USTM | Technology works for you

EN **User's manual for water softeners with 85SE control valve (FUTURA, LOTUS)**

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1. Introduction

You have just purchased one of the finest water conditioners on the market.

At UST-M we understand that the quality of water treatment products is an investment in your family health and well-being. Realizing this fact we do not just sell products, we sell quality you can count on. That is why in our warranty you will find no fine prints, which are usually the most important for the Customers.

UST-M warranty is clear, straightforward and comprehensive.

2. General description

Water softeners with automatic controller are dedicated to improve water quality, especially to lower its hardness. Water considered „hard" contains large amount of minerals (calcium and magnesium compounds). They can precipitate creating scale. It can narrow pipes diameter, limiting or in some cases even blocking the flow. Scale deposits on the heating elements increase the energy consumption for water heating.

Hard water can also lead to water supply installation and household appliances damages, which removal can be expensive. Moreover, hard water increases detergent consumption and creates stains on fixtures.

UST-M's water softeners soften water so effectively thanks to the usage of high quality ion exchange resin. They are equipped with by-pass allowing easy installation. Competitive price in combination with low exploitation costs make this softener an excellent choice.

The softener has been approved for use by the National Institute of Hygiene.

3. Technical parameters

- Test pressure .... 350 psi (24.15 bar)
- Working pressure .... 45 ~ 82.5 psi (3 ~ 5.5 bar) zalecane 4 bar
- Working temperature .... 4°C ~ 30°C
- Distributor diameter .... 1.05" (26.7 mm)
- Power supply .... Input: AC 110/240 V; 50/60 Hz
- Output: AC 12V 650 mA
- Tank thread .... 2.5" NPSM
- Connections inlet/outlet. .... 1", 3/4", 1/2" (PPR, PPO, mosiądz)
- Dimensions .... Futura: 30 x 52 x 111 cm
  Lotus: 33 x 52 x 105 cm

Before installation make sure the package contains all parts. The package should contain:

- Water softener
- Transformer
- Instruction manual
- By-pass
- Hex key
- 1" coupling

5. Installation

Before installation please read this manual carefully and comply to all safety precautions related to starting-up and operation. In case of any questions please contact the dealer or the manufacturer.

Before installation remove all parts out of the box. Check if the device has not been damaged during transport. All comments should be reported to the seller immediately.

The device should be removed from the box carefully. The softener can be heavy, so when carrying, grab it "from the bottom". It is forbidden to move the device grabbing hoses, by-pass and other delicate parts. Avoid moving across the floor. It is forbidden to drop the device, putting it on sharp or angular edges and turning upside-down, because this may lead to permanent damage of the softener. The device should be transported only in an upright position, otherwise it may damage the controller.

When installing the softener:
- make sure you have the knowledge or hire a professional
- make sure the placement area is clean, flat, stable and it can withstand the load of the softener filled with water and salt
- make all connections according to the local laws and regulations
- to seal all threaded, gasket-free connections use PTFE tape only. Using tows is prohibited and may result in connections damage.
Softener must be preceded with at least 50 micron rating sediment pre-filter (eg. UST-M's PS or PP).

> **Drain hose and brine overflow hose should be connected to the sewage system separately using siphon and air gap, in order to prevent the backflow of odors and bacteria inside the device.**
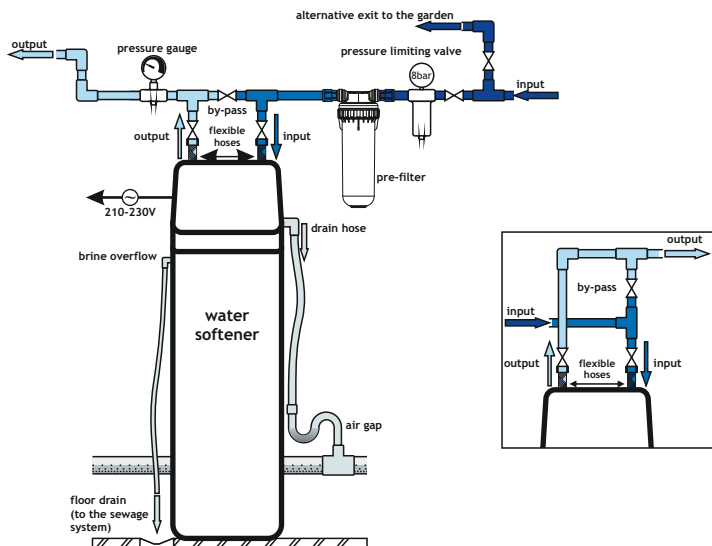
Installation scheme.
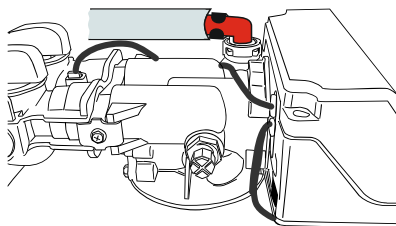
Drain hose must be installed on drain elbow using a clamp.

6. Programming

Head is controlled by a simple software. Large LCD display shows basic informations, such as:

- Time and date
- Water flow
- Regeneration mode
- Date of the previous regeneration
- Volume of water remains until the next regeneration

ATTENTION! THIS SOFTENER WORKS ONLY ON UP FLOW MODE.

The controller is equipped with 4 buttons.

- **MENU** button
    - Is used to enter or exit the main menu
    - Pressing and holding for 3 seconds will unlock the keyboard
- **SET/REGEN button**
    - Is used to select mode or to confirm the settings
    - Pressing and holding for 3 seconds will start manual regeneration
    - **UP** and **DOWN** buttons
    - Are used to increase/decrease current value
    - Are used to move to the next/previous menu
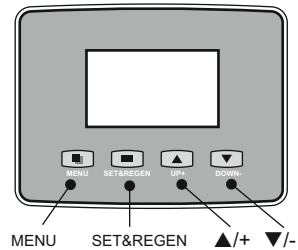
MENU   SET&REGEN   ▲/+ ▼/-

6.2 Programming mode

6.2.1 Data input procedure:

- Unlock the keyboard by pressing and holding the **MENU** button for 3 seconds
- Press the **MENU** button to enter the main menu
- Press the **UP** or **DOWN** button to select desired parameter
- Press the **SET/REGEN** button, current value will start to flash
- Press the **UP** or **DOWN** button to change the values
- Press the **SET/REGEN** button to save the settings
- Press the **UP** or **DOWN** button to select another parameter
- Repeat these steps until all parameters are set.
- Press the **MENU** button to exit the main menu

ATTENTION! Only flashing values can be changed

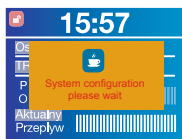If no buttons are pressed for 1 minute, the controller will exit the programming mode.
If no buttons are pressed for 3 minutes, the keyboard will be locked.

When you first connect the device to the power supply, controller needs approximatelly 2 minutes to start. During this time a statement:
„System configuration, please wait" is shown on the screen.

6.2.2 Time setting

- Unlock the controller by pressing the **MENU** button for 3 seconds
- Press the **MENU** button, select **TIME** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **SET/REGEN** button, to activate selected digit
- Set current hour using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **DOWN** button
- Press the **SET/REGEN** button
- Set minutes using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **DOWN** button
- Press the **SET/REGEN** button
- Set current month using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **DOWN** button
- Press the **SET/REGEN** button
- Set current day of a month using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **DOWN** button
- Press the **SET/REGEN** button
- Set current year using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **MENU** button

6.2.3 Setting language and region

- Press the **MENU** button
- Select **REGION/LANGUAGE** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Select **REGION** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Set **METRIC** or **US GALLON** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Select **LANGUAGE** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Select appropriate language using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **MENU** button

6.2.4 Setting feedwater hardness and number of people

After checking the water hardness using a droplet tester, convert it from the German degrees of hardness (dH) into ppm using the following formula:

$$dH \times 17.8 = PPM$$

- Press the **MENU** button
- Select **HARDNESS&PEOPLE** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Select **WATER HARDNESS** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Set feedwater hardness by setting every following digit using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **MENU** button
- Select **PEOPLE NUMBER** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **SET/REGEN** button, to activate selected digit
- Set number of people using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **MENU** button twice

6.2.5 Setting regeneration mode

Futura can operate in the following regeneration modes:

Calendar clock - controller will start regeneration after a specified number of days

Meter immediate - controller will start regeneration immediately, treating specified amount of water

Meter delayed – controller will start regeneration after treating specified amount of water

Meter override (recommended) - controller will start regeneration at a specified time, after treating specified amount of water.

- Press the **MENU** button
- Select **ADVANCED SETTINGS** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Select **MANUAL SETTINGS** using the **UP/DOWN** buttons
- Press and hold the **SET/REGEN** button
- Select **REGENERATION MODE** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button

- Select **„METER OVERRIDE"** (recommended) using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **MENU** button

6.2.6 Setting the time of regeneration

- Press the **MENU** button
- Select **REGENERATION TIME** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **SET/REGEN** button, to activate selected digit
- Set the hour regeneration starts using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Select minutes using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Set the minutes regeneration starts using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **MENU** button

6.2.7 Setting regeneration frequency (in days)

- Press the **MENU** button
- Select **REGENERATION DAYS** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **SET/REGEN** button, to activate selected digit
- Set number of days between regenerations using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Set minutes using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **MENU** button

6.2.8 Setting the amount of treated water

> **The amount of water which can be treated, can be calculated using the following formula:**
> **1263.8 / FEEDWATER HARDNESS (EXPRESSED WITH PPM).**

- Press the **MENU** button
- Select **PEOPLE NUMBER** by using **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Set amount of water to be treated before regeneration, set every following digit using the **UP/DOWN** buttons and confirm using **SET/REGEN** buttons
- Press the **MENU** button

6.2.9 Setting cycles duration

- Press the **MENU** button
- Select **REGENERATION CYCLE** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Set the time of each cycles according to the values listed below:

Data input method is the same as for setting the amount of water.

Recommended duration of each cycle is:

- backwash 1 - 06 min
- brine -   50 min
- backwash 2 - 06 min
- refill - 8 min

- Press the **MENU** button – softener is now in automatic operation mode.

6.2.10 Restoring defaults
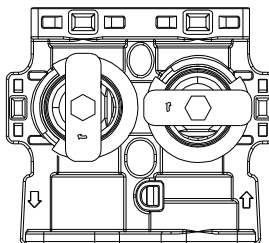
ATTENTION! Skip this step if the device works properly.

- Press the **MENU** button
- Select RESTORE DEFAULTS using the UP/DOWN buttons
- Confirm by pressing the **SET/REGEN** button
- Press the MENU button 3 times
- Initiating this mode will delete all settings and return to the factory defaults

7. Start-up procedure

- Set the by-pass valve in:
    - **INLET OPENED, OUTLET CLOSED**.
- VERY SLOWLY open the feedwater valve by ¼ turn and wait until the tank with the resin will be filled with water.
- After filling the tank with water, open the valve to the maximum.

Amount of water
Delay
Immediat

- Unlock the controller by pressing and holding the **MENU** button for 3 seconds
- Press and hold the **SET/REGEN** button
- Confirm by pressing the **SET/REGEN** button
- Select **IMMEDIAT** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Press the **MENU**
- Skip „**BRINING**" by pressing the **SET/REGEN** button

Rinsing 1

- Wait until the end of BACKWASHING 1. Time remaining is shown on a display.

Rinsing 2

- Wait until the end of RINSING. Time remaining is shown on a display.

Refilling

- Wait until the end of REFILLING. Time remaining is shown on a display.

- Wait until „preparing to work" message disappear.

Informations shown on a display, are presented below:

- Pour 12kg (half of bag) of salt to the salt storage tank
- Set the by-pass valve in:
  - **inlet open, outlet open**
- Open a tap in a possibly highest point of the object and wait for venting.

ATTENTION! If yellow water appear in the installation, BACKWASHING and RINSING must be repeated.
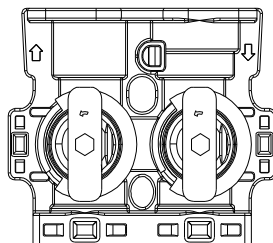
8. Adjustng treated water hardness

The softener allows to adjust water hardness supplied to the object.

Adjusting can be done by turning the screw, located on the left side of the controller or by using a by-pass valve.

Turning the screw clockwise the hardness of water supplied to the object is increased. Water hardness can also be adjusted by turning the blend adjusting knob on a by-pass valve in a way shown on the picture below.
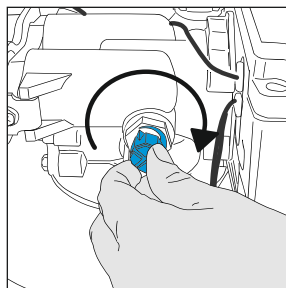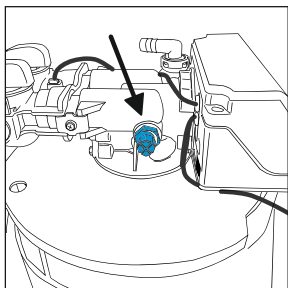
You can also adjust water hardness supplied to the object (the higher angle of turn 'A', the higher water hardness).

It is recommended, the hardness of water after treatment was between 4 and 5 German degrees of hardness (approx. 89 ppm).
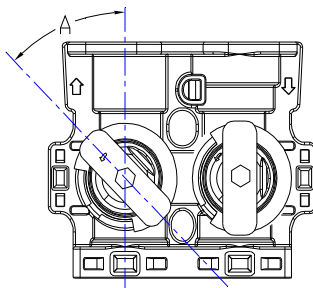
9. Salt level sensor and free chlorine generator (Lotus softener only)

The principle of operating of the free chlorine generator and the salt level sensor.

The salt level sensor reminds about the need to fill up the salt in the device. When activated in the menu, it will constantly monitor the level of salt in a solution. If a concentration drops below the set value, an alarm will be triggered. The alarm is activated by flashing icon and an audible noise. It can be set in a "silent" mode in any hour range. During this period no sound will be heard. The alarm can be removed by a short disconnecting of the power supply.

Activation/deactivation of the salt level sensor

- In order to unlock the device, press and hold the **MENU** button for 3 seconds
- Press the **MENU** button again
- Press the **UP ▲** button ("Salt Check" icon will be highlighted)
- Confirm by pressing the **CONFIRM ■** button
- Activate or deactivate the function by pressing the **UP ▲** or **DOWN ▼** buttons
- Confirm by pressing the **CONFIRM ■** button
- After confirmation you will automatically exit to Quiet time" (standard settings from 2 am to 8 am)
- Indicate the value to be changed by pressing the **UP ▲** or **DOWN ▼** buttons
- Press the **CONFIRM ■** button (the value will start to flash)
- Press the **UP ▲** or **DOWN ▼** buttons (time settings)
- Confirm by pressing the **CONFIRM ■** button
- Press the **UP ▲** or **DOWN ▼** buttons (silent alarm end time settings)
- Press the **CONFIRM ■** button (the value will start to flash)
- Press the **UP ▲** or **DOWN ▼** buttons (time settings)
- Confirm by pressing the **CONFIRM ■** button
- Press the **MENU** button three times in order to return to the "stand-by" mode

The salt level sensor is also the free chlorine generator.

The the free chlorine generator minimizes the risk of bacterial growth inside the softener. It eliminates the problem of biofilm formation and resulting microbiological corrosion. It produces free chlorine from brine during a ion exchange resin regeneration process. This function can be activated or deactivated according to ones needs. When activated, the generator will produce free chlorine during every regeneration.

Activation / deactivation of the free chlorine generator

- In order to unlock the device, press and hold the **MENU** button for 3 seconds
- Press the **MENU** button again
- Press the **UP** ▲ button twice („Chlorine" icon will be highlighted)
- Confirm by pressing the **CONFIRM** ■ button
- Activate or deactivate the function by pressing the **UP** ▲ or **DOWN** ▼ buttons
- Confirm by pressing the **CONFIRM** ■ button
- After confirmation you will automatically exit to menu
- Press the **MENU** button in order to return to the „stand-by" mode

Residual chlorine generator

Signal line

Residual chlorine generator

Brine line

Brine tank
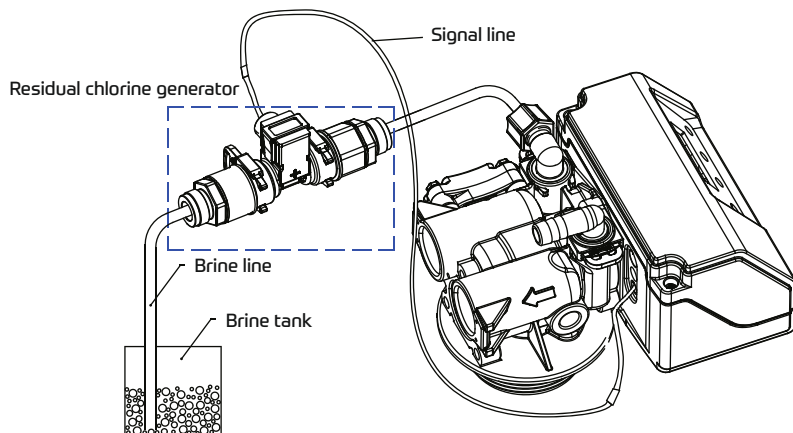
The instruction of residual chlorine generator and salt alarm

```
OCT/16/2015
   16:45
```
Standby display

[SETTINGS MENU] 👆
Press and hold "SETTINGS MENU"
for 3 seconds

```
TIME OF DAY
   12:01
```
[SETTINGS MENU] ↓

```
TIME OF DAY
   12:01
```
[SETTINGS MENU] ↓

```
   YEAR
   2012
```
[SETTINGS MENU] ↓

```
   MONTH
    DEC
```
[SETTINGS MENU] ↓

```
    DAY
    30
```
[SETTINGS MENU] ↓

```
SET HARDNESS
  340  PPM
```
[SETTINGS MENU] ↓

```
 SET PEOPLE
      4
```
[SETTINGS MENU] ↓

```
 SALT SETTING
HIGH EFFICIENCY
```
[SETTINGS MENU] ↓

```
WATER SOURCE
  MUNICIPAL
```
[SETTINGS MENU] ↓

```
 REGEN TIME
    2:00
```

[SETTINGS MENU] ↓

```
  CHLORINE
    OFF
```
Press **DOWN** or **UP** to change the setting
ON=OPEN the residual chlorine generating
         in the regeneration
OFF=CLOSE the residual chlorine generating in
         the regeneration
[SETTINGS MENU] Save

↓

```
 SALT LEVEL
    OFF
```
Press **DOWN** or **UP** to change the setting
ON=OPEN the salt alarm
OFF=CLOSE the salt alarm
[SETTINGS MENU] Save
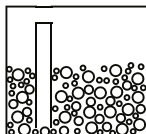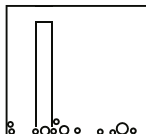
↓

```
PROGRAMMING
 COMPLETE
```

Reset the salt alarm

```
 SALT LEVEL
   NORMAL
```
When the salt level is normal,
the screen will show "NORMAL"

```
 SALT LEVEL
   CHECK
```
When the salt level is lacking,
the screen will show "CHECK"
and flash.Between 8:00-17:00,
the buzzer will alarm.

Open the brine tank,
check the salt level.

Refill the salt.

[MANUAL REGEN] 👆

Press the "**MANUAL REGEN**" button,
the unit will reserve a
regeneration at the day,at the
same time the salt alarm reset.

10. Holiday mode

When planning a longer break in the use of the softener (longer than 30 days) it is recommended to set it in a **HOLIDAY MODE**. It is important due to the possibility of bacterial growth on the media, which may lead to its irreversible damage and the need of replacement. Activation of the **HOLIDAY MODE** allows ion exchange resin rinsing and a removal of microorganisms at the same time.

During holiday mode the device does not draw salt. To set the softener in a HOLIDAY MODE do the following:

- Press the **MENU** button
- Select **HOLIDAY MODE** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Select **ACTIVATE** using the **UP/DOWN** buttons
- Confirm by pressing the **SET/REGEN** button
- Set the end of the holiday mode. Set every following digit using the **UP/DOWN** buttons and confirm using the **SET/REGEN** button
- Press the **MENU** button 3 times

The device is now in the holiday mode.
This mode turns off automatically after specified time.

PROBLEM	CAUSE	SOLUTION
Control valve fails to regenerate	No power	Check electrical connection
	Extended power outage	Set time and date
Hard water	By-pass valve is open	Close by-pass valve
	No salt in the brine tank	Add salt to the brine tank
	Injector screen plugged	Clean injector screen
	Insufficient water flowing into brine tank	Check resin volume setting and salt setting.
	Hard water in hot water tank	Empty hot water tank and fill it with soft water
	Leak at distributor tube	Make sure distributor tube is not cracked. Check o-ring and tube pilot. Replace faulty parts.
	Exhausted ion exchange resin	Regenerate the resin
	Internal valve leak	Replace gaskets, spacers and/or piston
Hard water, salt level does not change	Salt bridge was formed	Test with a broom handle. Break the bridge and remove its pieces.
	Regeneration mode was not set.	Set regeneration mode. Carry out manual regeneration
	Float jammed	Disassemble and clean parts
	Injector plugged	Disassemble and clean injector
Hard water from time to time	Increased water consumption	Check and re-set regeneration time
	Improper regeneration time	Check and re-set regeneration time
	Feedwater hardness has increased	Re-test the water and re-enter a new values
	The use of hot water during regeneration process	Do not use hot water during regeneration process.
Excessive salt consumption	Improper salt setting	Check salt usage and salt setting

PROBLEM	CAUSE	SOLUTION
Low water pressure	Sediments in feeding line	Clean the installation
	Sediments in the softener	Clean control or conduct chemical cleaning
	Inlet of control plugged	Wyjmij tłok i wyczyść głowicę
Resin flushed to drain	Air in water system	Assure the well system has proper air eliminator control, check for dry
	Inappropriate restrictor or DLFC	Check restrictor
Resin in the installation	Cracked resin tank	Seal or replace the tank
	Broken tank elements	Replace broken pieces
	Broken or incorrectly assembled upper "basket"	Check basket assembly, contact your local dealer
	Lack of upper basket	Contact your local dealer
Excess water in brine tank	Injector plugged	Clean or replace injector
	Foreign material in brine tank	Clean the tank
	Plugged drain line flow control (DLFC)	Clean flow control
Softener fails to draw brine	Plugged DLFC	Clean flow control
	Plugged injector	Clean injector
	Low water pressure	Increase water pressure to 3 bar (recommended 4 bar)
	Internal control leak	Replace gaskets, spacers and/or piston
Control cycles continuously	Broken gear	Replace broken parts
Drain flows continuously	Inappropriate settings	Check and correct the settings
	Foreign material in control	Clean control
	Internal control leak	Replace gaskets, spacers and/or piston
Soft water, but white stains on the appliances appear	Silica in water	Install sillica removal filter