Permo CENTURION
Permo DATA BLUE

Automatic water softener

VERY IMPORTANT: Before any connection, water supply and utilization, please carefully read this manual. The non-compliance with these prescriptions will cancel the **BWT** warranty.

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permo BEST WATER TECHNOLOGY
BWT GROUP

AFAQ ISO 9001 VERSION 2000

Technical manual **BWT CENTURION / DATA BLUE**
Code **P0010823EN GB Rev 3** - 11/01/2013

Dear Customer,

You relied on the **BWT** brand and you are now the owner of a **CENTURION or DATA BLUE** water softener.

This appliance is compliant with the 87/308/CEE Directive.

The EC marking affixed to **CENTURION or DATA BLUE** appliances certifies their compliance with the following requirements:

- Directive 2004/108/CEE dated 20/07/2007 dealing with **electromagnetic compatibility**.

- Directive 2006/95/CEE dated 16/01/2007 dealing with **electric equipment designed to be used within some voltage limits**.

The **CENTURION or DATA BLUE** water softeners are compliant with Directive 97/23/CEE dated 29/05/97 dealing with pressurized equipment. They meet the requirements of article 3 item 3 (design and manufacturing in accordance with the current state of the art) but do not pertain to categories I to IV and, as such, **they are not concerned by the EC marking related to pressurized equipment**.

We did our best for your satisfaction.

This equipment is user-friendly; nevertheless, we recommend that you carefully read this manual before implementing it.

This equipment is warranted as defined on the enclosed certificate. The warranty will be valid only if the warranty certificate is sent back to us.

Remember also that our Customer Service Dept. is at your disposal.

SECURITY

Descriptions are written in clear text.

The **WARNING, CAUTION and NOTE** sections have the following meanings:

NOTE
Points out a particular or important item of information.

WARNING
Risk related to the presence of electric current.

CAUTION
Risk of malfunctioning.

WARNING
Risk of injury or accident

NOTE
Recyclable item

CAUTION:
For your safety and that of the appliance, take care to comply with the basic operating precautions and the following instructions:

Please carefully read this manual before using your appliance.

- This manual contains very important notes about your appliance installation, utilization and maintenance procedures.

- Make sure that the appliance and packing were not damaged during transportation.

- Do not use the appliance in case of visible damage and immediately call the vendor.

DURING INSTALLATION:

- Electrical connections must be performed in compliance with the data printed on the appliance

name plate and this manual.

- This appliance is designed to be connected to a cold water inlet.

- This appliance must be installed so that the electric plug remains accessible.

- This appliance must be connected to a water system composed of new pipes.

- The water softener must be connected to the water system by means of hoses.

- Never re-use worn-out pipes.

WARNING :
Applies to the power supply cord.

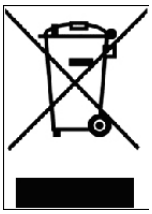
For most electric appliances, it is recommended to connect them to a dedicated circuit, i.e. a single connector only supplying the appliance in question and to which no other plug or by-pass circuit is added.

Do not overload wall sockets. Periodically check your appliance power supply cord. If it seems damaged or deteriorated, disconnect it, stop using your appliance and ask an authorized repairer to replace the faulty power supply cord by a new one to be strictly identical to the used item.

KEEP THESE INSTRUCTIONS IN A SAFE PLACE

DISPOSAL OF YOUR OLD APPLIANCE

1. This symbol, representing a crossed castor-wheeled garbage can, means that the product is covered by the 2002/96/EC European Directive.



2. All electric and electronic components must be disposed of separately in dedicated containers.

3. A disposal performed in compliance with the instructions will help reducing the negative consequences and possible risks for the environment and human health.

INSTALLATION INSTRUCTIONS

CAUTION:
Any electrical work required for installing this appliance must be performed by a qualified electrician or a skilful staff.

Any plumbing work required for installing this appliance must be performed by a qualified plumber or a skilful staff.

ELECTRIC CABLING

CAUTION:
For personal safety's sake, remove the electrical system fuse or release the circuit-breaker before connecting the appliance to the network. Make sure that the wall socket has been deenergized.

Do not use extension cables or socket adaptors with this appliance. Electrical and earth connections

should be compliant with all national, regional and/or local electrical standards.

This appliance must be supplied under the suitable voltage and frequency as indicated in this manual and on the water softener name plate. It must be connected to a separate circuit correctly earthed and protected by a circuit-breaker or a fuse matching with the installed equipment.

The power supply socket must be accessible and located next to the appliance to a maximum distance of 1.20 meters.

In no case should it be located behind the appliance. No other item of equipment should be connected to the same socket using a power bar or any other system.

CONTENTS

GLOSSARY

Softening process:

Water treatment process to remove water hardness (due to the presence of alkaline earth salts, carbonates, sulfates and calcium and magnesium chlorides). The softened water is not scale-forming and easily emulsifies with soap. The softening process consists in making water flow through a cation exchanger (change-over between calcium ions and sodium ions) regenerated with sodium chloride.

Cation:

Positively charged ion.

Cycle: (of an ion exchanger)

Water volume produced by an ion exchanger between two regenerations.

French degree:

Concentration unit of chemical substances in aqueous solution. One French degree (1°f) equals 0.2 milliequivalent per liter or 10 mg/l CaCO3

Degree of hardness (TH):

Water hardness degree expressed in French degrees.

Water hardness:

Calcium and magnesium contents counteracting foam formation with soap and allowing deposit of insoluble and scale-forming salts (scaling or incrustations).

Soft water:

Water defined as being the opposite of either salt water (it is then water with low dissolved minerals content), or hard water (in this case, it is water with low calcium and magnesium content).

Scaling:

Formation on vessel or pipe walls of a scale layer (deposit generally hard and adherent, sometimes porous) mainly composed of salts (carbonates, sulfates, calcium silicates, etc.) derived from hard or calcareous waters.

Milliequivalent per liter (meq/l):

Concentration unit of dissolved components in an aqueous solution: 1 meq/l corresponds to the concentration of a normal solution diluted one thousand times. 1 meq/l is equivalent to 5 French degrees.

Regeneration:

Operation performed on a saturated ion-exchanging resin so as to bring it back to its initial state. Regeneration consists in percolating an adequate highly pure solution through the resin.

Resins:

Partially improper term designating granular materials used in ion exchange (cation exchangers, anion exchangers).

Salt:

Substance resulting from the action of an acid on a base. Among the salts used in water treatment, can be mentionned : sodium chloride, sodium silicate, ferric chloride, aluminum sulfate. The salt used to regenerate water softeners is composed of highly pure sodium chloride.

Scale:

Deposit generally hard and adherent, sometimes porous, mainly composed of salts (carbonates, sulfates, calcium silicates, etc.) derived from hard or calcareous waters.

TH :

(hardness degree): See water hardness.

WATER SOFTENING PRINCIPLE

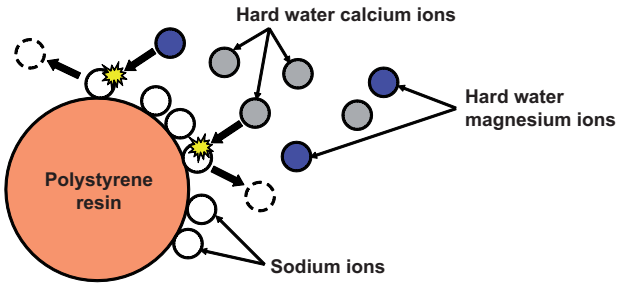
The softening process is the technique used to eliminate the TH from water (due to the presence of alkaline-earth salts : carbonates, sulfates and calcium and magnesium chlorides). The water softener is a device which uses an ion exchanging resin and the principle consists in changing over water hardness calcium and magnesium ions with sodium ions bound to the water softener resin.

When all sodium ions have been exchanged, the resin is said to be saturated and it must then be regenerated. Resin regeneration is then performed by means of brine (saturated NaCl solution or sodium chloride). Thus, sodium ions are reintroduced into the resins, while calcium and magnesium ions are drained out to the sewer system in the form of chlorides.

The brine is removed with rinsing.

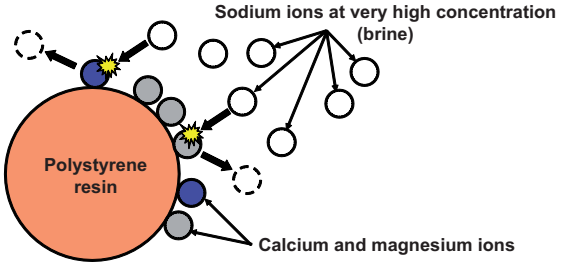
1) - Ions exchange

Sodium ions are substituted for calcium and magnesium ions on the resin. The former are released into water, which becomes soft.



2) - Regeneration

Sodium ions go back to their place on the resin. The expulsed calcium and magnesium ions return to water which is drained out to the sewer system.



NOTES

FAST COMMISSIONING PROCÉDURE

Fast commissioning procedure :

Filtered utility water inlet **item 1** (min. pressure 1.5 bar, max. pressure 7 b), 1'' threaded end-piece on the rear side.

Softened water outlet **item 2**, threaded end-piece 1'' on the rear side.

Regeneration waters drainage **item 3**, Ø16 mm.

Brine regulator link **item 4**, wing-nut end-piece.

Power supply:

230 volts +/- 10% 50-60Hz 35 watts max.

Setting the residual TH :

Fully screw in thumb wheel **B**, then slightly open a downstream tap and set the residual TH by turning knob **A** clockwise to increase or counterclockwise to decrease the TH.

When setting is complete, fully open the tap and tighten thumb wheel **B** if the residual TH is too high and vice versa.

Measure the residual TH using an analysis kit.

Setting the brine regulator :

Set brine regulator float located in brine stack or well inside salt tray. To do so, refer to Table «**Sizes X**» taking care to pull up float rod.

Connect siphon:

The Ø12/16 regeneration waters transparent pipe is to be connected to serrated port **item 1**.

On port **item 2**, connect the Ø15/21 hose to salt tray overflow.

On the Ø40 mm self-locking union **item 3**, connect a PVC pipe to the sewer.

Programming :

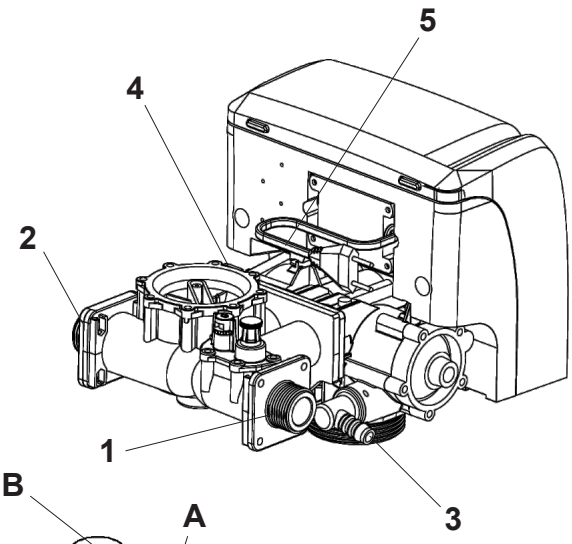
«R» Key: Press this key for 5 seconds to trigger the regeneration process.

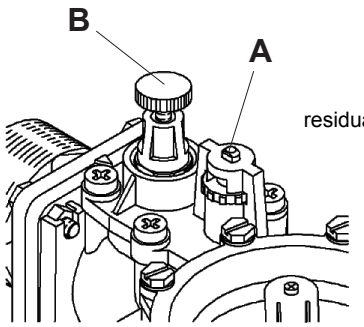
Press both «R» and «M» keys to switch off the regeneration process.

«M» Key: Press this key for 5 seconds to select the programming mode.

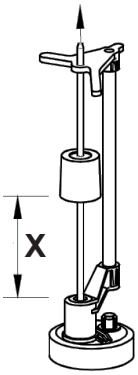
«Auto/Semi-auto» Key: Press this key for 5 seconds to select the manual or automatic mode. In the programming mode, briefly press the key to move the flashing digit.

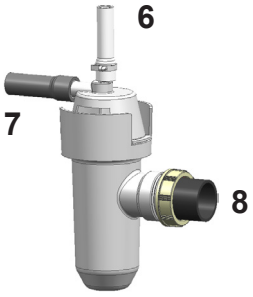
«Forward» Key: In the programming mode, briefly press the key to modify digit value.

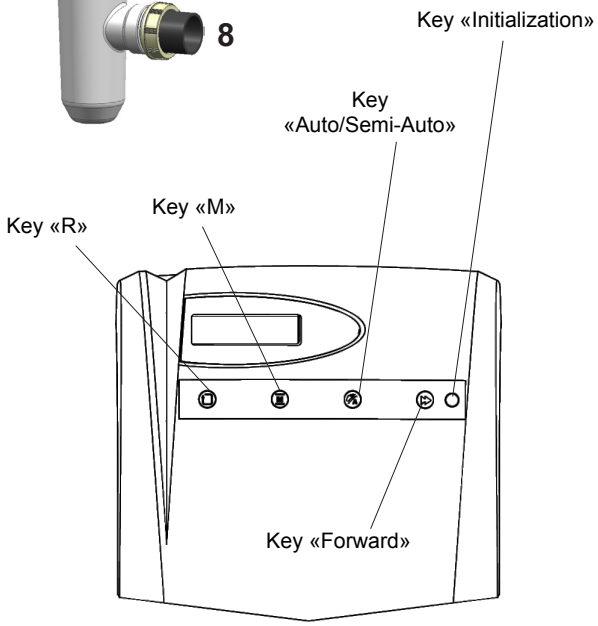


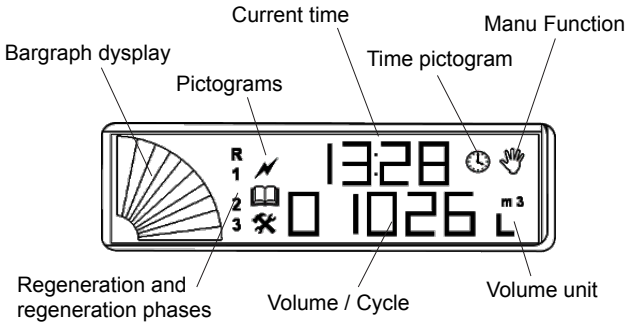


Softeners	Sizes "X" (in mm)	
	monobloc	bibloc
CENTURION 10	110	-
CENTURION 16	145	-
CENTURION 20	165	-
DATA BLUE 16	-	100
DATA BLUE 28	-	135
DATA BLUE 50	-	160









Softeners type	Network pressure	
	Less than 4 bars	More than 4 bars
CENTURION 10	32	32
CENTURION 16	42	33
CENTURION 20	52	43
DATA BLUE 16	42	33
DATA BLUE 28	62	53
DATA BLUE 50	73	63

Table «Overall regeneration duration in minutes»

Hardness in °f (TH)	CENTURION 10	CENTURION 16	CENTURION 20
18	2800	4700	5850
20	2500	4250	5250
22	2250	3850	4750
24	2100	3550	4400
26	1900	3250	4050
28	1800	3050	3750
30	1650	2850	3500
32	1550	2650	3300
34	1450	2500	3100
36	1400	2350	2900
38	1300	2250	2750
40	1250	2100	2650
42	1200	2000	2500
44	1150	1950	2400
46	1100	1850	2300
48	1050	1750	2200
50	1000	1700	2100

Hardness in °f (TH)	DATA BLUE 16	DATA BLUE 28	DATA BLUE 50
18	4700	8600	13850
20	4250	7750	12500
22	3850	7050	11350
24	3550	6450	10400
26	3250	5950	9600
28	3050	5550	8900
30	2850	5150	8300
32	2650	4850	7800
34	2500	4550	7350
36	2350	4300	6950
38	2250	4100	6500
40	2100	3900	6250
42	2000	3700	5950
44	1950	3500	5650
46	1850	3350	5400
48	1750	3250	5200
50	1700	3100	5000

Table «Water volume treated between two regenerations»

- Current day and time: Press the «Mode» key to display «P003». Set current day and time (24 hours). The first digit = week day (Monday 1, Tuesday 2, etc.)

- Regeneration time: Press the «Mode» key, «P080» is displayed. Set regeneration time over 24 hours. The first digit is not adjustable.

- Regeneration duration

Press the «Mode» key, «P050» is displayed. Set regeneration duration expressed in minutes (see table opposite) in accordance with network pressure.

- Cycle (water volume between 2 regenerations)

Press the «Mode» key, «P040» is displayed. Set the cycle corresponding to the water volume produced between two regenerations (in liters).

- Average consumptions: Press the «Mode» key, «P070» is displayed. Value «L.0300» corresponds to the initial average. The average is automatically calculated every day at the programmed regeneration time, therefore it is not necessary to modify programming.

Briefly press the «Mode» key until reaching «P077», default value «L.0300».

- Programming end: Press the «Mode» key, the display unit returns to the service configuration.

- Additional regeneration: After programming, we advise you to run a regeneration process by pressing the «R» key for 5 seconds and release.

- Recording the programmed parameters

Softener type :

Raw water TH (°f) :

Residual TH (°f) :

Regeneration time :

Setting regeneration duration :

Water softener cycle :

Setting size «X» on the brine regulator :

Setting the maintenance alarm :

Setting the After-sales alarm :

INTRODUCING THE SOFTENER RANGE

The **BWT** residential softener range is composed of five appliances. The compact **Permo CENTURION** softeners include three models and the **Permo DATA BLUE** dual softeners include of two models. All of them work in the anticipated volumetric mode using the bio-system function (fabrication of gaseous chlorine during the brining phase while the ion-exchanging resin is being set to asepsis). In the anticipated mode, the device calculates the water volume flowing through the water softener and determines the average consumption. The water softener outlet turbine is fitted with a flow-rate sensor which sends the data to the electronic control unit. This «smart» operating mode is the main feature of the **BWT** water softener.

Procurement limits:

- The inlet/outlet fittings for the by-pass (the by-pass is optional), for the cartridge filter and for the water softener are not supplied by **BWT**.
- The softener is supplied with flexible hoses for the salt tank overflow, the brine suction and for the drain. The inlet/outlet hoses for the softener are optional, no other flexible hoses are supplied by **BWT**.

PACKAGING

The water softener and the relevant accessories are delivered in a box fastened with plastic bands.

After unpacking, you will find:

- this installation and maintenance manual,
- the salt tray and its loading cover,
- the various hoses, connecting accessories and the Permosiphon in two plastic bags,
- the bottle containing the ion-exchanging resin along with the water softener hydraulic and electronic control head,
- the cartridge filter and the associated filtering cartridge are delivered assembled in a blister pack.

All our softeners are fitted with a check-valve located on the utility water inlet on head connecting flange.

		Softener Permo CENTURION		
		10	16	20
Resin volume	in liters	10	16	20
Exchange capacity	in °f.m³	50	85	105
Salt weight per rege.	in kg	1,25	2,00	2,50
Average salt tray autonomy	Nb rege.	6	14	11
First salt load	in kg	12	60	60
Packing sizes	in cm	57x49x72	57x49x118	57x49x118
Floor load in working order	in kg	55	115	120

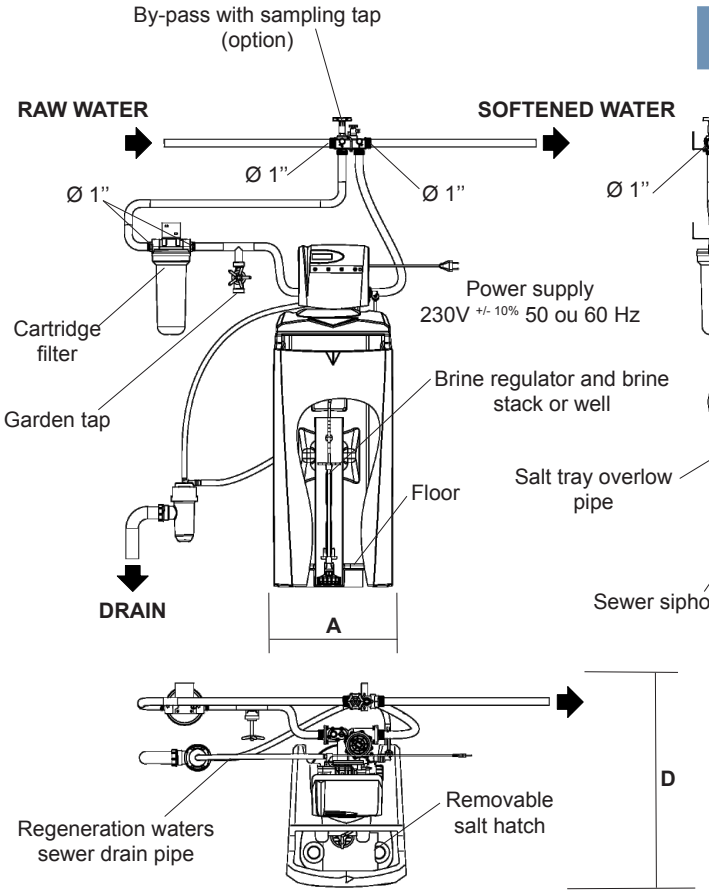
Permo CENTURION Technical characteristics (*)

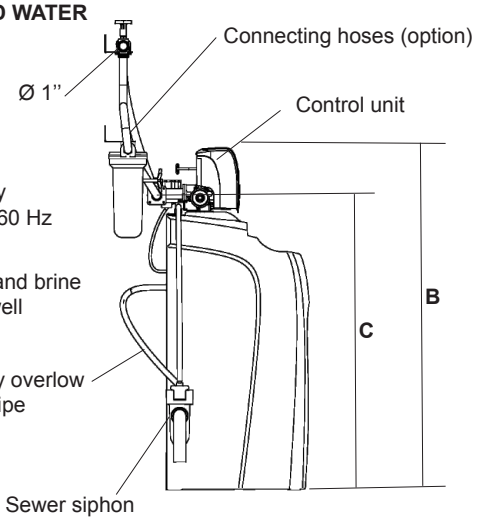
		Softener Permo DATA BLUE		
		16	28	50
Resin volume	in liters	16	28	50
Exchange capacity	in °f.m³	85	155	250
Salt weight per regeneration	in kg	2,00	3,50	6,25
Average salt tray autonomy	Nb rege.	18	9	25
First salt load	in kg	75	75	75
Packing sizes	in cm	50 x 50 x 136	50 x 50 x 150	50 x 50 x 180
Floor load in working order	in kg	130	150	300

Permo DATA BLUE Technical characteristics (*)

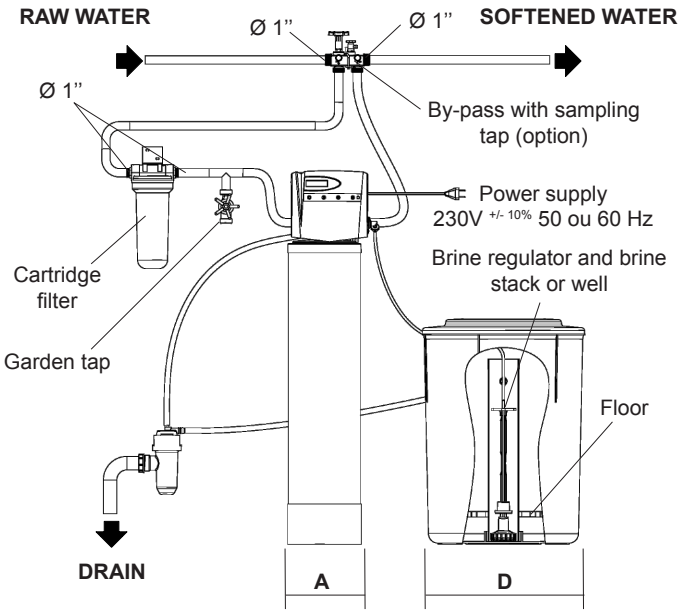
(*) - Some items of information given in the above tables are average values dependent on the settings performed.

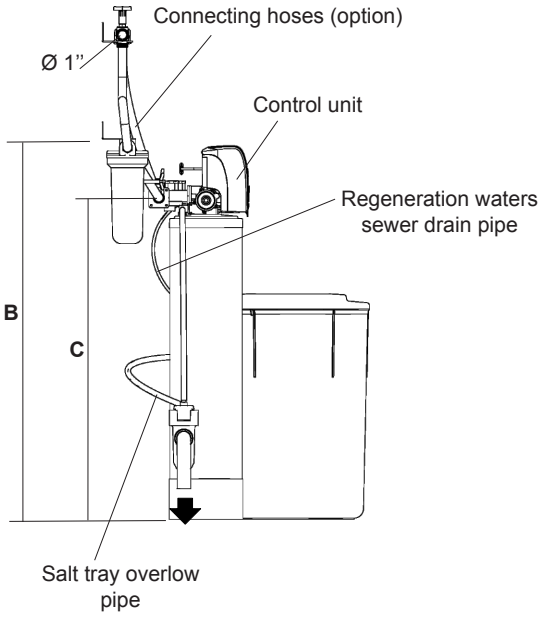
CONNECTING DIAGRAM





	Sofetner CENTURION		
	10	16	20
Size A (in mm)	385	385	385
Size B (in mm)	655	1110	1110
Size C (in mm)	500	960	960
Size D (in mm)	env. 680	env. 680	env.680



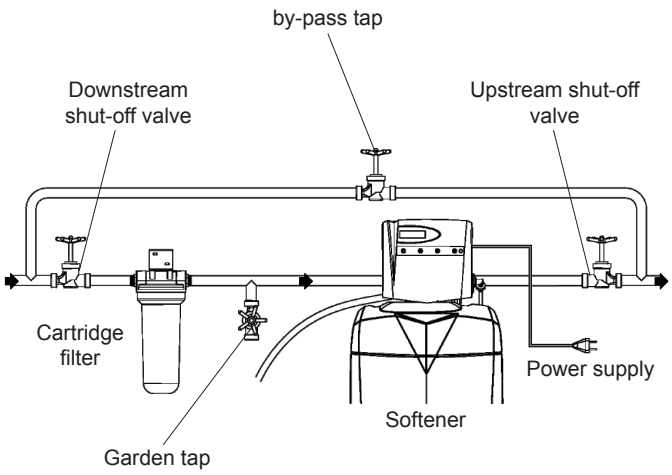


	Sofetner DATA BLUE		
	16	28	50
Size A (in mm)	195	220	260
Size B (in mm)	1115	1335	1585
Size C (in mm)	960	1180	1430
Size D (in mm)	480	480	535
Size E (in mm)	670	670	775
Size F (in mm)	env. 820	env. 820	900

ASSEMBLY : PARTICULAR CASE

The check-valve might project off the flange in some extreme operating and installation conditions (see drawing below).

To avoid this phenomenon, we recommend to connect the water softener with hoses or to fit the inlet flange with a special adaptor (ring) which will block and prevent the valve from popping out of its housing, code P0072127.



INSTALLATION & ELECTRICITY

Caution : Check that the valve is tight on the bottle before connecting the appliance to the network. To tighten, turn the valve in the clockwise direction. Tighten the valve by hand, do not use any tool or lever.

Place water softener and filter assembly next to the pipes to which it is to be connected (water inlet, softened water distribution and sewer drain). Check network pressure; the appliance operates at a pressure ranging within 1.5 bar in dynamic mode - 7 bar in static mode (install an upstream pressure reducer if the pressure is greater than 4 bar).Provide for a (non-softened water outlet) for watering the garden, washing the car and possibly the sink (see connecting diagram).

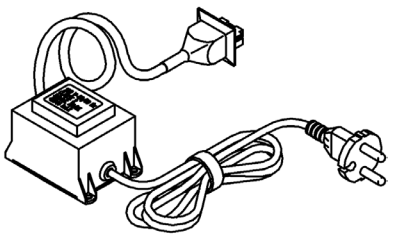
A power outlet (230 volts +/- 10% - 50/60Hz single-phase) shall be provided for at less than 1.2 meter from the water softener to feed the control unit with a permanent voltage. Since the appliance is the dualinsulation type, no earth connection is required. The water softener maximum consumption is 25 VA.

Important : For safety's sake, the water softener power supply cable cannot be replaced. If it is damaged, the whole transformer shall be discarded and replaced by a transformer subassembly available at your dealer's or your vendor's.

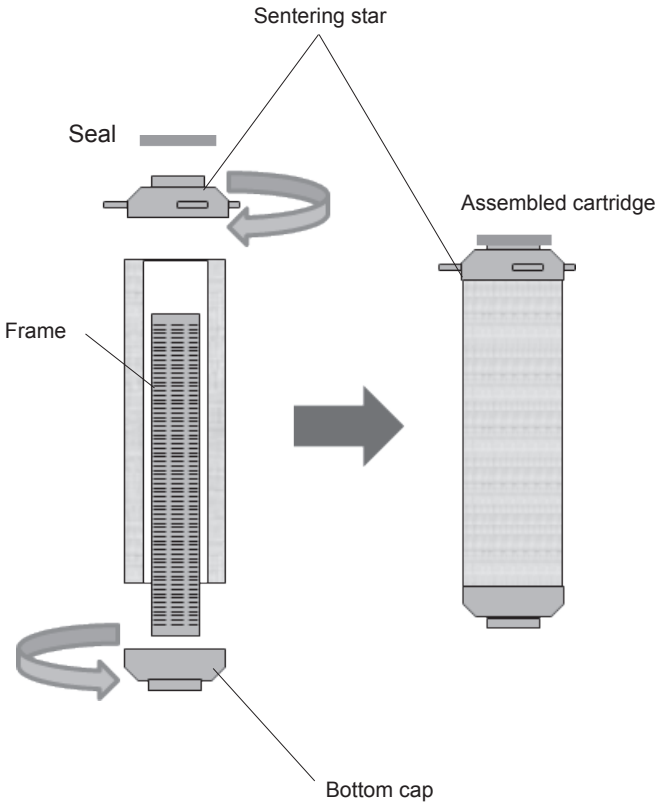
Choose a dry, frost-protected room the temperature of which is not likely to exceed 40°C maximum. The floor must be flat and able to bear loads in operation as mentioned in the appliance technical characteristics section

Technical characteristics :

Power supply voltage :	230 volts +/- 10%
	50 ou 60 Hz
Power consumption :	in service 6 VA
	in rege. 25 VA
Maximum pressure :	7 bars in static mode
Minimum pressure :	1,5 bar dynamic mode
Minimum flow-rate :	0,5 m3/h
Water temperature :	35°C maxi
Ambiente temperature :	40°C maxi



Transformator



HYDRAULIC CONNECTIONS

1) - Cartridge filter with 1” tapped unions

It should be located upstream from the water softener (See connecting diagram).

Comply with water flowing direction (flow direction arrow on head). This filter cartridge features a specific mounting direction, so it is necessary to comply with the following instructions for a proper mounting.

Fit the filtering element to the holder supplied with the filter .Then screw in lower plug and upper plug with the star-shaped end (do not forget flat seal) to the holder by hand, do not force and do not use any tool. Vertically position filter cartridge into filter bowl, setting star-shaped end upward. Position bowl and seal assembly under filter head and screw in tightening ring by hand without any tools.

To set filter to service, slightly open water inlet and back off filter bleed screw to drive out the air (the bleed screw is located on top of filter head).
When water is flowing out of the bleed screw, tighten the latter and fully open installation upstream and downstream shut-off valves.

2) - Cartridge filter maintenance

The filtering cartridge should be replaced when the pressure increase of 0.5 bars compare with the clean filter.

Since waters are more or less clogging depending on areas and installations, it is strongly recommended to systematically replace the cartridge ring every 6 months to a maximum.

To do so, isolate the filter by closing upstream and downstream valves. Unscrew bleed screw to drop the pressure. Then, unscrew the bowl and remove the used cartridge.

Flush and clean bowl in water and wipe with a soft cloth (no detergent). Replace the spare filtering cartridge and set back cartridge filter to service as described above.

3) - The water softener

Four ports must be connected to water softener head.

Important : To protect your appliance in case of overpressure or pressure surge, we advise you to use flexible hoses.

A hose kit and a bypass kit are optionally available.

Item 1 : Filtered utility water inlet 1'' threaded end-piece, on rear LH side.

Item 2 : Softened water outlet 1'' threaded end-piece, on rear RH side.

Item 3 : Regeneration waters drainage Ø16 mm serrated and bent plastic end piece (on LH side).

Item 4 : Link to brine regulator (in salt tray) wing-nut end-piece (See «salt tray» and «brine regulator» paragraphs).

4) - Permo CENTURION softener salt tray

The **Permo CENTURION** water softener is equipped with a special salt tray which is built in the water softener body.

1/ Using the 6/8 dia. gray hose, connect water softener to brine regulator. Slide the nut over the gray hose, push the hose fully home over the endpiece then tighten the nut by hand without any tool. Make sure that gray hose ends are perpendicularly cut.

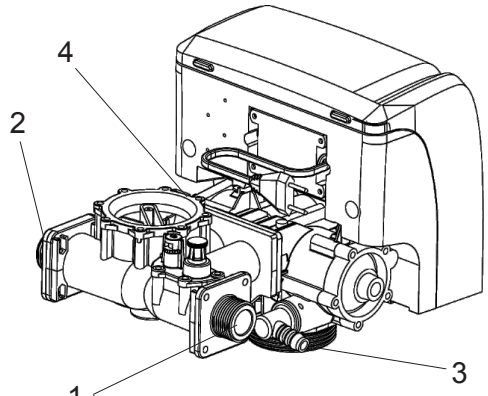
2/ Set brine regulator float located in brine stack or well inside the single-piece tray. To do so, refer to the «Sizes X» Table taking care to pull float rod upward.

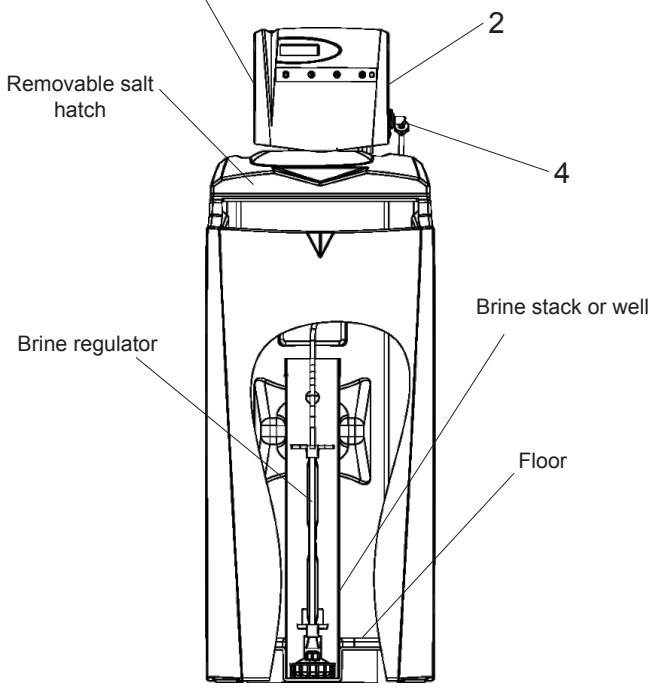
3/ When setting is complete, put back the brine regulator into the brine stack or well down to bottom. Then, close brine well with the red cap taking care not to bend the 6/8 dia. gray hose.

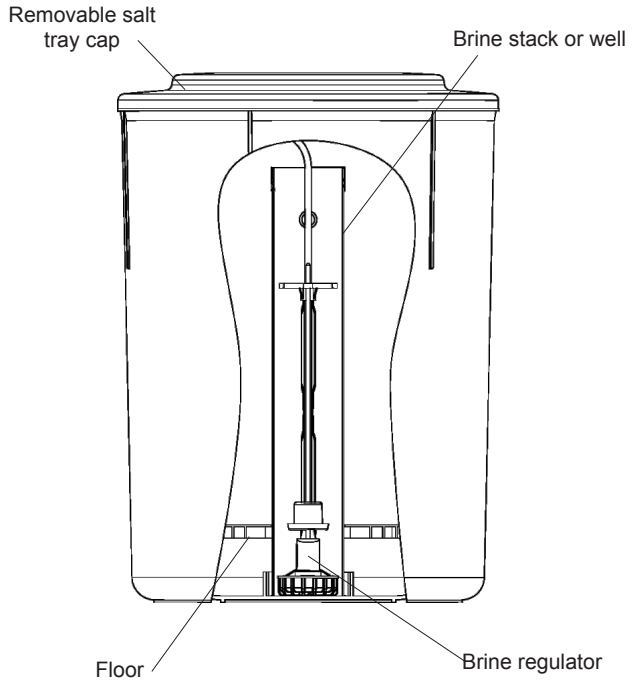
Upon setting to service, load special softener salt pellets and check that stack cap is in place.Add 10 to 20 liters water (depending on models) to prepare brine; at least one hour is necessary to produce a good salt dilution and as a result, an efficient brine.

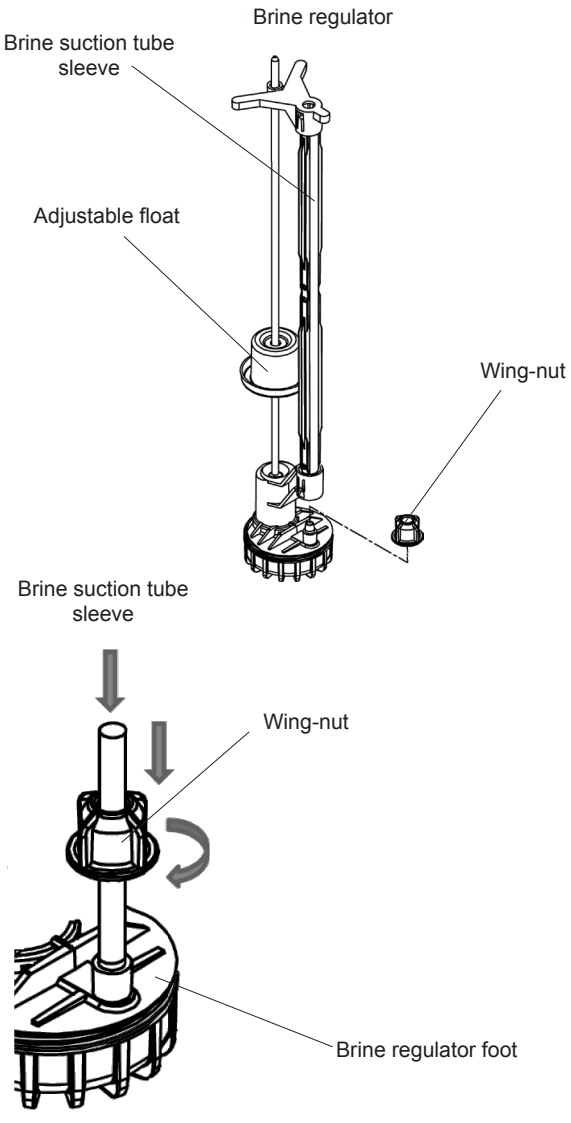
5) - Permo DATA BLUE softener salt tray

The **DATA BLUE** water softener is equipped with a salt tray mounted apart from the water softener body. It provides for a better installation autonomy thanks to its salt pellet reserve which is larger than a compact softener's (single-piece salt tray).









1/ Using the 6/8 dia. gray hose, connect water softener to brine regulator. Slide the nut over the gray hose, push the hose fully home over the end-piece then tighten the nut by hand without any tool. Make sure that gray hose ends are perpendicularly cut.

2/ Set brine regulator float located in brine stack or well inside the single-piece tray. To do so, refer to the «Sizes X» Table taking care to pull float rod upward.

3/ When setting is complete, put back the brine regulator into the brine stack or well down to bottom. Then, close brine well with the red cap taking care not to bend the 6/8 dia. gray hose.

Upon setting to service, load a 25-kg salt pellets bag and check that stack cap is in place.

Add 10 to 20 liters water (depending on models) to prepare brine; at least one hour is necessary to produce a good salt dilution and as a result, an efficient brine.

To correctly connect the brine suction tube to the brine regulator and valve union, please refer to the previous page drawing and perform the following steps. Perpendicularly cut gray hose ends, taking care not to distort hose. Slide wing-nut over the tube complying with screwing direction.

Push gray hose over tapered union end-piece and press strongly enough to hold it in place. With the other hand, tighten wing-nut to the free union while firmly holding gray hose.

Correctly tighten wing-nut without any tool then release gray hose. Check for security of attachment by gently pulling gray tube. Repeat the operation if the tube is not held in place.

7) - Connection to the sewer system

Important : Connection to the sewer system should be made with a regular load drop between regeneration waters drain hose and sewer pipe in order to avoid «drinking water» pollution hazard by the sewer system; to this end, use the Permosiphon supplied with the appliance.

Connect 12/16 dia. transparent pipe item 1 (1.5-meter long section supplied) to the upper serrated port in order to discharge regeneration waters then attach « Serflex « clamps at both ends.

Important : This hose should not be more than four meters long and not broken.

If the sewer is at more than four meters, provide for a 40 mm dia. rigid PVC pipe between sewer and Permosiphon.

Provide for a slope of at least 2% for gravity flow.

On side port item 2, connect a 15/21 mm dia. hose to salt tray overflow (See connecting diagram).

On the 40mm dia. self-locking union item 3, connect a PVC pipe to the sewer (40mm dia. min).

Note : The Permosiphon can be heightened (up to four meters above ground).

In this case, the minimum utility water supply pressure should be greater than 2.5 bar.

Provide for discharge of salt tray overflow via any suitable means.

Important : Salt tray overflow must follow a gravity flow.gravitaire.

8) - Bleeding the installation

It is compulsory to take some precautions before finally priming the system.

Any plumbing work on pipes located upstream from the water softener should be suitably rinsed beforepriming the system. This means that all items of equipment (by-pass, taps, shut-off valves and softener)should be removed or disconnected from the network to perform this task.

The appliance being hydraulically and electrically connected, press for five seconds on the«Regeneration» key then release (See control unit layout).

Then, progressively open upstream shut-off valve. If the by-pass is fitted (optional), turn the wheel so asto direct water to both filter and water softener.

Correctly bleed off the air trapped in filter bowl through the bleed screw located on top of the head. When the air is fully discharged, tighten filter bleed screw.

Bleeding the water softener

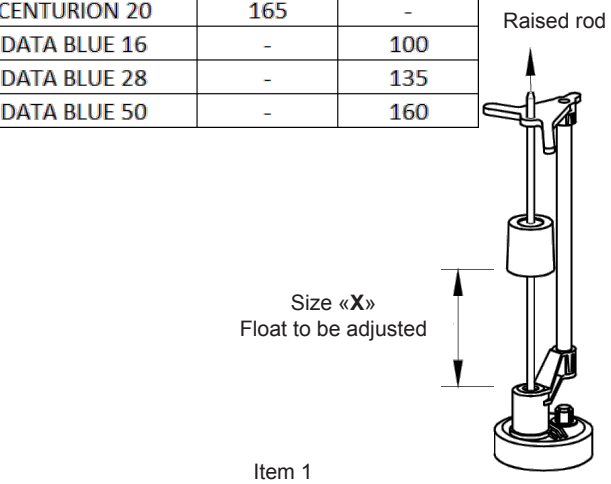
After a few seconds, the water is discharged to the sewer at high rate.

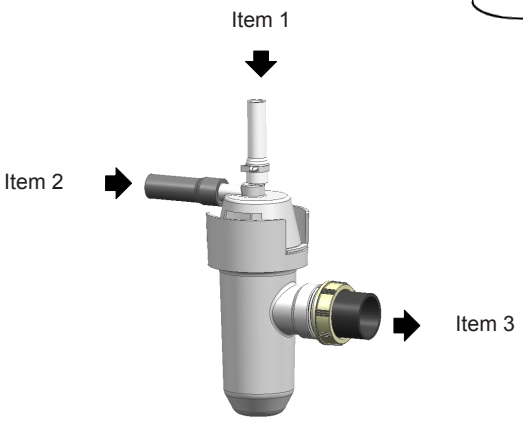
Allow three - four minutes to elapse before stopping regeneration by simultaneously pressing both «Regeneration» and «Mode» keys, then release. Water discharge to the sewer stops.

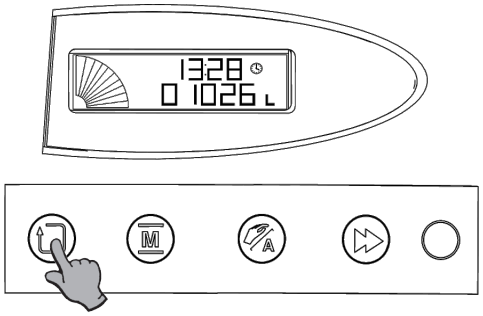
If no water discharge to the sewer is observed, repeat the procedure. Also bleed off salt tray water filling pipe.

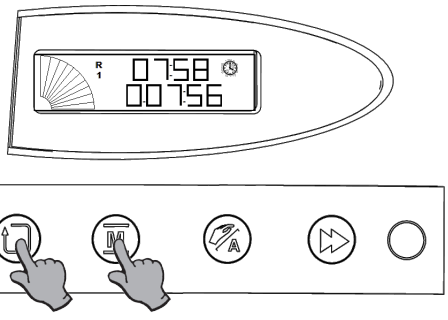
Remove salt tray loading hatch or cover. Inside the tray, the brine stack or well protects the regulator. Remove the red or blue cap and press down float guide rod. The slight resistance is due to network pressure. When the float is in down position, the water flows into the salt tray and should stop at float level previously set according to size «X».

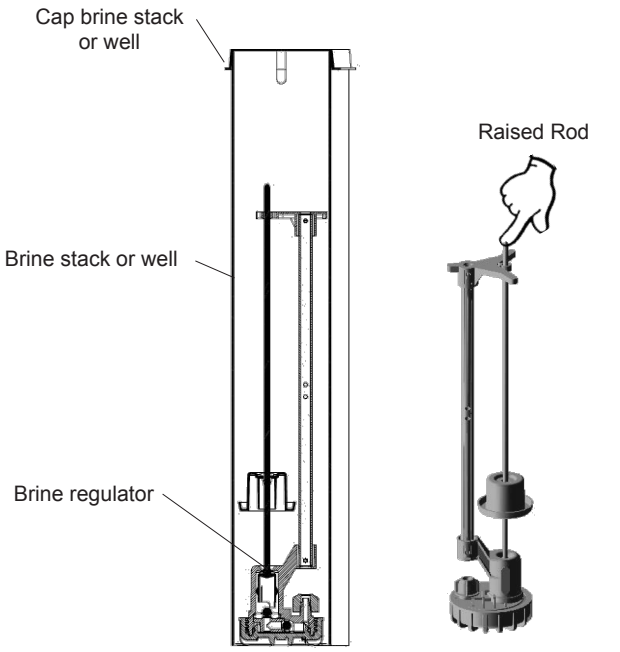
Softeners	Sizes "X" (in mm)	
	monobloc	bibloc
CENTURION 10	110	-
CENTURION 16	145	-
CENTURION 20	165	-
DATA BLUE 16	-	100
DATA BLUE 28	-	135
DATA BLUE 50	-	160

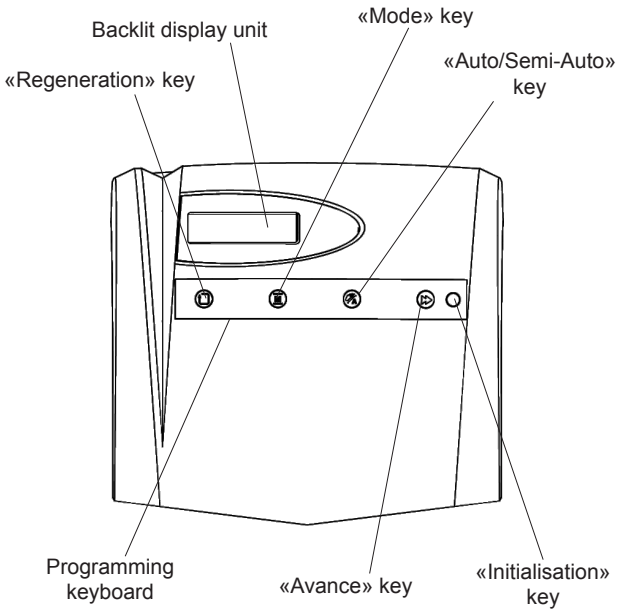


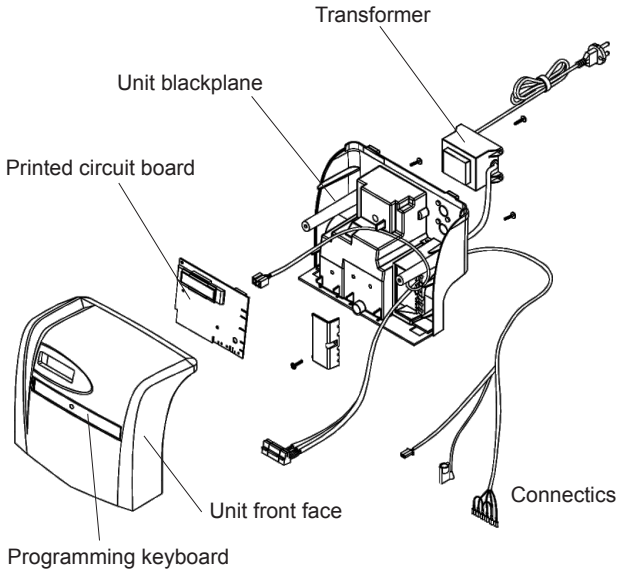












CONTROL UNIT

1) - Control unit layout

The **Permo CENTURION** or **Permo DATA BLUE** water softener is fitted with an electronic control unit and a lithium battery making it possible to save the data required for good operation of the appliance during several months in case of power supply failure.

2) - Electrical connections

The water softener operates with three solenoid valves fed with 24 volts AC. The diagram below shows the connection to be made when replacing the control unit.

3) - A5X PCB display unit

Barograph :

- Remaining volume display (1 dial = 1/10th of cycle)
- Elapsed time during regeneration display

Regeneration :

- Letter «R» symbolizes a regeneration in progress (display throughout the regeneration process).
- «1» = thinning-out phase (display during the first regeneration phase)
- «2» = brining and slow rinsing phase (display during the second regeneration phase)
- «3» = fast rinsing phase (display during the third regeneration phase)

Brining alarm :

- Displayed when the electro-chlorination probe has detected no brine during the second regeneration phase, at the beginning of brine suction.

Maintenance alarm :

- Displayed when a maintenance task has to be performed on your installation (e.g., filtering cartridge replacement). This function is defined by the number of regenerations programmed upon setting to service. During each regeneration process (automatically or manually controlled), the internal counter is incremented and displays the alarm symbol on the display unit when the digit matches with the programmed value.

After-sales alarm :

- Displayed when a specialized maintenance is to be performed on your installation by Our technicians. This function is defined by the number of regenerations programmed upon setting to service.

During each regeneration process (automatically or manually controlled), the internal counter is incremented and displays the alarm symbol on the display unit when the digit matches with the programmed value.

Time (fixed pictogram)

Manu :

Indicates that your appliance operating mode is in pause. No water softener regeneration is possible in both automatic or manual modes.

Unit :

Displayed volume unit display.

- Current time displayed in both «Service» and «Test» modes.
- Program step displayed in programming mode.
- Remaining volume displayed (depending on programmed unit and cycle).
- Regeneration initial time and final time alternately displayed while regeneration is in progress.
- Display of the number of regenerations performed since commissioning.
- Display of the total volume of treated water since commissioning.
- Programming values entry.
- Control unit operating mode code entry.
- Appliance commissioning date entry.

CONTROL UNIT PROGRAMMING

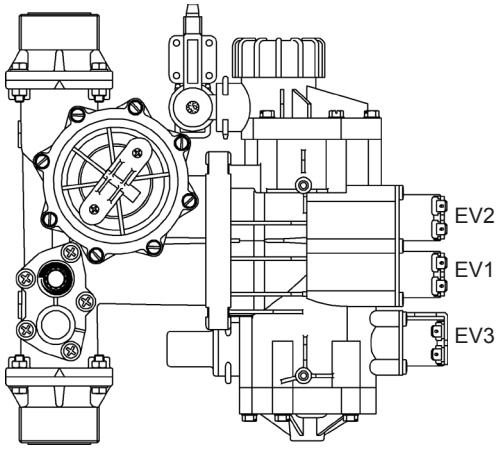
1) - Power-up procedure

Connect the appliance to a standard power outlet in compliance with the operating specifications described in this manual.

When the appliance is not used or if it has been disconnected for at least five consecutive days, at power-up the control unit will normally start in the regeneration mode upon the first treated water extraction of at least one liter or so.

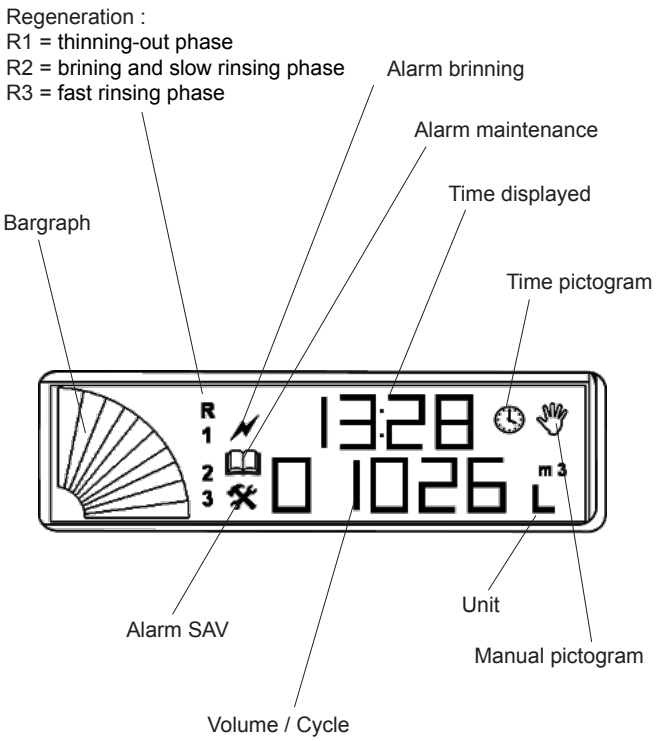
- the first line displays a current time to be set later
- the second line alternately displays the regeneration initial time and final time
- the barograph is in low position and the «R» and «1» characters are visible.

To stop regeneration, simply press both «Mode» and «Regeneration» keys simultaneously then release them. The display unit now displays the current time on the upper line and water volume to



Electrical connections :

EV1 = Blue (commun)
Black (24 VAC)
EV2 = Blue (commun)
Brown (24 VAC)
EV3 = Blue (commun)
Red (24 VAC)



«R» key

Pressing this key for at least five seconds triggers water softener regeneration.

Simultaneously press both «R» and «M» keys to stop regeneration in progress.

«M» key

Pressing this key for five seconds makes it possible to switch over the A5X unit to Programming mode.

Simultaneously press both «R» and «M» keys to stop regeneration in progress.

«Auto/Semi-auto» key

Pressing this key for about five seconds sets the water softener to halted mode and the relevant pictogram is displayed (See display unit detail). Pressing the key for another five seconds returns the water softener to automatic mode, the pictogram disappears from the display unit.

In control unit programming mode, briefly pressing the «Auto/Semi-auto» key makes it possible to shift selection to the right. The flashing digit value may be modified by pressing the «Forward» key. Simultaneously pressing both «Main/Auto» and «R» keys launches the «Test» mode. Then pressing the «M» key makes it possible to select all regeneration phases.

«Forward» key

In the control unit programming mode, briefly pressing the «Forward» key makes it possible to modify the flashing digit value. Holding the «Forward» key pressed causes the value to be continuously scrolled from 0 to 9.

When programming is off, pressing this key for about three seconds makes it possible to display consumption log, i.e. the water volume treated since commissioning. Briefly pressing the «Forward» key displays the number of regenerations performed since commissioning (regeneration manually triggered by pressing the «R» key for five seconds or in automatic mode).

Simultaneously pressing both «Forward» and «Initialization» keys cancels «Maintenance» pictogram display (See display unit detail) and the regenerations counter is then reset to zero.

«Initialization» key

The «Initialization» key is compulsorily associated to another key.

Pressing the «Initialization» key and :

- the «M» key for five seconds makes it possible to program the generic code defining your water softener operating mode. When the generic code is programmed, pressing the keys together makes it possible to reset the factory parameters.

- the «Forward» key cancels «maintenance» pictogram display and resets the regenerations counter to zero.

be treated before the next regeneration process on the lower line.

2) - «Anticipated volume» operating mode

The anticipated volume operating mode triggers regenerations at the programmed time if the available volume is lower than the consumption of the 24 hours to come.

A daily average is calculated every day depending on the corresponding daily consumption of the previous week. This calculation is performed every day at midnight by the control unit.

The following parameters are to be set:

a/ - the current time:

day 1 for Monday, 2 for Tuesday, etc.

then the time from 00:00 to 23:59

b/ - the regeneration time:

from 00:00 to 23:59

c/ - the overall regeneration duration in minutes:

See the «Setting regeneration duration» Table

d/ - the average consumptions:

optional because average values are automatically calculated by the electronics depending on daily treated water consumptions.

3) - Operating parameters

To correctly program your water softener, it is necessary to know utility water hardness expressed in French degrees. This analysis can be easily performed using a water hardness measuring kit available from your dealer or vendor.

On completion of utility water hardness analysis, refer to the «Water volume produced between two regenerations» Table so as to set your water softener cycle (visible on the second line of the display unit).

The other parameter to be known is the overall regeneration duration.

This is programmed depending on the type of equipment and as a function of your network pressure. The «Regeneration duration» Table makes it possible to set this value for your water softener.

Note : All the above-mentioned values are optimized in relation to the cycle calculation formula described in the «Fast commissioning» section at the beginning of this manual.

4) - Particular cases

Setting key functions reminder. Press the «Auto / Semi-auto» key to move the flashing digit selection to the right and modify its value by pressing the «Forward» key.

When the PCB is accidentally deprogrammed or when printed circuit board A5X is replaced, at power-up the unit displays five zeros the first of which on the left is flashing. It will remain in this configuration until your appliance operating mode is entered and identified by a generic code. The «Mode» and «Regeneration» keys are not active.

Press the « Auto / Semi-auto « key to move the flashing digit selection to the right and modify its value by pressing the «Forward» key.

- Enter the generic code : 22126

When the operating mode 5-digit code appears, press the «Initialization» key to validate the selection. The next 2-line display specifies the current time and the defaulted water softener cycles.

Caution : The operating mode selecting code described above corresponds to a program which is well defined in the A5X-Control unit microprocessor.Any code erroneous or not corresponding to your water softener may result in a malfunction of your appliance and possibly in voiding the **BWT** warranty.

5) - Watching the operating mode

To display and check the five-digit code, simultaneously press both «Mode» and «Initialization» keys for five seconds, then release them. Check and/or modify the displayed code, then validate after entry by pressing the «Initialization» key twice.

If the code is modified, repeat control unit programming procedure (See the «Programming parameters» paragraph).

6) - Returning to factory parameters

To reset the programmed operating mode, simultaneously press both «Initialization» and «Mode» keys for five seconds, then release them. Then, briefly press the «Initialization» key, the display unit indicates «ini 0». Select «1» with the «Forward» key, then press again the «Initialization» key to validate the resetting operation.

Then repeat control unit programming procedure (See the «Programming parameters» paragraph).

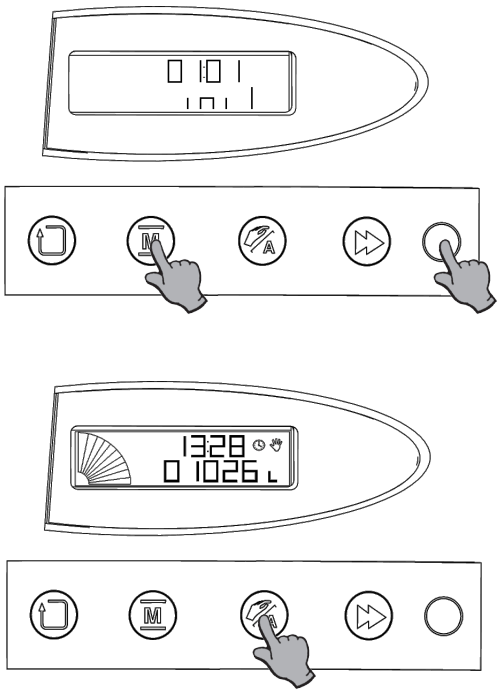
7) - Operation in the semi-automatic mode

This operating mode is recommended for discontinuous utilizations where regenerations are manually triggered.

Just press the «Auto / Semi-auto» key for five seconds. The semi-automatic mode symbol appears next to the clock symbol.

The «Regeneration» key is inactive during this mode. The water softener goes on producing softened water, but no automatic regeneration will be triggered on cycle completion.

Note : It is compulsory to exit the semi-automatic mode by pressing the «Auto / Semiauto» key for five seconds to be able to trigger a manual or automatic regeneration.



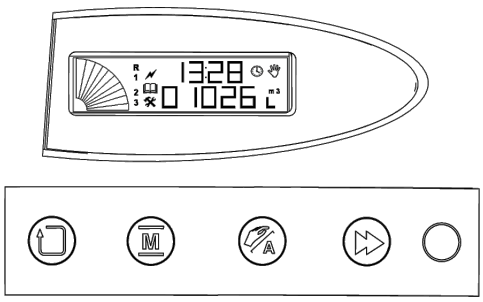
Softeners type	Network pressure	
	Less than 4 bars	More than 4 bars
CENTURION 10	32	32
CENTURION 16	42	33
CENTURION 20	52	43
DATA BLUE 16	42	33
DATA BLUE 28	62	53
DATA BLUE 50	73	63

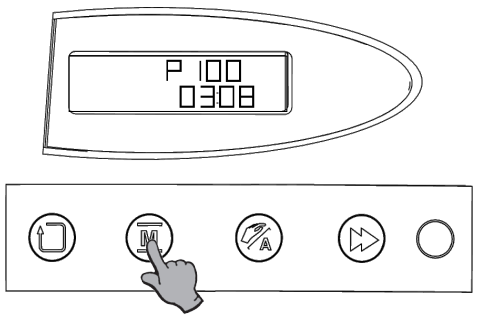
Table «Overall regeneration duration in minutes»

Hardness in °f (TH)	CENTURION 10	CENTURION 16	CENTURION 20
18	2800	4700	5850
20	2500	4250	5250
22	2250	3850	4750
24	2100	3550	4400
26	1900	3250	4050
28	1800	3050	3750
30	1650	2850	3500
32	1550	2650	3300
34	1450	2500	3100
36	1400	2350	2900
38	1300	2250	2750
40	1250	2100	2650
42	1200	2000	2500
44	1150	1950	2400
46	1100	1850	2300
48	1050	1750	2200
50	1000	1700	2100

Hardness in °f (TH)	DATA BLUE 16	DATA BLUE 28	DATA BLUE 50
18	4700	8600	13850
20	4250	7750	12500
22	3850	7050	11350
24	3550	6450	10400
26	3250	5950	9600
28	3050	5550	8900
30	2850	5150	8300
32	2650	4850	7800
34	2500	4550	7350
36	2350	4300	6950
38	2250	4100	6500
40	2100	3900	6250
42	2000	3700	5950
44	1950	3500	5650
46	1850	3350	5400
48	1750	3250	5200
50	1700	3100	5000

Table «Water volume treated between two regenerations»





PROGRAMMING PARAMETERS

The following explanations provide the meanings of the program steps and the values of the parameters to be programmed for your water softener operating mode.

Caution : From this time onward, to avoid any mishandling, the preset values remain displayed for 20 seconds; beyond this time and if no key is pressed, the display unit will automatically return to the initial display.

Important : Except for the current time, the following programming procedure will be effectively validated only when the first regeneration is triggered, either automatically by the electronic unit, or manually by pressing the «Regeneration» key for 5 seconds. It is only from this time that the updated parameters such as the cycle will be correctly displayed.

In the following steps, use the following keys to modify the displayed value.

- The flashing digit value may be modified by pressing the «Forward» key.

- The «Auto / Semi-auto» key makes it possible to move the selecting cursor to the right.

To simplify the water softener setting procedure, some program steps are no longer accessible one hour after entering the generic code. These steps are subsequently identified by the « # « symbol.

Power up the control unit.

1) - Setting to service date #

Press the «Mode» key for about five seconds.

The display unit indicates program step P100 on the first line and the default setting to service date in weeks on the second line.

Example: 03:08 for week 03 of year 2008.

It is possible to modify this value by entering the current week at commissioning time.

2) - Current year #

Press the «Mode» key again. The display unit indicates program step P001 on the first line and the default current year on the second line.

Set the current year value.

3) - Current day and month #

Press the «Mode» key. The display unit indicates program step P002 on the first line and the default current day and month on the second line.

Example: 01:02 for February 1st.

Set the current day and month value.

4) - Current day and time

Press the «Mode» key. The display unit indicates program step P003 on the first line and the default week day and time on the second line.

Example: 1.01:02 for Monday at 01h02.

The first digit corresponds to the week day number from 1 to 7, 1 for Monday, 2 for Tuesday, Wednesday to 3, etc.

Set current day and time value over 24 hours.

5) - Regeneration time

Press the «Mode» key. The display unit indicates program step P080 and the default regeneration time.

This setting makes it possible to anticipate regeneration depending on consumptions.

Example: 0.01:00 for 01h00.

Set regeneration time value over 24 hours.

The first digit is not adjustable.

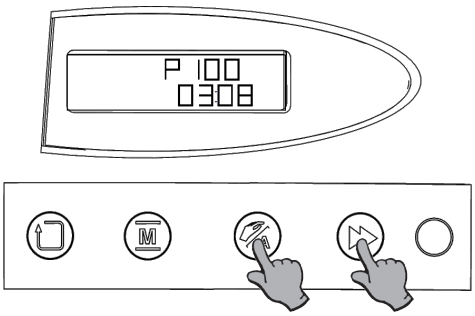
6) - Regeneration duration

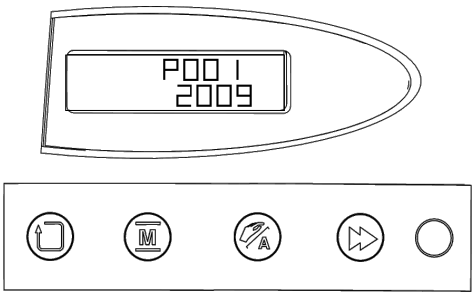
Press the «Mode» key. The display unit indicates program step P050 and the value corresponding to overall regeneration time in minutes.

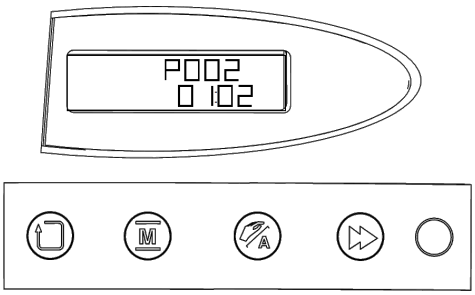
Example: 064.

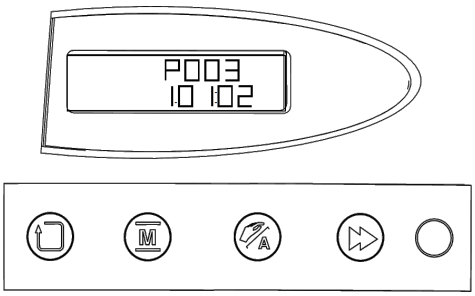
Set regeneration duration value expressed in minutes.

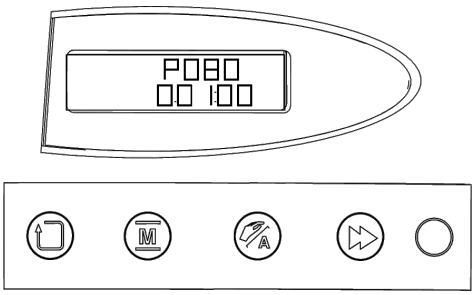
To perform this setting, refer to the «Overall regeneration duration» Table in the «Programming control unit operating parameters» section.

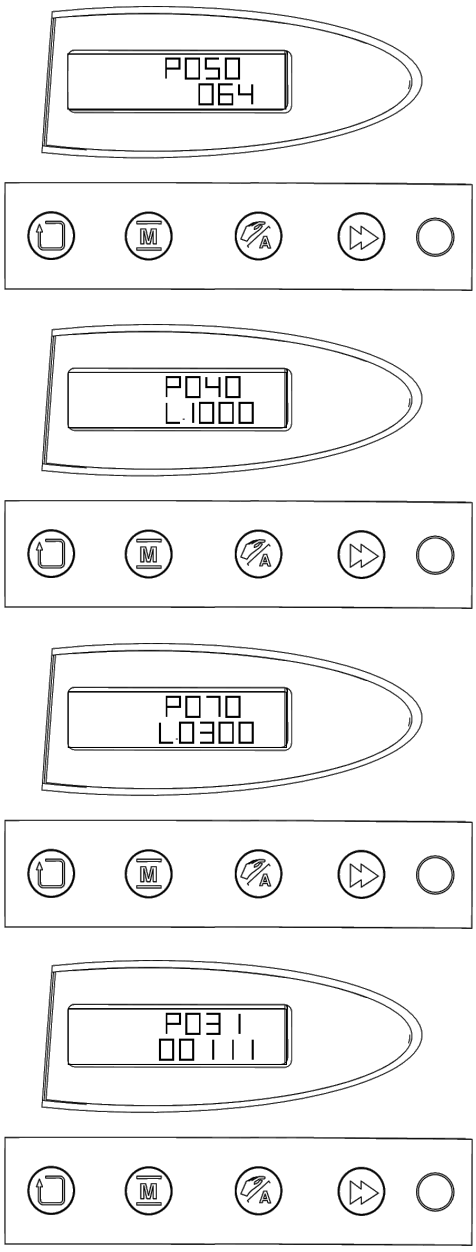












7) - Cycle or water produced between two regenerations

Press the «Mode» key again. The display unit indicates program step P040 and the default regeneration cycle.

Example: L.1000 corresponds to a 1000-liter cycle

Set the cycle corresponding to the water volume produced between two regenerations. Refer to the «Overall regeneration duration» Table in the «Programming the A5X unit, operating parameters» section. To calculate your water softener cycle, it is necessary to known the utility water TH in French degrees.

8) - Average consumptions

Press the «Mode» key. The display unit indicates program step P070 and the value in L.0300. This value corresponds to the initial average.

It is programmable if the daily consumptions are known. The A5X electronic unit will automatically record and modify this value depending on consumptions.

The average is calculated every day at the regeneration time programmed under step P080.

Then intermittently press on the «Mode» key to set all average values as required up to program step P077, default value L.0300.

9) - Activating the alarms

Press the «Mode» key again. The display unit indicates program step P031 and the alarms to be selected. See the table below to configure the alarms to be displayed.

Value «0» = alarm non active

Value «1» = alarm active

0	0	1	1	1
Pressure switch alarm not used	**Salt missing alarm not used**	**Electro-chlorination probe alarm**	**Maintenance alarm**	**After-sales alarm**
		If a problem is detected by the electronics after an 80-second time-delay at the beginning of the brining phase, an alarm is activated on the display unit after regeneration	**Programming at program step "P032" expressed in number of regenerations.**	**Programming at program step "P033" expressed in number of regenerations.**
		Acknowledge the fault by pressing the "Forward" key	**Acknowledge the fault by simultaneously pressing both "Forward" and "Initialization" keys**	**Fault acknowledged by our technicians only**

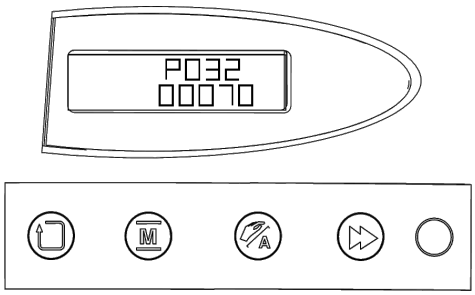
10) - Maintenance alarm

Press again the «Mode» key. The display unit indicates program step P032 along with the default number of regenerations after which the maintenance alarm is displayed.

If necessary, set the maintenance alarm from 1 to 999 regenerations.

If the alarm has not been selected when setting program step P031, no maintenance alarm can be displayed.

Fill in the «Recording the programmed parameters».



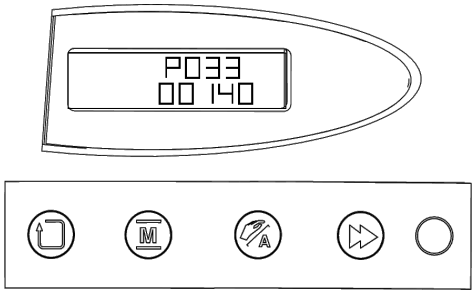
11) - After-sales alarm

Press the «Mode» key. The display unit indicates program step P033 along with the default number of regenerations after which the after-sales alarm is displayed.

If necessary, set the after-sales alarm from 1 to 999 regenerations.

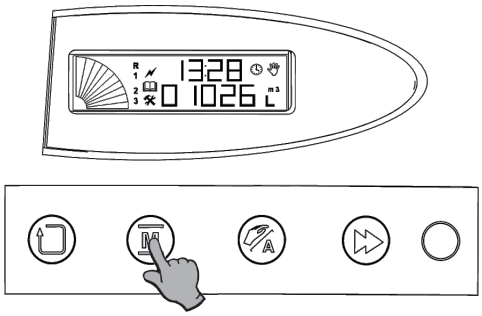
If the alarm has not been selected when setting program step P031, no after-sales alarm can be displayed.

Fill in the «Recording the programmed parameters».



12) - Programming end

Press the «Mode» key. The programming phase is complete and the display unit returns to the service configuration.

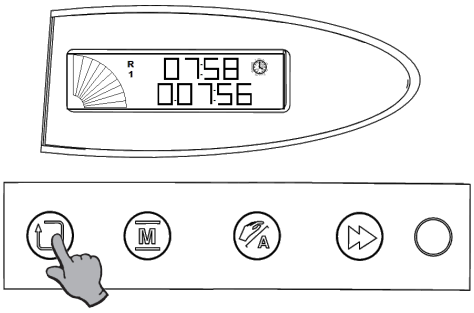


13) - Additional regeneration

To perform an additional regeneration following an unusual water consumption, simply press the «Regeneration» key for five seconds then release.

This action will not modify any setting and the microprocessor will take it into account for the next calculations.

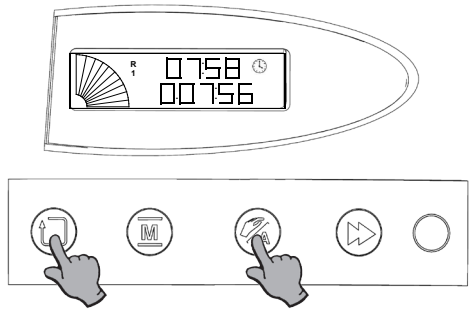
The additional regeneration is taken into account for the «Maintenance» and «After-sales» alarms.

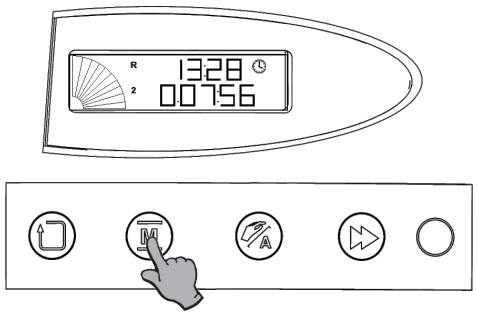


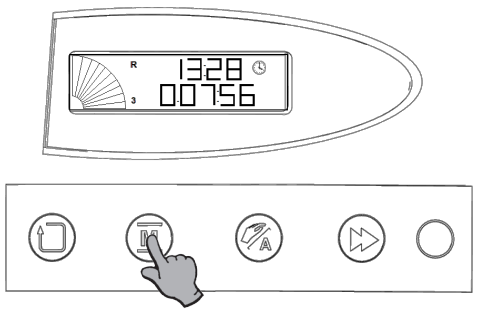
14) - «TEST» program

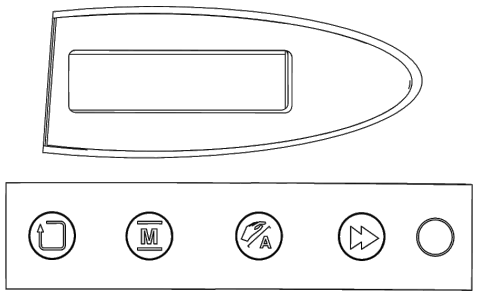
Caution : This test is reserved to technicians and makes it possible to test water softener operating condition and the regeneration phases.

To launch the «TEST» program, simultaneously press both «Regeneration» and «Auto / Semi-auto» keys for about five seconds.









The softener triggers regeneration and «R1» is displayed. The barograph remains in high position throughout the test.

To shift to the next regeneration phase (brine suction and slow rinsing), briefly press the «Mode» key. The display then shifts to «R2».

Note : To validate bio-system probe operation, this step should be held for at least two minutes.

Another action on the «Mode» key makes it possible to select fast rinsing, i.e. the last regeneration phase.

Caution : It is recommended to allow this last phase to entirely run out if the brine suction phase has been tested during a few minutes, this being aimed at correctly the resin contained in the water softener bottle.

Press the «Mode» key again to terminate the Test program and return to the initial display.

Note : The electronics does not manage the summer and winter times in force in France.

It is therefore necessary to manually perform the change by applying the procedure described under step 4, program step P003.

15) - Power supply failure

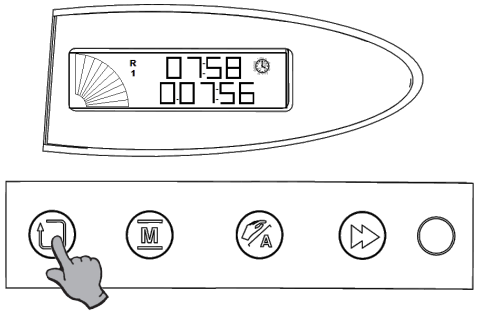
Each softener is protected against accidental or deliberate power supply failures by a lithium battery built in the electronic circuit. During the downtimes, the display is off and no regeneration can take place but the programming data remains backed up in memory.

During the control unit power-up procedure, a short wait makes it possible to update the data sent during the mains failure. Water consumption is calculated as a function of the average values recorded before the mains failure and failure duration.

If a regeneration was to take place during the power supply failure, it would be automatically triggered upon power supply restoration.

FIRST REGENERATION

To trigger a regeneration, proceed as described in the «Additional regeneration» paragraph. Regeneration waters will be discharged to the sewer. The second display line then alternately indicates regeneration initial and final times.



The regeneration phases described below will be automatically triggered in succession.

1 = thinning-out,

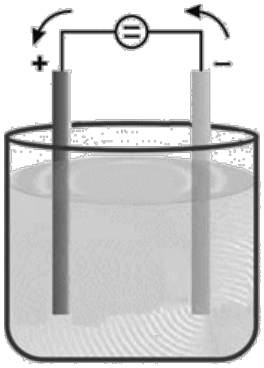
2 = brine suction,

3 = slow rinsing,

4 = fast rinsing.

Electro-chlorination:

The electro-chlorination process consists in locally producing chlorine by electrolysis of a solution rich in sodium chloride. Preparing this brine requires the use of softened water to prevent electrolysis cell cathodes (where OH- ions are produced) from getting rapidly scaled.



On regeneration completion, the sewer discharge stops and the display unit indicates the time and the programmed water volume available between two regenerations.

Also, on regeneration completion, the salt tray receives water via the small brine regulator hose. This water will be used to make brine for the next regeneration, whose level is controlled by the float located inside salt tray stack (gray tube).

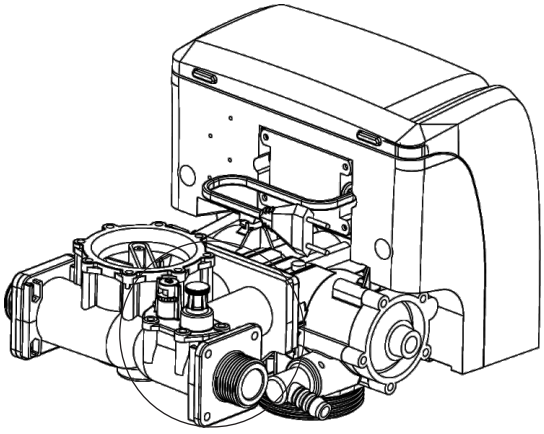
UTILIZATION

1) - Setting softened water (Residual TH)

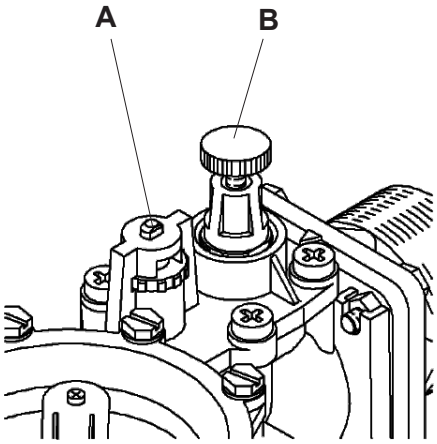
The softened water is measured using an analysis kit (not supplied) as follows:

- Collect softener outlet water after closing the main by-pass and bleeding the downstream circuit.

- Softeners are fitted with a mixing tap located on appliance rear side. The mixing tap makes it possible to mix raw water to softened water so as to create the residual hardness desired by the user.

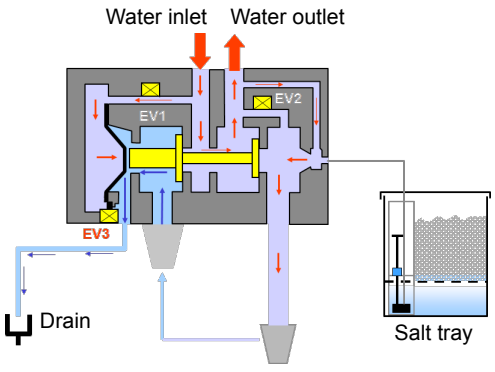


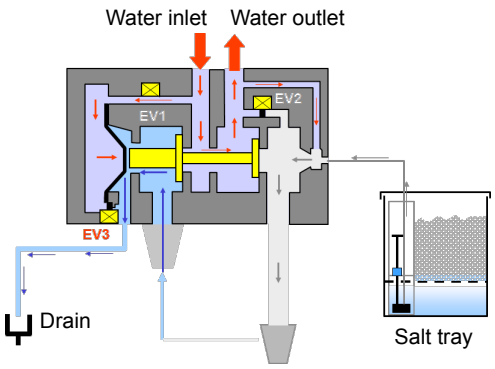
Note : There is no set-point for this setting. The user will select it within 0°f - 15°f, This latter value being the one generally chosen by communities.



Softeners	Quantity of bleach concentrat at about 35 - 36 chlorometric degrees (1)
CENTURION 10	3
CENTURION 16	5
CENTURION 20	5
DATA BLUE 16	5
DATA BLUE 28	6
DATA BLUE 50	7

(1) cartons trade at about 9.6% of concentrated bleach use (in ml) in the salt tank (after loading with salt).





2) - Setting the residual TH

a) Tighten thumbwheel B fully home, then back off over 1/2 or 3/4 turn.

b) On the installation downstream from the water softener, open a tap at low flow-rate and set the residual TH by turning knob A clockwise to increase the residual TH or counterclockwise to decrease it.

c) When setting is complete, fully open the tap or several taps to release a high flow-rate, tighten thumbwheel B if the TH is too high or loosen it if the TH is too low.

d) The test should be performed using an analysis kit only.

3) - Setting to asepsis

To prevent unwanted microbiological proliferation hazards, the water softener must be disinfected with a bleach solution in the proportions indicated in the following table.

At least once every 6 months, take advantage of a salt tray reloading to drain it off, clean and disinfect it after reloading with salt by introducing a dose of bleach solution into the brine regulator stack then manually trigger a regeneration process by pressing the «R» key for five seconds.

VALVE OPERATING PRINCIPLE

BACKWASH

First regeneration phase.

The thinning-out process takes place from bottom to top in the bottle and prepares the resin bed for brine wash-out.

This step takes a few minutes only and water will be discharged to the sewer at high rate.

Solenoid valve 1 drives the internal valve moving mechanism control diaphragm.

Solenoid valve 2 also opens to increase water discharge flow-rate to the sewer.

BRINE SUCTION

An important regeneration phase, brining takes place from bottom to top, feeding the resin with a saturated brine solution. The sodium ions will replace calcium and magnesium ions previously fixed to the resin.

Water is discharged to the sewer at low rate.

Solenoid valve 2 is closed to force water through the hydro-ejector. A negative pressure is then

created to suck the brine previously made up in the salt tray.

SLOW RINSING

Once the brine contained in the salt tray is fully sucked, a water quantity will be maintained on the resin in order to eliminate residual sodium ions.

Water is discharged to the sewer at low rate.

Solenoid valve 2 remains closed.

Solenoid valve 1 holds the moving mechanism in the regeneration position.

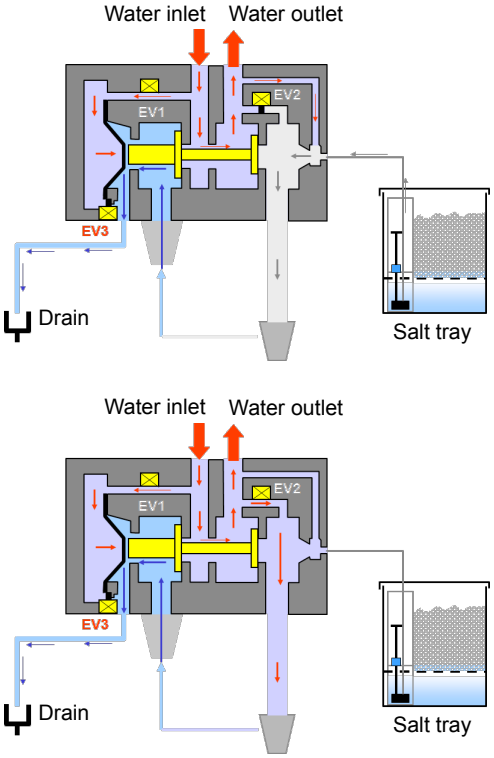
FAST RINSING

Last regeneration phase. Rinsing takes place from bottom to top; it is used to eliminate the possible sodium residues still present in the bottle.

This step takes a few minutes only and water will be discharged to the sewer at high rate.

Solenoid valves 1 & 2 are energized.

Following this step, solenoid valve 3 opens for a few minutes to relief chamber pressure and water should stop flowing to the sewer.



INCIDENTS, CAUSES AND REMEDIES

On completion of these verifications, manually trigger a regeneration and if no soft water is produced after it, call the Customer Service Department.

Important : Following a hydraulic repair on the water softener, set the system to asepsis as described in the «Utilization» section, paragraph 3 «Setting to asepsis».

MAINTENANCE

For your appliance to operate correctly and provide you with the utmost comfort and safety, it is important to ensure a periodical maintenance.

Indeed, some components are subject to normal ageing specific to the appliance operation. These components, also called operating and/or wear parts, must be periodically replaced by a qualified person authorized to perform this work.

Operating and wear parts are excluded from our general warranty conditions. See also our applicable warranty conditions, «Warranty Exclusion» paragraph.

Item concerned	Incidents	Causes	Remedies
Control unit	Additional regeneration impossible	Wrong generic code recorded and regeneration blocked in standby position.	Stop regeneration and check generic code.
		«Semi-automatic» mode triggered.	Press the «Auto / Semi-Auto» key for five seconds then release. The "hand" pictogram should disappear and the barograph stops flashing. If the fault persists, call the Customer Service Department.
	Barograph flashes in service	«Semi-automatic» Mode triggered.	Press the «Auto / Semi-Auto» key for five seconds then release. The "hand" pictogram should disappear and the barograph stops flashing. If the fault persists, call the Customer Service Department.
		An alarm is active.	Identify the displayed alarm pictogram and refer to the "Control unit" section.
	Barograph flashes during regeneration	Electro-chlorination probe faulty.	Check salt level in tray. If the fault persists, call the Customer Service Department.
	Wrong time displayed	Time returned to 00H01 after a power supply failure, back-up battery out of order.	Appeler le Service Après-Vente.
	No display	Mains failure.	Check for voltage on power outlet. If the fault persists, call the Customer Service Department
Abnormal water flow to the sewer			Make sure that the appliance is not in regeneration, otherwise call the Customer Service Department.
Abnormal water flow out of salt tray overflow		Brine regulator incorrectly closed, leaks.	Remove brine regulator from salt tray, check tightening. Submit unions and seals to a leak test and reinstall the assembly. If the fault persists, call the Customer Service Department.
Regeneration out of the programmed time		Standby mode active.	To preserve the quality of water softener outlet water, additional regenerations may take place in case of too low water consumptions. Regeneration is then triggered either at the first extraction after a long downtime or after a maximum time-delay following the last regeneration.
Exceptional cases		The water softener produces no more soft water.	Check that the various shut-off and by-pass valves are in the correct positions. Check that the appliance is electrically supplied. Check that salt tray is loaded with salt. Check that filter cartridge is not clogged.

The exchange frequency is determined in accordance with equipment installation and functioning conditions. The appliance shall be subjected to a visual inspection at least once per year so as to check for condition of unions, connections, display unit, etc…

Our appliances are warranted as of the setting to service date (See our applicable warranty conditions).

In any case, the statutory warranty under the terms of which the seller is committed to warranty the buyer against all consequences of faults or latent defects of the sold item or rendered service shall apply.

- Periodically check

- Upstream water hardness (TH).

- Any +/- 10% variation of water under treatment hardness should be taken into account in order to possibly review appliance settings.

- Downstream water hardness (TH).

- Check mixed water hardness and correct mixing device setting if required.

To measure TH hardness, **Permo** can offer you TH kits which will facilitate such analyses.

- Every six months

Before any utilization, return to service, after hydraulic system repair work, set the softening system asepsis in accordance with «Utilization» Section paragraph 3 «Setting to asepsis «.

We also recommend to clean resins using the **«STERICLEAN»** product.

Replace filter cartridge upstream from the water softener every 6 months or more frequently if required. Isolate the appliance and drop the pressure either by opening a downstream tap or by triggering a regeneration process.

- Every year

Check for too high quantities of salt insoluble deposits. Fully clean salt tray and brine regulator.

To do so, the salt tray must be empty, do not top up salt to facilitate the task. Isolate the appliance by closing upstream and downstream valves and correctly bleed off the network. Disconnect water softener power supply plug.

Perform a brine regulator functional test, replace parts as required.

- «Maintenance» alarm»

This alarm is identified by pictogram  on the display unit.

For instance, it stipulates replacement of the filtering cartridge in the filter installed upstream from water softener or any other event mentioned in the «Recording the programmed parameters « paragraph at the beginning of the manual which was documented upon setting to service.

- After-sales alarm

The alarm symbol  shown on the display unit indicates that you have to call our technician for a customer service intervention. It may be related to replacement of functioning and/or wear parts ensuring good operation of your installation. Please refer to the «Recording the programmed parameters « paragraph at the beginning of the manual which was documented upon setting to service.

Important:

Have the functioning and wear parts checked as required by a person authorized to work on the appliance. Check for tightness, control unit programming, regeneration cycles and perform a test. Your water softener must be correctly and periodically overhauled by a professional.

Note:

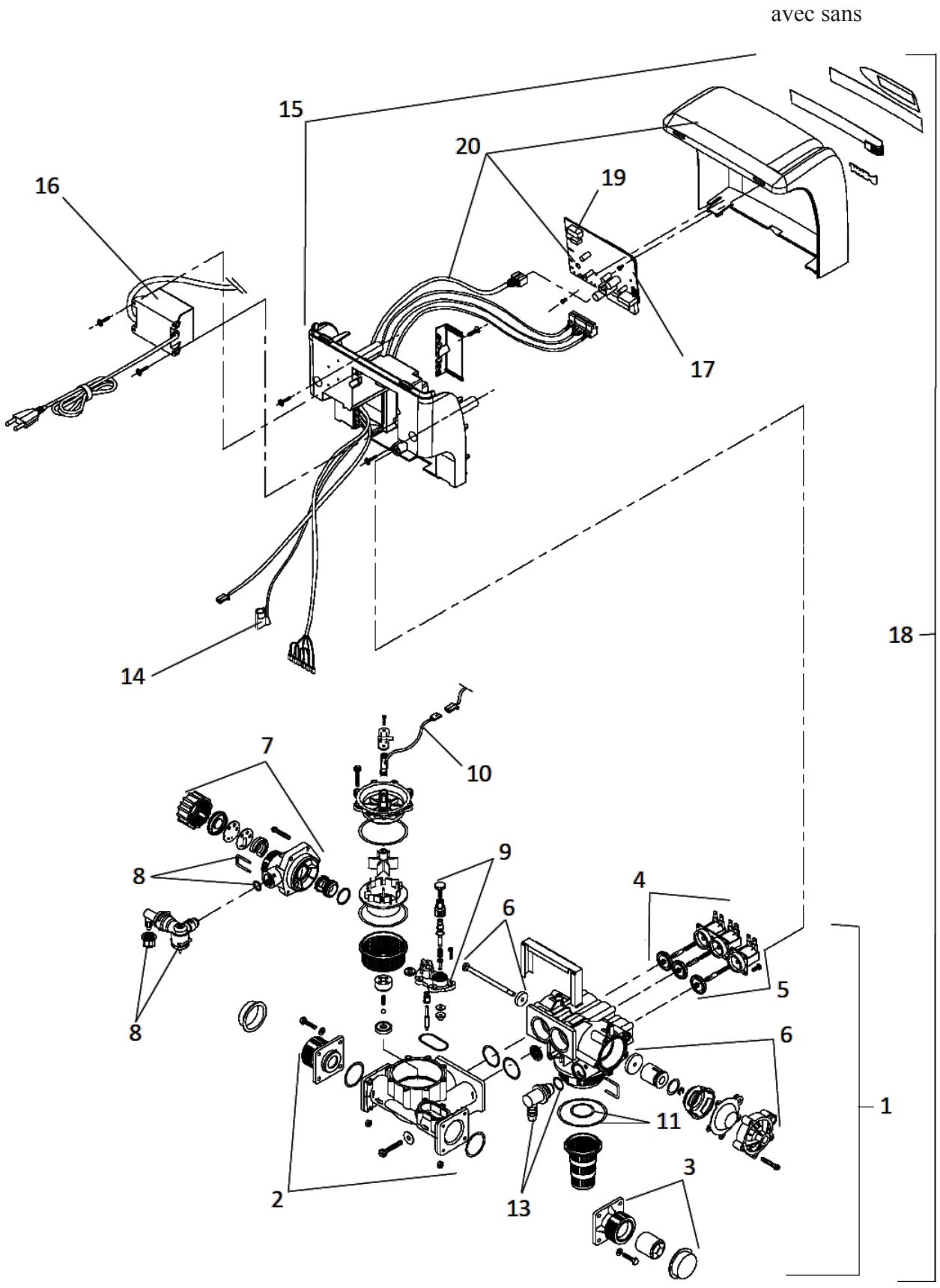
The above-mentioned information is a minimum. Depending on water under treatment quality and the changes thereof in time, appliance accommodating room typology, upstream or downstream processes, it may be necessary to provide for a more intensive maintenance at different periods.

If you wish, our BWT Permo regional agencies are at your disposal to offer you a customized technical support agreement for your appliance.

NOTES

NOTES

EXPLODED VIEW



VALVES

Rep 18	**P0001124**	Valve for softeners 10 à 16 L. (Valve, control unit, Bio and connectors)	(1)
Rep 18	**P0001125**	Valve for softeners 20 - 50 L. (Valve, control unit, Bio and connectors)	(1)
Rep 1	**P0012173**	Hydraulic block (3 EV) + drain, gaskets, injector n°1, without connecting, without suction and control box	(1)
Rep 1	**P0012174**	Hydraulic block (3 EV) + drain, gaskets, injector n°2, without connecting, without suction and control box	(1)
Rep 6	**P0012717**	Moving mechanism + membran S/A	(2)
Rep 7	**P0012718**	Injector n° 1 (Ø 0,8 - white / black gasket)	(1)
Rep 7	**P0012719**	Injector n° 2 (Ø 1,3 - blue / black gasket)	(1)
Rep 5	**P0012710**	Solenoid valve simply 24 V 50 Hz (EV 3)	(3)
Rep 4	**P0012711**	Solenoid valve 24 V 50 Hz (EV1 - EV2)	(3)
Rep 13	**P0012731**	Drain S/A	(1)
Rep 11	**C0620018**	O'ring valve / body and risertube	(1)

CONTROL UNIT

Rep 17	**P0017815**	Electronic board A5X (multi standard)	(1)
Rep 20	**P0001130**	Control unit without transformer (Front, electronic board and wiring harness)	(1)
Rep 16	**P0001131**	Transformer A5X	(1)
Rep 15 & 16	**P0001132**	Complet box with transformer	(1)

REAR HYDRAULIC BLOCK

Rep 3	**P0012702**	Flange + check valve 1"	(1)
Rep 2	**P0012127**	Rear hydraulic block + gaskets without check valve, flanges 1" - Residual TH	(1)
Rep 10	**P0012736**	ILS A4X - A5X with connecting	(4)
Rep 9	**P0012730**	Residual TH setting	(1)
Rep 8	**P0012006**	Electro-chlorination (without cable)	(4)
Rep 14	**P0012020**	Cable for sensor electro-chlorination	(3)

ACCESSORY

NR	**P0014854**	Brine regulator 8/13	(4)
NR	**P0014892**	Tubing 6/8 (meter)	(1)

Legend

(1) - Spare parts
(2) - Wear part replacement frequency every year
(3) - Wear part replacement frequency every 2 years
(4) - Wear part replacement frequency every 3 years

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permo
BEST WATER TECHNOLOGY
BWT GROUP