PERMO WATER SOFTENERS
8000 ALCYO COMPOSITE

A5X CONTROL

permo
BEST WATER TECHNOLOGY
BWT GROUP

www.permo.fr

VERY IMPORTANT: Read this manual carefully before connecting the unit to the mains supply, filling it with water or operating it. Failure to comply with these instructions will **invalidate** the BWT **PERMO** warranty.

WARNING

Dear Customer,

Please read this manual carefully before undertaking the installation, commissioning and maintenance of this appliance. The owner of the unit should ensure that any persons having access to it are familiar with this manual and have understood it.

The unit should be installed in a clean, dry location with adequate ventilation that is inaccessible to unauthorised persons.

The unit must be protected from bad weather, sources of heat and chemical vapours.

The electrical junction boxes should only be opened by qualified persons familiar with the danger of electric current - **DANGER OF ELECTROCUTION**.

The operation and maintenance of the unit should be undertaken by a duly qualified person who has the required knowledge for this kind of operation.

The owner of the unit should ensure that persons working on it have the appropriate tools and equipment.

Chemicals may be necessary for certain servicing operations. The user must be fully aware of any risks involved in the use of these chemicals and should employ the appropriate PPE or CPE (personal or collective protective equipment).

The unit must not be modified without the manufacturer's prior written approval.

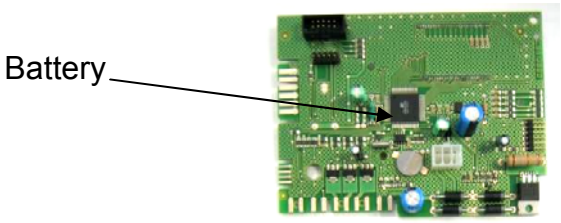
The unit's surfaces must not be cleaned with alcohol or an alcohol-based product, or with any product containing plastic solvents.

Replacing the battery:

In accordance with decree 2009-1139 on the marketing of batteries and accumulators and their disposal, this appliance contains a Lithium 3 volts type battery reference P0019905. The characteristics of this battery are in compliance with the decree.

If it is necessary to replace the battery an identical type of battery must be fitted.

The battery is soldered to the printed circuit board at the location shown below. To replace it:



- Disconnect the unit from the mains supply
- Open the casing
- Remove the printed circuit board from its support
- Unsolder the old battery taking care not to overheat the surrounding components
- Dispose of the old battery according to the current regulations (WEEE).

- Put the new battery in place taking care to comply with the polarity.
- Resolder the new battery taking care not to overheat the surrounding components

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IMPORTANT: Hydraulic and electrical connections must comply with good professional practice and the standards applying where the equipment is installed. It is especially important to fit efficient water-hammer arresters if the water input and output piping is fitted with devices likely to generate water-hammer effects (for example, solenoid valves).

Moreover, like any electrical device, the control box electronics are sensitive to electrical or magnetic interference. The control box is fitted with a series of filters to eliminate the most common interference. However, when the unit is close to power switches, transformers or any other source of interference, shielded cable should be used for connections, and a suitable interference suppressor fitted.

Permo reserves the right to modify the technical characteristics of its appliances without prior notice.

1- PACKING LIST

The 8000 ALCYO COMPOSITE is delivered in the standard version, in 5 packages or pallets:

- 1 supporting the softener body,
- 1 carton containing the softener valve,
- 1 packaged salt tanks and its connection accessories,
- 1 carton containing the A5X Control electronic unit and its fixing accessories,
- 1 pallet containing the silex and ion exchange resin charges according to Table 1 below.

Type of unit	Number of 25 kg silex sacks	Number of 25 l. sacks of resin
8150	2	6
8250	2	10
8300	3	12
8400	4	16
8550	9	22
8600	9	24
8700	12	28
8800	12	32

Table no. I - "Silex and resin charges"

IMPORTANT: It is important to store the equipment after receipt in a clean dry room at an ambient temperature between +3 et +35°C on pain of risk of damage to the ion exchange resins and some equipment components.

Non compliance with these conditions can void the guarantee on the damaged components.

2 - TECHNICAL DESCRIPTION

8000 COMPOSITE ALCYO is a range of 8 automatic water softeners that can operate in either timed mode or in volumetric mode (with meter transmitter as an option).

They are fitted with cationic type ion exchange resins working in a sodium cycle, in accordance with current regulations.

All the materials used are food grade.

The A5X Control electronic unit allows automatic control of the softener and control of the different regeneration stages.

Equipped with microprocessors, it can be programmed through the 5 key keyboard on the front panel. It controls the solenoid valves (double insulation) through very low voltage safety current (24 volts alternating).

3- DIMENSIONS

	Ø A	Ø B	C	D		E		F	G	H
				Min.	Max.	Min.	Max.			
8150	550	720	1400	1825	2055	1980	2210	145	1300	1910
8250	610	720	1400	2065	2095	2220	2250	145	1650	1750
8300	610	720	1400	2065	2095	2220	2250	145	1650	1750
8400	770	820	1400	2215	2245	2370	2400	145	1800	1850
8550	930	1300	1560	2245	2275	2400	2430	145	2300	1910
8600	930	1300	1560	2245	2275	2400	2430	145	2300	1910
8700	1075	1300	1560	2210	2240	2365	2395	145	2300	2000
8800	1075	1300	1560	2210	2240	2365	2395	145	2300	2000

Dimensions D and E vary depending on the expansion of the bottle

Sizes in mm

Table no. II - "Dimensions"

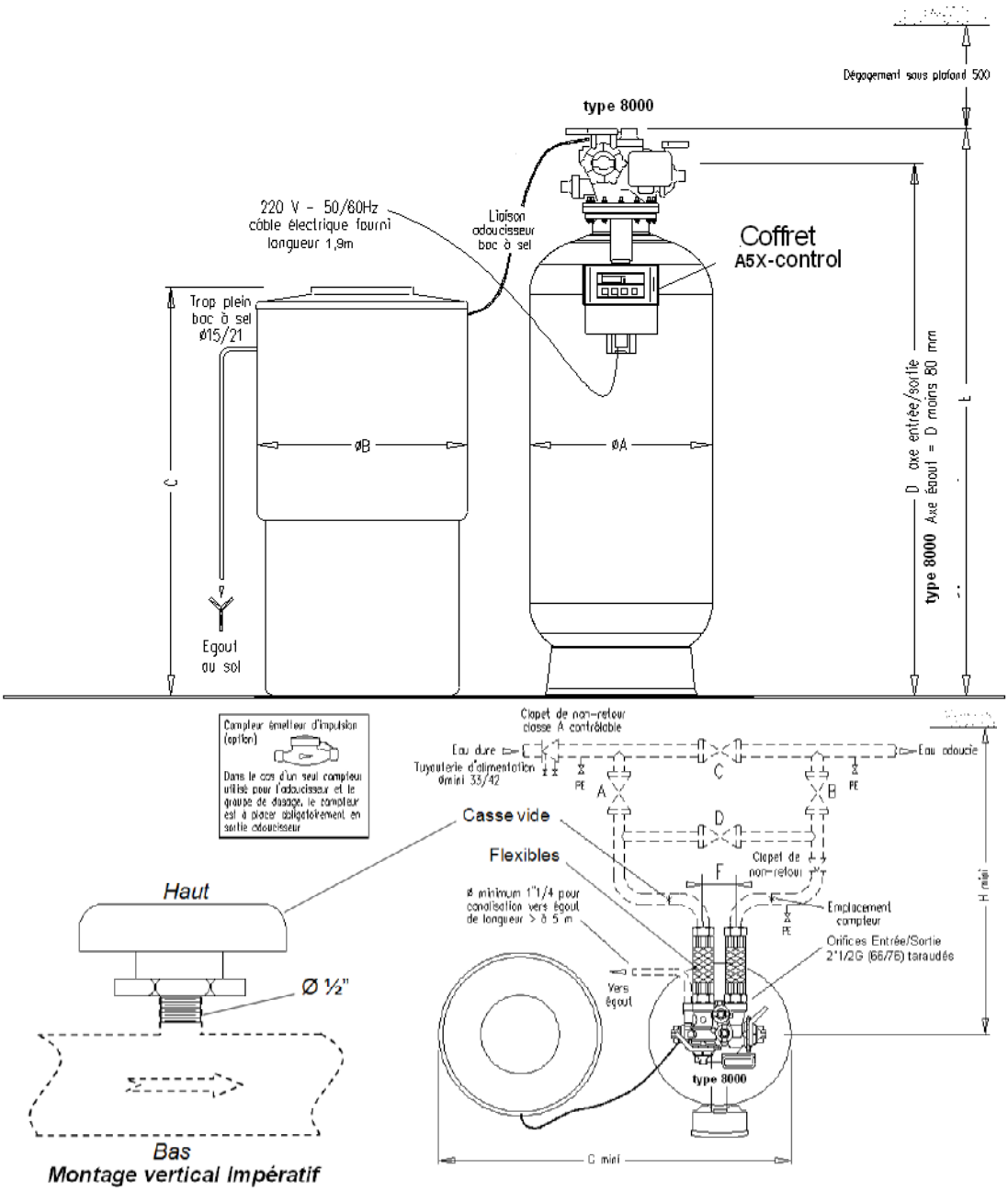


Diagram no. I - "Dimensions"

The A5X-CONTROL control unit and its transformer fixed on the appliance can be fixed to the wall on their plate.
IMPORTANT: The softener Hydraulic Inlet/Outlet assembly must be installed using the hoses provided, it is also indispensable to fit the vacuum breaker supplied.

4 - TECHNICAL CHARACTERISTICS

Characteristics COMPOSITE ALCYO	**8150**	**8250**	**8300**	**8400**	**8550**	**8600**	**8700**	**8800**
Volume of resin *litres*	150	250	300	400	550	600	700	800
Exchange capacity *standard* ° *f/m³*	750	1250	1500	2000	2750	3,000	3,500	4,000
max. possible ° *f/m³.*	900	1500	1650	2320	3300	3,600	4,200	4,800
Weight of salt per regeneration *min. kg*	19	32	38	38	69	75	88	100
max. kg	27	46	45	45	99	108	126	144
First salt tank filling *kg*	400	400	400	600	1000	1000	1000	1000
Salt tank refill *kg*	250	250	250	300	750	750	750	750
Salt tank operating duration Number of regenerations *u*	13	8	9	7	12	12	8	8
Average water volume per regeneration * *m³*	1.1	1.8	2.1	2.8	3.5	4.2	5.5	6.7
Shipping weight *kg*	500	550	600	800	1050	1150	1350	1650
Ground load in operation *t/m²*	4 to 5			3 to 4				

Table no. III - "Technical characteristics"

***** Depending on settings, the pressure and the operating requirements related to the water to the treated and the conditions of use.

5- TECHNICAL OPERATING CONDITIONS

Supply voltage		Single phase 230 V 50 Hz
Minimum voltage		200 volts
Maximum voltage		250 volts
Consumption electrical	In service	11 VA
	In regeneration	32 VA
Minimum operating pressure (dynamic)		1.5 bars
Maximum permitted (static)		7 bars
Minimum required flow rate for good regeneration		from 5 to 9 m^3/h
Temperature of water	minimum	1°C
	maximum	35°C
Temperature of room	minimum	Above freezing
	maximum	40°C

Table no. IV - "Technical operating conditions"

6- ASSEMBLY - CONNECTIONS

6.1. Installation

The 8000 ALCYO COMPOSITE must be installed in a clean, dry, well ventilated accessible room.

This room must be frost free and the atmosphere must not contain chemical vapours that could hinder its operation.

Before installation the installer must check that the dimensional conditions (*Diagram no. I*), the technical characteristics (*Table no. III*) and the technical operating conditions (*Table no. IV*) are met.

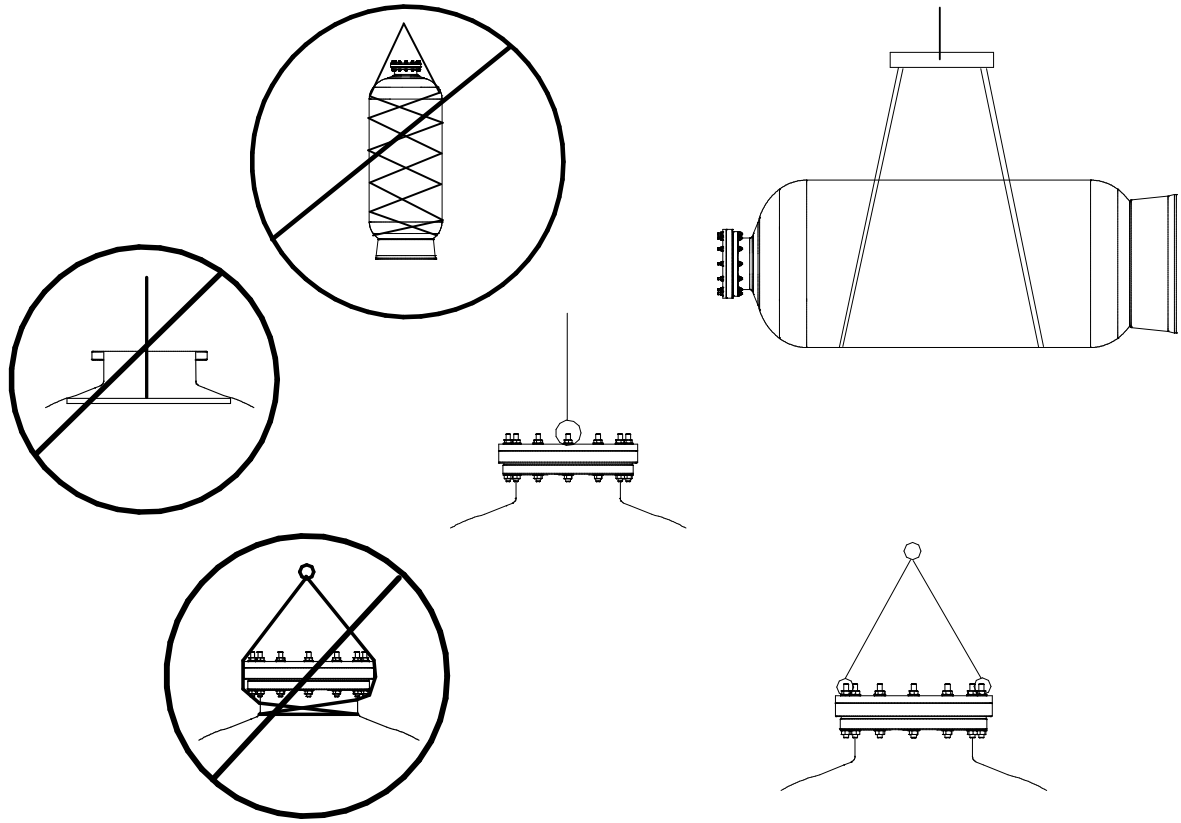
The room must have an adequately sized regeneration water drain, see paragraph 6.2 "*Removal of regeneration water*".
The ground on which the softener rests must be perfectly horizontal.

Allow sufficient height under the ceiling for maintenance operations (*Diagram no. I*).

The salt tank shall be placed as close as possible to the softener, preferably in the same horizontal plane (maximum allowable level difference from 0.5 to 1 metre depending on the water pressure to be treated) - Maximum acceptable separation in the same plane: 4 metres depending on the pressure of the water to be treated.

The salt tank must be easily accessible to permit refilling with salt for regeneration.

Handling of the softener body must comply with the diagrams below:



TYPICAL INSTALLATION DIAGRAMS

Vacuum breaker ESSENTIAL
Idem for the following diagrams

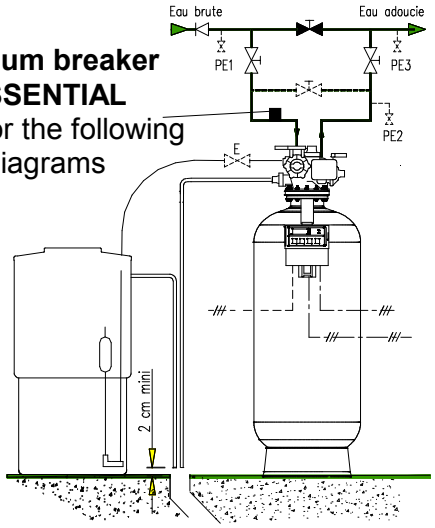


Diagram no. II - "Simplex softener with time based regeneration"

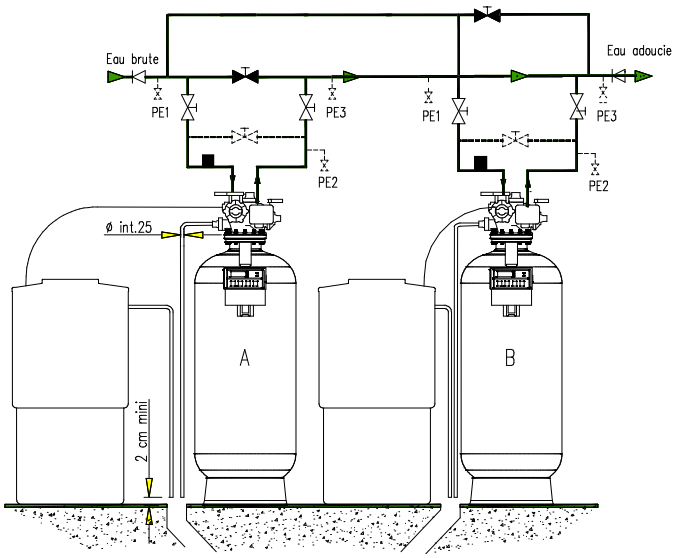


Diagram no. III - "Multiplex softeners in parallel, with time based regeneration"

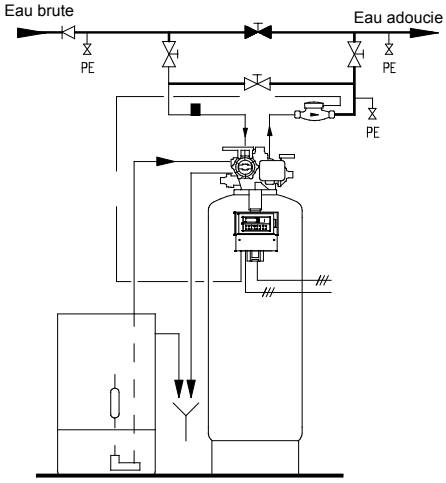


Diagram no. IV - "Simplex softener with volume based regeneration"

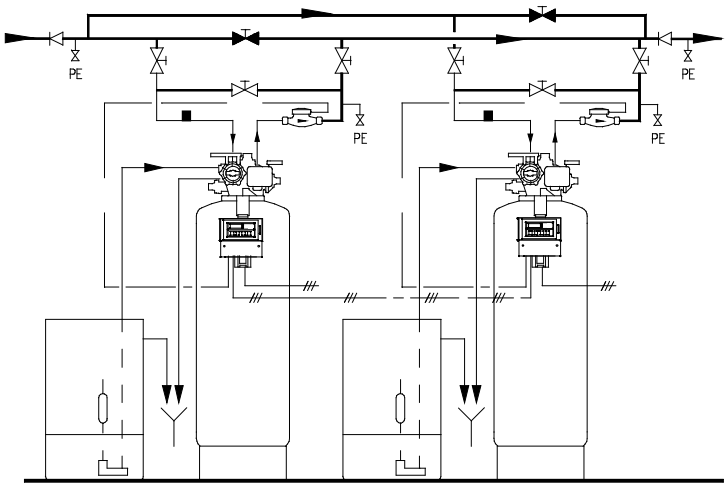


Diagram no. V - "Multiplex softeners in parallel, with volume based regeneration"

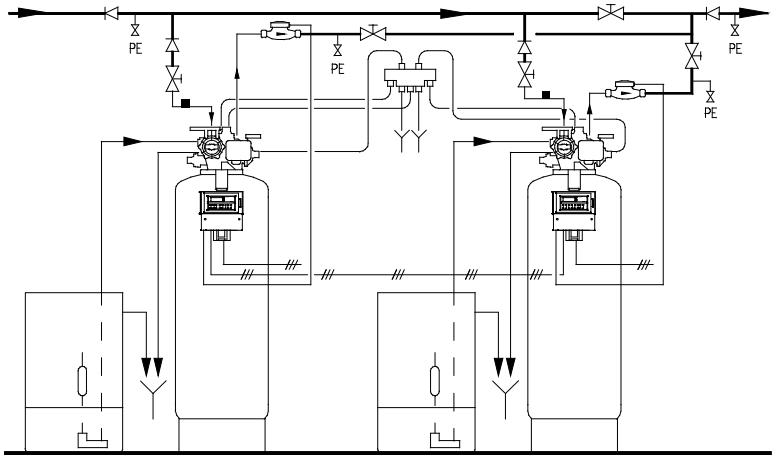


Diagram no. VI - " Alternating duplex volume softeners, 2 transmitting meters"

SP = Sampling point

Note:

When a meter is used for the softener and the dosing unit, the meter **must** be placed at the softener outlet.

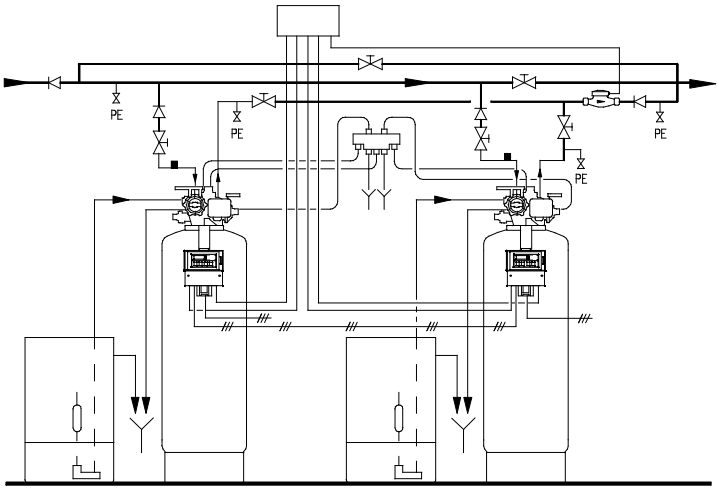


Diagram no. VII - "Alternating duplex volume softeners 1 transmitting meter"

6.2. Hydraulic unit assembly (softener valve) on the body and installation of the assembly

On the body unscrew the nuts and washers (which must be retained) and remove the metal fixing plate and the cardboard sheet. Leave the flange sealing gasket in place.

Fit the hydraulic control unit in place with the additional flange.

Fix the hydraulic control unit with the additional flange onto the body using the washers and studding supplied.

Fit the softener into the planned location.

Then remove the valve to put in the silex and resins and replace it afterwards. Positioning the softener and valve must be done before filling.

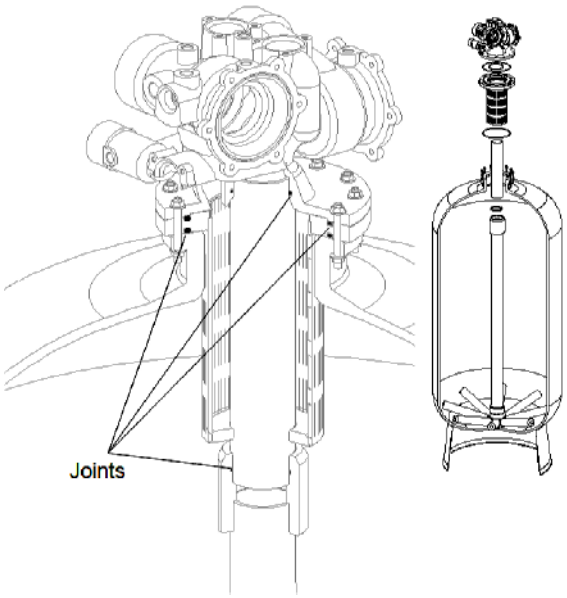


Diagram no. VIII - "Type 8000 hydraulic unit assembly on the body and installation of the assembly"

6.3. Earthing the body

The softener body being made of composite material, it is not necessary to earth it.

6.4. Hydraulic connections

(Diagram no. I and diagrams no. X and XI below)

There are 5 connections to be made on the softener hydraulic control unit.

IMPORTANT: The inlet and outlet must be made using the hoses supplied. It is also essential that the vacuum breaker supplied is fitted.

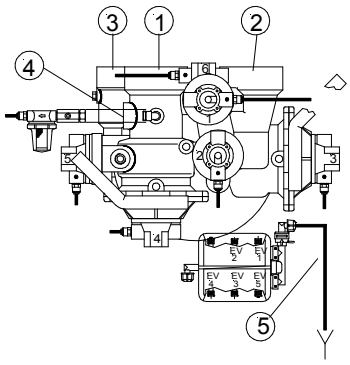


Diagram no. IX - "Type 8000 hydraulic connections"

① Inlet for water to be treated	tapped 2"1/2 gas
② Treated water outlet	tapped 2"1/2 gas
③ Regeneration water drain	tapped 1"1/4 gas
④ Connection to brine regulator (in the salt tank)	tapped 3/8" gas (see regulator connection paragraph)
⑤ Valve control water drain	Connection for Ø 6/8 rilsan tube

6.4.1. Inlet for water to be treated and treated water outlet

The inlet pipe for the water to be treated must be sufficiently sized to be able to carry the required production flow rate and the regeneration flow rates (see *table no. XII - " Theoretical regeneration flow rates")* under a minimal pressure of 1.5 bars dynamic and maximum of 7 bars static. We recommend fitting a manometer upstream of the software to monitor this pressure.

We also advise fitting a filter upstream of the softener to protect the unit from foreign bodies that could affect its operation.

In accordance with the requirements of the current sanitary regulations, class A controllable check valve shall be placed upstream of the water treatment unit. The installer should check all specific sanitary regulations that could be in force at the installation location and comply with them.

Sampling points shall also be provided upstream and downstream of the softener.

The softener must be protected from any water returns through suitable non-return devices, fitted downstream of the appliance on the treated water pipe.

The installation upstream and downstream of the softener must not cause "water hammer" (if necessary provide effective water hammer preventers).

In general the softener should be fitted in a bypass and always fitted with isolation valves and possibly with a residual hardness adjustment bypass as shown in diagram X opposite.

Valve A = Softener inlet

Valve B = Softener outlet

Valve C = General bypass

Valve D = Residual TH bypass, needle valve (if partially softened water used (domestic water).

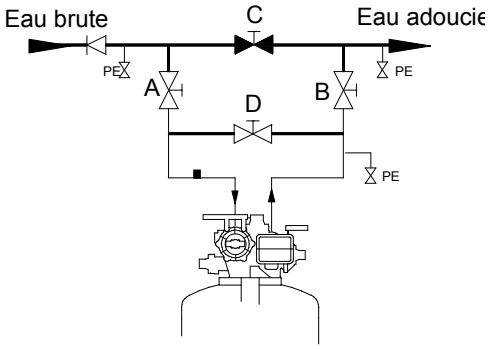


Diagram no. X - "Valve identification"

The table below gives the bypass pipe Ø relative to that of the main pipe.

Ø inlet raw water	33 x 42 1"1/4	40 x 49 1"1/2	50 x 60 2"
Ø bypass additional	20 x 27 3/4"	26 x 34 1"	33 x 42 1"1/4

The softener connections must be removable and accessible to ease any maintenance operations.

The pipes must be correctly supported so that no force or stress comes back onto the appliance

<u>Caution</u>: The Inlet and Outlet connections must be made with hoses.

6.4.2. Regeneration water drain

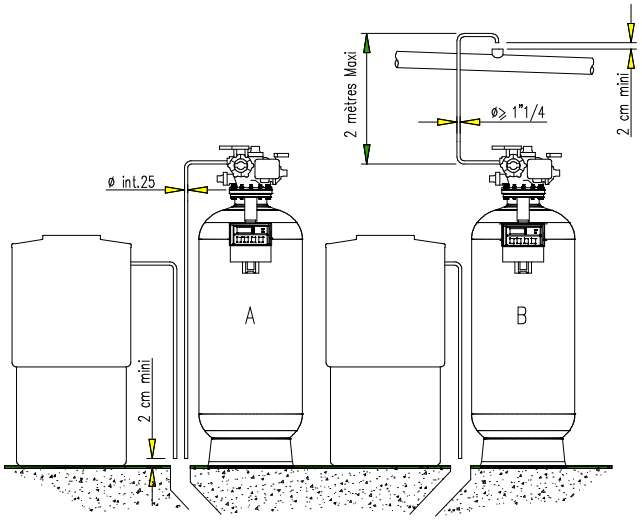
The drain pipe (item ③ on diagram IX must have the shortest and simplest route possible. It must allow drainage of regeneration water at the flow rates given in *table no. V* opposite "*Maximum instantaneous flow rate to drain*" depending on the type of appliance installed and with a pressure loss (pipework pressure loss + manometric height) that must not exceed 3 metres water column (0.3 bar).

In accordance with the requirements of the sanitary regulations, a pressure break of at least 2 cm must be provided between the softener drain pipe and the main drain pipe i as shown in *diagram no. XI* "*Pressure break*".

Type of softener	Flow rate in ***l/min***
8150	50
8250	83
8300	83
8400	117
8550	150
8550	150
8600	200
8700	200
8800	200

Table no. V

"Instantaneous maximum flow rate to drain"



If drainage is through a recovery sump and lifting pump, size the equipment so as to avoid risks of flooding the room (in the case of unexpected stopping of the lifting pump during regeneration). If the mains current is interrupted during regeneration, the softener flow to the drain stops.

The 6 x 8 flexible tube from the distributor drain must also be taken to the drain.

Diagram no. XI - "Pressure break"

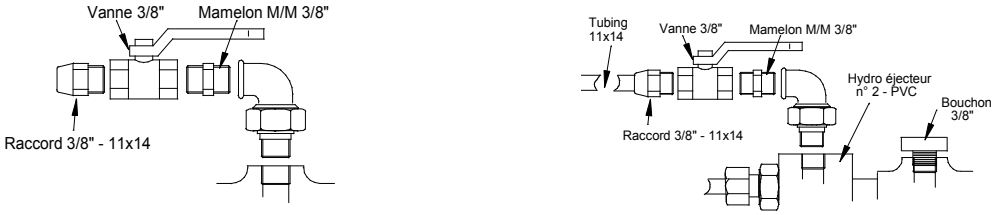
6.4.3. Salt tank overflow drainage

(see *diagram no. I*)

The salt tank is fitted with a safety overflow that must be connected to either a gutter or the drain header. Drainage must be by gravity without pressure losses. A pressure break of at least 2 cm must also be created in accordance with the sanitary regulations.

6.4.4. Connecting the brine regulator(s)

The brine regulator is located in the brine well (grey PVC cylinder) inside the salt tank. The white flexible pipe (Ø 11 x 14) supplied should be connected to the regulator then, at the other end, to the brine intake hole ④ on *diagram IX* with the mounting accessories and isolation valve supplied inserted between the hydraulic control unit and the pipe as shown in *diagram XII "Inlet connection*" above.



Assembly for 8150 to 8550 1 tank

Assembly for 8600 to 8800

Diagram no. XII - "Inlet connection"

6.5. Connections for different options

6.5.1. Connecting a transmitting meter (volume based regeneration control option) - see electrical diagrams.

The meter must be installed downstream of the softener before the residual TH adjustment bypass.

To avoid metering errors and premature wear of the internal mechanism, this meter must be installed horizontally, reading head upwards. Following good engineering practice straight lengths should be fitted upstream and downstream during installation.

As a reminder:	upstream	10 x Ø pipe
	downstream	5 x Ø pipe

6.5.2. Hydraulic changeover kit connection (option)

There are 2 of: - 1 meter changeover kit,
- or 2 meter changeover kit,

These kits permit the alternation of 2 softeners (1 softener in service, the other in regeneration or waiting).

After connecting the transmitting meters supplied with the kits according to the instructions previously stated and the diagrams, fix the changeover distributor onto the wall.

Connect the 6 x 8 and 2 x 4 flexible pipes supplied as shown in *diagram no. XIII "Hydraulic changeover connections"* below.

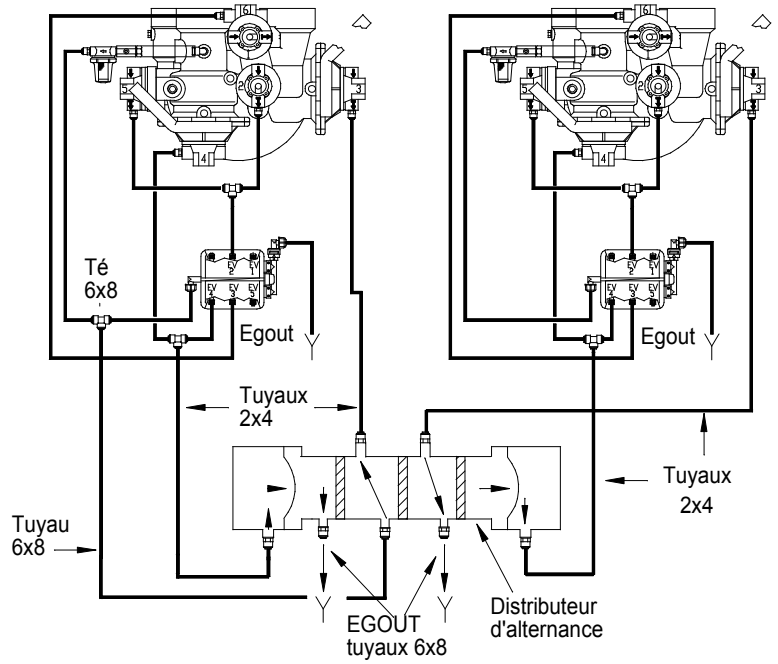


Diagram no. IX - "Hydraulic changeover connections"

6.6. Electrical connections

The COMPOSITE ALCYO softeners are controlled by the electronic unit which, in the standard version, is to be mounted on the softener using the adjustable bracket supplied, this bracket is fixed to the hydraulic unit flange by fixing nuts.

If appropriate the unit can also be fixed to the wall (see paragraph 6.6.2 *"Fixing the A5X-CONTROL unit*")

In both 2 cases it is the installer's responsibility to check that the cables used comply with the standard applicable in the room where the appliance is installed and to replace them if necessary.

IMPORTANT: According to directive 2006/95/CE, for safety reasons the transformer primary and secondary power supply cables cannot be replaced. If they are damaged the complete transformer must be discarded and replaced by a new one.

6.6.1. General description of the electronic control unit

The A5X-CONTROL microprocessor electronic control unit allows a softener to be controlled.

A 5 key keyboard on the front panel allows access to programming of the different sequences needed for operation of the softener and programming of the regeneration time delays.

It is delivered with an external transformer delivering very low voltage currents needed for operation of the electronics and regeneration solenoid valves. On the primary side this transformer is fitted with a 1.9 metre cable without earth pin, the unit and electronic valves controlled being double insulated class. A 230 volt single phase (European standards) electrical wall socket should be placed near to the unit (see also chapter 5 "*Technical operating conditions*")

6.6.2. Fixing the A5X-CONTROL unit to the wall

The A5X-CONTROL unit is delivered to be fixed onto the softener as standard.

It can also be fixed to the wall in an accessible location at a height of 1.6 metres relative to the floor using the drilling template shown in *diagram no. XIV* above.

To fix the unit open the lower terminal access hatch and fix the unit at the bottom using the 2 side oblong holes and at the top using the external "hook" at the rear of the unit.

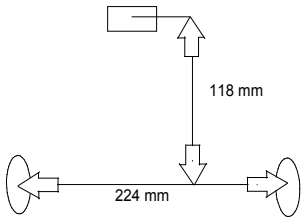


Diagram no. XIV
"Drilling template"

6.6.3. Electrical wiring

The COMPOSITE ALCYO softener is delivered with 2 stranded cables and DIN plugs for solenoid valve connection. If the cables must be extended use only 0.5 or 0.75 mm^2 flexible cable. Also use the same type of cable for the other connections to be done.

6.6.4. Description of control terminals

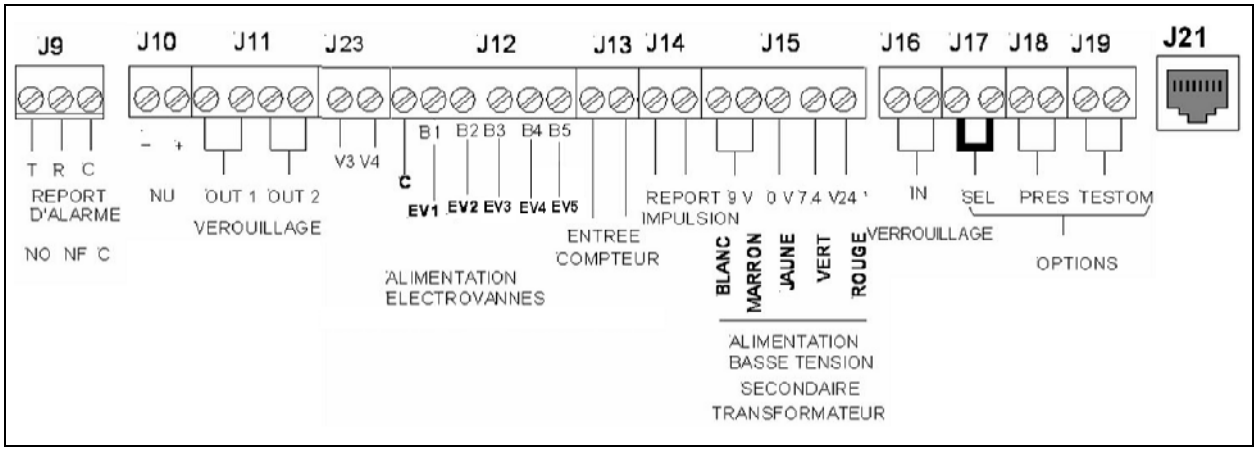


Diagram no. XV - "Connection terminals"

Description from left to right: Input =  Output = 

Terminal no.	*Cable type*	*Description*
J9 	2 x 05 or 0.75 mm² or 3 x 0.5 or 0.75 mm² to suit desired contacts	A5X-CONTROL unit alarm feedback in the case of: - Electrical supply fault - Low salt level (option) - Low pressure (option) Voltage free from left to right: NO = Normally open dry contact NF = Normally closed dry contact C = Common Under voltage from left to right: NF = Normally closed dry contact NO = Normally open dry contact C = Common
J10		Not used
J11 	4 x 0.5 or 0.75 mm²	OUT 1 : output 1 Dry contact Softener no. 2 dialogue inhibit. Case of 2 softeners in dialogue (parallel), regeneration of no. 2 prohibited when no. 1 is regenerating and conversely. OUT 2: output 2 Dry contact Softener no. 3 dialogue inhibit, case of 3 softeners in dialogue (parallel)
J23 	3 x 0.5 or 0.75 mm² Dosing pump control (option)	C of terminal J12 = Common V3 = active contact during brining V4 = active contact during operation 24 V AC. 9W max.
J12 	Supplied with unit: 2 x cables no. 1 and no. 2 with DIN plugs - If the cables must be extended use 0.5 or 0.75 mm² flexible cable	DIN connector no. 2 / 1 Cable no. 18 / 24 / 23 / 22 / 21 / 20 Colours Blue / Brown / Black / Black / Brown / Blue Terminal no. C / B1 / B2 / B3 / B4 / B5 EV no. - / EV1 / EV2 / EV3 / EV4 / EV5
J13 	2 x 0.5 or 0.75 mm² Screened if length greater than 5 metres or power cable nearby	External transmitting volume meter pulse input. For Permo meters: - White wire = Common, to be connected to the centre terminal - Other colours = to be connected to the left terminal and right terminal
J14 	2 x 0.5 or 0.75 mm² screened if length greater than 5 metres or power cable nearby	External transmitting meter pulse repeater Dry contact: maximum load 10 watts with limits of 100 volts - 0.4 ampere
Terminal no.	***Cable type***	***Description***
J15 	Supplied on transformer	External transformer secondary input 9 volts = White and brown wire 0 volts = Yellow wire 7.4 volts = Yellow wire 24 volts = Red wire
J16 	2 x 0.5 or 0.75 mm²	IN = Dialogue inhibit input from OUT 1 or OUT 2 of another A5X-CONTROL unit

Terminal no.	*Cable type*	*Description*
J17	2 x 0.5 or 0.75 mm²	Low salt level input (option) Terminals delivered with a strap (contact open at low level)
J18	2 x 0.5 or 0.75 mm²	Pressure fault input (option) Low pressure contact closed (Pressostat upstream of softener) Regeneration inhibited in the low pressure case
J19	2 x 0.5 or 0.75 mm²	Remote regeneration initiation input (Testomat or other option) Dry contact: closed for regeneration initiation Resetting by reopening the contact to avoid regeneration looping

Table no. VI - "Description of control terminals"

6.6.5 Electrical connection diagrams

Simplex version

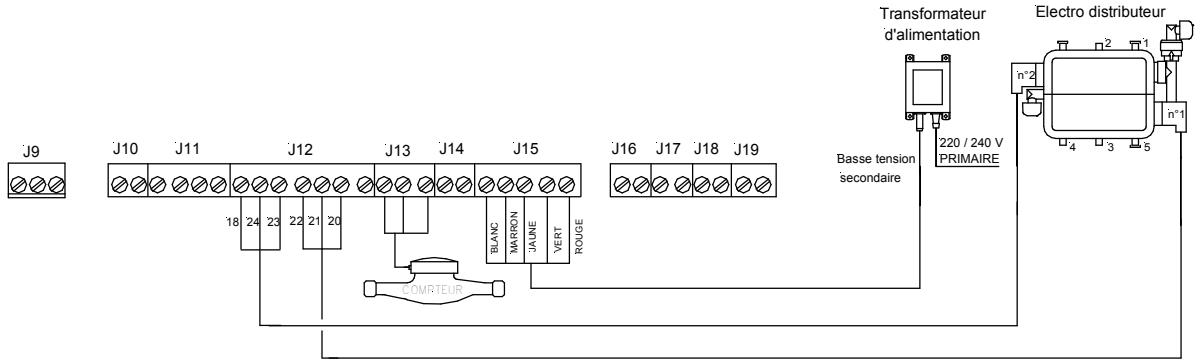


Diagram no. XVI - "Simplex version connections"

Parallel version

Connect each softener as previously indicated for the simplex version. Also connect the dialogue function as shown in *diagram no. XVII "Dialogue electrical connections - parallel"* below.

Alternating version

- *2 meter alternation*: Electrically connect each softener as previously indicated for the simplex version. Do not connect the dialogue.
- *1 meter alternation*: An additional unit (delivered with the kit), called the selection unit, is to be connected after fixing it to the wall as shown in *diagram no. XVIII "Changeover electrical connections for 1 meter* " below.

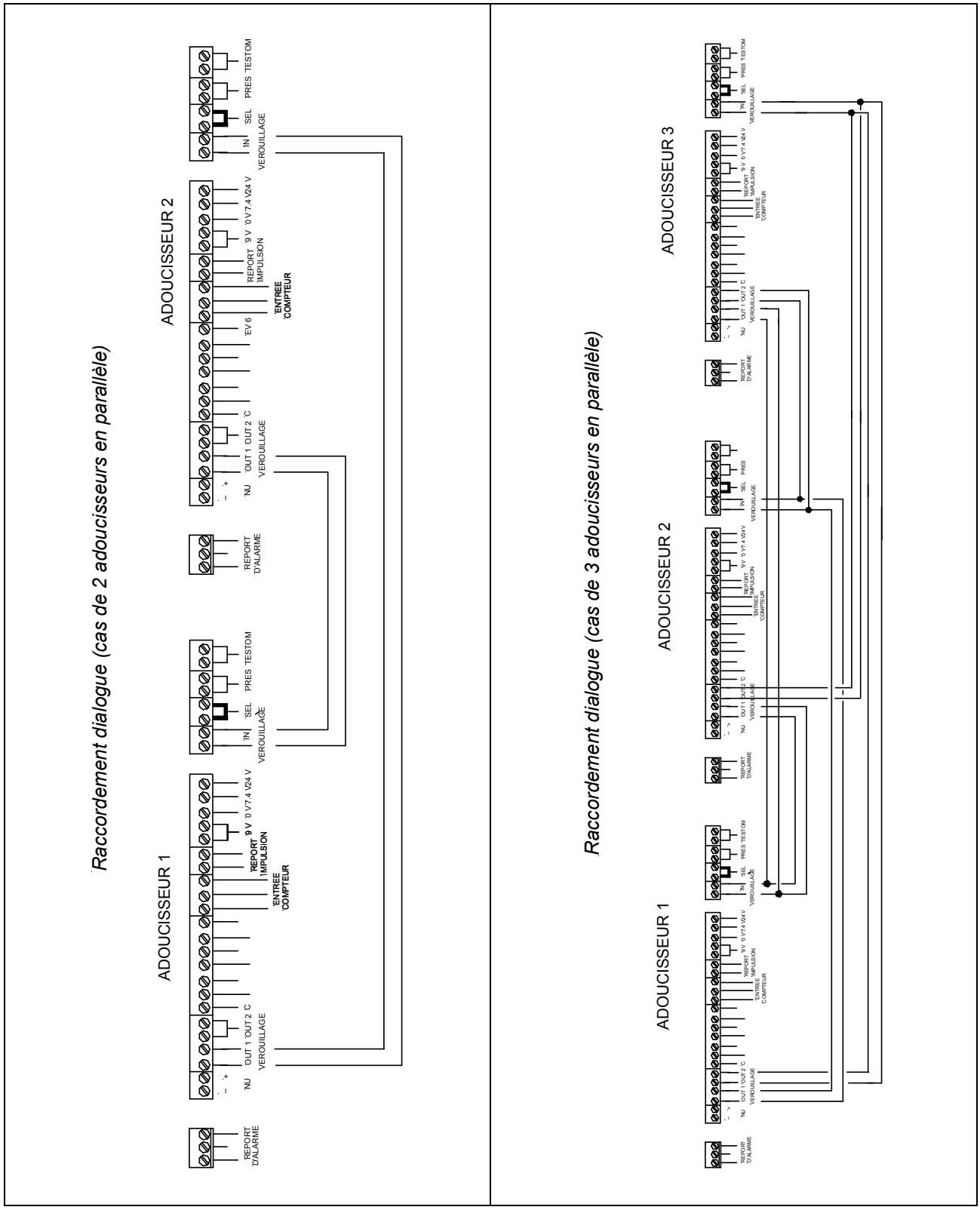


Diagram no. XVII - "Dialogue electrical connections - parallel"

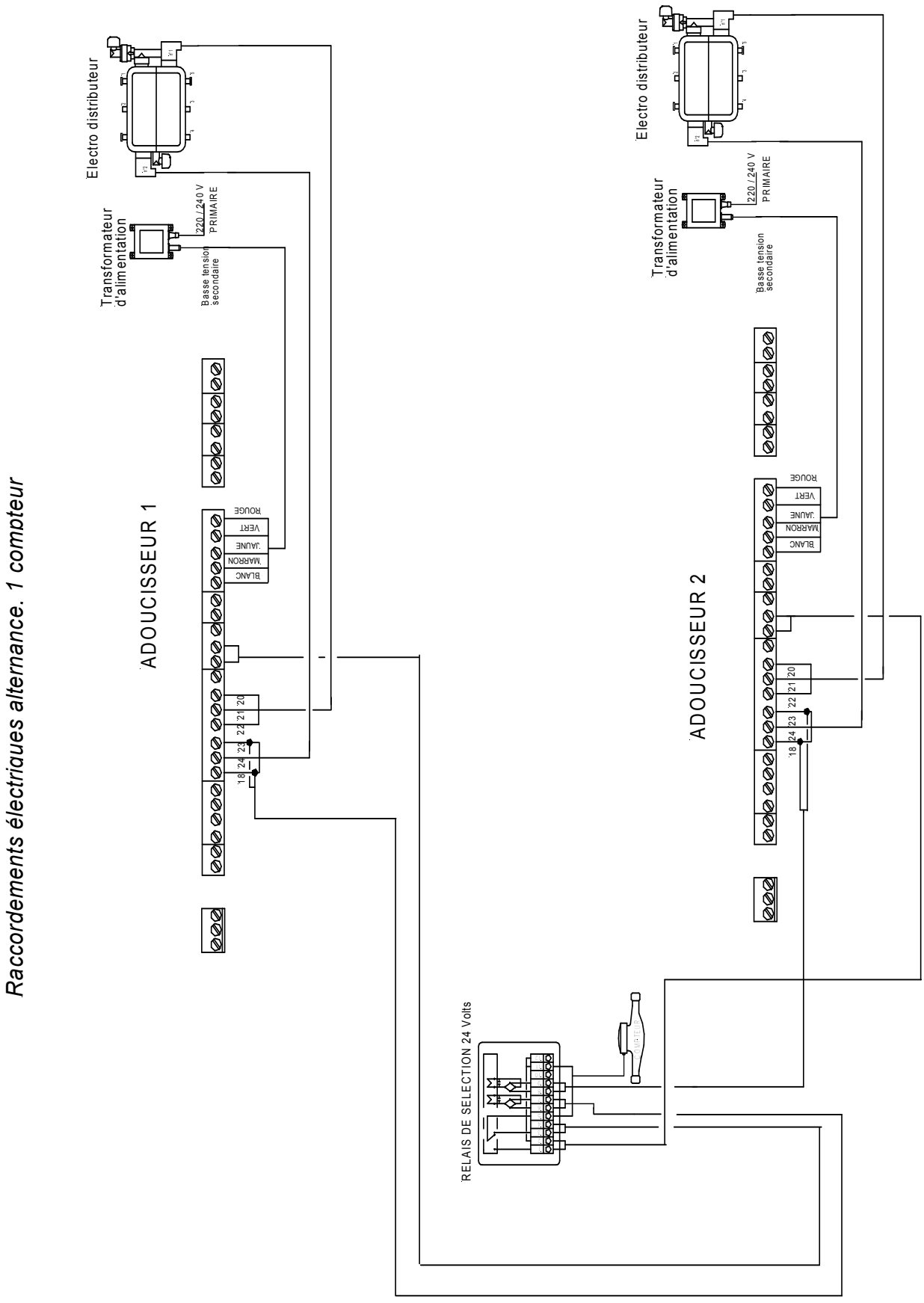


Diagram no. XVIII - "Changeover electrical connections - 1 meter"

7- PROGRAMMING THE A5X-CONTROL UNIT

Once the hydraulic and electrical connections have been made and checked, programme the unit.

Description of unit

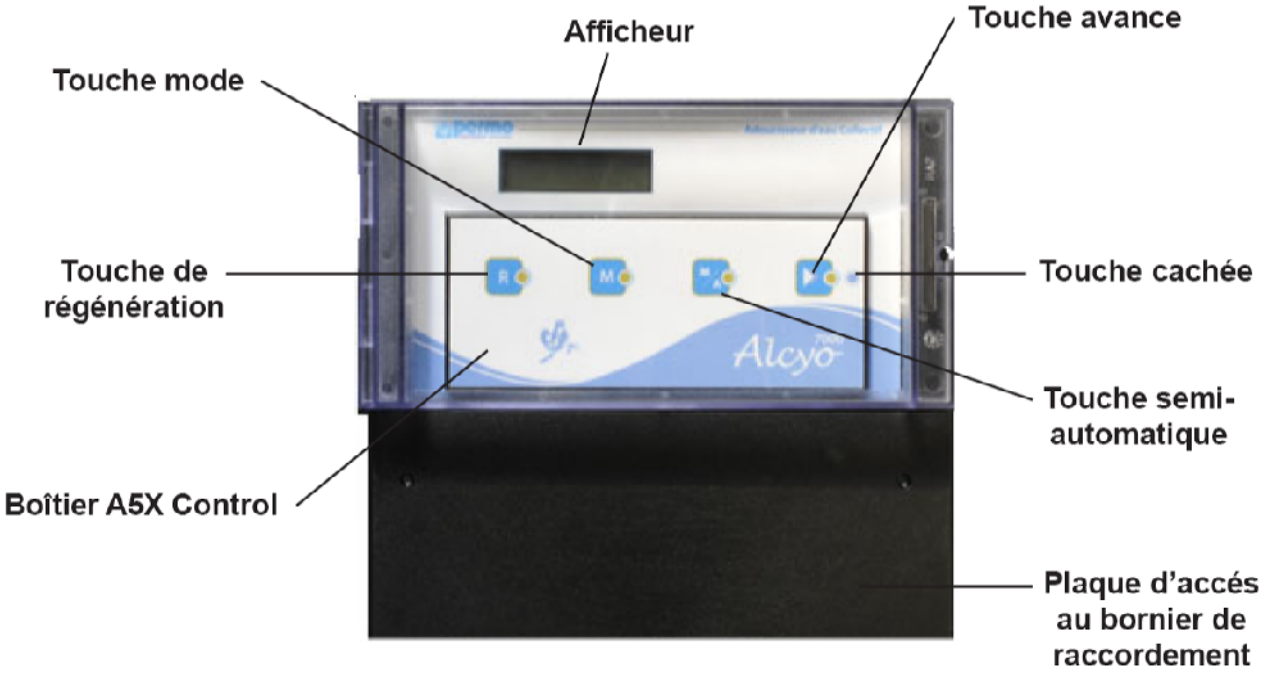


Diagram no. XIX - " Description of unit"

symbol	meaning
	- display of remaining volume on scale up to 10 in volumetric mode - display of remaining volume on scale up to 10 in chronometric mode - display of elapsed time during a regeneration on scale up to 10
R 1 2 3	- R displayed during regeneration - 1, 2 and 3 successively lit during phases 1(backwashing), 2(brining and slow rinsing) and 3(fast rinsing)
	- alarm displayed in low salt or low water cases (options)
	- alarm displayed after regeneration in low conductivity case during brining
	- alarm displayed when the number of regenerations associated with maintenance is reached
	- alarm displayed when the number of regenerations associated with After Sales Service monitoring is reached
	- displayed as the same time as the current time
	- displayed during Standby mode
m^3	- displayed when a volume is expressed in m^3
L	- displayed when a volume is expressed in litres
	- current time display in Service and Test modes - programme step display in Programme mode
	- programme values input - generic code and MO no. input - display of number of days before the next regeneration of the programmed time - display of regeneration start or finish time - display of remaining volume in integer number of litres if less than 99999, in m^3 otherwise - display of number of regenerations - display of total treated volume in m^3

Table no. VII - "Description of display"

7.1. Operating mode selection

The operating mode for COMPOSITE ALCYO softeners is selected through the A5X-CONTROL unit programming keys.

The Permo COMPOSITE ALCYO softeners can operate in different modes identified by the codes described below.

Operating mode	Programme code	Designation	Observation
Pure time	**60210**	Regeneration every "x" days (interval between two regenerations) at a predetermined fixed date.	
Pure time "Seven"	**60410**	Programmable regeneration on the seven days of the week (14 possible ranges) at a predetermined time for each day.	Option of two regenerations per day for the seven days of the week.
Pure volume	**61230**	Immediate regeneration depending on the cycle programmed for the softener without taking the time into account.	Immediate regeneration when the softener cycle = 0
"Data" expected volume	**62230**	Regeneration depending on the softener programmable cycle and the mean daily consumption at a predetermined time.	
"Data" expected volume with priority to volume	**62730**	Regeneration depending on the software programmable cycle at a predetermined time and the mean daily consumption.	Immediate regeneration when the softener cycle = 0
"Seven" expected volume	**62530**	Regeneration depending on the software programmable cycle at a predetermined time and the mean consumption calculated over seven days.	

Table no. VIII - "List of generic codes"

7.2. Programming the operating mode code

A / Connect the appliance to a standard electrical socket in accordance with the operating characteristics described in this manual.

1/. First case:
On switching on, the unit starts normally in regeneration:
- The first line displays the current time, to be set later
- The second line alternates display of regeneration start time and end time
- The bar chart is in the low position and the letter "R" is visible.

To stop regeneration just press the ‘Mode’ and ‘Regeneration’ buttons simultaneously, then release them.

2. Second case:
On switching on the unit displays five zeros with the first on the left flashing. It will remain in this configuration until the operating mode for your appliance is entered and

identified by a generic code described in table VI. The ‘Mode’ and ‘Regeneration’ buttons are not active.

Entering the generic code for the operating mode
Press the "Semi-automatic" button to move to the selection indicated by the flashing digit to the right and modify its value with the ‘Forward’ button.
Enter the generic code appropriate for the chosen operating mode.

Once the 5 figure operating mode code is displayed, press the ‘hidden’ button to confirm the selection.
The next 2 line display states the current time and the softener cycle programmed by default.

Attention:

Every operating mode code described above corresponds to a well-defined programme in the A5X-Control unit microprocessor. Any code that is erroneous or that does not correspond to the list above can cause your softener it to malfunction and may lead to loss of the BWT PERMO warranty.

B / Modifying the operating mode

To modify the five figure code, press the "*Mode*" and "*hidden*" buttons simultaneously for 5 seconds, then release. Modify the code displayed then confirm after entering with the hidden key.

Reprogramme the new operating mode according to paragraph 7.4.

C / Return to factory parameters

To reset the programmed operating mode to zero, press the "*hidden*" and "*Mode*" buttons simultaneously for five seconds, then release. Then press the "*hidden*", button briefly, the display shows "ini 0", choose 1 with the "*Forward*" key, then press the "*hidden*" button again to confirm the reset to zero.

7.3. Case of 2 or 3 softeners with dialogue links - parallel

When two or three softeners are operating in pure volume it is necessary to create a multiplex electrical link between each unit to prevent the regeneration of other softeners when a softener is regenerating. The programming code is then the same for each equipment (61230).

Attention:
If, during the regeneration of a softener a second softener becomes exhausted it will display "R". Once the regeneration of the first is complete the waiting equipment will only start its regeneration after a time delay.

7.4. Programming operating phases

The explanations below give the meanings of the programme steps and the value of the parameters to be programmed for depending on the operating mode (Also see the operating flow diagrams at the end of this manual).

Attention:
From this moment, to avoid any incorrect setting, the parameter values set remain

displayed for 20 seconds; after this and without pressing a button, the display automatically returns to the initial display.

Important:
With the exception of the current time the above programming will only actually be confirmed when the first regeneration is started, either automatically by the electronic unit, of manually by pressing the "Regeneration" button for 5 seconds. The updated parameters such as the cycle will be displayed from this moment.
In the steps below, use the following keys to modify the displayed value.
- The 'Forward' button allows the value of the flashing figure to be modified.
- The "Semi-automatic" key allows the selection cursor to be moved to the right.

To simplify the softener parameter setting, certain programming steps are only accessible after a delay of one hour following the entry of the generic code.
The steps are then marked by the symbol '# '.

7.4.1. Time based operating mode – code 60210

Press the "Mode" button, for about five seconds.
The display shows programme step P100(#) and the default commissioning date in weeks.
example: 03:08 for week 03 of year 2008.
It is possible to change this value by entering the current week on commissioning.

Press the "Mode" button again. The display shows programme step P001(#) and the default current year.
Set the value of the current year.

Press the 'Mode' button. The display shows programme step P002(#) and the default current day and month.
example: 01:02 for the 1st February.
Set the current day and month value.

Important:
The data programmed in P001(#) & P002(#) are used if the communication option is installed.

Press the "Mode" button. The display shows programme step P003 and the default current day of the week and time.
Example: 1.01:01 for 01:01 on Monday.
Set the current day and time value in the 24 hour clock.

Press the "Mode" button. The display indicates programme step P020 and the number of days between each regeneration.

Press the "Mode" button. The display shows P051 and the value 04 corresponding to backwashing, the first phase of regeneration, expressed in minutes (see table X - "Regeneration time").

Press the "Mode" button. The display shows P052 and the value 00. This step is used in the case where the brine is sent to the softener from a salt silo. The value for this step therefore corresponds to the brine pump activation time (terminal V3).

"Mode" key again. The display shows P053, the programme step corresponding to the

brine intake and slow rinsing duration, and the value "40" (minutes) (see table X - "Regeneration time"). If P052 is not zero the duration of brining+slow rinsing corresponds to the sum of the values of P052 and P053.

Press the "Mode" button again. P054 shows the duration of final rinsing in minutes "08" (see table X - "Regeneration time").

Press the "Mode" button. The display shows programme step P080 and the default regeneration time. This setting allows the regeneration to be planned depending on the consumption.
example: 0.01:00 for 01h00.
Set the regeneration time value in the 24 hour clock.

Press the "Mode" button again. The display shows program step P031(#) and the alarms to be selected according to table IX below:

alarm type	salt		pressure		maintenance		ASS	
configuration	active	inactive	active	inactive	active	inactive	active	inactive
10000		X	X			X		X
01000	X			X		X		X
00010		X		X	X			X
00001		X		X		X	X	
11000	X		X			X		X
10010		X	X		X			X
10001		X	X			X	X	
01010	X			X	X			X
01001	X			X		X	X	
00011		X		X	X		X	
11010	X		X		X			X
11001	X		X			X	X	
10011		X	X		X		X	
01011	X			X	X		X	
11011	X		X		X		X	

Table no. IX: "Configuration of alarms"

Press the "Mode" button again. The display shows programme step P032(#) and the default number of regenerations after which the maintenance alarm is displayed.
If necessary set the maintenance alarm parameter from 1 to 999 regenerations. If the alarm is not selected during parameter setting for programme P031(#), maintenance alarms will not be displayed.

Then press the "Mode" button. The display shows programme step P033(#) and the default number of regenerations after which the after sales service alarm is displayed.
If necessary set the After Sales Service alarm parameter from 1 to 999 regenerations. If the alarm was not selected when setting the parameters for programme step P031(#), no ASS alarm will be displayed.

Press the "Mode" button. The programming phase is completed and the display returns to the service configuration.

7.4.2. "Seven" time based operating mode - code 60410

Press the "Mode" button for about five seconds.

The display shows programme step P100(#) and the default commissioning date in weeks.
example: 03:08 for week 03 of year 2008.
It is possible to change this value by entering the current week on commissioning.

Press the "Mode" button again. The display shows programme step P001(#) and the default current year.
Set the value of the current year.

Press the "Mode" button. The display shows programme step P002(#) and the default current day and month.
example: 01:02 for the 1st February.
Set the current day and month value.

Important:
The data programmed in P001(#) & P002(#) are used if the communication option is installed.

Press the "Mode" button. The display shows programme step P003 and the default current day of the week and time.
example: 1.01:01 for 01:01 on Monday.
Set the current day and time value in the 24 hour clock.

Press the "Mode" button. The display shows programme step P081 and a default regeneration time and day. This setting allows the regeneration to be planned depending on the consumption.
example: 1.01:00 for 01:01 on Monday.
Set the regeneration time value in the 24 hour clock.

The following steps from P082 to P097 allow 13 other regenerations to be set in the week.
For a step that is not to be taken into account, just enter the value 0 in the day location.

Press the "Mode" button. The display then shows P051 and the value 04 corresponding to backwashing, the first phase of regeneration, expressed in minutes (see table X - "Regeneration time").

Press the "Mode" button. The display shows P052 and the value 00. This step is used in the case where the brine is sent to the softener from a salt silo. The value for this step therefore corresponds to the brine pump activation time (terminal V3).

"Mode" key again. The display shows P053, the programme step corresponding to the brine intake and slow rinsing duration, and the value "40" (minutes) (see table X - "Regeneration time"). If P052 is not zero the duration of brining+slow rinsing corresponds to the sum of the values of P052 and P053.

Press the "Mode" button again. P054 shows the duration of final rinsing in minutes "08" (see table X - "Regeneration time").

Press the "Mode" button again. The display shows the programme step P031(#) and the alarms to be selected according to table IX on the alarm configuration.

Press the "Mode" button again. The display shows programme step P032(#) and the default number of regenerations after which the maintenance alarm is displayed.

If necessary set the maintenance alarm parameter from 1 to 999 regenerations. If the alarm is not selected during parameter setting for programme P031(#), maintenance alarms will not be displayed.

Then press the "Mode" button. The display shows programme step P033(#) and the default number of regenerations after which the after sales service alarm is displayed.
If necessary set the After Sales Service alarm parameter from 1 to 999 regenerations. If the alarm was not selected when setting the parameters for programme step P031(#), no ASS alarm will be displayed.

Press the "Mode" button. The programming phase is completed and the display returns to the service configuration.

7.4.3. "Data" expected volume based operating modes - codes 62230 and 62730

Press the "Mode" button, for about five seconds.
The display shows programme step P100(#) and the default commissioning date in weeks.
example: 03:08 for week 03 of year 2008.
It is possible to change this value by entering the current week on commissioning.

Press the "Mode" button again. The display shows programme step P001(#) and the default current year.
Set the value of the current year.

Press the "Mode" button. The display shows programme step P002(#) and the default current day and month.
example: 01:02 for the 1st February.
Set the current day and month value.

Important:
The data programmed in P001(#) & P002(#) are used if the communication option is installed.

Press the "Mode" button. The display shows programme step P003 and the default current day of the week and time.
example: 1.01:01 for 01:01 on Monday.
Set the current day and time value in the 24 hour clock.

Press the "Mode" button. The display shows programme step P080 and the default regeneration time. This setting allows the regeneration to be planned depending on the consumption.
example: 0.01:00 for 01h00.
Set the regeneration time value in the 24 hour clock.

Press the "Mode" button. The display shows P051 and the value 04 corresponding to backwashing, the first phase of regeneration, expressed in minutes (see table X - "Regeneration time").

Press the "Mode" button. The display shows P052 and the value 00. This step is used in the case where the brine is sent to the softener from a salt silo. The value for this step therefore corresponds to the brine pump activation time (terminal V3).

"Mode" key again. The display shows P053, the programme step corresponding to the brine intake and slow rinsing duration, and the value "40" (minutes) (see table X -

"Regeneration time"). If P052 is not zero the duration of brining+slow rinsing corresponds to the sum of the values of P052 and P053.

Press the "Mode" button again. P054 shows the duration of final rinsing in minutes "08" (see table X - "Regeneration time").

Press the "Mode" button once more. P060 is then displayed with "0-001".
The left hand "0" characterises the meter mode: multiplier (value 1) or divider (value 0).
The 3 figures on the right give the ratio between the meter pulses and the number of litres recorded by the unit.
examples: 1 meter pulse corresponds to 5 litres -> set parameter 1-005.
5 meter pulses corresponds to 1 litres -> set parameter 0-005.

Press the "Mode" button. P062 is displayed with "0-001".
This function permits the external pulse feedback parameters to be set.
The left hand "0" characterises the meter mode: multiplier (value 1) or divider (value 0).
The 3 figures on the right give the ratio between the meter pulses and those reported at the unit output.
example: 1 meter pulse corresponds to 5 output pulses -> set parameter 1-005.

Press the "Mode" button again. The display shows programme step P040 and the default regeneration cycle.
example: L.1000 corresponds to a cycle of 1000 litres; H.1000 corresponds to a cycle of 1000 hectolitres
Set the cycle corresponding to the volume of water produced between 2 regenerations.
To calculate the cycle for your softener, divide the exchange capacity (see table III "Technical characteristics) by the TH of the water to be treated.

Press the "Mode" button. The display shows P070 and the value in "L.0300". This value corresponds to the initial mean. It can be programmed if the daily consumptions are known. The A5X electronic unit will automatically record and modify this value depending on the consumption. The average is calculated daily at the regeneration time programmed in step P080.

Press the "Mode" button again. The display shows the programme step P031(#) and the alarms to be selected according to table IX on the alarm configuration.

Press the "Mode" button again. The display shows programme step P032(#) and the default number of regenerations after which the maintenance alarm is displayed.
If necessary set the maintenance alarm parameter from 1 to 999 regenerations. If the alarm is not selected during parameter setting for programme P031(#), maintenance alarms will not be displayed.

Then press the "Mode" button. The display shows programme step P033(#) and the default number of regenerations after which the after sales service alarm is displayed.
If necessary set the After Sales Service alarm parameter from 1 to 999 regenerations. If the alarm was not selected when setting the parameters for programme step P031(#), no ASS alarm will be displayed.

Press the "Mode" button. The programming phase is completed and the display returns to the service configuration.

7.4.4. "Seven" expected volume based operating mode - code 62530

Press the "Mode" button, for about five seconds.

The display shows programme step P100(#) and the default commissioning date in weeks.
example: 03:08 for week 03 of year 2008.
It is possible to change this value by entering the current week on commissioning.

Press the "Mode" button again. The display shows programme step P001(#) and the default current year.
Set the value of the current year.

Press the "Mode" button. The display shows programme step P002(#) and the default current day and month.
example: 01:02 for the 1st February.
Set the current day and month value.

Important:
The data programmed in P001(#) & P002(#) are used if the communication option is installed.

Press the "Mode" button. The display shows programme step P003 and the default current day of the week and time.
example: 1.01:01 for 01:01 on Monday.
Set the current day and time value in the 24 hour clock.

Press the "Mode" button. The display shows programme step P080 and the default regeneration time. This setting allows the regeneration to be planned depending on the consumption.
example: 0.01:00 for 01h00.
Set the regeneration time value in the 24 hour clock.

Press the "Mode" button. The display shows P051 and the value 04 corresponding to backwashing, the first phase of regeneration, expressed in minutes (see table X - "Regeneration time").

Press the "Mode" button. The display shows P052 and the value 00. This step is used in the case where the brine is sent to the softener from a salt silo. The value for this step therefore corresponds to the brine pump activation time (terminal V3).

"Mode" key again. The display shows P053, the programme step corresponding to the brine intake and slow rinsing duration, and the value "40" (minutes) (see table X - "Regeneration time"). If P052 is not zero the duration of brining+slow rinsing corresponds to the sum of the values of P052 and P053.

Press the "Mode" button again. P054 shows the duration of final rinsing in minutes "08" (see table X - "Regeneration time").

Press the "Mode" button once more. P060 is then displayed with "0-001".
The left hand "0" characterises the meter mode: multiplier (value 1) or divider (value 0).
The 3 figures on the right give the ratio between the meter pulses and the number of litres recorded by the unit.
examples: 1 meter pulse corresponds to 5 litres -> set parameter 1-005.
5 meter pulses corresponds to 1 litres -> set parameter 0-005.

Press the "Mode" button. P062 is displayed with "0-001".
This function permits the external pulse feedback parameters to be set.
The left hand "0" characterises the meter mode: multiplier (value 1) or divider (value 0).

The 3 figures on the right give the ratio between the meter pulses and those reported at the unit output.
example: 1 meter pulse corresponds to 5 output pulses -> set parameter 1-005.

Press the "Mode" button again. The display shows programme step P040 and the default regeneration cycle.
example: L.1000 corresponds to a cycle of 1000 litres; H.1000 corresponds to a cycle of 1000 hectolitres
Set the cycle corresponding to the volume of water produced between 2 regenerations.
To calculate the cycle for your softener, divide the exchange capacity (see table III "Technical characteristics) by the TH of the water to be treated.

Press the "Mode" button again. The display shows programme step P071 and the default mean Monday consumption.
example: L.0300 corresponds to a mean consumption of 300 litres; H.0300 corresponds to a mean consumption of 300 hectolitres.
For every day of the week (P071=Monday, P072=Tuesday…, P077=Sunday), enter the mean volume consumed.
If the mean volumes are not known, pass through the different steps from P071 to P077 by successive presses on the "Mode" button. The default value of 300 litres will then be used on starting and the means recalculated over the weeks. These calculated values can be viewed at any time by reading programme steps P071 to P077.

Press the "Mode" button again. The display shows the programme step P031(#) and the alarms to be selected according to table IX on the alarm configuration.

Press the "Mode" button again. The display shows programme step P032(#) and the default number of regenerations after which the maintenance alarm is displayed.
If necessary set the maintenance alarm parameter from 1 to 999 regenerations. If the alarm is not selected during parameter setting for programme P031(#), maintenance alarms will not be displayed.

Then press the "Mode" button. The display shows programme step P033(#) and the default number of regenerations after which the after sales service alarm is displayed.
If necessary set the After Sales Service alarm parameter from 1 to 999 regenerations. If the alarm was not selected when setting the parameters for programme step P031(#), no ASS alarm will be displayed.

Press the "Mode" button. The programming phase is completed and the display returns to the service configuration.

7.4.5. Pure volume operating mode - code 61230

Press the "Mode" button, for about five seconds.
The display shows programme step P100(#) and the default commissioning date in weeks.
example: 03:08 for week 03 of year 2008.
It is possible to change this value by entering the current week on commissioning.

Press the "Mode" button again. The display shows programme step P001(#) and the default current year.
Set the value of the current year.
Press the "Mode" button. The display shows programme step P002(#) and the default current day and month.

Example: 01:02 for the 1st February.
Set the current day and month value.

Important:
The data programmed in P001(#) & P002(#) are used if the communication option is installed.

Press the "Mode" button. The display shows programme step P003 and the default current day of the week and time.
example: 1.01:01 for 01:01 on Monday.
Set the current day and time value in the 24 hour clock.

Press the "Mode" button again. The display shows programme step P040 and the default regeneration cycle.
example: L.1000 corresponds to a cycle of 1000 litres; H.1000 corresponds to a cycle of 1000 hectolitres
Set the cycle corresponding to the volume of water produced between 2 regenerations.
To calculate the cycle for your softener, divide the exchange capacity (see table III "Technical characteristics) by the TH of the water to be treated.

Press the "Mode" button. The display shows P051 and the value 04 corresponding to backwashing, the first phase of regeneration, expressed in minutes (see table X - "Regeneration time").

Press the "Mode" button. The display shows P052 and the value 00. This step is used in the case where the brine is sent to the softener from a salt silo. The value for this step therefore corresponds to the brine pump activation time (terminal V3).

"Mode" key again. The display shows P053, the programme step corresponding to the brine intake and slow rinsing duration, and the value "40" (minutes) (see table X - "Regeneration time"). If P052 is not zero the duration of brining+slow rinsing corresponds to the sum of the values of P052 and P053.

Press the "Mode" button again. P054 shows the duration of final rinsing in minutes "08" (see table X - "Regeneration time").

Press the "Mode" button. The display shows P056, the program step corresponding to the minimum delay in minutes between the end of softener regeneration and the start of regeneration on another softener in the installation. This softener is electrically connected to terminal J11 (see paragraph 6.4.4).

Press the "Mode" button once more. P060 is then displayed with "0-001".
The left hand "0" characterises the meter mode: multiplier (value 1) or divider (value 0).
The 3 figures on the right give the ratio between the meter pulses and the number of litres recorded by the unit.
examples: 1 meter pulse corresponds to 5 litres -> set parameter 1-005.
5 meter pulses corresponds to 1 litres -> set parameter 0-005.

Press the "Mode" button. P062 is displayed with "0-001".
This function permits the external pulse feedback parameters to be set.
The left hand "0" characterises the meter mode: multiplier (value 1) or divider (value 0).
The 3 figures on the right give the ratio between the meter pulses and those reported at the unit output.
example: 1 meter pulse corresponds to 5 output pulses -> set parameter 1-005.

Press the "Mode" button again. The display shows the programme step P031(#) and the alarms to be selected according to table IX on the alarm configuration.

Press the "Mode" button again. The display shows programme step P032(#) and the default number of regenerations after which the maintenance alarm is displayed.
If necessary set the maintenance alarm parameter from 1 to 999 regenerations. If the alarm is not selected during parameter setting for programme P031(#), maintenance alarms will not be displayed.

Then press the "Mode" button. The display shows programme step P033(#) and the default number of regenerations after which the after sales service alarm is displayed.
If necessary set the After Sales Service alarm parameter from 1 to 999 regenerations. If the alarm was not selected when setting the parameters for programme step P031(#), no ASS alarm will be displayed.

Press the "Mode" button. The programming phase is completed and the display returns to the service configuration.

Important:

The programming done above will only be really confirmed when the first regeneration is starred, either automatically by the control unit, or by manual initiation by pressing the ″Regeneration″ button for five seconds. From this moment the parameters recorded can be displayed (except for the time of day, which is displayed immediately).

Important:

The times given in minutes in the table below are basic times that can be modified depending on the installation operating conditions.

Type Softener	Times in minutes					
	Pressure less than 4 bars			Pressure greater than 4 bars		
	Duration of backwashing	Intake duration slow rinsing	Duration of fast rinsing	Duration of backwashing	Intake duration slow rinsing	Duration of fast rinsing
8150	*10*	*40*	*11*	*10*	*32*	*11*
8250	*10*	*57*	*19*	*10*	*44*	*19*
8300	*10*	*51*	*16*	*10*	*40*	*16*
8400	*10*	*51*	*16*	*10*	*40*	*16*
8550	10	60	20	10	46	*20*
8600	12	57	19	12	44	19
8700	12	68	24	12	52	24
8800	12	68	24	12	42	24

Table no. X – "Regeneration time"

7.4.6. Test programme

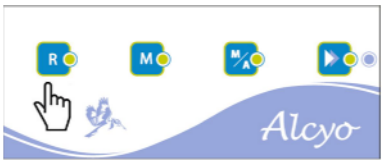
To start the ‘Test’ programme, press the ‘Regeneration’ and ‘Semi-automatic’ buttons simultaneously for about five seconds. The softener starts regeneration automatically (display R1). The bar graph remains in the top position throughout the duration of the test.
To go to the next regeneration phase (brine intake and slow rinsing), press the "Mode" button briefly. The display then changes to R2.
Pressing the ‘Mode’ key again allows a change to fast rinsing, the last regeneration phase. The display then changes to R3.

Attention:
We advise allowing the completion of this last phase if the brine intake phase was tested for several minutes, this is to rinse the resin contained in the softener bottle correctly.

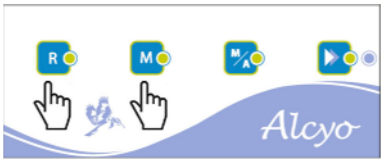
A final press on the ‘Mode’ button terminates the Test programme and allows a return to the initial display. The equipment changes hydraulically to operation or softened water production.

Attention:
The "TEST" mode permits the software regeneration phases to be checked and must in no case be used to perform a regeneration. Similarly this mode does not reinitialise the remaining volume for volume programmed equipment.

Other functions:



Starting a regeneration: press the "Regeneration" button for at least 5 seconds. A complete regeneration starts when the button is released.



Stopping a regeneration in progress
Attention: This emergency stop mode will return the softener to the operating position. If the stop was made during brine passage or during rinsing there is a risk of the bring been drawn towards the installations downstream of the softener.
To make this type of stop" press the "Regeneration" and "Mode" buttons simultaneously.

Softener history
If the softener is not regenerating it is possible to show the total softened water volume and the number of regenerations completed at any time.
It is sufficient to press the "Forward" button for 5 seconds. The total volume of softened water then appears. This indicative value is updated after each regeneration. The volume unit automatically changes from litre tom^3 when the value exceeds 99999 litres.
Pressing the "Forward" button for a second time allows the total number of regenerations performed to be displayed.
Total volume a number of regenerations can be reset to zero by simultaneously pressing the 3 "Mode", "Semi-automatic" and "Forward" buttons for 5 seconds.

Controlling an external pump
A 24 volt contact is available on terminal V3 to control a dosing pump when the softener is not in regeneration.

8- COMMISSIONING

8.1. Brine regulator adjustment

- Remove the regulator from the brine well placed in the salt tank.
- Check dimension " X " as shown on *drawing no. XX* and *table no. XI* below. Adjust the dimension by sliding the float on the regulator rod.
- Remove the side plugs from the brine well as shown in the diagrams.

Take advantage of this to check that the salt tank floor is correctly fitted.

	Salt box adjustment			
Type Equipment	Dimension X standard in mm	Dimension X Max. in mm	Plugs remove for standard exchange	Plugs remove for max. exchange power
8150	418	406	Not applicable	1 – 2
8250	484	484	1 – 2 - 3	1 - 2 - 3 - 4 - 5
8300	435	484	1 - 2 - 3 - 4	1 - 2 - 3 - 4 - 5
8400	486	545	1 – 2 - 3	1 - 2 - 3 - 4 - 5
8550	418	420	Not applicable	1 - 2
8600	445	457	Not applicable	1 - 2
8700	400	420	1	1 - 2 - 3 - 4
8800	390	410	1 – 2	1 - 2 - 3 - 4 - 5

Table no. XI - "Regulator adjustment"

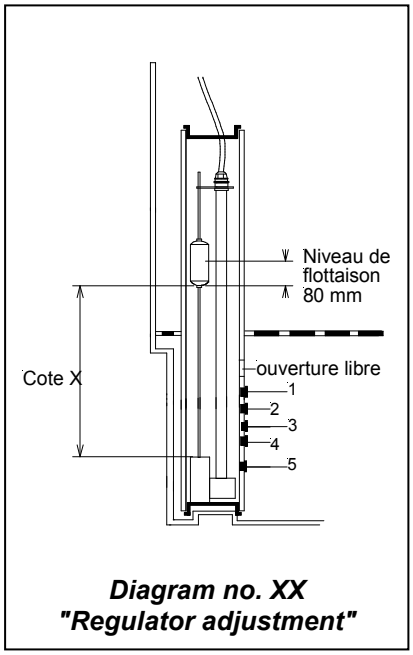


Diagram no. XX "Regulator adjustment"

8.2. Adjusting the type 8000 hydraulic control unit

The type 8000 valves' control system hydraulic pilots should be adjusted on commissioning depending on the pressure of the water to be treated and the type of equipment.

The hydraulic control system is fitted with 6 pilots (see *diagram no. XXI* opposite). Pilots 1 - 2 - 5 and 6 are adjustable flow rate so as to be able to adapt the hydraulic operating characteristics of the type of softener installed (resin beds).

To make this adjustment slightly loosen the 3 slot head screws on each pilot to be adjusted and grasp the knurled part.

There are five marks: I -II - III - IIII - IIIII (position I corresponding to almost complete closure).

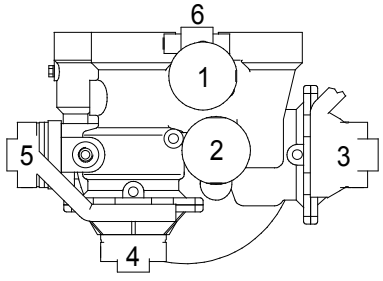


Diagram no. XXI

The flow rate for all regeneration operations is adjustable. However that for backwashing and fast rinsing must be set.

Table XII above, " *Theoretical flow rates* " shows the theoretical flow rate needed for both these operations as a function of the equipment type and the chart allows this setting to be determined as a function of the **mains** pressure.

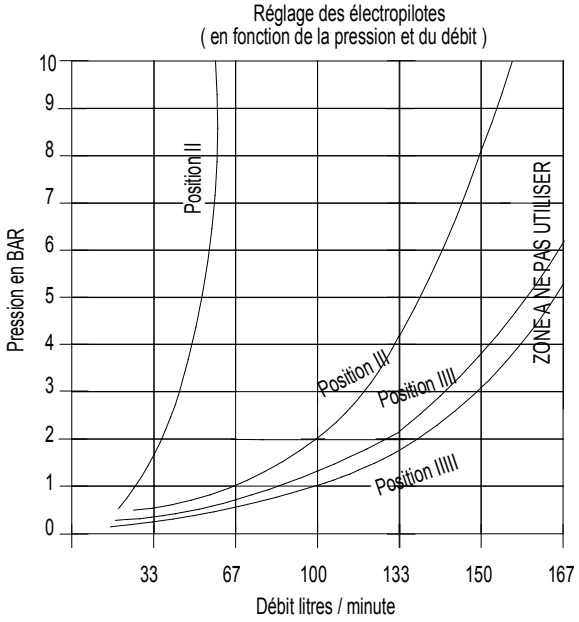
Example: For a COMPOSITE ALCYO type 8000 softener operating at mains pressure of 5 bars,

- Backwashing adjustment: 125 l/min (pilot no. 5) on mark III,
- Fast rinsing adjustment: 142 l/min (pilot no. 6) on mark IIII

Note: In all cases (equipment type and mains pressure) pilots 2 and 1 must be set on position IIIII.

	Theoretical flow rates	
COMPOSITE ALCYO for type 8000	Backwashing l/min	Fast rinsing l/min
8150	47	40
8250	77	67
8300	77	80
8400	117	107
8550	117	133
8600	125	142
8700	133	150
8800	133	150

Table no. XII - "Theoretical flow rates"



8.3. Connection to the mains water supply (see diagram XXII below)

In accordance with the requirements of the public health code, and to prevent the risk of proliferation of undesirable micro-organisms, the softener must be disinfected using bleach employed in the following doses:

Volume of resin (in litres)	Quantity of 39° chlorometry bleach (retail sachets) to be used (in ml)	
	In the salt tank (after filling with salt) for all types of softeners	In the body (after filling with silex)
150	15	20
250	20	30
300	20	30
400	25	30
450	25	30
550	30	80
600	30	90
700	40	115
800	50	125

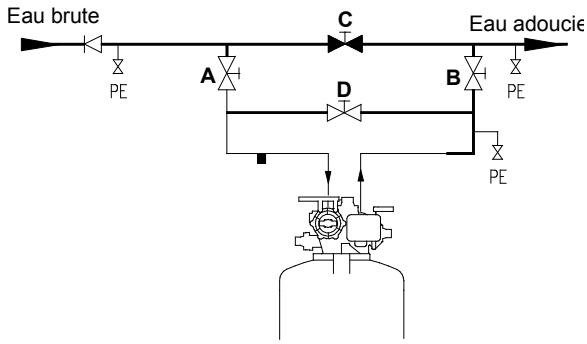


Diagram no. XXII "Valve identification

With valves A - B closed, C open, start a regeneration by pressing the "Regeneration" button on the A5X-CONTROL electronic unit.

Open valve A slowly to allow purging of air contained in the installation. Once the air is purged completely open A.

Also purge the brine regulator by pushing on the float road (hold the rod at the bottom).

Open valve B, then close valve C. Leave the softener regenerating.

Once regeneration is complete check the watertightness of the equipment. Check the TH and chlorides in the softened water. Modify the slow and fast rinsing times if necessary.

Set the residual TH valve D if appropriate.

9- OPERATION - GENERAL MAINTENANCE

Power cuts

The programmed parameters are saved in the microprocessor on the electronic board.

- The displays go out.
- The solenoid valves are no longer fed with power.

- If the power cut occurs during a regeneration this stops, the equipment does not return to service. When power returns the interrupted regeneration restarts at the start of the stopped phase.

Unprogrammed regeneration

It is possible to start regeneration at any time by pressing the "Regeneration" key.
If the "Regeneration" key for the 2nd softener is pressed during regeneration of the 1st the regeneration request information will be recorded by the unit and regeneration of the 2nd equipment will start after the 1st.

General maintenance

Periodically check the TH and chlorides in the raw water and softened water and if necessary modify the software regeneration parameters as a result.

Refill the salt tank whenever necessary. The salt level must always be greater than the level of water contained in the salt tank, however, it must not exceed the top of the brine well so as to leave free access to the brine regulator.

At least once every 6 months, take advantage of refilling the salt to tank to empty, clean and disinfect it, after refilling with salt, by introducing bleach into the brine water regulator chimney in the following dose:

Volume of resin (litres)	Quantity of 39° chlorometry concentrated bleach (retail sachets) to be used (in ml)
150	15
250	20
300	20
400	25
450	25
550	30
600	30
700	40
800	50

Alarm feedback

- *Electrical power cut*: alarm feedback contact closure.

  The contact remains active after voltage returns. To cancel it is necessary to press the "Mode" button (press for at least 5 seconds) and use successive presses to go through the different program steps and check that no data have been lost.

- *Pressure fault*: alarm feedback contact closure.

  Contact automatically deactivated when the correct pressure returns. If a pressure fault occurs during regeneration the regeneration time count is locked and will resume when pressure returns.

- *Low salt level*: alarm feedback contact closure.

  Contact automatically deactivated when the salt level in the salt tank is restored.

Incidents

INCIDENTS	CAUSES	REMEDIES
The softener is no longer producing softened water.	Bypass open.	Check the setting of the residual bypass. Check that the general bypass is not open.
	Regeneration salt low.	Check the presence of salt in the salt tank.
	Fault or incorrect brine intake.	Check the (dynamic) pressure at the softener input (minimum 1.5 bars).
	TH of water to be treated greater than expected TH.	Check the TH of the water to be treated.
	Absence of softened water draw off metering.	Check the volume metering on the control unit (ILS turbine/meter fault).
Water flowing to drain outside regeneration periods.	Valves or solenoid valves inside the equipment not watertight.	Replace the defective components.
	Decompression limiter blocked.	Clean the limiter.
	Insufficient pressure.	Check the pressure (minimum 1.5 bars dynamic).
Water flowing from salt tank overflow.	Brine regulator watertightness fault.	Check the absence of deposits at the bottom of the salt tank. Clean the salt tank and the regulator.

10- PROGRAMMING FLOW DIAGRAMS

10.1. TIME based operation – code 60210

FUNCTION	DISPLAY	DESCRIPTION
Operating mode	**60210**	Programming the generic code (see §7.2)
Factory programming	**01:01** **4.01:00**	➔Current time in 24 hour clock ➔Date of next regeneration
Program step P100	**P100** **01:01**	Press Mode for 5 seconds ➔Commissioning date (year:week = YY:WW) Modify with Forward and Semi-Automatic
Program step P001	**P001** **2000**	Press Mode ➔Current Year Modify with Forward and Semi-Automatic
Program step P002	**P002** **01:01**	Press Mode ➔Current Day and Month (DD:MM) Modify with Forward and Semi-Automatic
Program step P003	**P003** **1.01:01**	Press Mode ➔Current day of week and time Modify with Forward and Semi-Automatic

FUNCTION	DISPLAY	DESCRIPTION
Program step P020	**P020** **04**	Press Mode ➔Number of days between each regeneration Modify with Forward and Semi-Automatic
Program step P051	**P051** **04**	Press Mode ➔Backwashing duration in minutes Modify with Forward and Semi-Automatic
Program step P052	**P052** **00**	Press Mode ➔Brine pump option
Program step P053	**P053** **40**	Press Mode ➔Slow rinsing duration in minutes Modify with Forward and Semi-Automatic
Program step P054	**P054** **08**	Press Mode ➔Fast rinsing duration in minutes Modify with Forward and Semi-Automatic
Program step P080	**P080** **0.01:00**	Press Mode ➔Regeneration time (HH:MM) Modify with Forward and Semi-Automatic
Program step P031	**P031** **00111**	Press Mode ➔Alarms configuration Modify with Forward and Semi-Automatic
Program step P032	**P032** **070**	Press Mode ➔maintenance frequency in number of regenerations Modify with Forward and Semi-Automatic
Program step P033	**P033** **140**	Press Mode ➔ASS frequency in number of regenerations Modify with Forward and Semi-Automatic

10.2. SEVEN TIME based operation – code 60410

FUNCTION	DISPLAY	DESCRIPTION
Operating mode	**60210**	Programming the generic code (see §7.2)
Factory programming	**01:01** **4.01:00**	➔Current time in 24 hour clock ➔Date of next regeneration
Program step P100	**P100** **01:01**	Press Mode for 5 seconds ➔Commissioning date (year:week = YY:WW) Modify with Forward and Semi-Automatic
Program step P001	**P001** **2000**	Press Mode ➔Current Year Modify with Forward and Semi-Automatic
Program step P002	**P002** **01:01**	Press Mode ➔Current Day and Month (DD:MM) Modify with Forward and Semi-Automatic
Program step P003	**P003** **1.01:01**	Press Mode ➔Current day of week and time Modify with Forward and Semi-Automatic
Program step P081	**P081** **1.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P082	**P082** **1.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P083	**P083** **1.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic

FUNCTION	DISPLAY	DESCRIPTION
Programme step P084	**P084** **1.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P085	**P085** **1.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P086	**P086** **1.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P087	**P087** **1.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P091	**P091** **0.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P092	**P092** **0.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P093	**P093** **0.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P094	**P094** **0.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P095	**P095** **0.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P096	**P096** **0.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P097	**P097** **0.01:00**	Press Mode ➔Regeneration day and time (D HH:MM) Modify with Forward and Semi-Automatic
Program step P051	**P051** **04**	Press Mode ➔Backwashing duration in minutes Modify with Forward and Semi-Automatic
Program step P052	**P052** **00**	Press Mode ➔Brine pump option
Program step P053	**P053** **40**	Press Mode ➔Slow rinsing duration in minutes Modify with Forward and Semi-Automatic
Program step P054	**P054** **08**	Press Mode ➔Fast rinsing duration in minutes Modify with Forward and Semi-Automatic
Program step P031	**P031** **00111**	Press Mode ➔Alarms configuration Modify with Forward and Semi-Automatic
Program step P032	**P032** **070**	Press Mode ➔maintenance frequency in number of regenerations Modify with Forward and Semi-Automatic
Program step P033	**P033** **140**	Press Mode ➔ASS frequency in number of regenerations Modify with Forward and Semi-Automatic

10.3. DATA EXPECTED VOLUME operation – codes 62230 & 62730

FUNCTION	DISPLAY	DESCRIPTION
Operating mode	**42230 or 42730** **52230 or 52730**	Programming the generic code (see §7.2)
Factory programming	**01:01** **1000 L**	➔Current time in 24 hour clock ➔Default softener autonomy
Program step P100	**P100** **01:01**	Press Mode for 5 seconds ➔Commissioning date (year:week = YY:WW) Modify with Forward and Semi-Automatic
Program step P001	**P001** **2000**	Press Mode ➔Current Year Modify with Forward and Semi-Automatic
Program step P002	**P002** **01:01**	Press Mode ➔Current Day and Month (DD:MM) Modify with Forward and Semi-Automatic
Program step P080	**P080** **0.01:00**	Press Mode ➔Regeneration time (HH:MM) Modify with Forward and Semi-Automatic
Program step P051	**P051** **04**	Press Mode ➔Backwashing duration in minutes Modify with Forward and Semi-Automatic
Program step P052	**P052** **00**	Press Mode ➔Brine pump option
Program step P053	**P053** **40**	Press Mode ➔Slow rinsing duration in minutes Modify with Forward and Semi-Automatic
Programme step P060	**P060** **0-001**	Press Mode ➔Conversion of water meter pulses Modify with Forward and Semi-Automatic
Program step P062	**P062** **0-001**	Press Mode ➔ External pulse transmission
Program step P040	**P040** **L.1000**	Press Mode ➔Softener cycle in litres or hectolitres Modify with Forward and Semi-Automatic
Program step P070	**P070** **L.0300**	Press Mode ➔Initial daily mean Modify with Forward and Semi-Automatic
Program step P031	**P031** **00111**	Press Mode ➔Alarms configuration Modify with Forward and Semi-Automatic
Program step P032	**P032** **070**	Press Mode ➔maintenance frequency in number of regenerations Modify with Forward and Semi-Automatic
Program step P033	**P033** **140**	Press Mode ➔ASS frequency in number of regenerations Modify with Forward and Semi-Automatic

10.4. SEVEN EXPECTED VOLUME based operation – code 62530

FUNCTION	DISPLAY	DESCRIPTION
Operating mode	**62530**	Programming the generic code (see §7.2)
Factory programming	**01:01** **1000 L**	➔Current time in 24 hour clock ➔Default softener autonomy

FUNCTION	DISPLAY	DESCRIPTION
Program step P100	**P100** **01:01**	Press Mode for 5 seconds ➔Commissioning date (year:week = YY:WW) Modify with Forward and Semi-Automatic
Program step P001	**P001** **2000**	Press Mode ➔Current Year Modify with Forward and Semi-Automatic
Program step P002	**P002** **01:01**	Press Mode ➔Current Day and Month (DD:MM) Modify with Forward and Semi-Automatic
Program step P003	**P003** **1.01:01**	Press Mode ➔Current day of week and time Modify with Forward and Semi-Automatic
Program step P080	**P080** **0.01:00**	Press Mode ➔Regeneration time (HH:MM) Modify with Forward and Semi-Automatic
Program step P051	**P051** **04**	Press Mode ➔Backwashing duration in minutes Modify with Forward and Semi-Automatic
Program step P052	**P052** **00**	Press Mode ➔Brine pump option
Program step P053	**P053** **40**	Press Mode ➔Slow rinsing duration in minutes Modify with Forward and Semi-Automatic
Program step P054	**P054** **08**	Press Mode ➔Fast rinsing duration in minutes Modify with Forward and Semi-Automatic
Programme step P060	**P060** **0-001**	Press Mode ➔Conversion of water meter pulses Modify with Forward and Semi-Automatic
Program step P062	**P062** **0-001**	Press Mode ➔ External pulse transmission
Program step P040	**P040** **L.1000**	Press Mode ➔Softener cycle in litres or hectolitres Modify with Forward and Semi-Automatic
Program step P071	**P071** **L.0300**	Press Mode ➔Initial Monday mean Modify with Forward and Semi-Automatic
Program step P072	**P072** **L.0300**	Press Mode ➔Initial Tuesday mean Modify with Forward and Semi-Automatic
Program step P073	**P073** **L.0300**	Press Mode ➔Initial Wednesday mean Modify with Forward and Semi-Automatic
Program step P074	**P074** **L.0300**	Press Mode ➔Initial Thursday mean Modify with Forward and Semi-Automatic
Program step P075	**P075** **L.0300**	Press Mode ➔Initial Friday mean Modify with Forward and Semi-Automatic
Program step P076	**P076** **L.0300**	Press Mode ➔Initial Saturday mean Modify with Forward and Semi-Automatic
Program step P077	**P077** **L.0300**	Press Mode ➔Initial Sunday mean Modify with Forward and Semi-Automatic

FUNCTION	DISPLAY	DESCRIPTION
Program step P031	**P031** **00111**	Press Mode ➔Alarms configuration Modify with Forward and Semi-Automatic
Program step P032	**P032** **070**	Press Mode ➔maintenance frequency in number of regenerations Modify with Forward and Semi-Automatic
Program step P033	**P033** **140**	Press Mode ➔ASS frequency in number of regenerations Modify with Forward and Semi-Automatic

10.5. PURE VOLUME based operation – code 61230

FUNCTION	DISPLAY	DESCRIPTION
Operating mode	**61230**	Programming the generic code (see § 7.2)
Factory programming	**01:01** **1000 L**	➔Current time in 24 hour clock ➔Default softener autonomy
Program step P100	**P100** **01:01**	Press Mode for 5 seconds ➔Commissioning date (year:week = YY:WW) Modify with Forward and Semi-Automatic
Program step P001	**P001** **2000**	Press Mode ➔Current Year Modify with Forward and Semi-Automatic
Program step P002	**P002** **01:01**	Press Mode ➔Current Day and Month (DD:MM) Modify with Forward and Semi-Automatic
Program step P003	**P003** **1.01:01**	Press Mode ➔Current day of week and time Modify with Forward and Semi-Automatic
Program step P040	**P040** **L.1000**	Press Mode ➔Softener cycle in litres or hectolitres Modify with Forward and Semi-Automatic
Program step P051	**P051** **04**	Press Mode ➔Backwashing duration in minutes Modify with Forward and Semi-Automatic
Program step P052	**P052** **00**	Press Mode ➔Brine pump option
Program step P053	**P053** **40**	Press Mode ➔Slow rinsing duration in minutes Modify with Forward and Semi-Automatic
Program step P054	**P054** **08**	Press Mode ➔Fast rinsing duration in minutes Modify with Forward and Semi-Automatic
Program step P056	**P056** **00000**	Press Mode ➔Minimum time between regenerations in minutes
Programme step P060	**P060** **0-001**	Press Mode ➔Conversion of water meter pulses Modify with Forward and Semi-Automatic
Program step P062	**P062** **0-001**	Press Mode ➔ External pulse transmission
Program step P031	**P031** **00111**	Press Mode ➔Alarms configuration Modify with Forward and Semi-Automatic

FUNCTION	**DISPLAY**	DESCRIPTION
Program step P032	**P032** **070**	Press Mode ➔maintenance frequency in number of regenerations Modify with Forward and Semi-Automatic
Program step P033	**P033** **140**	Press Mode ➔ASS frequency in number of regenerations Modify with Forward and Semi-Automatic

10.6. A5X board program step coding

step	**description**	**default value**
P001	current year	2000
P002	current day and month	01:01
P003	current time	1.01:01
P020	frequency in days	04
P031	alarms configuration	00011 if not bio / 00111 if bio
P032	maintenance frequency in number of regenerations	070
P033	ASS frequency in number of regenerations	140
P040	cycle	L.1000
P051	backwashing duration in minutes	04
P052	brine pump duration in minutes	00
P053	slow rinsing duration in minutes	40
P054	fast rinsing duration in minutes	08
P056	time between regenerations in seconds	00000
P060	metering conversion	0-001
P062	metering feedback	0-001
P070	initial mean	L.0300
P071	initial Monday mean	L.0300
P072	initial Tuesday mean	L.0300
P073	initial Wednesday mean	L.0300
P074	initial Thursday mean	L.0300
P075	initial Friday mean	L.0300
P076	initial Saturday mean	L.0300
P077	initial Sunday mean	L.0300
P080	regeneration time	0.01:00
P081	regeneration time 1st slot	1.01:00
P082	regeneration time 2nd slot	1.01:00
P083	regeneration time 3rd slot	1.01:00
P084	regeneration time 4th slot	1.01:00
P085	regeneration time 5th slot	1.01:00
P086	regeneration time 6th slot	1.01:00
P087	regeneration time 7th slot	1.01:00
P091	regeneration time 8th slot	0.01:00
P092	regeneration time 9th slot	0.01:00
P093	regeneration time 10th slot	0.01:00
P094	regeneration time 11th slot	0.01:00
P095	regeneration time 12th slot	0.01:00
P096	regeneration time 13th slot	0.01:00
P097	regeneration time 14th slot	0.01:00
P100	commissioning date	01:01

11- RECORD OF PARAMETERS PROGRAMMED FOR SOFTENER

Softener type : _____

Raw water TH: _____ °f

Residual TH : _____ °f

Chosen operating mode:

1/ ❑ Pure time

2/ ❑ "Seven" pure time *(regeneration programmable on 7 days)*

3/ ❑ Pure volume regeneration if the cycle is equal to "0"

4/ ❑ Expected volume regeneration at mandatory fixed time

5/ ❑ Expected volume with volume priority

6/ ❑ "Seven" expected volume regeneration at time fixed according to calculated mean

Regeneration time: _____ hours _____minutes

Number of days between two regenerations: _____ days

Regeneration day(s) and time(s):

❑ Monday _____h_____min

❑ Tuesday _____h_____min

❑ Wednesday _____h_____min

❑ Thursday _____h_____min

❑ Friday _____h_____min

❑ Saturday _____h_____min

❑ Sunday _____h_____min

Regeneration duration setting:

- Backwashing: _____ minutes
- Intake and slow rinsing: _____ minutes
- Fast rinsing: _____ minutes

Pulse transmitting meter: _____ pulses per _____ litres

Diameter: _____ Nominal flow rate: _____ m3/h

Softener cycle: _____ litres

Mean consumptions: Monday (1) : _____ litres Tuesday (2) : _____ litres

Wednesday (3) : ____ litres Thursday (4) : ____ litres Friday (5) : _____ litres

Saturday (6) : _____ litres Sunday (7) : _____ litres

Alarms configuration: ❑ low water ❑ low salt

❑ bio sensor ❑ maintenance ❑ ASS

Note: - The parameters above are to be entered accurately during commissioning of the equipment.0
- Put a cross in the boxes corresponding to the operating mode and regeneration day, time(s).

12 - MAINTENANCE

Some components are subject to normal wear and tear due to the operation of the equipment. These components, also called operating and/or wearing parts must be regularly replaced by a person qualified and authorised to perform this operation.

The operating and wearing parts are excluded from our general guarantee conditions (apart from specific exceptions or cases).

The frequency of replacement depends on the conditions of installation and operation of the equipment. A visual examination of the appliance must be made at least once a year to assess the condition of the connections, connectors, display, etc...

DAILY (or at least once per week depending on the process)

- Check the upstream water hardness (TH).
- Any variation of +/- 10% in the hardness of the water to be treated must be taken into account and the appliance settings modified if necessary.
Check the hardness (TH) downstream of the appliance.
- Check the mixed water hardness (TH) (Depending on the process).
Correct the adjustment of the mixing unit if necessary.
To check the TH hardness, **BWT Permo** can offer you TH kits allowing these analyses to be done easily.
Samples can be taken from the sampling points
Record the installation operating parameters:
Pressure of water to be treated (upstream of the softener).
Meter reading (for volumetric equipment).
Salt level in the tank and quantity refilled (if necessary)
Process specific parameters
All the readings (Hardness, Operating parameters…) shall be entered in a document so that they can be consulted if necessary.

WEEKLY (or several times per week depending on the process)

Check the correct operation of the water treatment systems (if they exist) upstream of the softeners
(Example filters). Check the seals.
Check the salt level in the salt tank and top up if necessary.

MONTHLY (or several times per week depending on the process)

Check the display on the softener control unit and set the internal clock to the correct time if necessary.
Method: refer to the paragraph "Programming the unit" in the present manual.
Check (for volumetric installations only) the reception of flow rate information being delivered by the pulse transmitting water meter installed on the water pipe.
Method: put the control unit display on cycle display and wait for a unit to be counted during softened water production.
Check that there is no water at the equipment drain (when not regenerating)
Check the correct tightening of the electrical connections.
Check the pre-treatment or filtration if installed downstream of the softener.

EVERY SIX MONTHS (or several times per half year depending on the process)

We also advise you to clean the resins using the STERICLEAN product.

ANNUALLY (or several times per half year depending on the process)

Check the valve's internal components (operating and wearing parts). Operating and wearing parts are shown on page 59 of this manual.
Replace parts showing wear or the start of wear.
Clean and replace the other parts if necessary.
Check the absence of excessive quantities of insoluble salt deposits. Clean the salt tank if necessary.
Check that the brine regulator is functioning correctly and replace any parts if necessary.

NOTE:

The information shown above is a minimum. Depending on the quality of the water to be treated and its changes over time, the nature of the location of the equipment, and the upstream or downstream processes, it can be necessary to plan enhanced maintenance at different periods.
Our **BWT PERMO** regional branches are available to offer you a customised technical support contract for your appliance. (See page 4 for a list of our branches).
Regular maintenance is essential to ensure that your softener functions correctly and gives you the maximum of comfort and safety.
Some components are subject to normal wear and tear due to the operation of the appliance. These components, also called operating and/or wearing parts must be regularly replaced by a person qualified and authorised to perform this operation.
The operating and wearing parts are excluded from our general guarantee conditions.
The frequency of replacement depends on the conditions of installation and operation of the equipment. Refer to the "Maintenance" chapter for more information and contact our technical services to obtain all their skills.

Operating and wearing parts:

Maintenance kit - Inlet and outlet	**P0011546**
Adjustable pilot 1 - 2 - 5 and 6	**P0012635**
Adjustable pilot 3 - 4	**P0012636**
Set of 3 sleeves - 50µ	**P0003735**
Brine regulator	**P0014822**

– **Other spare parts:**

– Valve 8000 Composite, complete without casing - without strainer	**PK0012566**
– A5X electronic control unit	**P0024458**
– A5X transformer	**P0012434**
– Vacuum breaker	**P0098526**
– Hydro-ejector N1	**P0011611**
– Hydro-ejector N2	**P0020228**
Other parts are available, please contact your PERMO branch	

13 - COMMUNICATION

The PERMO 8000 ALCYO softener is fitted with an A5X communications board that uses a specific MODEM unit and software for local or remote transmission of information via a dedicated telephone line.

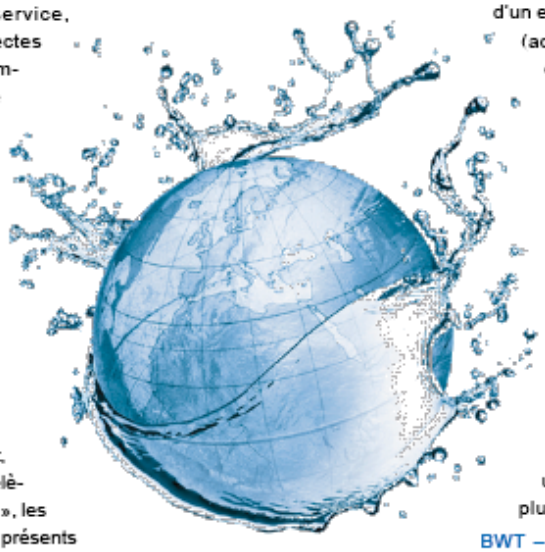
It is possible to monitor the operating parameters of your equipment and certain associated equipment remotely, for example, low product in a dosing unit.

BWT PERMO also offers contracts for the remote monitoring of your equipment via its central monitoring platform.

We can also offer you technical assistance contracts for regular monitoring and maintenance of your water treatment equipment.

Le groupe BWT

Le groupe Best Water Technology a été fondé en 1990 et est aujourd'hui l'une des entreprises leaders en Europe en matière de technologie de l'eau. Plus de 2800 employés travaillent dans les 70 filiales et sociétés affiliées, mais le réseau BWT est également constitué de milliers d'entreprises partenaires, collaborateurs de service, installateurs, planificateurs, architectes et spécialistes en hygiène. Les employés du département Recherche et Développement travaillent sur de nouveaux procédés et matériaux avec des méthodes avancées, en ayant pour objectif la mise au point de produits écologiques ainsi qu'économiques. La réduction de la consommation d'énergie et des émissions de CO_2 tient particulièrement à coeur de BWT. Presque partout où l'eau entre en question, que ce soit à l'admission d'une conduite d'eau dans un bâtiment, le «Point d'Entrée» ou au point de prélèvement de l'eau, le «Point d'Utilisation», les produits révolutionnaires de BWT sont présents et ont déjà largement prouvé leur efficacité. Que ce soit pour le traitement de l'eau potable, de l'eau minérale et de l'eau déminéralisée pour les applications pharmaceutiques, pour l'eau de piscine, de chauffage et de processus, pour l'eau de chaudière et de refroidissement ou encore pour l'eau de climatisation.



Une multitude d'innovations qui garantissent à nos clients un maximum de sécurité, d'hygiène et de santé lors de leurs contacts quotidiens avec l'eau, cet élixir de vie précieux. Parmi ces innovations, on retrouve notamment le SEPTRON®, le premier module d'électrodéionisation (EDI) au monde doté d'un enroulement en spirale, le procédé MDA (activation de l'oxyde manganeux) pour éliminer efficacement le manganèse, la technologie bipolaire AQA total qui offre une protection contre le calcaire sans ajout de produits chimiques, SANISAL, le premier sel régénérant au monde pour installations d'adoucissement qui désinfecte en même temps et la nouvelle technologie révolutionnaire Mg^{2+} qui garantit un meilleur goût des eaux filtrées, ainsi que des thés et cafés. Avec ses membranes uniques à haut rendement pour piles à combustible et batteries, BWT apporte un approvisionnement énergétique plus propre et durable au XXIe siècle.

BWT – For You and Planet Blue, c'est notre mission de prendre la responsabilité écologique, économique et sociale de fournir les meilleurs produits, systèmes, technologies et services dans tous les domaines du raitement des eaux à nos clients et de contribuer ainsi à protéger efficacement les ressources globales de notre planète bleue.

For You and Planet Blue. BWT BEST WATER TECHNOLOGY

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