

User's Manual

Anti-limescale system

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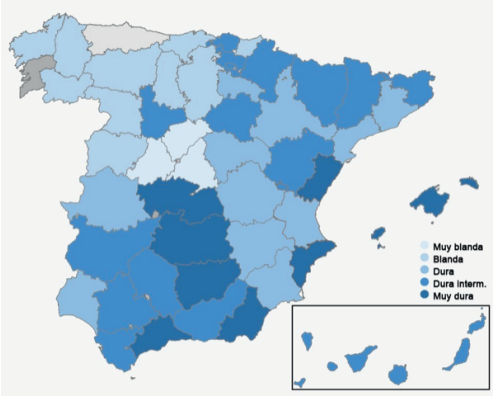
Anti-limescale system

1. HARDNESS IN SPAIN

Water hardness is the concentration of mineral compounds in a given quantity of water, in particular, magnesium and calcium salts are responsible for water hardness.

Hard water causes many problems for our health and wellbeing, especially for our skin, but it is also very harmful to our wallets. Many of the cities and towns in Spain have a serious problem with excess limescale in their water.

Rather, the problem is the lack of water quality: water of NO quality is the source of many problems in our health and in our domestic economy.



The drinking water that reaches our homes is distributed by the Municipal Water Service of each city or province; this water comes from aquifers, reservoirs, etc... so that in the dragging and filtration of rainwater to these places, the carbonate is released, producing an average concentration of calcium, according to the analyses that are carried out in each province or city, the qualification of the water can be determined.

TIPE OF WATER	ppm $CaCO_3$
Very soft	0 - 15
Soft	16 - 75
Medium	76 - 150
Hard	151 - 300
Very hard	>300

Table 1. Classification of waters according to their actual hardness value.

- **The use of more laundry detergent.** More should be added to obtain a good result. Hard water influences the behaviour of favours, because it has positively charged ions that inactivate surfactants, one of its main ingredients.

- **More soap and shampoo is spent on washing the body.** Moreover, the result is worse, because the same thing happens to them as happens to detergents when they come into contact with hard water. This makes it easier to lather. On the other hand, it can also make the skin and hair drier.

- **Dishwashers need more salt to clean the descaling systems**, which trap limescale and allow better washing. If this is not done, the crockery and cutlery will remain with a white deposit and in the long term it may darken. It can also cause problems for the appliance itself, and it precipitates at a certain temperature, for example 4 °C or 50 °C, and touches a heating element, sticks to it and turns into a stone that does not allow it to heat up.

- **Risk of clogging of pipes.** If limescale builds up it can clog the pipes that carry water, especially domestic hot water, and heaters may lose their service life.

2. EXISTING SYSTEMS TO REMOVE LIMESCALE

Limescale can be combated in various ways, but you have to know how, when and with what. Depending on the specific case you have in your home, the best thing to do is to assess the costs and choose the solution or solutions that best suit your application.

Softening technologies are divided into five categories depending on how they work:

- **Physical descalers (DESCALERS):** They are so called because they modify the physical conditions of hard (electronic) water.
- **Electrolytic softeners:**
  They dissolve substances in the water and prevent the formation of limescale deposits (electrolytes, polyphosphates, etc...).
- **Mechanical water softeners:**
  Better known as salt softeners, they replace calcium ions with sodium ions.
- **Softeners using filters:**
  The water passes through microfilters which capture calcium ions (activated carbon / osmosis).
- **Descalers by distillation:**
  Distillation consists of heating water to boiling point and then piping it to a tank where it condenses and returns to a liquid state.

If you are concerned about pipes, appliances and water hardness in relation to household cleaning, laundry and daily personal hygienic care, the most cost-effective and efficient option is the Prolime electronic descaler.

3. WHY PROLIME?

By choosing the Prolime descaler, you are choosing the best descaler on the market due to its simplicity, ease of installation and effectiveness.

4. TECHNICAL SPECIFICATIONS



MICROPROCESSOR

New generation microprocessors, Prolime, which will be able to distinguish between the different types of:

- Pipes: PVC, copper.
- Pipe sections: ½", ¾", 1".
- Water hardness: 75ppm, 180ppm.

DOUBLE COIL

The incorporation of the second electromagnetic field will allow Prolime to work directly in both cold and hot water, the latter being much more prone to the problem of limescale.

360º PROTECTION

Prolime, with its installation in the home's water supply, ensures comprehensive protection of all the elements that are in contact with water, from the entrance to the home, pipes, electrical appliances, taps, toilets...

LEVEL OF HARDNESS

Water hardness is measured in milligrams of calcium carbonate per litre of water. Prolime technology allows descaling at levels of less than 16mg/l, soft water, up to more than 180mg/l, very hard water.

LOW CONSUMPTION

To reduce power usage, the device features ARM processors, requiring fewer transistors and a reduced instruction set, generating very low-power electromagnetic fields. This design approach therefore leads to a reduction in cost, heat and power.

DURABILITY

The components used for Prolime, as well as its self-diagnostic software, ensure that we always have the certainty that our installations are being correctly descaled, as this equipment is designed to last over time under any conditions.

5. INSTALLATION OF THE EQUIPMENT

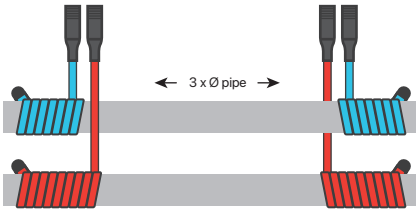
1. The cable is wound onto the pipe with a total of 12 turns.



2. The winding direction shall be the same on both sides.



3. The distance between the two windings shall be at least three times the pipe diameter.



4. Once we have finished with the previous steps we can now proceed to connect to the mains.



NOTICE: The equipment works correctly even with a single winding.

6. OPERATING MANUAL

This model is based on a 32-bit ARM processor and a 2.4" TFT LCD touch screen.

The equipment will generate pulses at its output with 3 different frequency ranges, which will depend on the operating mode determined by the user for its operation.

The equipment will display a menu on the LCD screen through which the user will be able to interact by means of the touch screen and choose the preferred mode of operation.

7. COMMISSIONING USER GUIDE

When the equipment is switched on it will display a welcome screen for a set time, then automatically switch to the screen for selecting the programming mode.



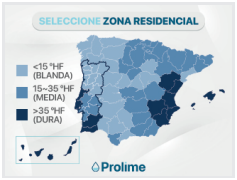


By default, the equipment will be switched on in manual mode. In the configuration mode selection screen, the user will be able to choose whether he/she wants the equipment to operate in Manual or Automatic mode.

AUTOMATIC MODE:

When the automatic mode has been chosen, the equipment will present two screens. One with the pipe selection and the other with a map of the region in which you reside.





Simply click on the location on the map where the installation will take place, and the equipment will auto-configure itself for the best performance in that area.

MANUAL MODE:

When manual mode has been chosen in the setup mode selection screen, the feature selection screens shall be displayed in the following order.

Starting with the Water Type screen, the user will be able to choose between the different types of water available in his residence.



We will have to select the hardness of the water in our area. To do this, click on one of the three options shown on the screen.

Once the type of water has been selected, the Pipe Type screen will be displayed, where you can choose according to the type of pipe you are going to work with.



Then click on one of the three options that appear on the screen:

COPPER TUBING - HOSE ASSEMBLIES - NON-METALLIC

After selecting the type of pipe, the screen for selecting the Pipe Diameter will be displayed, where you can choose between the different diameters available.



Click on the screen on one of the three options indicated and the programming of the Prolime system will be completed.

Once all the features within the manual mode have been selected, the screen indicating that the MANUAL Mode is ON and the system is ready to operate correctly will be presented.



8. ENVIRONMENTAL RECYCLING

When the equipment has reached the end of its useful life, do not dispose of it with household waste. It should be taken to a clean point for proper disposal in order to respect the environment.



Materials:

70 % of the materials used in the manufacture of Prolime equipment come from post-consumer recycled material.

Packaging of the device:

95% of the packaging of this Prolime device is made of wood fibre from responsibly managed forests or recycled material.

Low consumption:

To reduce power usage, the device features ARM processors, requiring fewer transistors and a reduced instruction set. This design approach therefore leads to a reduction in cost, heat and power.

Eased Use:

Prolime products are very easy to install, configure and use. Following our policy of integration in the digital home for less experienced or inexperienced people. Prolime equipment requires no patience or stress for installation, configuration and use.

Prolime Ecogrin:

It is the climate commitment that Prolime products meet what we understand to be sustainability standards and help preserve the environment. We are committed to creating a sustainable business model for our customers and the planet. And in this same line we work to make effective the measures of the Paris Agreement, for the reduction of greenhouse gas emissions through mitigation, adaptation and resilience of ecosystems to the effects of Global Warming.

CUSTOMER DETAILS:

Mr. / Mrs: _____
Address: _____
Zip code and town: _____
Contact telephone number: _____
Email address: _____

SELLER DETAILS:

Date of purchase: _____
Company name: _____
Address: _____
Zip code and town: _____
Telephone: _____
FAX: _____
Email address: _____

WARRANTY FOR THIS PIECE OF EQUIPMENT FOR THE END-CLIENT:

All our products benefit from a two-year warranty under the law from the date of purchase. If any repairs are required, this will have a 3-month warranty independent from the general warranty. To activate this warranty, the acquisition date of the product must be proven.

The company undertakes to guarantee any parts that may be faulty due to **manufacturing defect**, as long as they are sent for examination to **our facilities** by the client.

To validate the warranty, the defective part must be accompanied by this warranty notice, duly completed and stamped by the seller. The warranty will always be given in our warehouses.

In all cases, our responsibility is **limited to replacing or repairing the defective materials**, not paying compensation or any other costs.

No returns or material claims will be accepted more than 15 days after receipt. In the case of an agreement within this period, the material will be sent perfectly wrapped and **SENT WITH POSTAGE PAID TO OUR WAREHOUSES.**

THE WARRANTY DOES NOT COVER:

1. The substitution, reparation of parts or equipment caused by wear and tear, due to normal use of the equipment, such as resins, polyphosphates, sediment cartridges, etc... according to what is indicated in the equipment's instruction manual.
2. Imperfections caused by improper use of the equipment and those caused by transportation.
3. Adjustments, modifications or repairs carried out by third parties.
4. Faults or malfunctioning that is a consequence of poor installation, aside from the technical support, or if the installation instructions have not been followed correctly.
5. Improper use of the equipment or operating conditions that are not those indicated by the manufacturer.
6. Use of spare parts that are not genuine from the company.

"CE" DECLARATION OF CONFORMITY:

We hereby declare our sole responsibility that the water purification system for the filtration of water for human consumption complies with the rules or normative documents "**EN-12873-3, EN50081-1, EN50082-1, EN55022, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN61000-4-11**", and it complies with the essential requirements of directives:
DIR. N. 2004/108/CE, DIR. N. 2006/95/CE.

Authorized seller stamp

	Order number
	Product code
	Series number

WARNING: Read this manual thoroughly. If you have any doubts or questions, please contact the technical support service of your distributor. The information marked with (*) must be stamped by the installer and transcribed by them to the company.

	Order number
	Product code
	Series number

DATA PRIOR TO INSTALLATION OF THE EQUIPMENT:

Origin of water to be treated:

- ☐ Public water supply.
- ☐ Other: _____

Was there treatment before this equipment? _____
Hardness of water upon entering the equipment? _____ °F
Pressure on entry to the equipment: _____ Bar

CHECKLIST OF INSTALLATION STEPS:

- ☐ Minimum inlet pressure: 2 Bar.
- ☐ Winding filter installation.
- ☐ Water softener installation.
- ☐ Post-filter installation of polyphosphates.
- ☐ Resin purge.
- ☐ Verification of regeneration cycles.
- ☐ Bypass installation.
- ☐ Water hardness measurement at the outlet (must be between 3 and 6°F): _____
- ☐ Clearly inform of the use, manipulation and maintenance that the equipment requires to guarantee correct functioning and quality of water produced. Given the importance of correct maintenance of the equipment that has to guarantee the quality of the water produced, the owner should be offered a maintenance contract carried out by fully trained technicians.

WARRANTY FOR THIS PIECE OF EQUIPMENT FOR THE DISTRIBUTOR:

Osmofilter will be solely and exclusively responsible for replacement of parts in case of non-conformity. Reparation of the equipment and costs associated with this (labor costs, postage costs, movement, etc.) will not be borne by Osmofilter, as the manufacture and/or distributor warranties apply in their facilities.

COMMENTS:

*Result of the installation and beginning service:

- ☐ CORRECT (equipment installed and working correctly. Water produced is suitable for the purpose).
- ☐ Others: _____

AUTHORIZED INSTALLER:

AGREEMENT OF EQUIPMENT OWNER:

The client owner has been informed about maintenance of the equipment and informed about how to contact the technical assistance service.

Comments: _____

REASON	DATE	TECHNICIAN'S INFO
☐ Installation ☐ Maintenance ☐ Warranty ☐ Review ☐ Repair		Name: _____ Signature or seal:
☐ Installation ☐ Maintenance ☐ Warranty ☐ Review ☐ Repair		Name: _____ Signature or seal:
☐ Installation ☐ Maintenance ☐ Warranty ☐ Review ☐ Repair		Name: _____ Signature or seal:
☐ Installation ☐ Maintenance ☐ Warranty ☐ Review ☐ Repair		Name: _____ Signature or seal:
☐ Installation ☐ Maintenance ☐ Warranty ☐ Review ☐ Repair		Name: _____ Signature or seal:

OBSERVATIONS: _____

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