best suits the specific needs of each installation.
Depending on the amount of sodium chloride used to regenerate each litre of resin, the exchange capacity of the resin can vary.

The VD PLUS equipment has three different degrees of regeneration depending on the conditions in which the equipment will operate, as shown below:

Dosage	Consumption	Salt Hardness	salt (gNaCl / lt res) max. (°HF)
High efficiency	60	40	Standard 120 70
Iron remover	250	120	

2.5 WORKFLOW

Ion exchange softening equipment must respect adequate contact times between the water to be treated and the resin to ensure the smooth running of the softening process. In VD PLUS units, the flow rates indicated in the technical characteristics (Section 3) must be respected.

If the working flow rates are outside the recommended ranges, this can affect the proper functioning of the system (excessive pressure drop, hardness leak).

2.6 LEAK HARDNESS

The ion exchange process on which water softening is based can be affected by different parameters, which can reduce its effectiveness, causing some amount of hardness leakage.

CAUTION
a high sodium concentration in the water to be treated can affect the exchange process.

EXCESSIVE RATES
Without sufficient contact time, some of the hardness may not be retained in the resin.

DEGREE OF REGENERATION
Higher regeneration levels reduce the risk of hardness leakage.

2.7 RESIDUAL HARDNESS

Depending on the application for which the treated water is to be used, it may need to be completely decalcified, or on the contrary, it may be preferable to have some residual hardness.

The equipment is designed to provide fully softened water. However, the control valve incorporates a residual hardness mixer which allows the desired degree of hardness in the treated water to be regulated (see Section II.

ATTENTION: for water intended for human consumption there is a residual hardness between 5 and 8°HF. If the pipes are made of copper then between 5 and 8°Hf. Should the pipes be of iron, it is also recommended to install a posterior silico-polyphosphate filter).

2.8 SODIUM INCREASE

Most of the sodium we consume daily is ingested through food in general and processed foods in particular, salt being an excellent preservative, it is used as an additive in prepared products.
The sodium intake from the water we drink is relatively low compared to that ingested through food.

NOTE: as indicated above
Softeners reduce the concentration of calcium and magnesium in the water, replacing it for sodium. Increasing therefore the level of sodium in the water.
The recommended limit for sodium in drinking water is 200 ppm. Depending on the sodium concentration and the hardness of the water to be treated, softened water may have sodium concentrations higher than those recommended.
In cases where this occurs or in the case of people who must follow a sodium-restricted diet, domestic reverse osmosis equipment should be installed for drinking water consumption.
The following table serves as a guideline on increasing sodium concentration in treated water as a function of inlet hardness:

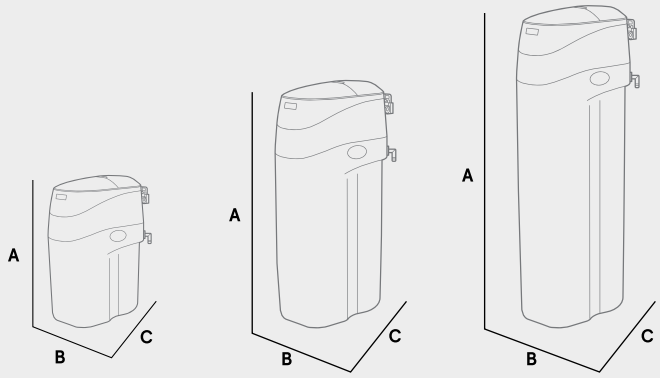
INITIAL WATER HARDNESS °HF	*SODIUM ADDED BY SOFTENER*
10	*43 mgNa/filter*
15	*65 mgNa/filter*
25	*108 mgNa/filter*
30	*130 mgNa/filter*
35	*152 mgNa/filter*
40	*173 mgNa/filter*
45	*195 mgNa/filter*
50	*217 mgNa/filter*
60	*260 mgNa/filter*

3. TECHNICAL CHARACTERISTICS

Model	
Code	
Resin volume	
Vessel **Workflow** **Maximum flow** **Maximum hardness**	
Low capacity configuration Salt/ Regeneration Exchange capacity	
Medium capacity configuration Salt/ Regeneration Exchange capacity	
High capacity configuration Salt/ Regeneration Exchange capacity	
Regeneration 250g/Lt Salt/ Regeneration Exchange capacity	
Min. flow: Temperature renge: Pressure range:	
Pressure rating: Electrical connection: Rated electrical power: Protection level:	
Dimensions High A Width B Depth C	

DISTRIBUTED :
WLG (B-60326279)
Aiguafreda, 8
Pol. Ind. L'Ametlla Park
08480, L'Ametlla del Vallès
Barcelona - Spain

VD8	VD12	VD18
960449	**960450**	**960451**
8 litre	12 litre	18 litre
8x15 0,3 m³/h 0,4 m³/h 40 °HF	8x24 0,5 m³/h 0,7 m³/h 60 °HF	8x35 0,8 m³/h 1,2 m³/h 90 °HF
0,4 kg 16 °HFxm³	0,7 kg 40 °HFxm³	1,1 kg 67 °HFxm³
0,6 kg 22 °HFxm³	1,0 kg 49 °HFxm³	2,2 kg 97 °HFxm³
0,8 kg 27 °HFxm³	1,4 kg 67 °HFxm³	4,5 kg 117 °HFxm³
	0,1 m³/h 4 - 35 °C 2,5 - 8 bar	
	220V / 50 Hz - 24VAC 4W TIPO III	
559 mm 244 mm 420 mm	787 mm 244 mm 420 mm	1068 mm 244 mm 420 mm



4. UNPACKING AND CONTENTS

It is important that before installing and starting up the equipment, you review the equipment received, to ensure that it has not been damaged during transport.

CAUTION: Claims for damage in transit must be submitted with the invoice to your distributor, including the name of the carrier, within a maximum period of 24 hours after receipt of the goods.

The units come fully assembled and consist of the following:

- VD PLUS 850 volumetric valve: Fully automatic integrated in Noryl. Equipped with an isolation bypass and residual hardness mixer.

-Column of containers for resins, built in polyethylene reinforced with fiberglass.

-Charge of special ion exchange resin of strong cationic type for softening, supplied inside the column.

- VD PLUS compact cabinet, in plastic material, with salt capacity for various regenerations.

- Brine suction system.

- Packaging and protections, including a pressurized air bag to prevent the tank from moving.

Before you begin to install the equipment, please read this manual carefully.

The air bag must be removed before proceeding with the installation of the equipment.

The materials used in the packaging are recyclable and must be disposed of in the appropriate selective collection containers or in the specific place for the recycling of the materials.

The device you have purchased has been designed and manufactured with high quality materials and components which can be recycled and reused. This product cannot be disposed of with ordinary municipal waste. When disposing of the device, it must be handed over to the specific local material recycling centre, indicating that it has circuits, electrical and electronic components, as well as the exchange resin.

For information on disposing of your electrical or electronic equipment after its useful life, contact a licensed waste handler or the establishment where you purchased the equipment.

The correct collection and treatment of unusable devices contributes to the conservation of natural resources and also to the avoidance of public health risks.

5.PRIOR WARNINGS

VD PLUS Series water treatment equipment DOES NOT make water potable. Its purpose is to remove hardness from the water, leaving treated, softened water that will prevent hard water problems.

If the water to be treated does not come from a public distribution network or is of an unknown origin, it will be necessary to carry out a physico-chemical and bacteriological analysis of the water, in order to ensure that its good for consumption by applying the techniques and equipment adapted to each need, BEFORE INSTALLING the unit.
Contact your dealer for advice on the most appropriate treatment for you.

5.1 CONDITIONS FOR PROPER OPERATION OF THE APPLIANCE

· The equipment must not be supplied with hot water (T <36°C).
· The ambient temperature must be between 4ºC and 45°C.
· The unit should be installed, ideally, in a dry environment free from acid vapours. Otherwise, good ventilation must be ensured.
· A minimum pressure of 2.5 bar must be ensured. If this minimum pressure is not available, a pumping system must be installed.
· If the inlet pressure is higher than 5.5 bar, a pressure regulator must be installed.
· The water to be treated must be suitably filtered, therefore the installation of a filter beforehand is recommended to guarantee the elimination of particles in suspension which have been dragged by the inlet water. It is recommended to use self-cleaning filters from the FILTERMAX series, which incorporate all the necessary components.

If a suitable filter is not fitted, these particles could clog the equipment's internal gauges or injectors, affecting the proper operation of the equipment.

5.2 EQUIPMENT INSTALLATION

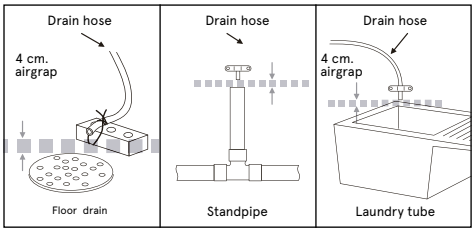
· To treat the entire domestic supply, connect the water softener to the general supply pipe, before connecting it to the rest of the plumbing, except for the outlets to the outside. Faucets located outside the house should provide hard water. Due to the increased sodium in softened water, its use for irrigation is not recommended, as it may adversely affect the development of plants and vegetables.

· If the installation has to be conditioned in order to be able to install the equipment in the intended place, it must be carried out in accordance with the national regulations in force regarding electrical and hydraulic installations.

· The place foreseen for its installation must have sufficient space for the device itself, its accessories, its connections and for carrying out appropriate maintenance.

· The equipment must not be installed next to a heat source or directly receive a stream of hot air on it.

· A drainage connection is necessary to carry away the regeneration water, if possible at the installation site. The drain connection must be with a free outlet. The diameter of this connection must be at least 1". The maximum distance between the water softener and the drain connection cannot exceed 6 metres.



· It is recommended not to raise the drain pipe above the level of the softener, as this may affect the brine suction, causing incorrect regenerations.

· If it is essential, it can be raised by a maximum of 1.5 m as long as the inlet pressure is greater than 4 bars.

· In case of higher heights and/or insufficient pressures, contact your dealer.

· Under no circumstances will the equipment be installed outdoors.

· The environment and the taps must meet adequate hygienic conditions.

· External drips on the equipment from pipes, drains... must be avoided.

· If the softened water supplies hot water or steam generator, it will be necessary to install an effective non-return valve between the softener and the generator, in order to avoid hot water returns which could damage the `equipment.

· It is recommended to install water sampling valves as close as possible to the softener.

· If there are quick-closing valves in the installation, it is recommended to install an anti-water hammer device.

· The softener only works with a current of 12 volts - 50 hertz, powered by the transformer included in the equipment. Be sure to use the transformer and connect it to a 220V outlet.
- 240V, 50Hz. Similarly, it must be ensured that the installation of the dwelling is duly protected by a circuit breaker or a fuse.

· If the daytime pressure exceeds 5.5 bar, the nighttime pressure may exceed the maximum. Use a pressure reducer if needed. (A pressure reducer can reduce the flow).

· It is recommended to install a silicopolyphosphate filter at the outlet of the equipment, in order to protect the installation from the corrosive tendency of softened water.

5.3 COMMISSIONING AND MAINTENANCE

· Equipment should be periodically disinfected. See Section 8 for more information.
· The maintenance of the equipment must be carried out by qualified technical personnel with an attitude and adequate hygienic conditions. (For more information, contact the technical department of your distributor).

6. INSTALLATION OF EQUIPMENT

The installation of the softening equipment must be carried out by qualified technical personnel. Follow the recommendations in section 5.

Since the device to be installed improves the quality of the water to be consumed and is considered an alimentation, all the tools to be used for assembly and installation must be clean and in no case can they be contaminated , not impregnated with fats, oils and oxides, etc. Increase the precautions in all that concerns the materials that will be in contact with the water to be treated or consumed. (For more information, contact your dealer).

6.1 TOOLS AND PARTS REQUIRED

Before beginning the installation, gather the necessary tools. Read and follow the instructions in section 6.2.

If you are using copper tubing:
Pipe cutter, blow torch, soldering roll, pliers.
Sandpaper or steel wool

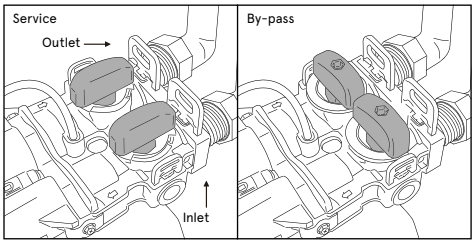
If you are using threaded pipes:
Steel pipe cutter and threading equipment
Pipe sealant and pipe clamps

If you are using plastic PVC :
hacksaw or pipe cutter
Adjustable Wrench PVC glue, pipe clamps.

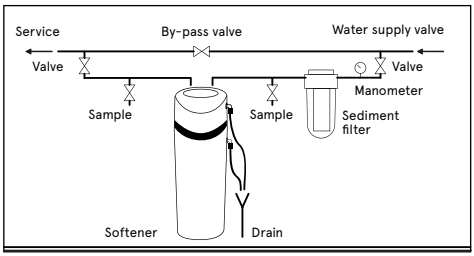
If you use other materials:
Other pipes and fittings suitable for drinking water supply, according to manufacturer's requirements and local regulations.

6.2 INSTALLATION STEP BY STEP

1. The system must always be installed with the by-pass valve supplied. Also, a three-valve bypass can be installed if possible.



RECOMMENDED INSTALLATION



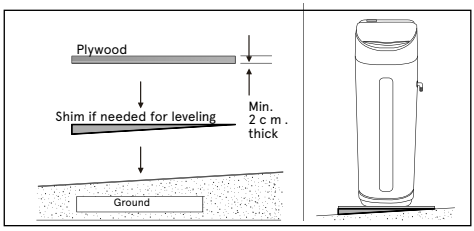
2. Close the general water supply valve, which is close to the main pump or the water meter.

3. Open all the taps to empty all the pipes in the dwelling.

NOTE: Do not empty the boiler, in order not to damage it.

"DANGER" There is a risk of injury when handling excess weight. It takes a minimum of 2 people and install the system and also it takes 2 people to lift bags of salt. There is a risk of back injuries and other bodily harm.

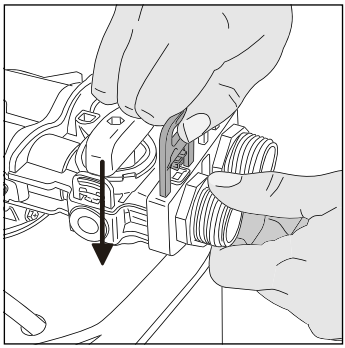
4. Move the softener until it reaches the installation position. Place it on a flat surface. If necessary install it on a wooden block with a minimum thickness of 2 cm. After, having leveled it with a wedge.



"CAUTION" Do not place the wedges directly under the salt reservoir. The weight of the tank loaded with water and salt can cause the tank to break against the wedge.

5. Visually check and clean residue from softener inlet and outlet connections.

6. The system is supplied with an assortment of input and output connections. Make sure the fitting clips are secure.



7. Measure, cut and loosely assemble the pipe and fittings from the mains water supply pipe to the softener valve inlet and outlet.
Keep all fasteners together, and pipes supported and straight. Check that water is flowing from the pipe to the softener inlet.

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

"CAUTION" Check that the pipes are well fixed and aligned, and have sufficient support to avoid pressure on the inlet and the outlet of the softener. Undue pressure on a loose, misaligned, or unsupported pipe can damage the valve.

Soldering copper

1. Thoroughly clean and apply solder paste to all joints.

2. Finish all welds.

NOTE: Do not weld the pipes that are close to the bypass valve during the installation, because the Heat can damage the valve.

THREADED PIPE

1. Apply pipe joint compound or Teflon tape to the male thread pipes.

2. Tighten all threaded connections securely.

PVC PLASTIC PIPE

1. Clean, prepare and bond all seams following the manufacturer's instructions.

OTHER :

Follow the plumbing manufacturer's instructions when using any other type of plumbing approved for potable water.

Installation of the drain connection:

Measure, cut to length and connect the ½" line drain hose to the water softener drain connection fitting. Secure the tube with a clamp.

NOTE: Connect the drain pipe. Fix to the drain pipe. This will prevent movement during regenerations.

Installing the overflow

Connect the system overflow elbow fitting to the nearest drain. This drain intake must be at a height lower than that of the overflow.

NOTE: Install the overflow pipe so that water cannot return from the drain pipe.

6.3 SMART SOFT PROGRAMMER

Description of the programmer

The systems have an easy-to-operate electronic programmer, which allows complete control of the system.

This programmer is installed at the top of the compact cabinet. The VD series programmers provide information on the functioning of the system and allow to configure all the functioning parameters.

MOST IMPORTANT FUNCTIONS

· Easy operation and intuitive programming.
· Digital screen.
· Water hardness programming
· It is possible to establish a maximum period of time without doing a regeneration, so that the water does not remain stopped in the system.
· Allows you to select between timed, delayed, instantaneous or mixed regenerations.
Advanced functions such as rapid regeneration in the event of resin saturation, automatic reserve calculation, etc.

Display LCD

Displays system status information. Each step of the system displays different messages:

· Service: Important information on the operation of the system. The information displayed will alternate between that indicated in point 6.5.

· Regeneration: Indicates what regeneration stage the system is in and the time remaining for the current stage. The current screen can be skipped by pressing any key.
· Programming: Displays the internal operating parameters and allows them to be modified.

SET

· "SET/MENU" BUTTON: Allows access to internal programming (by pressing for 5 seconds) and exiting internal programming.
· "UP" AND "DOWN" BUTTONS: These are used to navigate between the different parameters displayed. In programming, they are used to modify the selected parameters.
· "REGEN" KEY: This is used to start a regeneration (either immediate or delayed). During interior programming, it allows you to choose parameters to modify and to confirm their value when they are modified.

If no key is pressed for a while, the timer is automatically blocked for safety reasons. The following message is displayed when any key is pressed.

PRESS THE MENU
3 SEC.

To unlock the programmer, press the "MENU" button for 3 seconds.

6.4. PROGRAMMAZIONE ATTREZZATURE

The systems are already configured from the factory with the following configurations:
Regenerations delayed at 02:00 hours.
Security regeneration every 7 days.
Rapid regeneration in case of resin exhaustion during the day.

Smart cleaning (5 minutes) of the resin, in case we have 5 days without water consumption.
System configured with low salt consumption.

USER PROGRAMMING:

1. Connect the supplied transformer to the electrical connection located at the rear of the system. If the timer is locked, press the "SET/MENU" button for 3 seconds to unlock it.

2. When the system is unlocked, press the "SET/MENU" button for 3 seconds to enter the interior programming.

3. With the "UP" and "DOWN" keys you can modify the displayed parameter and with the "SET/MENU" key you can jump to the next parameter. In user programming these are the parameters to modify:

USER PROGRAMMING
Touch "SET/MENU" for 5 seconds
Next: "SET/MENU"

Setting	*Format*
Time of day	*0-24h*
Year	*2020*
Month	*Jan.-Dec.*
Day	*01-31*
Water hardness	*ºHF*
People at home	*1-9*
Amount of salt	*High performance*
Source of water	*Municipal or well*
Regeneration time	*02:00*
Default: Don't modify	*NO (don't change it)*

Recommendations for programming:

· Water hardness: It is always programmed a hardness value a little higher than the analyzed parameter, because some variations can occur during the seasons.

· People at home: Program only in home applications. For other applications, leave it at 1.

· Amount of salt: The systems are supplied programmed in high performance mode to reduce the salt consumption of the systems. This configuration allows working correctly up to hardness levels of 40ºHF. For higher hardness levels it is recommended to change the programmed salt quantity.

	AMOUNT OF SALT (gNaCl/lt res)	*MAXIMUM HARDNESS (ºHF)*
High performance	60	40 *
Standard	120	70 *
Iron remover	250	120 *

The maximum working hardness of a softener is affected by other parameters such as the composition of the water, the treatment flow, the application... The values shown in the previous table are estimates for domestic applications.

· Water source: If the water to be treated is obtained from a well, it will be necessary to carry out a study of its quality to confirm that additional treatments are not required.

· Default: Should NOT be changed. Any modification could affect the internal operating parameters.

Initiate a regeneration:

Delayed regeneration: In the service position, press the "REGEN" key once. The display will show the following screen:

Pressing the "REGEN" button will toggle between the "ON" / "OFF" option. By choosing the "ON" option the system will start a regeneration at the next regeneration time.

Immediate regeneration and holiday mode:

Press the "REGEN" key for 3 seconds until the display shows the following screen:

With the "UP" and "DOWN" keys you can choose between the following options. Press the "REGEN" key to confirm the chosen option:
Immediate regeneration: The system will initiate a regeneration immediately.

Holiday mode: By choosing this option the system will ask for a number of days to be programmed. You must indicate the number of days that the system should remain in holiday mode.

During this period the system will do small flushes of the resin without salt consumption. At the end of the programmed period the system will automatically go into service position.

Cancel a regeneration:

When the system is regenerating, the current stage can be canceled by pressing any key. The system will advance to the next stage of regeneration.

6.5. DISPLAY INFORMATION IN SERVICE POSITION

The different data shown below will alternate on the display when the system is in the service position.

Date (yyyy/mm/dd) and current time:

2019/02/06
12:30

Treated water from the start-up of the equipment:

TOTAL WATER
25000 L

Volume (in litres) of water between washes and volume remaining until regeneration:

TOTAL 6892 L
REST. 6888 L

Water supplied untreated. This value should be 0 or as low as possible:

OVER RUN TOTAL
0 L

Inhabitants in the dwelling and calculated water reserve:

PEOPLE 4
RESERVE 300 L

Current flow rate and maximum flow rate in LPM:

CURRENT 0.01/M
PEAK 99.91/M

Estimated number of days until next regeneration:

NEXT REGEN.
10 DAYS

Maximum number of days between regenerations:

REGEN. MIXED
10 DAYS

Date (yyyy/mm/dd) of last regeneration:

LAST REGEN.
2019/01/25

Every few regenerations the quick resin wash (OFF) must be performed:

RS TEMPORARY
OFF

Number of regenerations carried out since the start-up of the equipment:

TOTAL REGENS
20

Programmed nocturnal regeneration:

DELAYED REGEN.
OFF

Time for regeneration:

REGEN. TIME
02:00

Filling time (in minutes) of the tank:

FILLING
14.2 MINUTS

Type of system. Must be in "current" mode:

VALVE MODE
CURRENT

7. COMMISSIONING

7.1. HYDRAULIC COMMISSIONING

Before putting the system into service, check that all the procedures prior to installation, assembly and programming have been carried out correctly and have been followed.¬following this instruction manual and the standards in force. For commissioning, follow the procedure below:

Do not fill the system with salt until the end of commissioning. To prevent air pressure on the softener and plumbing system, follow the procedure below.

1. Place the bypass valve in the "bypass" position.

2. Fully open two treated cold water faucets, close to the softener. Check that there are no water leaks in the installation, and after a few minutes, close the taps. In this way we will also remove all the air caught up in the installation.

3. Connect the programmer to the power supply using the transformer provided.

4. The controller must be in the service position, otherwise review "Section 6.3".

5. Start a regeneration as indicated on the instructions. After a few seconds, the system will enter the Backwash stage.

CONTRALAVADO

6. Open the water inlet valve very slowly, allowing water to enter the system. The inlet flow at this point must be relatively low, because at this position the water enters the lower part of the column and flows upwards to the drain.

7. As the flow to the drain increases, the water inlet to the system can be fully opened. At this point, the column will be completely full of water and high flow cannot damage it. Water running to the drain may be slightly yellow or brown. This is completely normal, as these are the preservatives in the resin.

8. Let the water run to the drain until the water no longer has any colour.

9. Shut off the water supply to the system for five minutes. In this way, the resin will remain on the bottom of the column, and the air that there may be will rise towards the top.

10. Open the inlet valve to the system and wait a few minutes to ensure that all air is removed.

11. Cancel the current regeneration step and advance to the tank fill step. At this point, the brine tank begins to fill with water automatically. Let this step finish. At the end of this step, the system will end the regeneration started at "point 6".

12. Start another regeneration following the one indicated in point 6 and wait until the system reaches the Backwash stage. Press any key to go to the Brine Draw step.

SALMUERA

13. The system should draw water from the brine tank. Allow this suction process for a few minutes to confirm that it is correct.

14. Cancel the remaining regeneration steps.

15. Place the by-pass in the service position and check that the treated water is properly softened.

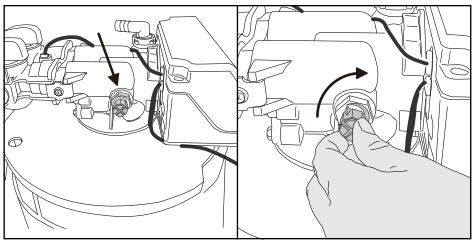
16. Fill the brine tank with salt.
17. The system is ready to operate.

"CAUTION" There is a risk of injury when handling excess weight. A minimum of 2 people must move and empty the salt bags. There is a risk of injury to the back and other bodily harm.

7.2 ADJUSTMENT OF RESIDUAL HARDNESS

As stated in "Section 2.7", the supply of fully softened water to domestic installations is not recommended.

To modify the residual hardness, open the regulating valve gently, as shown in the images below.



Measure the hardness of the water leaving the system and check that it corresponds to the desired values. If not, adjust the regulator and recheck.

"CAUTION" The hardness regulator is supplied fully closed, so if the system is left unadjusted, it will supply fully softened water.

8. MAINTENANCE / DISINFECTION

To ensure correct operation of the system, only the following checks should be carried out within the indicated frequency:

VERIFICATION	*PERIOD*
Check the salt level in the tank:	*Monthly*
Check input hardness:	*Monthly*
Check the hardness of the treated water:	*Monthly*
Disinfection:	*Annual*
Descaling:	*Annual*
Cleaning the salt tank:	*Annual*
Technical service review:	*Annual*

"CAUTION" It is important not to disinfect and descale the system at the same time, because the chemicals used can react violently. Perform disinfection and descaling alternately, according to the frequency indicated.

SALT FILLING:

Regularly check the salt level in the tank. Maintain a minimum salt level equal to one third of the tank. If the salt runs out before refilling, the system will supply hard water. After servicing, check that the salt cover is properly closed.

NOTE :For humid areas, it is advisable to maintain a lower salt level than usual, and refill it more often.

RECOMMENDED SALT: Coarse salt in pellets with a degree of impurities lower than 1%.
SALTS NOT RECOMMENDED: Salt in stone, with impurities, in block, granulated, in tablets or for cooking.

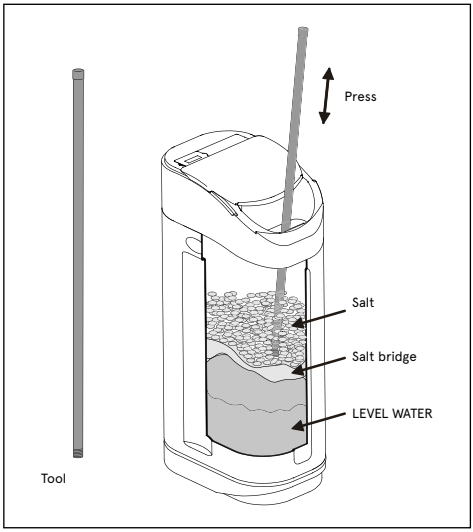
BREAK A SALT BRIDGE:

In alcuni casi si può formare un ponte salino nel depoUnder certain conditions, a salt bridge can form in the salt tank. This is normally due to a high degree of humidity or the use of the wrong salt. When forming a salt bridge, there is an empty space between the water and the salt, which prevents its dissolution, and therefore, the softener does not regenerate correctly and provides hard water.

If the tank is full of salt, it is difficult to tell if there is a salt bridge, as the surface salt may appear loose, but be compacted underneath.
To check for the existence of a salt bridge, take a long, rigid tool (for example, a broom handle) and place it next to the softener to measure the distance between the ground and the salt surface. . Then introduce the tool into the salt.

If you find a hard object, it's probably a salt bridge.

Carefully press the crust in several places to break it up.



"CAUTION" Do not use sharp or pointed objects, as this could damage the body of the tank.

Disinfection:

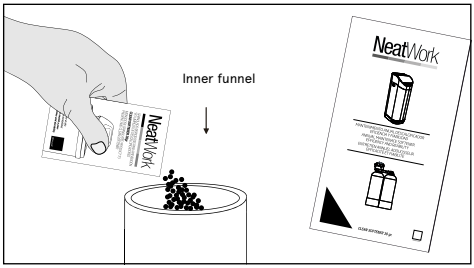
Once a year, it is recommended to disinfect the device according to the procedure below:

1. Open the lid of the salt reservoir and pour between 20 or 30 ml (2 or 3 capfuls) of BacWater (652100) to the brine chimney. Close again.
2. Check that the bypass valves are in service.
3. The sanitizing process will end when the regeneration is complete and the sanitizing solution is flushed from the softener by draining it to the drain.

Descaling:

Once a year, it is advisable to clean the appliance with Clean Softener (611000). It is a product that has been specially designed for cleaning and descaling the softener system.
The special formulation of this product cleans the resin, eliminating the remains of iron and other metals, which

can pollute it, and also the possible descaling that may exist in the internal ducts of the valve.



NOTE: Carefully follow directions for use of this product on labels.

Extended team stop:

A full regeneration should be initiated if the water softener has been out of service for periods longer than 96 hours.
Whenever the water softener will be taken out of service for long periods (more than a month), it is recommended that a complete disinfection system be carried out before putting the equipment back into service (as indicated in this manual)

9. TROUBLESHOOTING GUIDE

PROBLEM	MAY CAUSE	SOLUTION
1. The timer doesn't work	1. The transformer is not connected. 2. Electric cable deffective. 3. No power. 4. Deffective 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 oveflowing	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.

10. WARRANTY

· The distributor guarantees the equipment for a period of three years for issues with conformity that is detected during this period, pursuant to RD 1/2007 of 16 November (Consolidated text of the General Law for the Defense of Consumers and Users). The warranty includes the reparation and substitution of defective pieces by authorised personal by the Distributor or the Official Technical Assistance Service (SAT), where it was installed or in a workshop. The warranty includes all labor and transportation costs that may arise.
· The distributor is excluded from this warranty if the parts are damaged due to natural wear and tear, lack of maintenance, blows or other lacks of conformity that are the result of the inappropropiate use of the equipment or inappropriate according to the conditions and operational limits indicated by the manufacturer of the product. Also, the warranty is no longer valid if the equipment has been poorly handled or used, or if they have been repaired or modified by personnel that does not work for the distributor or official.
· The distributor will respond for any non-compliance in the equipment if it relates to the origin, identity or suitability of the products, in accordance with their nature and purpose. Taking into account the characteristics of the equipment, if the warranty is to cover any lack of conformity, compliance with the technical installation and operation conditions of this warranty sheet is essential; as is a copy of the invoice or purchase ticket. If these conditions are not fulfilled, it may lead to the invalidation of the warranty, taking into account the equipment's purpose and the conditions and operating limits in which it must operate.
· The distributor guarantees that the equipment installed is suitable in particular for the improvement of the quality of the water to be treated, based on the characteristics of the equipment and all applicable laws.
· The installer and/or distributor guarantees the correct installation and implementation of the equipment as indicated by the manufacturer and applicable law and will also respond for any lack of conformity that may result from the incorrect application, instalment or implementation of the equipment.

The system has been installed and works correctly for the client:

* Previous treatment to the system:

* Inlet system hardness (ºF):

* Inlet water hardness (ºF):

* Residual harness(ºF):

* Inlet system pressure (bar):

***Results of Installation and start-up:**

Correct:

Other:

The owner of the equipment has been informed adequately and clearly of the use, manipulation and maintenance that the equipment requires to guarantee its correct operation and the quality of the water produced. For this, we offer you a maintenance contract.

***Maintenance contract reference:**

ACCEPTS the maintenance contract

DOES NOT ACCEPT the maintenance contract

If you need information, or if you need to communicate any damages, maintenance requests or request the intervention of a technician, first read the operational, detection and problem shooting sections of this manual and get in touch with the distributor or the company that sold your equipment.

COMPANY OR AUTHORIZED INSTALLER:

COMPANY OR AUTHORIZED INSTALLER, DATA, SIGNATURE:

NOTE FOR THE COMPANY AND/OR THE AUTHORISED TECHNICIAN/INSTALLER:The data marked with * must be filled by the installing technician and transcribed in the COMMISSIONING AND INSTALLATION REGISTRATION SHEET.

11. INSTALLATION REGISTRATION SHEET

NOTES FOR THE TECHNICIAN/INSTALLER: Read this Manual carefully. If you have any doubts, get in touch with the Technical Assistance Service (T.A.S) of your distributor. The data market with * must be filled by the installing technical and transcribed in the WARRANTY SHEET. This sheet must be preserved by the installer/distributor and may be required by the distributor for the purpose of improving after-sale and customer service. The technician that performs the installation and set-up of the equipment must be in possession of the appropriate skills.

DATA OVER THE APPLICATION OF THE SYSTEM:

Source of water to be treated:

- PUBLIC SUPPLY NETWORK
- OTHER

* Previous treatment to the system:

* Inlet system hardness (ºF):

* Inlet water hardness (ºF):

* Residual harness(ºF):

* Inlet system pressure (bar):

INSTALLATION CHECK-LIST:

Pre-filter installation:		Fittings installation:	
Isolation bypass installation:		Pressurized system tightening:	
Overflow system installation:		Inlet hardness measurement:	
Proper drain istallation:		System programming:	
Start-up according to protocol:		Outlet hardness measurement:	
Brine intaje / tank filling confirmation:		Residual hardness adjustment:	

COMENTARIOS

* Results of installation and set-up:

- CORRECT (system installed and working correctly. Water produced can be used).
- OTHER:

INDENTIFICATION OF THE AUTHORIZED TECHNICIAN:

COMPANY OR AUTHORIZED INSTALLER, DATA, SIGNATURE:

CONFIRMATION:

I have been clearly informed of the use, manipulation and maintenance that the installed equipment requires and I have been offered a maintenance contract and informed of how to contact Customer Service if I need information, if I need to notify any damages or malfunctioning, request a maintenance service or request the intervention of a technician.

Comments:

***Maintenance contract reference:**

- ACCEPTS the maintenance contract
- DOES NOT ACCEPT the maintenance contract

Model/Ref.:

Owner:

Adress:

Phone:

Location:

City: ZIP:

SYSTEM WARRANTY FOR THE DISTRIBUTOR:

Will bear the responsability only and exclusively the substitution of the parts in case of non-conformity. The reparation of the equipment and the expenses that this will entail (labor, transportation costs, displacements, etc), will be the responsability of the distributor, in accordance with what is outlined in the general conditions of sale, which will not be transferable to the manufacturer.

12. MAINTENANCE SERVICE

DATE	SERVICE TYPE	NAME, SIGNATURE AND TECHNICIAN STAMP	
	◯ START-UP		
	◯ FULL MAINTENANCE ◯ PREPARATION ◯ HYGIENISATION ◯ OTHER	TECHNICIAN STAMP	ORDINARY EXTRAORDINARY WARRANTY
	◯ FULL MAINTENANCE ◯ PREPARATION ◯ HYGIENISATION ◯ OTHER	TECHNICIAN STAMP	ORDINARY EXTRAORDINARY WARRANTY
	◯ FULL MAINTENANCE ◯ PREPARATION ◯ HYGIENISATION ◯ OTHER	TECHNICIAN STAMP	ORDINARY EXTRAORDINARY WARRANTY
	◯ FULL MAINTENANCE ◯ PREPARATION ◯ HYGIENISATION ◯ OTHER	TECHNICIAN STAMP	ORDINARY EXTRAORDINARY WARRANTY
	◯ FULL MAINTENANCE ◯ PREPARATION ◯ HYGIENISATION ◯ OTHER	TECHNICIAN STAMP	ORDINARY EXTRAORDINARY WARRANTY

12. MAINTENANCE SERVICE

DATE	SERVICE TYPE	NAME, SIGNATURE AND TECHNICIAN STAMP	
	◯ START-UP		
	◯ FULL MAINTENANCE ◯ PREPARATION ◯ HYGIENISATION ◯ OTHER	TECHNICIAN STAMP	ORDINARY EXTRAORDINARY WARRANTY
	◯ FULL MAINTENANCE ◯ PREPARATION ◯ HYGIENISATION ◯ OTHER	TECHNICIAN STAMP	ORDINARY EXTRAORDINARY WARRANTY
	◯ FULL MAINTENANCE ◯ PREPARATION ◯ HYGIENISATION ◯ OTHER	TECHNICIAN STAMP	ORDINARY EXTRAORDINARY WARRANTY
	◯ FULL MAINTENANCE ◯ PREPARATION ◯ HYGIENISATION ◯ OTHER	TECHNICIAN STAMP	ORDINARY EXTRAORDINARY WARRANTY
	◯ FULL MAINTENANCE ◯ PREPARATION ◯ HYGIENISATION ◯ OTHER	TECHNICIAN STAMP	ORDINARY EXTRAORDINARY WARRANTY

13. NOTES

MU/ VD 8· VD 12 · VD 18