

I n s t r u c t i o n s   f o r   u s e

# IT 4000



- Perfect soft water** ■
- Comfort without lime** ■
- Energy saving** ■



**Efficient building services**





Attentively read the use and installation instructions prior to starting the device!

Should questions remain unanswered in these instructions, please contact the manufacturer.

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## **INSTRUCTIONS for USE and INSTALLATION: IT 4000**

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## 1 SAFETY INSTRUCTIONS

### 1.1 SYMBOLS



Warning! Danger to life and limb! Caution!



Important instructions regarding the correct operation of the device. To be strictly followed!

### 1.2 GENERAL SAFETY INSTRUCTIONS

Only use original spare parts and accessories that are tested and approved by the manufacturer. The manufacturer is not liable for damages caused by the use of non-original spare parts and accessories or improper handling.

For remaining questions not being dealt with in the instructions of installation and use, please contact the manufacturer.

### 1.3 SAFETY INSTRUCTIONS ELECTRICITY

An electric shock can be lethal or cause serious injuries. Any non-authorized work on the electric system is strictly forbidden!



Prior to cleaning works on the device or close to it, always unplug the apparatus as water and current form a lethal mixture!

**The apparatus is delivered with a mains adapter.**



**Only qualified service technicians are authorized to install the device.**

Ensure that the socket is always readily accessible. When the cable of the device is damaged, it has to be exchanged in order to avoid any risk. Unplug the device prior to changing any setting in the electronic system.

### 1.4 SAFETY INSTRUCTIONS, SALT

The residual regeneration salt will be flushed out of the regeneration tanks along with the waste water, which should not be used for watering flowers or similar purposes.

Follow the instructions in chapter "Installation site requirements" to ensure perfect safety as regards the drain of waste water and salt.



Caution: The indicated salt quantities refer to the use of salt tablets.

When using industrial salt (salt pellets or blocks or fragmented salt), quantities may vary.

### 1.5 SAFETY INSTRUCTIONS TEMPERATURE



Warning: danger of scalding! Load resistances may become hot in operation and should not be touched.

Vent the water softening system right after the connection to the water mains to ensure perfect safety.



**2 FOREWORD**

To the customers' attention!

you made a very good decision in selecting this water softening system, as it stands for the latest developments in the water conditioning technology.

The SYR water softener IT 4000 is designed to protect pipes and water heaters against scale deposits, which reduce the water flow through the pipes and lead to a high energy consumption. By protecting appliances and valves, the device prevents expensive repair works.

The ion exchanger resin is located in two separate tanks. The ion exchanger resin is regenerated in two consecutive cycles. During regeneration, the two tanks alternately ensure the soft water supply.

The water softener's capacity is designed to allow for the partial softening of both the total water in single/ multi-family houses and of specific water quantities used for hot water, swimming pools, washing machines and dish washers.

Synthetic pipes or other corrosion resistant pipes shall be installed in all cases, where water of 0 ° dH (German hardness degree) flows through the pipes. Galvanized or copper tubes can be also used in case of partial softening (approximately 8 °dH).

This stabilizes the remaining carbonate hardness particles and forms the prerequisite for building up a homogenous protective coating in the downstream piping system.

The functional parts are made of high-quality materials, which all meet the local regulations and specifications.

When delivered, immediately verify that the device shows no visible damages.

In case of damage caused by transport, directly contact the forwarding agency.

The warranty does not cover damages caused by improper handling or operation.



## FOREWORD

---

Please refer to the terms of delivery and payment of your local dealer for any further or other claims.

To ensure trouble-free functionality, the regeneration salt used must comply with the requirements of the European Standard EN 973. We recommend Broxo- or Solvay-salt.

We recommend to conclude a service contract to make sure that the perfect functionality of all water treatment devices is verified on a regular basis.

### 3 HOW THE SYSTEM WORKS

The ion exchanger resin is made up of small synthetic resin beads allowing for the replacement of calcium ions causing water hardness with sodium ions.

The water becomes "soft". However, the ion exchanger resin absorbs only a limited amount of particles. Depending on the water hardness, the absorbing capacity of the resin becomes depleted sooner or later and has to be regenerated.

Regeneration with this system means removing the hardness particles from the ion exchanger resin.

A diluted salt brine that flows through the resin bed removes the hardness particles, which are then directed to the sewer.

The ion exchanger resin is regenerated in two consecutive cycles. During regeneration, the two containers alternately ensure the soft water supply.

As a result, the user always has soft water at his disposal, even during regeneration.

The regeneration process requires only a small amount of salt and complies with EN 14743.

The water softening system undergoes automatic disinfection on a regular basis in order to prevent microbial growth. The small amount of chlorine required for that process is generated electrolytically from the brine sucked in during regeneration.

The regeneration is carried out automatically with wear-resistant ceramic disks.

The regeneration process is predetermined by the disks' geometry and does not need to be reset in case of power failure. The regeneration period for both containers is short, which means that softened water can be drawn off any time.

A water meter integrated in the device records the quantity of produced softened water, which is summed up in the electronic system. When the value set for the raw water hardness is reached, the electronic system triggers a regeneration process.



## HOW THE SYSTEM WORKS

---

When the pressure loss in the water softening system exceeds 1 bar due to a considerable amount of water drawn off (for instance caused by a flushing valve), an overflow valve integrated in the control unit opens, a bypass is opened, which reduces the pressure loss and a small amount of water is not treated during that short moment. As a result, the hardness of the blended water is somewhat higher for a short while.

#### 4 INSTALLATION SITE REQUIREMENTS



Carefully follow these instructions to prevent any problem with the water softener.

Install the water softening system in a dry room, which is not liable to frost and is equipped with a floor drain. The ambient temperature should not exceed 30 °C.

The system requires a power supply (230 V, 50 Hz) under constant voltage, which is independent of the light switch.

A gravity flow connection to the sewer for the waste water hose and the salt tank's safety overflow is necessary as well.

The water softening system is usually installed downstream of the protecting filter, the pressure reducing valve (**compulsory as of a static pressure of 5.0 bar**) and upstream of a dosing pump (optional).

To prevent huge damage on the installation site due to a leaking device or supply line ( for instance in an office, medical practice etc), it has to be ensured that during the personnel's absence the water and power supply are interrupted upstream of the system. However, the disconnection is not allowed during the regeneration process. Should the water and power supply be interrupted for more than 4 days, initiate a regeneration process manually, when the device resumes service. The resulting automatic disinfection will ensure a perfectly hygienic operation.

Do not position the waste water hose above the control unit. The maximum length of the hose is 3 m. Do not extend it. Install the overflow hose with a continuous inclination towards the sewer without bending it.

The water to be softened has to be clear, free of solid impurities as well as iron and manganese-free.



5 INSTALLATION / START-UP

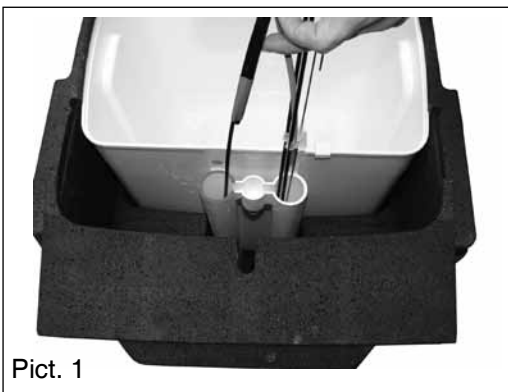


**Important information!**

To ensure a trouble-free operation of the IT 4000, the device has to be permanently connected to the power mains. Make sure that the device contains a sufficient amount of salt.

**The non-compliance with these instructions will damage the device!**

5.1 INSTALLATION



Pict. 1

1. Install a connection flange (accessories - e.g. universal flange 1", 2315.25.005) in the pipe.  
**Observe the correct direction of flow!**
2. Mount the wall bracket and the bypass valve. Observe the enclosed instructions for installation.
3. Mount the IT 4000 to the bypass valve.
4. Insert the hoses in the corresponding openings (pict. 1 + 2).

**Observe the following:**



**The upper edge of the salt tank must be positioned below the connection of the regeneration hose!**

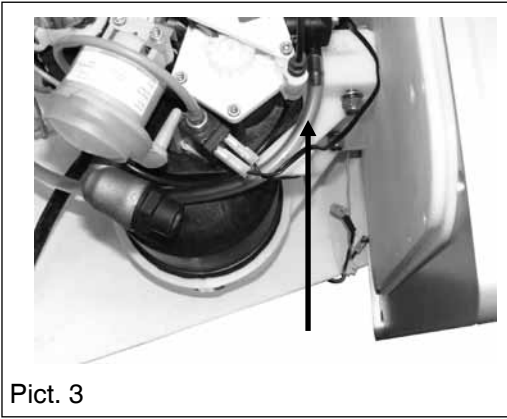


Pict. 2

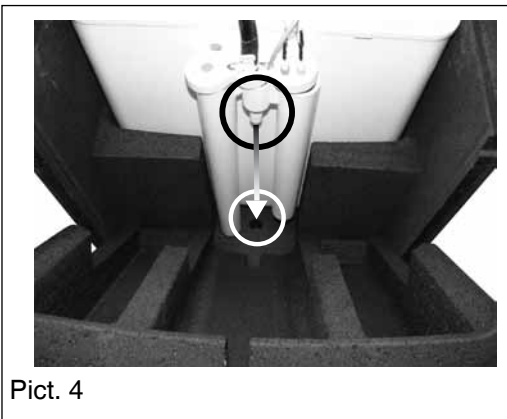
**Hose with red marking into body with red marking**

The opening in the middle has no function!

5. Fix the hoses with cable straps.



6. Connect the regeneration hose to the top of the control unit (pict. 1) and pull it through the left lateral insulation to the backside of the device (pict. 3).

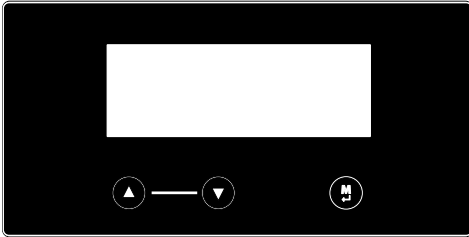


7. Fix the emergency overflow hose to the backside of the salt tank and direct it through the cover to the sewer (pict. 4).






## 5.2 OPERATION

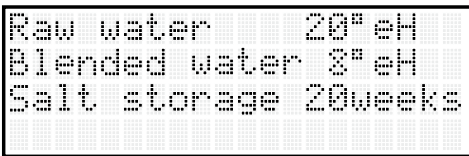
### 5.2.1 DISPLAY



Pict. 5

The display is composed of a window displaying messages and the menus as well as three keys to make selections (up and down key, confirming/saving settings and acknowledging messages (mode key)).

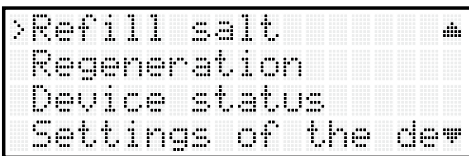
-  - Up key
-  - Down key
-  - Mode key



Pict. 6

The display's standard setting shows the operation mode. (pict. 6)




The sleep mode can be ended by pressing any key.




Pict. 7

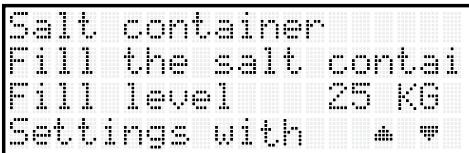
#### Example:

The main menu is displayed (pict. 7).

Press the  or  key to select "Refill salt" with the ">" symbol. Press the  key.

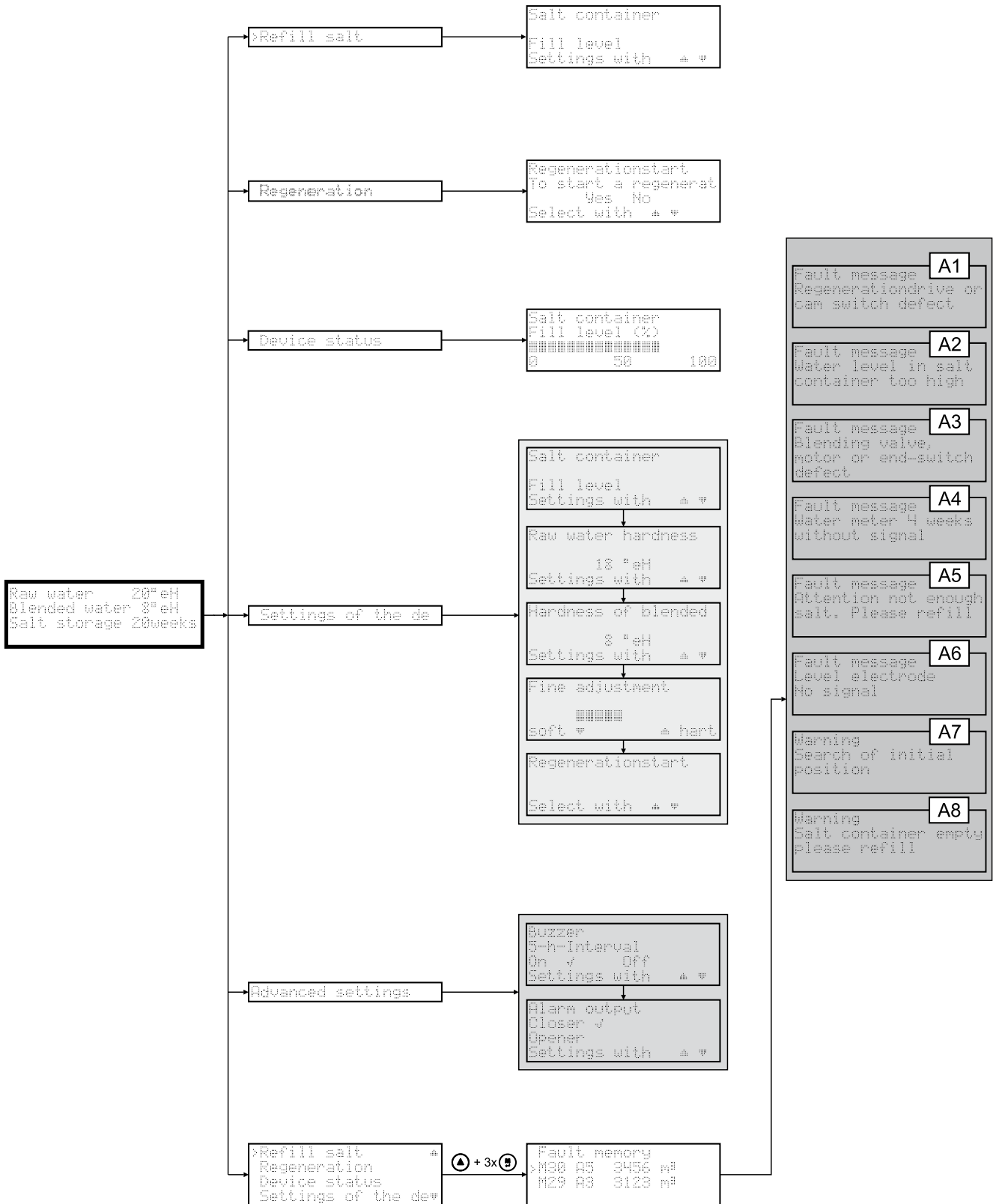
This leads you to the next menu "Salt container" (pict. 8).

Change the settings and press the  key to save them.



Pict. 8

## 5.3 MENU TREE



## 5.4 START-UP



To start up the device, proceed as follows:

- a) To start up the apparatus, the water softener has to be connected to the water pipe, but the water supply shall not be opened yet. Do not plug in yet.
- b) Fill in the regenerating salt (about 25 kg).  
We recommend: Solvay salt tabs.  
We noticed that when using another type of salt, the strainer in the suction hose and the salt tank have to be cleaned more often.
- c) Fill 7 litres of water in the salt tank.
- d) Record the date of installation and the water meter reading on the relevant label and in the maintenance report (cf. chapter "Maintenance report").
- e) Determine the hardness of your tap water by means of an appropriate measuring device or ask your local waterworks.
- f) Connect the device to the power supply. Each time the water softener is plugged in, the electronic system carries out a self-test, which can last up to 10 seconds. When the test is concluded with a positive result, you will be asked to start up the device.
- g) Open the water supply (or the bypass valve).  
**Vent** the water softener **immediately** after the connection to the water network (bypass valve in operating position) to ensure perfect safety. The device is automatically vented during the initial regeneration.
- h) First fill the salt container with salt and enter the quantity filled in when requested.  
Confirm by pressing the MODE (Ⓜ) key for at least 2 seconds.
- i) Enter the raw water hardness. Use the titration set to measure the hardness or ask your local water operator.  
Confirm by pressing the MODE (Ⓜ) key for at least 2 seconds.

```

Salt container
Fill the salt containi
Fill level      25 KG
Settings with   ▲ ▼
    
```

```

Raw water hardness
Measure the raw wate
           18 °eH
Settings with   ▲ ▼
    
```

```
Hardness of blended
Set the hardness deg
      8 °eH
Settings with  ▲ ▼
```

- j) Enter the blended water hardness.  
Confirm by pressing the MODE (Ⓜ) key for at least 2 seconds.  
The blending valve goes into the required position.

**Note:** Measure the blended water. The following point "Fine adjustment" might be skipped.

```
Fine adjustment
Check the hardness o
      ████████
soft ▼          ▲ hart
```

- k) At this stage, it is possible to make a fine adjustment.  
Choose harder or softer water.  
Confirm by pressing the MODE (Ⓜ) key for at least 2 seconds.

```
Regenerationstart
To start a regenerat
      Yes No
Select with  ▲ ▼
```

- l) When starting the device for the first time, trigger a regeneration cycle to vent the installation.  
Confirm with "YES".

If you wish to trigger a regeneration after the basic settings, select "YES", otherwise select "NO" to regenerate the IT 4000 at a later stage.  
Confirm by pressing the MODE (Ⓜ) key for at least 2 seconds.

```
Raw water      20°eH
Blended water  8°eH
Salt storage 20weeks
```

- m) After these settings, you get into the operation menu.  
It includes an overview of your settings and provides information on the salt supply.

```
>Refill salt      ▲
  Regeneration
  Device status
  Settings of the de▼
```

Press the (Ⓜ) key to get into the main menu.  
It allows you to re-enter the salt tank's filling level (refill salt), trigger a regeneration (regeneration), call up the salt tank's filling level (Device status), repeat the start-up (Settings of the device) and to change the setting of the buzzer and the alarm outlet (Advanced settings).

```
Buzzer
5-h-Interval
On  ✓      Off
Settings with  ▲ ▼
```

```
Alarm output
Closer ✓
Opener
Settings with  ▲ ▼
```

The test water for measuring and adjusting the water hardness can be drawn off at a draw-off point downstream of the water softener. Prior to draw off water, ensure that the blended water, which has undergone a new adjustment has flown through a possibly long pipe from the water softener to the draw-off point. For a correct comparison of the measured values, the test water should be drawn off at normal flow rate (1 draw-off point fully opened) without simultaneously consuming water at another spot.

According to the German water quality regulations (TrinkwV) from 01.01.2003, the limit value for sodium in potable water is 200 mg/l. This value does not apply to mineral and table waters, which sometimes contain more than 1.000 mg of sodium per litre.

The table below "Calculation of the sodium content" allows to determine whether the blended water is still in compliance with this maximum value of the sodium content.

When the calculated total sodium content exceeds the admissible value of 200 mg/l, adjust the setting of the blended water hardness to a higher value.

<b>Calculation of the sodium content</b>	
° dH	Raw water hardness (ask water operator or measure with hardness measuring device)
- ° dH	Hardness of blended water (measured value)
= ° dH	Reduction of the water hardness
x 8,2	mg Na/°dH Sodium-ion exchange value
= mg/l	Increase of the sodium content due to softening
+ mg/l	Sodium already present in the raw water (ask water operator)
= mg/l	Total sodium content in the blended water

Table 1: Calculation of the sodium content

<b>Example: calculation of the sodium content</b>	
20 ° dH	Raw water hardness
- 8 ° dH	Hardness of blended water
12 ° dH	Reduction of the water hardness
x 8,2	
98 mg/l	by softening
10 mg/l	from water operator
108 mg/l	Total sodium content in the blended water

Table 2: Example: calculation of the sodium content



## 6.1 OPERATION

When no softened water or just a little quantity of softened water is drawn off, the water softening system automatically carries out an additional regeneration every 4 days to ensure perfect hygiene (in compliance with EN 14743 and the DVGW test directive DIN 19636-100).

## 6.2 INTERRUPTION

Always initiate a manual regeneration process when a dismantled water softening system is re-installed and put back into operation. This allows to vent the water softener (refer to chapter "Start-up"). Protect the dismantled water softening system against frost, humidity and dirt. Place the flange cover on the connection flange to provide protection against damages (especially the sealing edges).



Should the main water supply of the water softener be interrupted (main isolation closed or on "bypass"), the power supply of the device has to be interrupted as well.





**7 MAINTENANCE / INSPECTION / CLEANING**

**7.1 MAINTENANCE**

It is recommended to carry out maintenance works at least once a year, in case of multi-family houses every six months.

Proceed as follows to service the device:

- a) Remove the cover on each side (fig. 1).
- b) Should regeneration take place at this very moment, wait until completed.
- c) The operating piston rotates the driver (1) (fig. 2), which controls the small gear wheel. The position indicator (2) allows to read the driver's position. The "Influx of salt" position (pos. 2) is reached after two lifts. Afterwards, the operating piston initiates another lift. The waste water quantity used up to then amounts to approximately 4.5 litres.
- d) The "backwash" position is reached after this lift (pos. 3). The resin is flushed upwards. Waste water roughly 3 - 4.5 litres
- e) Two further lifts are carried out until the position "Primary filtrate" (pos. 5) is reached. At this stage, the resin is flushed downwards (waste water 2.5 - 4 litres).
- f) After two further lifts, the regeneration of the first tank is completed. The driver now turns with two lifts the right gear wheel to the position "Influx of salt" (pos. 2) to regenerate the second tank  
Afterwards, the system initiates another lift (waste water quantity roughly 4.5 l).
- g) The "backwash" position (pos. 3) is reached after this lift. The resin is flushed upwards (waste water approx. 3 - 4.5 l).
- h) Two further lifts are carried out afterwards until reaching the position "Primary filtrate" (pos. 5). At this stage, the resin is flushed downwards (waste water approx. 2.5 - 4 litres).
- i) After two further lifts, the regeneration of the second tank is completed and the operating position (pos. 1) is reached again.
- j) Should the measured values distinctly deviate from the target values (refer to chapter "Maintenance report"), inform the after-sales service. Please, always indicate the serial number, which you will find on the upper side of the device's connection flange (3) (fig.2).

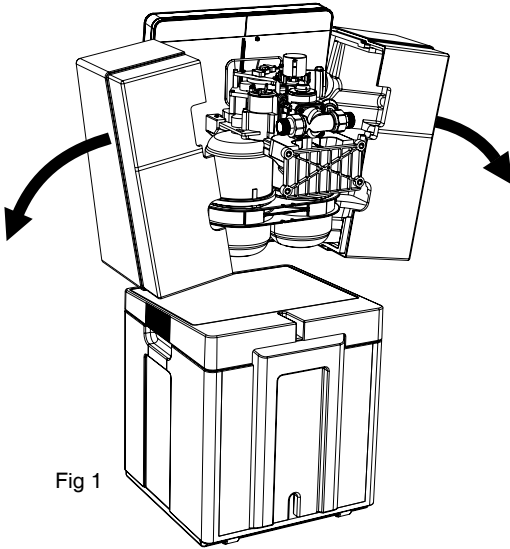


Fig 1

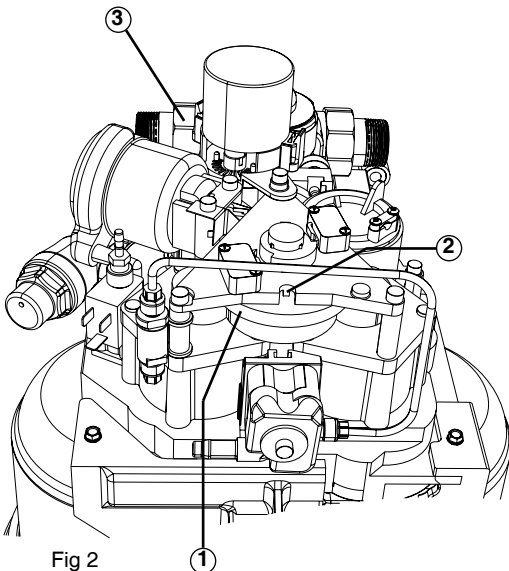


Fig 2



### 7.2 INSPECTION

Depending on the water volume used, regularly verify the salt consumption. If necessary, refill some regeneration salt (use only quality complying with EN 973). Observe the necessary hygiene requirements when refilling salt. For instance, the salt packages should be cleaned prior to use to prevent impurities from getting into the salt tank. The regenerating salt should be poured in the salt tank as soon as the package is opened. Make sure not to overfill the salt tank and close it properly when the work is completed. Avoid the use of already opened packages. Store the salt exclusively in clean and dry rooms.

The IT 4000's service intervals read as follows (table below):

Maintenance	Interval
Check of hardness setting	every 3 months
Cleaning salt container	once per year
Cleaning electrodes	once per year
Replacement suction strainer	every 2 years
Exchange pressure reducer	every 2 years
Exchange suction indicator	every 2 years
Exchange injector	every 2 years
Functional test	once per year
Exchange drive	when necessary

### 7.3 CLEANING

The external surface of the water softening system can be cleaned with a usual household cleaner (soft soap). Solvents, detergents with alcohol and lacquers affect the durability of synthetic parts (danger of breaking) and shall not be used.


Should the water supply to the water softener be interrupted (main isolation closed or on "bypass"), unplug the water softening system.

### 8 MALFUNCTIONS

Malfunctions are indicated by means of two different signals:

- a) message
- b) an acoustic signal, which lasts two minutes and is repeated every 5 hours, according to the buzzer's setting.

Confirming the malfunction message:

Confirm the malfunction message shown in the display by pressing the  key for 2 seconds. It is saved in the fault memory and can be called up again later.

When a malfunction has been caused

- by a temporary interruption of the pipe pressure,
- as salt has not been refilled in due time,
- by manual rotation of the driving wheel during A regeneration process or
- by an operating error, for instance when setting the hardness level (refer to chapter "Start-up"),

confirm the malfunction message and initiate a regeneration process manually.

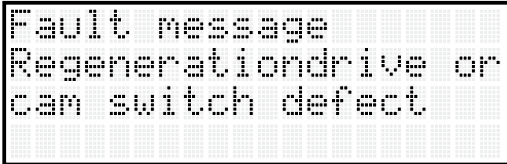
When there is no further error, the system automatically goes back to trouble-free operation. If a malfunction message is displayed again after approximately 5 hours, contact the customer service.

In this case, unplug the device (**10**) and rotate the driving wheel (**5**) by means of a spanner of size 13 until reaching the operating position (pos. 1).

If available, activate the bypass (refer to chapter "Interruption").

## 8.1 TROUBLESHOOTING

### Malfunction message A1:



```
Fault message
Regeneration drive or
can switch defect
```

**1. Cause:**

The water supply has been stopped during regeneration.

**Measure:**

Restore the water pressure.

Unplug the device and turn the driving wheel clockwise with a spanner of size 13 until reaching the operating position (position 1 - cf. chapter 7-1).

Plug in again and initiate regeneration.

**2. Cause:**

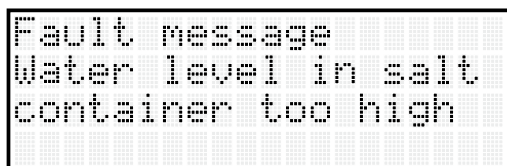
The water pressure is too low.

**Measure:**

Make sure that the dynamic pressure is at least 2 bar.

---

### Malfunction message A2:



```
Fault message
Water level in salt
container too high
```

**1. Cause:**

The water level in the salt tank is too high (malfunction message A2)! Overflowing salt tank.

**Measure:**

Empty the salt tank and carry out a start-up as described in the instructions manual (5-2).

**2. Cause:**

The water pressure is too low.

**Measure:**

Ensure that the dynamic pressure is at least 2 bar.

**3. Cause:**

The regeneration hose is bended or clogged up.

**Measure:**

Verify the regeneration hose and ensure the downward gradient.

**4. Cause:**

The solenoid valve does not close properly.

**Measure:**

Replace the driving unit (spare part number 3000.00.904).

## Malfunction message A3:

```
Fault message
Blending valve,
motor or end-switch
defect
```

**1. Cause:**

The actuator ensuring the blending process is not working.

**Measure:**

Contact the SYR customer service.

## Malfunction message A4:

```
Fault message
Water meter 4 weeks
without signal
```

**1. Cause:**

The turbine is dirty or faulty.

**Measure:**

Clean or replace the turbine or contact the SYR customer service.

**2. Cause:**

The Hall sensor is dirty or defective.

**Measure:**

Clean or replace the Hall sensor or contact the SYR customer service.

## Malfunction message A5:

```
Fault message
Attention not enough
salt. Please refill
```

**1. Cause:**

The salt quantity is too low or the entered parameter is not correct.

**Measure:**

Empty the salt container and make a start-up as described in the instructions manual chapter 5-4.

## Malfunction message A6:

```
Fault message
Level electrode
No signal
```

**1. Cause:**

There is no water in the salt container

**Measure:**

Fill with water and start up the device as described in the instructions manual chapter 5-4.

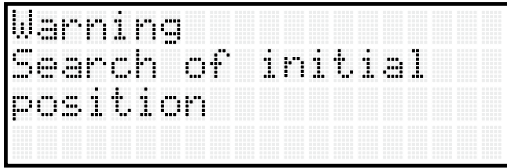
**2. Cause:**

The water pressure is too low.

**Measure:**

Make sure that the dynamic pressure is at least 2 bar.

### Warning message A7:



Warning  
Search of initial  
position

**1. Cause:**

The water pressure is too low and the drive unit cannot find its original position.

**Measure:**

Make sure that the dynamic pressure is at least 2 bar.

---

### Warning message A8:



Warning  
Salt container empty  
please refill

**1. Cause:**

The water in the salt container is almost used up.

**Measure:**

Refill water.

---

### General faults:

**Fault:**

No function

**1. Cause:**

No power supply! The display always shows something.

**Measure:**

Ensure a permanent power supply. When water is drawn off, the fourth menu line displays the word 'Flow' with moving bars.

---

**Fault:**

Softening function not correct.

**1. Cause:**

The raw water hardness is not set properly.

**Measure:**

Check the raw water hardness by means of the measuring device and adjust if required.

**2. Cause:**

The ball in the suction indicator is stuck (during regeneration, the black ball has to move in the suction indicator).

**Measure:**

Replace the suction indicator (spare part number 3000.00.908).

---

**Fault:**  
Noise during regeneration



**1. Cause:**  
The upstream cold water pressure is too high.

**Measure:**  
Install a central pressure reducing valve as of a pressure of 4.5 bar.



**2. Cause:**  
The noise comes from the domestic installation.

**Measure:**  
Check the domestic installation.



**3. Cause:**  
The pressure reducing valve of the IT 4000 is not working.

**Measure:**  
Replace the pressure reducing valve (spare part number 3000.00.917).

**Fault:**  
The device gets stuck at some point during regeneration.



**1. Cause:**  
There is a malfunction in the control unit.

**Measure:**  
To reset the device: unplug, press and hold the manual regeneration button, while plugging in again.



**2. Cause:**  
The dynamic pressure has fallen below 2 bar during regeneration.

**Measure:**  
To reset the device: unplug, press and hold the manual regeneration button, while plugging in again.



**3. Cause:**  
Power failure during regeneration.

**Measure:**  
To reset the device: unplug, press and hold the manual regeneration button, while plugging in again.

**Fault:**  
Leaking hose.



**1. Cause:**  
The hose is not fit properly.

**Measure:**  
Mount the hose on a fitting and check the connections.

---

**Fault:**  
The water has a salty taste.



**1. Cause:**  
The hardness difference is too big.

**Measure:**  
Adjust the hardness setting. Stick to the sodium calculation in the instructions manual (chapter 5-7).



## 9 WARRANTY

The operator of the device is requested to make an inspection of the device at least every two months. Warranty claims may not apply when this inspection interval has not been observed.

Servicing by the manufacturer or qualified installers is also required at least once a year, in case of multi-family houses twice a year.

We recommend to conclude a service contract, as it ensures best functionality, also beyond the warranty period.

Make sure that qualified installers or the manufacturer's customer service regularly carry out maintenance works and provide the necessary consumables or wear-out parts etc.

The warranty period lasts 24 months as of the date of installation.

We commit ourselves to repair or replace as quickly as possible all parts that become unserviceable during the warranty period as a result of verifiably bad materials, a defective construction or a faulty model.

Our highest objective is to manufacture high-quality products.

Should you be faced with a problem, for which no solution is proposed in this instructions manual, contact us. We will be glad to help you.

Please, always indicate the model and the serial number of the device.

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10 DIAGRAMS

Pressure loss in operating position (pos. 1) with a raw water hardness of 20 °dH (German hardness degree) and a blended water hardness of 8 °dH in dependence on the volumetric flow rate.

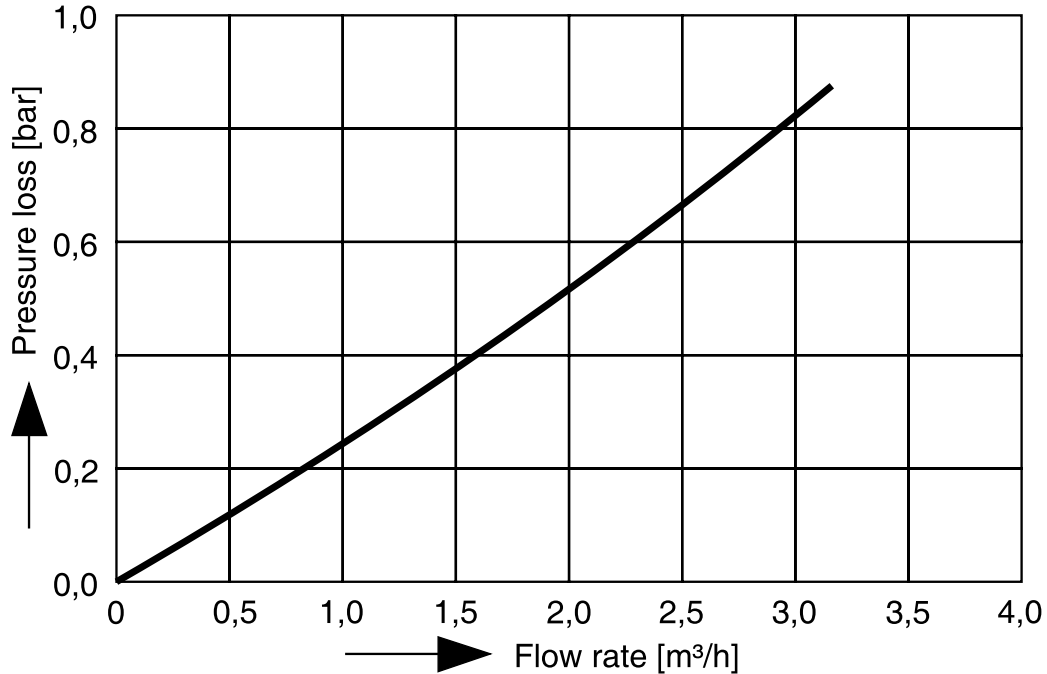


Fig. 1 Pressure loss in operating position

Max possible draw-off quantity per day depending on the raw water hardness with a blended water hardness of 8 °dH (German hardness degree).

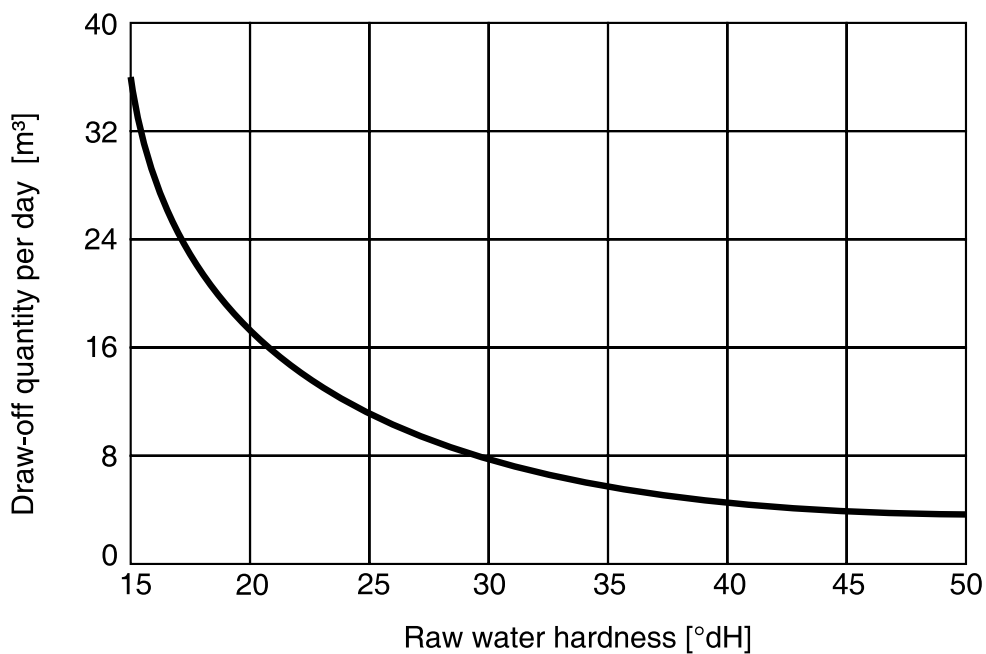


Fig. 2 Draw-off quantity per day

Max. possible permanent draw-off quantity depending on the raw water hardness with a blended water hardness of 8 °dH (German hardness degree).

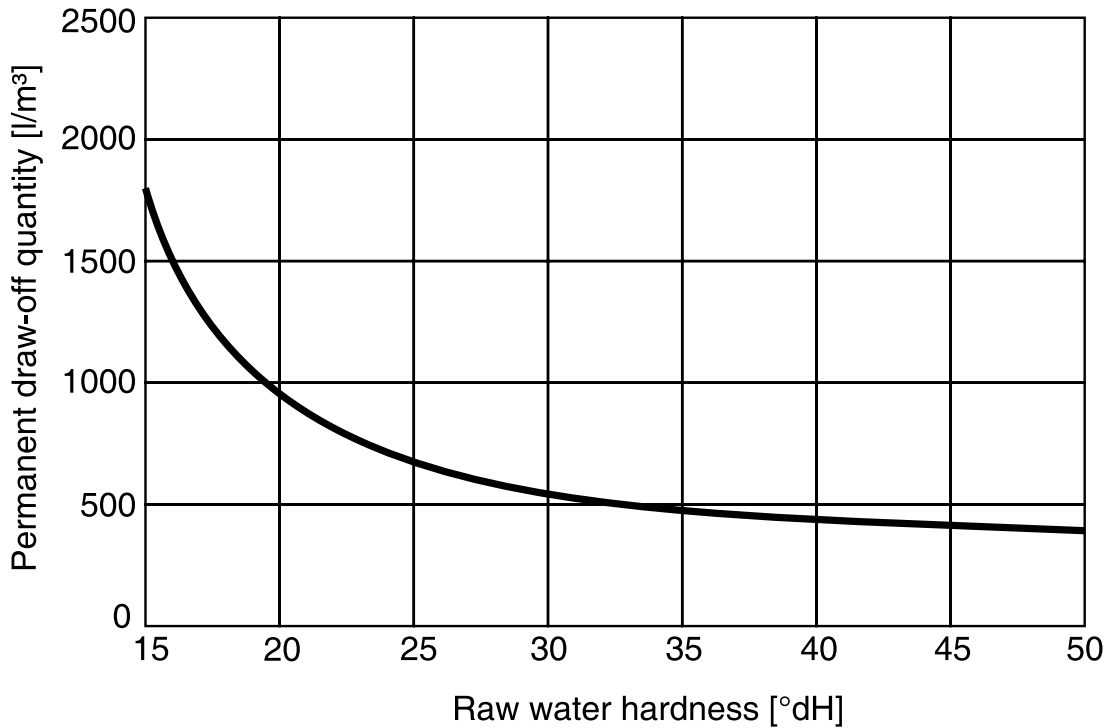


Fig. 3 Permanent draw-off quantity

Waste water quantity per 1 m³ of blended water with a 8 °dH hardness (German hardness degree) in dependence on the raw water hardness.

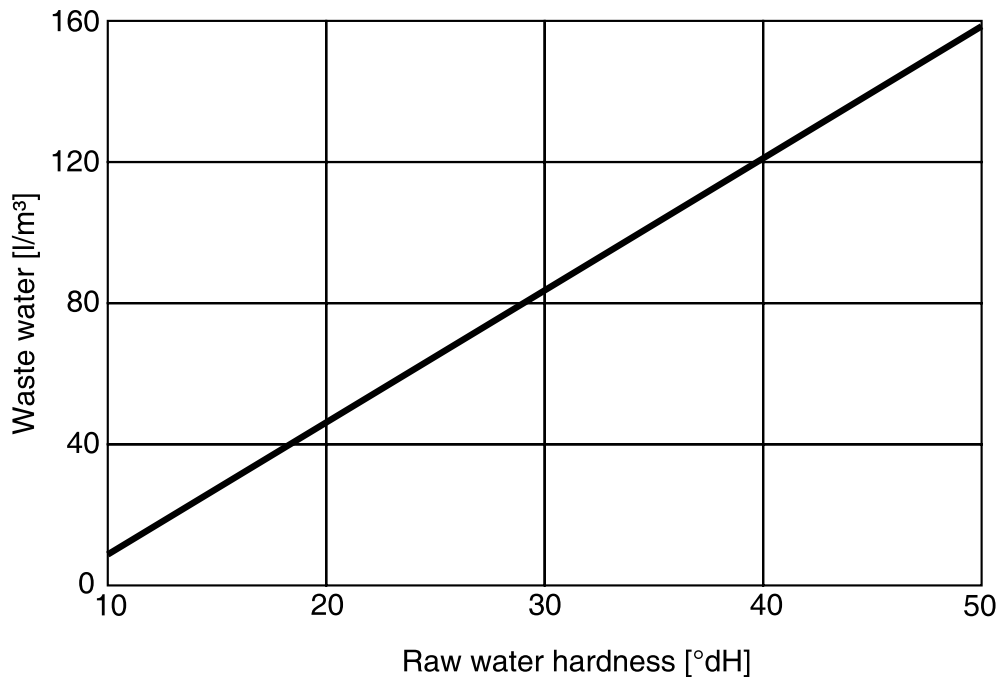


Fig. 4 Waste water quantity

Salt consumption per 1 m<sup>3</sup> of blended water with a 8 °dH (German hardness degree) hardness in dependence on the raw water hardness.

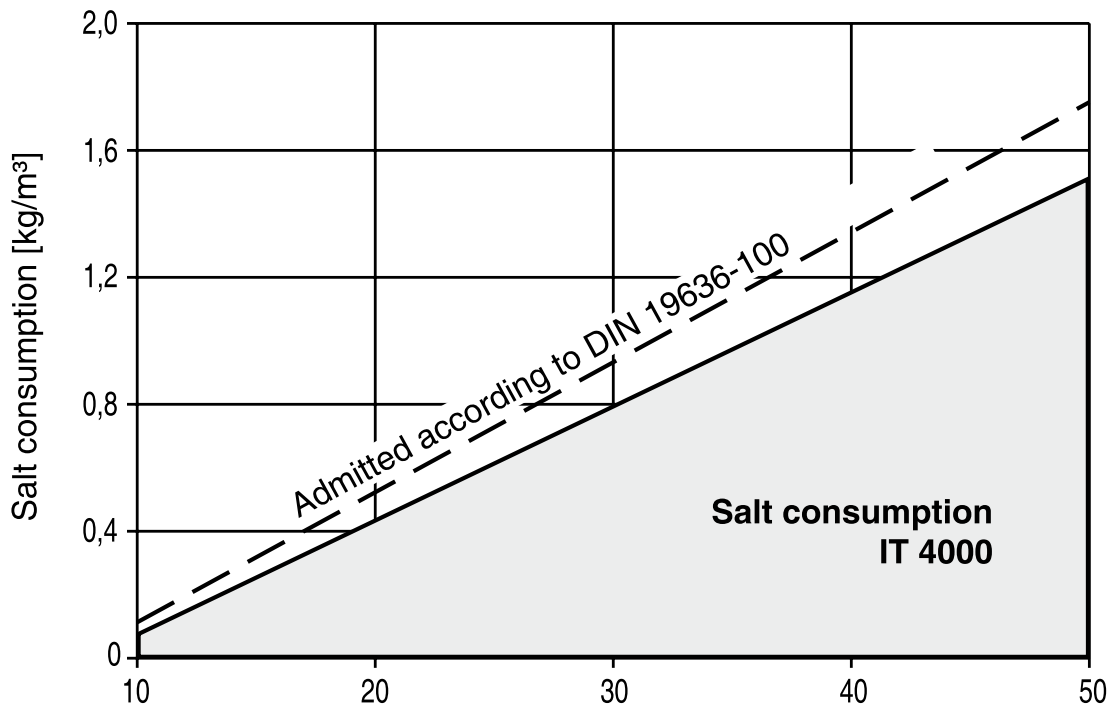


Fig. 5 Salt consumption



## 11 TECHNICAL SPECIFICATIONS

Nominal flow rate:	1.7 m <sup>3</sup> /h
Nominal capacity:	0.9 mol
Nominal pressure:	PN 10
Capacity per kg of salt:	5 mol
Min. operating pressure:	2 bar
Max. operating overpressure:	7.0 bar (the central installation of a pressure reducing valve is compulsory as of a dynamic pressure of 5.0 bar (chapter 4-1))
Max. operating temperature:	30 °C
Pressure loss at nominal flow rate:	0,8 bar
Stock level of salt:	40 kg
Power supply:	230V / 50Hz / 15W
Salt consumption and waste water per m <sup>3</sup> as well as pressure loss and max. draw-off quantity:	Cf. chapter "Diagrams"
Volume of exchanger resin:	5 l
Weight with salt fill:	about 60 kg



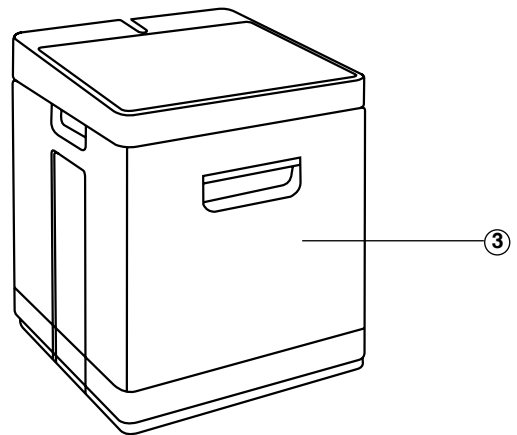
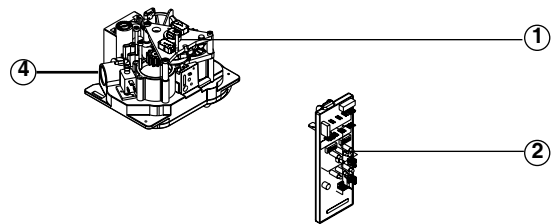
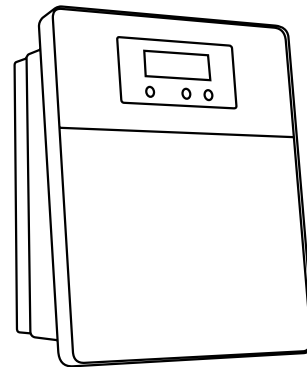


**12 SPARE PARTS**

- ① Drive unit  
4000.00.900
- ② Board  
4000.00.901
- ③ Salt container  
4000.00.902
- ④ Blending motor  
4000.00.903

not shown in fig.:

- Drive unit  
3000.00.904
- Regeneration tank  
3000.00.905
- Injector  
3000.00.906
- Regeneration cartridge  
3000.00.907
- Suction indicator  
3000.00.908
- Bypass valve  
3000.00.909
- Pressure reducing valve  
3000.00.917
- Suction strainer  
3000.00.912
- Regenerating salt (25kg)  
3000.00.911
- Bypass valve  
1700.00.000
- Titration test IT 4000  
3000.00.913
- Maintenance kit  
3000.00.920

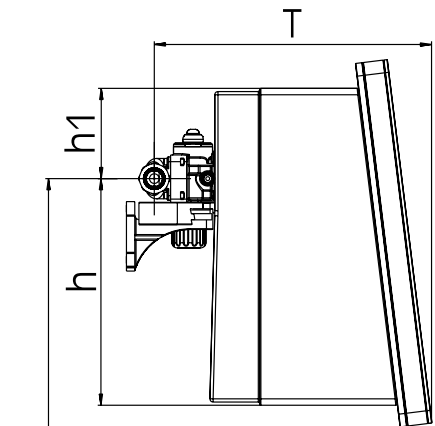
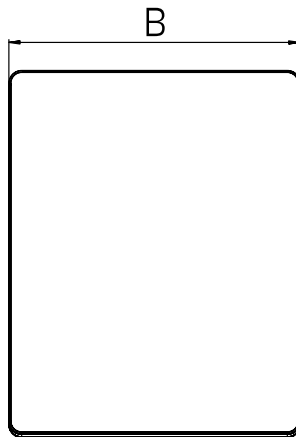


Y-distribution flange (multi-flange)  
2315.00.071

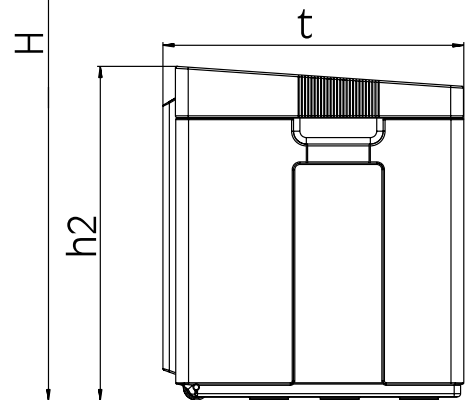
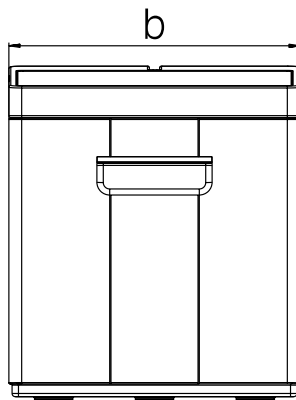
Double connection flange (parallel flange)  
2315.32.030 (DN 32)  
2315.40.030 (DN 40)  
2315.50.030 (DN 50)

**Exchange intervals:** \* = 1 year, \*\* = 2 years, \*\*\* = 3 years, \*\*\*\* = 4 years

Water softener



Salt container



Connection flange not included in delivery

Length of connection hose  
up to salt container: 1,3m

Nominal size	DN 20 - 32	
<b>Dimensions</b>	T (mm)	433
	t (mm)	470
	B (mm)	455
	b (mm)	455
	H (mm)	980
	h (mm)	354
	h1 (mm)	141
	h2 (mm)	522

## 13 MAINTENANCE REPORT

Date of installation:			Mains pressure:		
Date:					
Raw water hardness - measured [°dH]:					
set [°dH]:					
Hardness of blended water - measured [°dH]:					
Water meter [m <sup>3</sup> ]:					
Number of reg. <sup>1</sup>	S				
	L				
	N				
	M				
Suction time <sup>2</sup> [minutes] (max. 15 min.)					
Waste water [litres] (max. 4.5 litres)					
Flushing <sup>3</sup> (3 - 4.5 litres)					
Primary filtrate <sup>4</sup> (2.5 - 4 litres)					

<sup>1</sup> To be filled in by customer service  
(S = Total, L = prolonged salting process, N = normal regeneration,  
M = shortened salting process)

<sup>2</sup> Position 2

<sup>3</sup> Position 3

<sup>4</sup> Position 5

The values for suction time, waste water, flushing and primary filtrate apply to each regeneration step

# SYR. And your cellar gets brains.

The SYR philosophy: On the basis of consistent research and development work, we turn domestic water installations with our innovative ideas into well-thought out and perfectly matching systems. Easy to install, long service life, more comfort, less water consumption, more safety. All these elements combined result in a system offering modern and trouble-free solutions, which is beneficial for the installer and the customer alike.



Drufi+ DFR



Limex IQ LEX 1500



PRV 315



Duo DFR



Safety Valve 1915



SecurityCenter 4807



Safety Group 324



FüllCombi BA plus



Safety Group 24



KLS 3000



HeatingCenter 3228



Thermal Safety Valve



Protect



Safe-T



Flange Filter 6380



Backflow Preventer