PENTAIR

INSTALLER MANUAL

Autotrol 368 (604-606)

IMPORTANT SAFETY INSTRUCTIONS

Read and follow all instructions

Save these instructions

WWW.PENTAIR.EU

Table of Contents

1 Generalities

1.1 Scope of the documentation

The documentation provides the necessary information for appropriate use of the product. It informs the user to ensure efficient execution of the installation, operation or maintenance procedures.

The content of this document is based on the information available at the time of publication. The original version of the document was written in English.

For safety and environmental protection reasons, the safety instructions given in this documentation must be strictly followed.

The manufacturer reserves the right to make changes at any time without notice.

This manual is a reference and will not include every system installation situation. The person installing this equipment should have:

- training in the Autotrol series, (604-606) controllers and water treatment appliances installation;
- knowledge of water conditioning and how to determine proper controller settings;
- basic plumbing skills.

This document is available in other languages on **https://www.pentair.eu/product-finder/product-type/control-valves**.

1.2 Release management

Revision	Date	Authors	Description
A	11.07.2016	STF/FLA	First edition.
B	23.05.2018	BRY/FLA	Address change, Bleam information and valve on tank assembly.
C	11.10.2019	STF	General corrections.
D	12.10.2020	STF	General corrections.
E	16.01.2023	BRY/FIM	New website, scan & service removal.
F	26.03.2026	AMI	Corrections.

1.3 Manufacturer identifier, product identification

Manufacturer: **EMEA legal entity**
Pentair Manufacturing Italy S.R.L.
Via Tiziano 32
20145 Milano (MI)
Italy

Product identification: Autotrol 368 (604-606)

1.4 Abbreviations used

Assy	Assembly
BLFC	Brine Line Flow Controller
DF	Down Flow
DLFC	Drain Line Flow Controller
HW	Hot Water
Inj	Injector
QC	Quick Connect
Regen	Regeneration
SBV	Safety Brine Valve
TC	Time Clock

1.5 Norms

1.5.1 Applicable norms

Comply with the following guidelines:

- 2006/42/EC: Machinery Directive;
- 2014/35/UE: Low Voltage Directive;
- 2014/30/UE: Electromagnetic compatibility;
- 2011/65/UE: Restriction of use of certain hazardous substances in electrical and electronic equipment (RoHS);
- UNI EN ISO9001.

Meets the following technical standards:

- IEC/EN 60335-1;
- IEC 61010-1;
- EN 55014-1;
- EN 55014-2;
- EN 61000-3-2: 2006 + A1: 2009 + A2: 2009;
- EN 61000-3-3: 2008;
- EN 61000-6-2: 2005;
- EN 61000-6-3: 2007 + A1: 2011;
- EN 61326-1.

1.5.2 Available certificates

- CE;
- DM174;
- ACS.

Please find beside the certifications for some of our product families. Please note that this list is not an exhaustive list of all our certifications. In case of need for more information please contact us.

1.6 Procedure for technical support

Procedure to follow for any technical support request:

1. Collect the required information for a technical assistance request.
   - ⇨ Product identification (see Serial label location [→Page 10] and Recommendations [→Page 48]);
   - ⇨ Description of the device problem.
2. Please refer to the Troubleshooting [→Page 57]. If the problem persists contact your supplier.

1.7 Copyright and Trademarks

All indicated Pentair trademarks and logos are property of Pentair. Third party registered and unregistered trademarks and logos are the property of their respective owners.

1.8 Limitation of liability

Pentair Water Treatment EMEA products benefit, under specific conditions, from a manufacturer warranty that may be invoked by Pentair's direct customers. Users should contact the vendor of this product for applicable conditions and in case of a potential warranty claim.

Any warranty provided by Pentair regarding the product will become invalid in case of:

- installation done by a non-water-professional;
- improper installation, improper programming, improper use, improper operation and/or maintenance leading to any kind of product damages;
- improper or unauthorized intervention on the controller or components;
- incorrect, improper or wrong connection/assembly of systems or products with this product and vice versa;
- use of a non-compatible lubricant, grease or chemicals of any type and not listed by the manufacturer as compatible for the product;
- failure due to wrong configuration and/or sizing.

Pentair accepts no liability for equipment installed by the user upstream or downstream of Pentair products, as well as for process/production processes which are installed and connected around or even related to the installation. Disturbances, failures, direct or indirect damages that are caused by such equipment or processes are also excluded from the warranty. Pentair shall not accept any liability for any loss or damage to profits, revenues, use, production, or contracts, or for any indirect, special or consequential loss or damage whatsoever. Please refer to the Pentair List Price for more information about terms and conditions applicable to this product.

1.9 Pentair Scan application

Pentair Scan mobile application is the ideal support for the maintenance person in his daily business. A simple scan of the serial label present on the valve with a smartphone gives an instantaneously access to all updated information related to the product, such as:

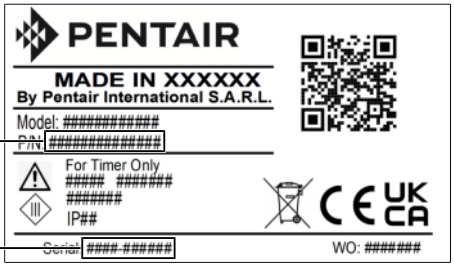
- valve's and tanks detailed configuration;
- manuals;
- spare parts lists;
- troubleshooting recommendations;
- multi-lingual videos, detailing how to best service a part;
- informations about new products, latest technologies, novelties about the Blue Network program, etc.

1. Download the application Pentair **Scan** from Available on the App Store or Available on the Google play in a smartphone.

Mandatory

The app must be open to scan and identify Pentair products!

2. Open the Pentair **Scan** application.
3. Either scan the serial number and part number from the product label or enter them manually.
   ⇨ For serial label location, refer to Serial label location [→Page 10].
4. Navigate to find information.



2 Safety

2.1 Safety pictograms definition

DANGER

This combination of symbol and keyword indicates an imminently hazardous situation that will result in serious or fatal injury if not avoided.

WARNING

This combination of symbol and keyword indicates a potentially hazardous situation that can result in serious or fatal injury if not avoided.

CAUTION

This combination of symbol and keyword indicates a potentially hazardous situation that can result in minimal or minor injury if not avoided.

Caution - material

This combination of symbol and keyword indicates a potentially hazardous situation that can result in material damage if not avoided.

Prohibition

Mandatory advice to follow.

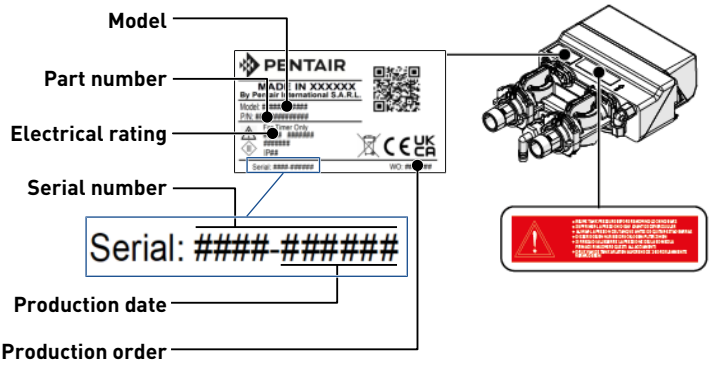
Mandatory

Applicable guideline, measure.

Info

Informative comment.

2.2 Serial label location



Mandatory

Ensure that the serial label and the safety labels on the device are completely legible and clean !

If necessary, replace them with new labels in the same positions.

2.3 Hazards

All the safety and protection instructions contained in this document must be observed in order to avoid temporary or permanent injury, damage to property or environmental pollution.

At the same time, any other legal regulations, accident prevention and environmental protection measures, as well as any recognized technical regulations relating to appropriate and risk-free methods of working which apply in the country and place of use of the device must be adhered to.

Any non-observation of the safety and protection rules, as well as any existing legal and technical regulations, will result in a risk of temporary or permanent injury, damage to property or environmental pollution.

2.3.1 Personnel

⚠ CAUTION

Risk of injury due to improper handling!

Only qualified and professional personnel, based on their training, experience and instruction as well as their knowledge of the regulations, safety rules and operations performed, are authorized to carry out necessary work.

2.3.2 Material

The following points must be observed to ensure proper operation of the system and the safety of user:

- be careful of high voltages present on the transformer (230 V, 50 Hz);

- do not put your fingers in the system (risk of injuries with moving parts and shock due to electric voltage).

2.4 Hygiene and sanitization

2.4.1 Sanitary issues

Preliminary checks and storage

- Check the integrity of the packaging. Check that there is no damage and no signs of contact with liquid to make sure that no external contamination occurred;
- the packaging has a protective function and must be removed just before installation. For transportation and storage, appropriate measures should be adopted to prevent the contamination of materials or the objects themselves.

Assembly

- Assemble only with components which are in accordance with drinking water standards;
- after installation and before use, perform one or more manual regenerations in order to clean the media bed. During such operations, do not use the water for human consumption. Perform a disinfection of the system in the case of installations for treatment of drinking water for human use.

Info

This operation must be repeated in the case of ordinary and extraordinary maintenance.

It should also be repeated whenever the system remains idle for a significant time.

Info

Valid only for Italy

In case of equipment used in accordance with the DM25, apply all the signs and obligations arising from the DM25.

2.4.2 Hygiene measures

Disinfection

- The materials used for the construction of our products meet the standards for use with potable water; the manufacturing processes are also geared to preserving these criteria. However, the process of production, distribution, assembly and installation, may create conditions of bacterial proliferation, which may lead to odor problems and water contamination;
- it is therefore strongly recommended to sanitize the products. See Sanitization [→Page 42];
- maximum cleanliness is recommended during the assembly and installation;
- for disinfection, use Sodium or Calcium Hypochlorite and perform a manual regeneration.

3 Description

3.1 Technical specifications

Design specifications/ratings

Valve body	Glass-filled Noryl®
Rubber components	Compounded for cold water
Weight (valve with controller)	1.8 kg
Recommended operating pressure	1.4 - 8.6 bar
Water temperature	1 - 38°C
Ambient temperature*	2 - 50°C
Refill flow rate	0.53 L/min - 1.25 L/min

*Recommended for indoor use only.

Flow rates (valve only)

Service at 1.05 bar drop	3.77 m^3/h
Backwash at 1.09 bar drop	0.62 m^3/h
Service	Kv = 3.68 (Cv = 4.25)
Backwash	Kv = 0.48 (Cv = 0.55)

Valve connections

Tank Thread	63.5 mm (2½") - 8, male
Inlet/Outlet Thread	19 mm (¾") BSPT, male
Drain line	12.7 mm (½") BSPT, male
Brine line	9.5 mm (⅜") BSPT male
Riser tube [Ø]	27 mm (1.05")
Riser tube length	Flush to top of tank ± 12.7 mm (½")

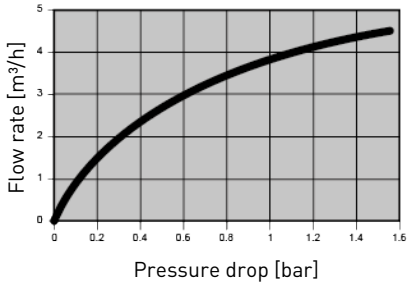
Electrical

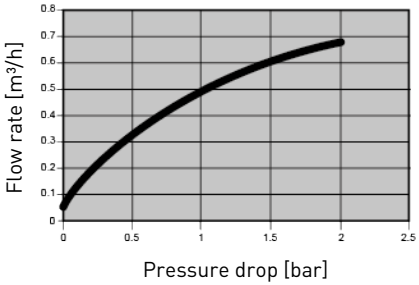
Controller Operating Voltage	12 VAC (requires use of Pentair Water supplied transformer)
Input Supply Frequency	50 or 60 Hz
Motor Input Voltage	12 VAC
Controller Power Consumption	6 W average
Protection rating	IP23

3.2 Performance flow rate characteristics

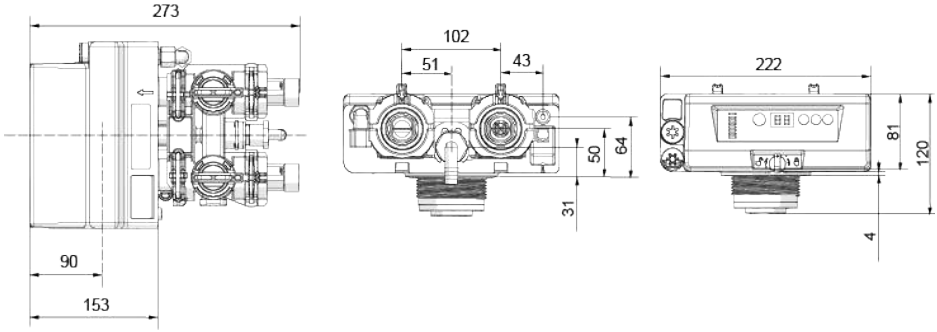
The graph shows the pressure drop created by the valve itself at different flow rates. It allows predetermining the maximum flow rate going through the valve depending on the system settings (inlet pressure etc). It also allows to determine the valve pressure drop at a given flow rate, and therefore to evaluate the system pressure drop vs flow rate.

FLOW RATE VS PRESSURE DROP

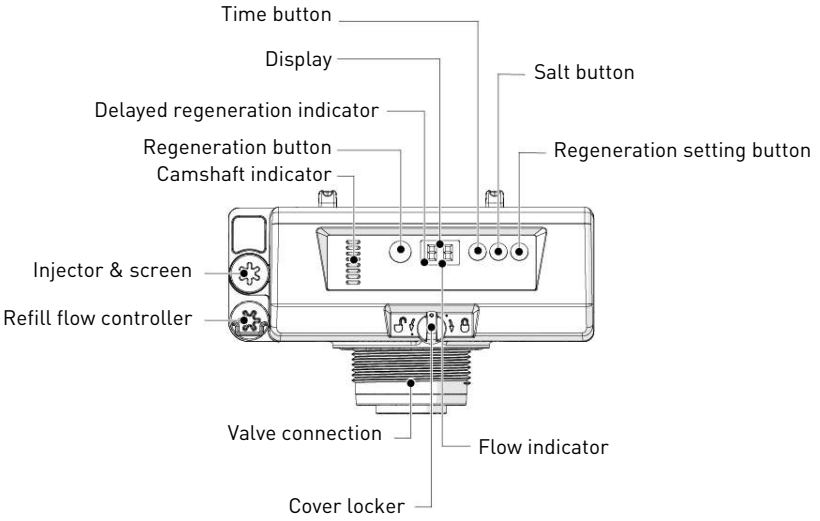


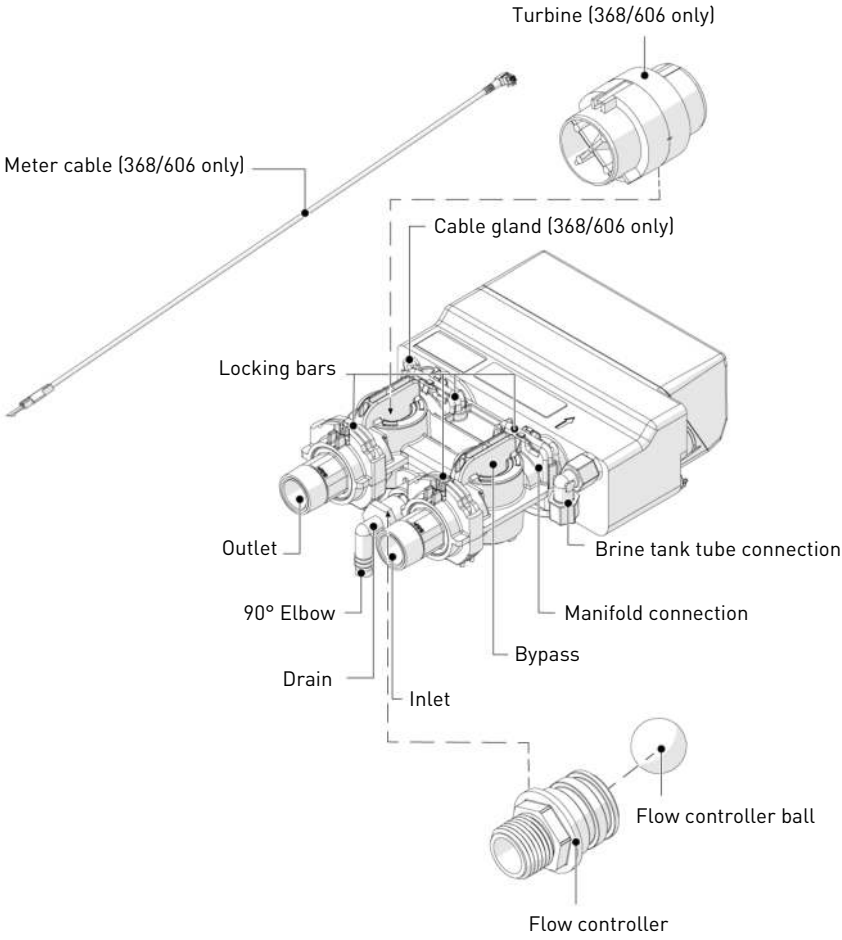


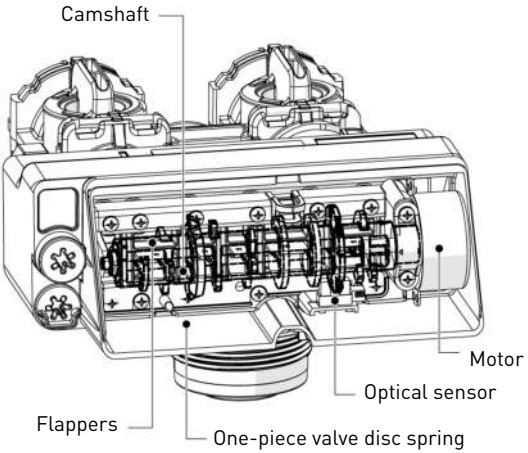
3.3 Outline drawing



3.4 Components description and location




Turbine (368/606 only)
Meter cable (368/606 only)
Cable gland (368/606 only)
Locking bars
Outlet
Brine tank tube connection
90° Elbow
Manifold connection
Bypass
Drain
Inlet
Flow controller ball
Flow controller


Camshaft
Motor
Optical sensor
Flappers
One-piece valve disc spring

3.5 System regeneration cycle (8-cycles operation)

Service (downflow) — cycle C0

Untreated water is directed down through the resin bed and up through the riser tube. The hardness ions attach themselves to the resin and are removed from the raw water being exchanged on the resin beads against sodium ions. The water is conditioned as it passes through the resin bed.

Backwash (upflow) — cycle C1

The flow of water is reversed by the valve and directed down the riser tube and up through the resin bed. During the backwash cycle, the bed is expanded and debris are flushed to the drain, while the media bed is remixed.

Brine draw (downflow) & slow rinse — cycle C2

The valve directs water through the brine injector and brine is drawn from the brine tank. The brine is then directed down through the resin bed and up through the riser tube to the drain. The hardness ions on the resin beads are replaced by sodium ions and are sent to the drain. The resin is regenerated during the brine cycle. When the air check valve closes brine draw finishes, and then the slow rinse phase starts.

Repressurization cycle — cycle C3

This cycle allows the air and water to hydraulically balance in the valve before continuing the regeneration.

Rapid rinse (downflow) — cycle C4

The valve directs water down through the resin bed and up through the riser tube to the drain. Any residual brine is rinsed from the resin bed, while the media bed is recompacted.

2nd Backwash (upflow) — cycle C5

2nd Rapid rinse (downflow) — cycle C6

Brine refill — cycle C7

Water is directed to the brine tank at a rate controlled by the refill flow controller, to prepare brine for the next regeneration. During brine refill cycle, treated water is already available at the valve outlet.

Info

For illustration purpose only. Always verify inlet and outlet marking on the valve.

SERVICE
C0
Inlet
Outlet
Valve

BACKWASH
C1 and C5
Inlet
Outlet
Drain
Valve

BRINE/SLOW RINSE
C2
Inlet
Outlet
Drain
Valve
From brine tank

REPRESSURIZE
C3
Inlet
Outlet
Valve

RAPID RINSE
C4 and C6
Inlet
Outlet
Drain
Valve

BRINE REFILL
C7
Inlet
Outlet
Valve
To brine tank

4 System sizing

4.1 Injector/DLFC/Refill flow controller - Valve configuration

Vessel diameter [In]	Injector Flow control	Refill flow control [gpm]	Backwash flow control [gpm]	Controller Time Clock 604	Controller Volumetric 606
6	E [yellow]	0.14	0.9	4001737	4001738
7	F [peach]	0.14	1.2	4001737	4001738
8	G [tan]	0.14	1.6	4001737	4001738
9	H [lt purple]	0.14	2.0	4001737	4001738
10	J [lt blue]	0.33	2.5	4001741	4001742

4.2 Cycle time calculation

The 600 series controller will automatically set the cycle time based on the program or so called unit number selected when programming the system (see System selection [→Page 38]). Make sure the programmed unit# is corresponding to your actual system and valve configuration.

4.3 Salt amount definition

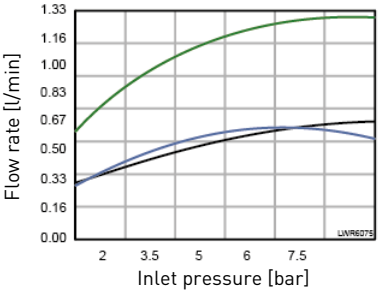
The salt amount is set in kilograms of salt use for each regeneration. This setting will greatly influence the system. Make sure this setting is aligned with your actual system size and unit programmed.

4.4 Injector flow rates

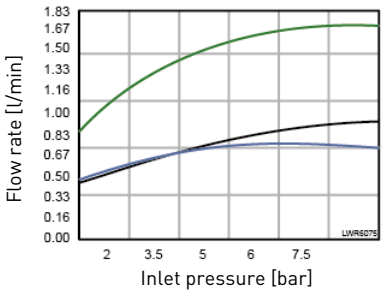
The following graphs represent the injectors flow rate as a function of the inlet pressure for the different injector sizes.

TOTAL BRINE DRAW RINSE

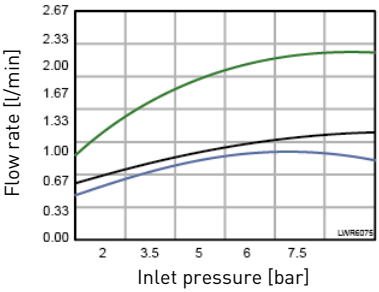
Injector "E" (Yellow)
For 6" Tanks



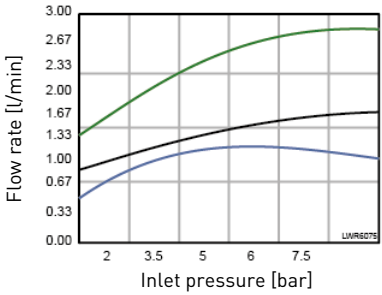
Injector "F" (Peach)
For 7" Tanks



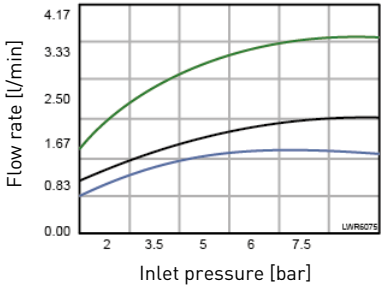
Injector "G" (Tan)
For 8" Tanks



Injector "H" (Light Purple)
For 9" Tanks



Injector "J" (Light Blue)
For 10" Tanks



5 Installation

5.1 Safety notices for installation

- Observe all warnings that appear in this manual;
- only qualified and professional personnel are authorized to carry out installation work.

5.2 Installation environement

5.2.1 General

- Use only brine salts designed for water softening. Do not use ice melt, block, or rock salts;
- keep the media tank in an upright position. Do not turn on its side, upside down, or drop it. Turning the tank upside down may cause media to enter the valve or might clog the upper screen;
- follow State and local codes for water testing. Do not use water that is micro-biologically unsafe or of unknown quality;
- when filling the media tank with water, first place the valve in the backwash position, then partly open the valve. Fill the tank slowly to prevent media from exiting the tank;
- when installing the water connection (bypass or manifold), first connect to the plumbing system. Allow heated parts to cool and cemented parts to set before installing any plastic parts. Do not get primer or solvent on O-rings, nuts, or the valve.

5.2.2 Electrical

There are no user-serviceable parts in the AC/AC or AC/DC transformer, motor, or controller. In the event of a failure, these should be replaced.

- All electrical connections must be completed according to local codes;
- use only the power AC/AC or AC/DC transformer that is supplied;

Mandatory

The use of any other power transformer than the one supplied void the warranty of all electronic parts of the valve!

- the power outlet must be grounded;
- to disconnect power, unplug the AC/AC or AC/DC transformer from its power source;
- an uninterrupted current supply is required. Please make sure that the voltage supply is compatible with the unit before installation;
- make sure the controller power source is plugged in;
- if the electrical cable is damaged, it is imperative that it is replaced by qualified personnel.

5.2.3 Mechanical

Caution - material

Risk of damage due to wrong lubricant use !

Do not use petroleum-based lubricants such as vaseline, oils, or hydrocarbon-based lubricants.

Use only approved silicone grease or soapy water !

- All plastic connections should be hand-tightened. PTFE (plumber's tape) may be used on connections that do not use an O-ring seal. Do not use pliers or pipe wrenches;
- existing plumbing should be in a good shape and free from limescale. In case of doubt, it is preferable to replace it;
- all plumbing must be completed according to local codes and installed without tension or bending stresses;
- soldering near the drain line should be done before connecting the drain line to the valve. Excessive heat will cause interior damage to the valve;
- do not use lead-based solder for sweat solder connections;
- the drain line must be a minimum of 12.7 mm (½") in diameter. Use 19 mm (¾") pipe if the backwash flow rate is greater than 26.5 lpm or the pipe length is greater than 6 m;
- do not support the weight of the system on the valve fittings, plumbing, or the bypass;
- it is not recommended to use sealants on the threads. Use PTFE (plumber's tape) on the threads of the drain elbow, and other NPT/BSP threads;
- the installation of a pre-filter is always recommended (100µ nominal);
- valve inlet/outlet must be connected to main piping via flexible.

5.3 Integration constraints

Location of a water treatment system is important. The following conditions are required:

⚠ CAUTION

The surface for installation (platform or floor) must be solid, flat and level.

Mandatory

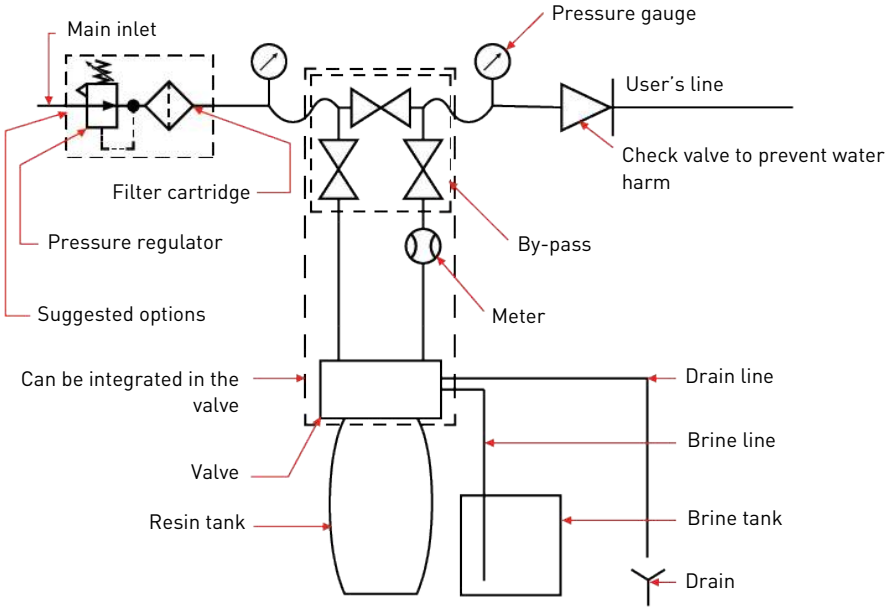
Drain must be capable of handing a maximum backwash flow rate of 19 L/min.

- locate the softener as close as possible from drain discharge point and within 12.2 m maximum of drain discharge point, respecting minimum drain line diameter advises given at chapter Drain line connection [→Page 31];
- room to access equipment for maintenance and adding brine (salt) to tank;
- constant electrical supply to operate the controller;
- total minimum pipe run to water heater of 3 m to prevent backup of HW into system;
- always install check valve before water heater to protect the softener from HW return;

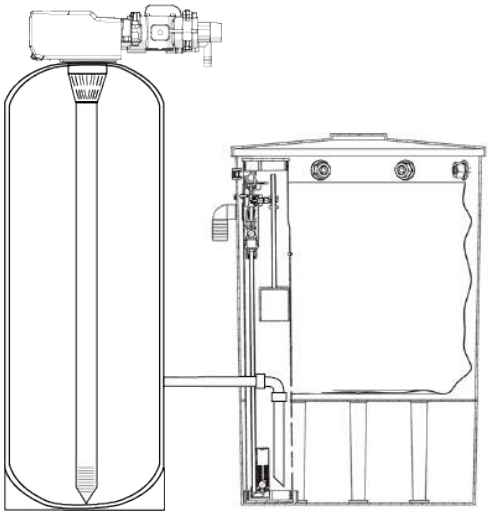
- local drain for discharge as close as possible;
- water line connections with shut off or bypass valves;
- must meet any local and state codes for site of installation;
- valve is designed for minor plumbing misalignments. Do not support weight of system on the plumbing;
- use flexible piping to connect main piping to softener;
- be sure all soldered pipes are fully cooled before attaching plastic valve to the plumbing.

5.4 Block diagram and configuration example

Block diagram



Configuration example



5.5 Valve on tank assembly

1. Lubricate the seals with approved silicone grease.

2. Spin the valve (**1**) onto the tank (**2**), ensuring the threads are not cross-threaded.
3. Rotate the valve (**1**) clockwise and freely, without using force until it comes to a stop.

Info

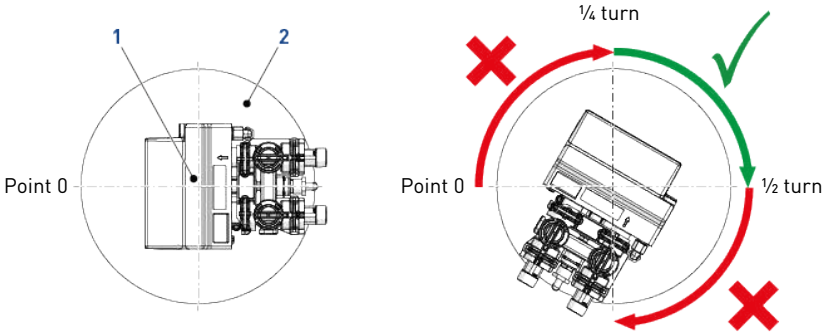
This stop position is considered point zero.

4. Rotate the valve (**1**) clockwise from point zero to between ¼ turn and ½ turn.

Caution - material

Risk of damage due to excessive force !

Do NOT exceed 27 Nm of torque when installing the valve. Exceeding this limit may damage the threads and cause failure.



5.6 Valve connection to piping

The connections should be hand tightened using PTFE (plumber's tape) on the threads if using the threaded connection type.

In case of heat welding (metal type connection), the connections should not be made to the valve when soldering.

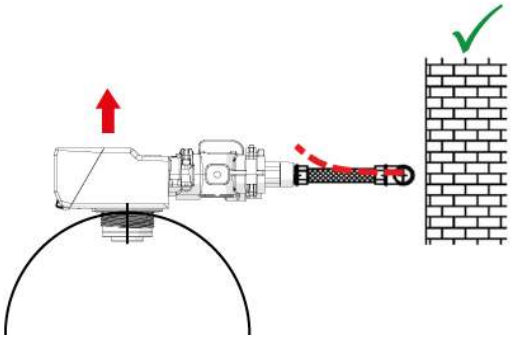
Tip

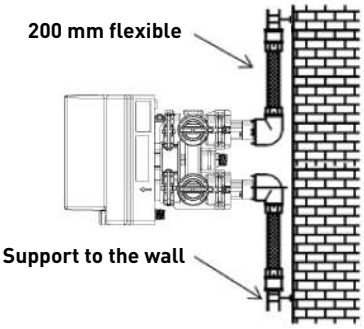
See chapter Components description and location [→Page 14] to identify the connections.

When pressurized, any composite tank will expand both vertically and circumferential. In order to compensate the vertical expansion, the piping connections to the valve must be flexible enough to avoid overstress on the valve and tank.

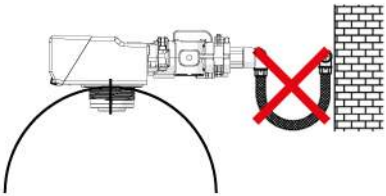
5.6.1 Top-mounted valve installation

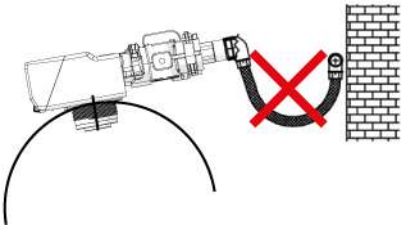
The valve and tank should not be supporting any part of the piping weight. This is hence compulsory to have the piping fixed to a rigid structure (e.g. frame, skid, wall...) so that the weight of it is not applying any stress on the valve and tank.





- The diagrams above illustrate how the flexible piping connection should be mounted;
- in order to adequately compensate the tank elongation the flexible tubes must be installed **horizontally**;
- should the flexible piping connection be installed in vertical position, instead of compensating the elongation, it will create additional stresses on the valve & tank assembly. Therefore this is to be avoided;
- the flexible piping connection must also be installed stretched, avoiding excessive length. For instance 20 – 40 cm is enough;
- excessively long and non-stretched flexible piping connection will create stresses on the valve and tank assembly when the system is pressurized, as illustrated in the below picture: on the left the assembly when the system is unpressurised, on the right the flexible piping connection when put under pressure tends to lift up the valve when stretching up. This configuration is even more dramatic when using semi-flexible piping;
- failure to provide enough vertical compensation may lead to different kinds of damage, either on the valve thread which is connected to the tank, or on the female thread connection of the tank. In some cases, damage may also be seen on the valve inlet and outlet connections;



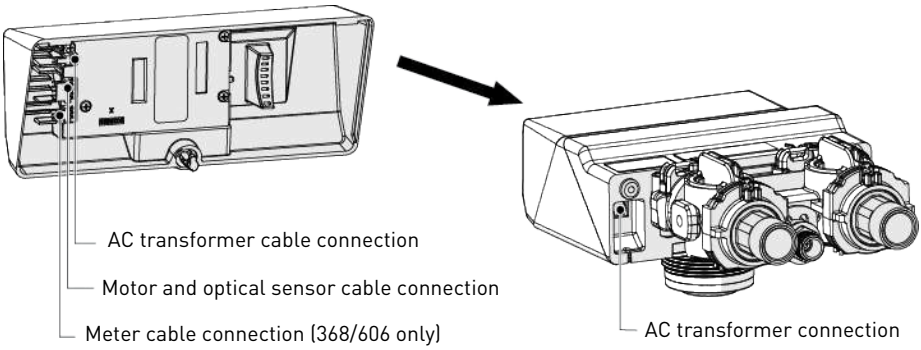


- in any case, any failure caused by improper installations and/or piping connections may void the warranty of Pentair products;

- in the same way, using lubricant* [→Page 28] on the valve thread is not allowed and will void the warranty for the valve and tank. Indeed using lubricant there will cause the valve to be over-torqued, which may lead to valve thread or tank thread damage even if the connection to piping has been done following the above procedure.

*Note: Use of petroleum-based grease and mineral based lubricant is totally forbidden, not only on the valve thread, since plastics used (especially Noryl) will highly suffer from contact with this type of grease, leading into structural damage hence to potential failures.

5.7 Electrical connections



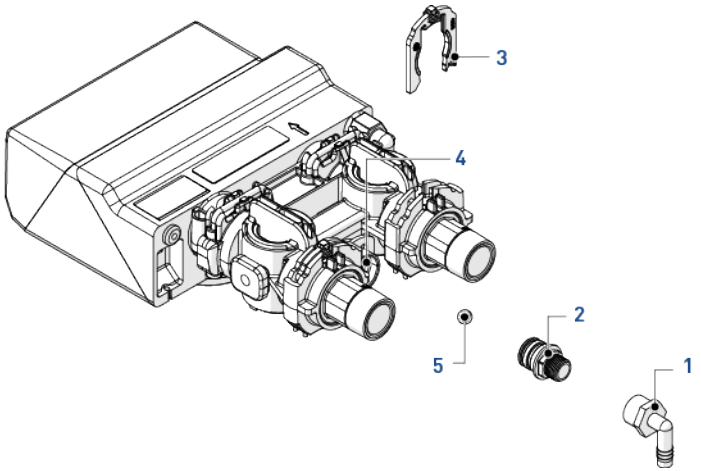
5.8 Drain line flow controller

The DLFC requires assembly before use.

Info

The plumbing connectors should not be installed. See Bypass assembly [→Page 30]

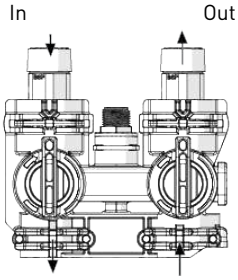
1. Using a PTFE (plumber's tape), wrap it over threads of the flow controller (**2**).
2. Screw the flow controller (**2**) and the 90° elbow (**1**) together (hand tighten).
3. Place the ball (**5**) into the flow controller (**2**) and insert the assembly into the drain line opening (**4**).
4. Push the assembly in and secure with the drain line clip (**3**).



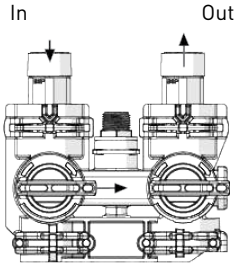
5.9 Bypassing

A bypass valve system should be installed on all water conditioning systems. Bypass valves isolate the softener from the water system and allow unconditioned water to be used. Service or routine maintenance procedures may also require that the system is bypassed.

Normal operation



In Bypass



Caution - material

Risk of damage due to bad mounting!

Do not solder pipes with lead-based solder.

Do not use tools to tighten plastic fittings. Over time, stress may break the connections. When the bypass valve is used, only hand tighten the plastic nuts.

Do not use petroleum grease on gaskets when connecting bypass plumbing. Use only 100% silicone grease products when installing any plastic valve. Non-silicone grease may cause plastic components to fail over time.

5.9.1 Bypass assembly

The bypass assembly connects to the water system by means of a connector assembly. The connector is secured to the plumbing and then inserted into the bypass. Clips are used to hold it in place.

Before inserting the connector:

- check that all o-rings are in place and not damaged;
- o-rings are pre-lubricated. Sliding surfaces should be lubricated with 100% silicone grease.

1. Firmly insert connector (**3**) into bypass.
2. Press the locking clip (**1**) into position. Make certain the clip is fully engaged.

⚠ CAUTION

Before turning on the water to the valve, rotate the two handles (4) on the bypass valve 2 or 3 times.

This will help to place the O-rings and prevent leaking.

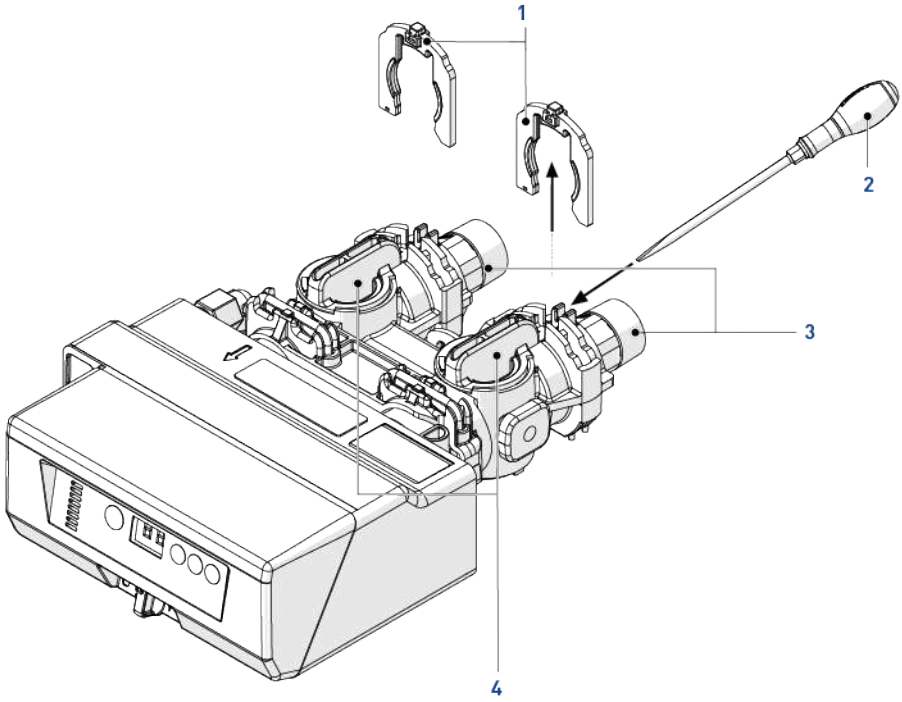
To remove a clip:

1. Turn off water and release water pressure at the valve.
2. Push the water line connectors (**3**) into the bypass and valve. This will help release O-rings that may have seated in place.
3. Remove the clips (**1**) by inserting a flat screwdriver (**2**) under the top centre of the clip and lifting (prying up).

Caution - material

Do not use pliers to remove a clip.

It is likely the clip will break.



5.10 Drain line connection

Info

Standard commercial practices are expressed here.

Local codes may require changes to the following suggestions.

Check with local authorities before installing a system.

Mandatory

The drain line must be build with ½" semi rigid or rigid piping ! An air gap must be present at the drain!

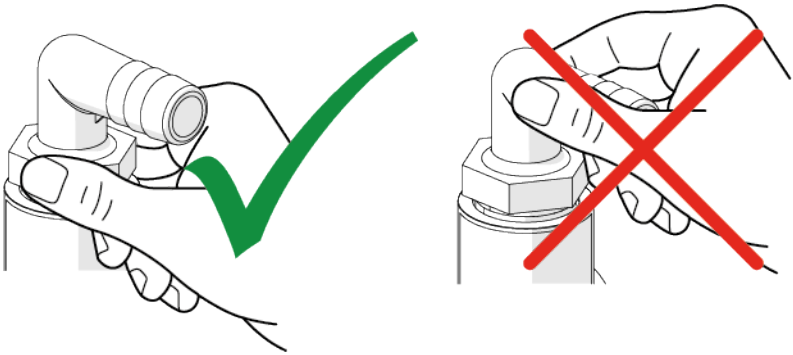
Caution - material

Risk of damage due to over-force !

The drain line plastic elbow must always be hand-tighten without using the elbow as a lever.

The drain plastic elbow is not designed to support the weight of the tube. The tube has to have its own support.

Do not over tighten the hose tightening ring on its plastic support.



Preferably, the unit should not be more than 6.1 m from the drain. Use an appropriate adapter fitting to connect plastic tubing to the drain line connection of the valve.

If the backwash flow rate exceeds 22.8 lpm or if the unit is located 6.1-12.2 m from the drain, use 19.0 mm (¾") tubing. Use appropriate fittings to connect the 19.0 mm (¾") tubing to the 12.7 mm (½") drain connection on the valve.

The drain line may be elevated up to 1.8 m providing the run does not exceed 4.6 m and water pressure at the softener is not less than 2.76 bar. Elevation can increase by 61 cm for each additional 0.69 bar of water pressure at the drain connector.

Where the drain line is elevated but empties into a drain below the level of the valve, form a 18 cm loop at the far end of the line so that the bottom of the loop is level with the drain line connection. This will provide an adequate siphon trap.

Where the drain empties into an overhead sewer line, a sink-type trap must be used.

Secure the end of the drain line to prevent it from moving.

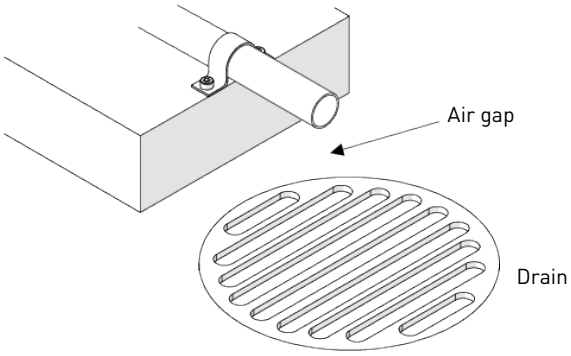
Mandatory

Waste connections or the drain outlet shall be designed and constructed to provide connection to the sanitary waste system through an air-gap of 2 pipe diameters or 25.4 mm (1"), whichever is larger.

Caution - material

Risk of damage due to lack of gap !

Never insert the drain line directly into a drain, sewer line or trap. Always allow an air gap between the drain line and the waste water to prevent the possibility of sewage being back-siphoned into the softener.



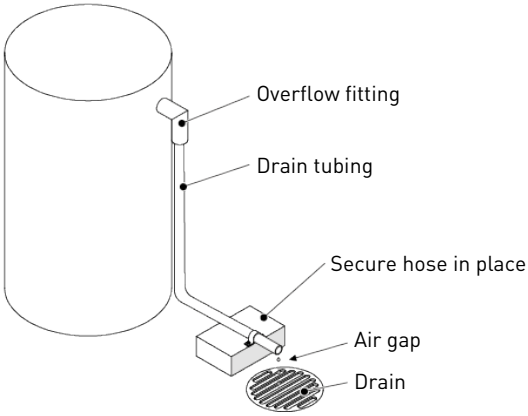
5.11 Overflow line connection

In the event of a malfunction, the brine tank overflow fitting will direct "overflow" to the drain instead of spilling on the floor. This fitting should be on the side of the brine tank. Most brine tank manufacturers feature a pre-drilled hole for the tank overflow connector.

To connect the overflow line, locate the hole on the side of the tank. Insert the overflow fitting into the tank and tighten with plastic thumb nut and gasket as shown below. Attach a 12.7 mm (½") I.D. tubing (not supplied) to fitting and run to drain.

Do not elevate overflow higher than overflow fitting.

Do not tie into the drain line of the controller unit. The overflow line must be a direct, separate line from overflow fitting to drain, sewer or tub. Allow an air gap as per drain line instructions.



Caution - material

Risk of flooding due to lack of floor drain !

Floor drain is always recommended to avoid flooding in case of overflow.

5.12 Brine line connection

Caution - material

Risk of malfunction due to the use of wrong equipment!

Flexible and semi-flexible hoses may shrink because of the vacuum during brine draw.

The brine line from the tank connects to the valve. Make the connections and hand tighten. Be sure that the brine line is secure and free from air leaks. Even a small leak may cause the brine line to drain out, and the softener will not draw brine from the tank. This may also introduce air into the valve, causing problems with the valve operation.

Brine line must be equipped with brine tank air check in the brine tank.

6 Programming

Info

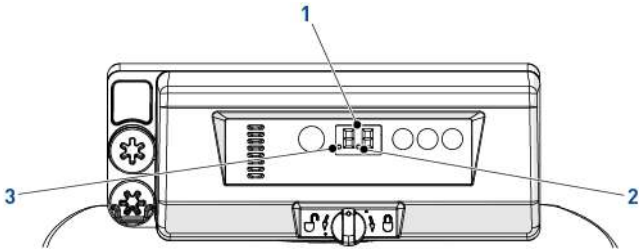
After 5 seconds without keypad input, the unit returns to normal operation mode and display the time of day.

Memory retention in case of power failure : the controller stores the time of day without battery in case of power failure. All others programmed parameters are stored in the nonvolatile (Novram) memory and are stored during power failure. The storage time in the flash memory is about 99 years.

▲ has two different functions according to the controller used:

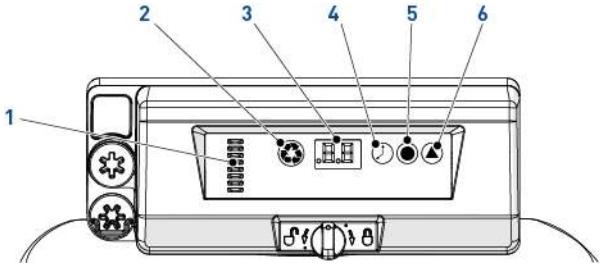
- For 604 controllers: the function is the day interval setting.
- For 606 controllers: the function is the volumetric capacity setting.

6.1 Display



1.	Digits	Two digits used to display the time, program value or error codes.
2.	Flow indicator	The flow indicator blinks ON and OFF when water flow turns the meter.
3.	Delayed regeneration indicator	When this dot is displayed, it means that a delayed regeneration is programmed.

6.2 Commands



1.	Camshaft indicator	A column of windows provides a visual indicator of the camshaft rotation.
2.	♻ - Manual regeneration button	The manual regeneration button when pressed initiates either a delayed regeneration or immediate regeneration.

3. Display — Used to show informations, see Display [→Page 35].
4. - Time button — The time button when pressed will display the current hour of day for 5 seconds. Also used to change the time of day, see Time of day [→Page 37].
5. - Salt button — The salt button when pressed will display the current salt setting for 5 seconds. Also used to change the brine dosage, see Brine dosage [→Page 37].
6. - Hardness button — The hardness button when pressed will display the current hardness setting for 5 seconds. Also used to change the volumetric regeneration, see Volumetric regeneration (606 only) [→Page 37].

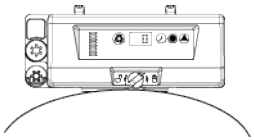
6.3 Programming mode chart

Parameter description	Range of values	Default value	Units of measure	Notes
Time of day	0:00 - 23:59	12:00	hour: minute	-
Brine dosage	0.2 - 6.0	0.6	kg	From 0.2 kg to 1.0 kg by increments of 0.05 kg; from 1.0 kg to 3.0 kg by increments of 0.1 kg; from 3.0 kg to 6.0 kg by increments of 0.5 kg.
Time clock regeneration (only 604)	0 30	3	day	0 = Disabled; 0.3 = Regeneration every 8 hours: at 2, 10 and 18 hours; 0.5 = Regeneration every 12 hours: at 2 and 14 hours; 1 - 30 = Regeneration every X days.
Volumetric regeneration (only 606)	0.4 - 9.5	3.6	m^3	From 0.4 m^3 to 1.0 m^3 by increments of 0.05 m^3; from 1.0 m^3 to 3.0 m^3 by increments of 0.1 m^3; from 3.0 m^3 to 5.0 m^3 by increments of 0.2 m^3; from 5.0 m^3 to 9.5 m^3 by increments of 0.5 m^3.

Parameter description	Range of values	Default value	Units of measure	Notes
Calendar override (only 606)	0 - 30	3	day	0 = Disabled; 0.3 = Regeneration every 8 hours: at 2, 10 and 18 hours; 0.5 = Regeneration every 12 hours: at 2 and 14 hours; 1 – 30 = Regeneration every X days.
System selection	1 - 4	1	-	See Programmed settings [→Page 38].

6.4 Time of day

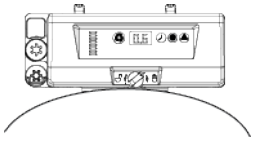
Set the current time.



1. Press ◷ until desired hour appears then release.
   - ⇨ Range from 0 through 23 hours.
   - ⇨ The elapsed minutes will reset to zero when the hours are changed.

6.5 Brine dosage

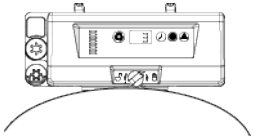
Set the brine dosage.



1. Press ● until desired brine dosage appears then release.
   - ⇨ Range from 0.2 kg to 6.0 kg;
     from 0.2 kg to 1.0 kg by increments of 0.05 kg;
     from 1.0 kg to 3.0 kg by increments of 0.1 kg;
     from 3.0 kg to 6.0 kg by increments of 0.5 kg.

6.6 Time clock regeneration (604 only)

Set the time between each regeneration.

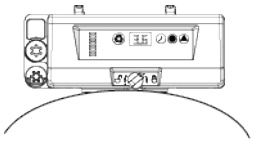


1. Press ▲ until desired brine dosage appears then release.
   - ⇨ Range from 0 through 30;
     0 = Disabled;
     0.3 = Regeneration every 8 hours: at 2, 10 and 18 hours;
     0.5 = Regeneration every 12 hours: at 2 and 14 hours;
     1 – 30 = Regeneration every X days (every 3 days in this example).

6.7 Volumetric regeneration (606 only)

Set the capacity in [m^3] between each regeneration.

1. Press ▲ until desired capacity appears then release.

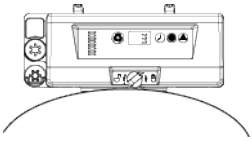


   ⇨ Range from 0.4 to 9.5 m^3;
   from 0.4 m^3 to 1.0 m^3 by increments of 0.05 m^3 (12 increments);
   from 1.0 m^3 to 3.0 m^3 by increments of 0.1 m^3 (20 increments);
   from 3.0 m^3 to 5.0 m^3 by increments of 0.2 m^3 (10 increments);
   from 5.0 m^3 to 9.5 m^3 by increments of 0.5 m^3 (10 increments).

6.8 Calendar override setting (606 only)

The 606 controller needs a method to set days between regeneration for regulatory requirements and in cases when the flow sensor has failed.

1. Press and hold ♻ and ▲ for 3 seconds.



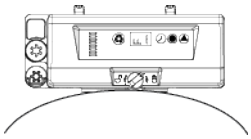
   ⇨ The programmed calendar override is displayed.
2. Press ▲ to increases value.
   ⇨ Range from 0 through 30;
   0 = Disabled;
   0.3 = Regeneration every 8 hours: at 2, 10 and 18 hours;
   0.5 = Regeneration every 12 hours: at 2 and 14 hours;
   1 – 30 = Regeneration every X days (every 3 days in this example).

6.9 System selection

The 604 / 606 controller has four system settings available. The system selections accommodate multiple tank sizes and various feedwater conditions.

System selection:

1. Press and hold 🕐 and ● simultaneously for 3 seconds.



   ⇨ A small "u" will be displayed in the left digit.
   ⇨ The right digit will display the current system setting.
2. Press ● until desired system setting appears then release.
   ⇨ The displayed system setting will be stored in flash memory when the controller exits programming after 5 seconds.

6.9.1 Programmed settings

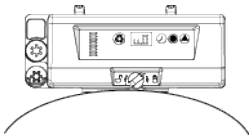
C#	Cycle	Resin bed flow direction	System u1 [minutes]	System u2 [minutes]	System u3 [minutes]	System u4 [minutes]
C1	Backwash	↑	8	8	1	3

C#	Cycle	Resin bed flow direction	System u1 [minutes]	System u2 [minutes]	System u3 [minutes]	System u4 [minutes]
C2	Brine draw	↓	Calculated	Calculated	Calculated	Calculated
	Slow rinse		25	45	25	45
C3	Repressurize	None	3	3	3	3
C4	Rapid rinse	↓	3	3	1	3
C5	2nd backwash	↑	1	1	1	1
C6	2nd rapid rinse	↓	1	1	1	1
C7	Brine refill	None	Calculated	Calculated	Calculated	Calculated

6.10 Resetting the controller

All programmed settings with the exception of time of day can be reset. Entering the value "0" will reset the flash memory to the factory default.

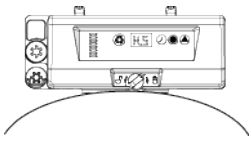
To reset the controller:



1. Press and hold and simultaneously for 3 seconds.
   - ⇨ A small "u" will be displayed in the left digit.
   - ⇨ The right digit will display the current system setting.
2. Press until the "u0" system is displayed.
   - ⇨ Wait 5 seconds for the setting to be stored into the flash memory. The display will return to the time of day.
   - ⇨ The controller has now system 1 setting (default setting).
3. Follow the steps of the system selection procedure to select the desired system setting.

6.11 History values

The controller features a review level that displays the operation history of the system. To access history values :



1. Press and hold and simultaneously for 3 seconds.
   - ⇨ To view the "H" levels.
2. Press to navigate through the table.
   - ⇨ When the desired code is reached, press to display the value.
   - ⇨ Some of the values have four digits. Press to display the first two digits, then press to display the last two digits.

Info

After 30 seconds without a button press, the controller exists the history table.

Code	Description	Notes
H1	Days since last regeneration	Days since last regeneration.
H2	Current day of week	0-6.
H3	Water used today since 02h00	In liter.
H4	Water used since last regeneration	In liters, max value displayed 9999, max value stored 65 535.
A0	Average water usage for day 0	
A1	Average water usage for day 1	
A2	Average water usage for day 2	
A3	Average water usage for day 3	
A4	Average water usage for day 4	
A5	Average water usage for day 5	
A6	Average water usage for day 6	

7 Commissioning

Info

This chapter is available for standard regeneration flows. Contact your supplier if the actual regeneration is not standard and if you need assistance.

7.1 Water filling, draining and waterproofness inspection

7.1.1 Start up procedure

1. With the bypass still in Bypass position (inlet and outlet of the valve closed), plug in the 600 series controller to the power source.
2. Proceed to programming according to your system specification if not done yet. See Programming [→Page 35].
3. Start a manual regeneration by pressing for 3 seconds (see Manual regeneration [→Page 44]).
   The camshaft will turn into backwash position. Once in this position, unplug the controller from the power source.
4. With the outlet manual valve still closed, slowly open the inlet manual valve and the bypass.If you do not have manual inlet/outlet valve but only a bypass, open the nearest faucet close to the system, then slowly open the bypass valve.
   The valve and tank will slowly get filled with raw water, allowing air to be purged by the drain and/or by the open faucet next to the system. Open the inlet progressively until fully open position.
5. Once the drain runs clear and the inlet manual valve fully open, plug in again the controller to the power source.
6. Press on and on together once to move the camshaft to the next regeneration cycle position. Leave the valve 1 minute in each positions and move to the next one, until C7 is displayed. When C7 is displayed, let the valve run the entire cycle and check the level of water in the brine tank or cabinet. The level of water in the brine tank should be about 5 cm above the salt platform. You may want to mark the level on the brine tank as this can be used as an indicator for the future lifetime of the softener.
7. Once C7 is completed, the valve will automatically go back into service position. Start again a manual regeneration by pressing for 3 seconds on (see Manual regeneration [→Page 44]). The valve will move to backwash position.
8. Press on and on together once to move to brine draw position. Check to see in the brine tank if the water level decrease.
9. Once the draw function is observed and confirmed (level of water in the brine tank or cabinet has decreased), you may go through each cycle by pushing on and until C7 cycle. Let the water come back to the "full" level, and then push on and on so that the valve returns into service position.
10. Slowly open the outlet manual valve, and close the bypass manual valve. The system is now in service.

11. Fill the brine tank or cabinet with salt. You may want to mark the level of water in the brine tank/cabinet when completely refilled with water and full of salt. In the future, after each regeneration, you can visually control that the quantity of water refilled should be between the 2 marks done. Marking are optional, but may allow to visually detect any irregularity during regeneration that may lead to softener inefficiency.
12. With the brine tank completely refilled and full of salt, adjust the safety brine float in the brine well. Make sure the overflow elbow is installed above the float level.
13. After the softener has been running a few minutes in service, proceed to hardness test on outlet water to make sure the water is treated as per requirements.

Info

Ensure that the system has been properly disinfected by the water conditioning system manufacturer's recommendations.

The water conditioning system is now fully operational.

The display will show the hour of the day and the decimal point at the bottom centre of the display will blink when water is flowing.

7.2 Sanitization

7.2.1 Disinfection of water softeners

The materials of construction of the modern water softener will not support bacterial growth, nor will these materials contaminate a water supply. In addition, during normal use, a softener may become polluted with organic matter, or in some cases with bacteria from the water supply. This may result in an off-taste or odour in the water.

Thus, the softener may need to be disinfected after installation. Some softeners will require periodic disinfection during their normal lifetime. Consult the installing dealer for more information on softener disinfection.

Depending on the conditions of use, the softener type, the type of ion exchanger and the disinfectant available, a choice can be made among the following methods.

7.2.2 Sodium or calcium hypochlorite

These materials are satisfactory for use with polystyrene resins, synthetic gel zeolite, greensand and bentonites.

5.25% Sodium hypochlorite

If stronger solutions are used, such as those sold for commercial laundries, adjust the dosage accordingly.

Dosage

Polystyrene resin: set 1.25 mL fluid per 1 L of resin.

Non-resinous exchangers: set 0.85 mL fluid per 1 L.

Brine tank softeners

Backwash the softener and add the required amount of hypochlorite solution to the well of the brine tank. The brine tank should have water in it to permit the solution to be carried into the softener.

Proceed with the normal regeneration.

Calcium hypochlorite

Calcium hypochlorite, 70% available chlorine, is available in several forms including tablets and granules. These solid materials may be used directly without dissolving before use.

Do not let the disinfectant stand for more than 3 hours in the brine tank before the regeneration start.

Dosage

Measure two grains ~ 0.11 mL for 1 L.

Brine tank softeners

Backwash the softener and add the required amount of hypochlorite to the well of the brine tank. The brine tank should have water in it to permit the chlorine solution to be carried into the softener.

Proceed with the normal regeneration.

7.2.3 Electro chlorination (if present)

Valves or systems already equipped with an electrochlorinator device or system will be sanitized during the brine draw phase.

8 Operation

During a regeneration:

- The controller displays a cascading symbol "--". Press ♻ to display the current cycle "C#" or the "--".

8.1 Recommendations

- Use only regeneration salts designed for water softening EN973;
- for optimal system operation, the use of clean salt and impurities free is recommended (for example salt pellets);
- do not use ice melt salt, block, or rock salts;
- the sanitizing process (both with liquid and electrochlorination) may introduce chlorine compounds which may reduce the life of the ion exchange resins. Refer to media manufacturer specifications sheet for more information.

8.2 Manual regeneration

Mandatory

The controller must be in service in order to enable this procedure.

Manual delayed regeneration

1. Press ♻ once to program a delayed regeneration.
   - ⇨ The regeneration will start on the next time of regeneration (2:00 AM). See Programming [→Page 35]
   - ⇨ A regeneration dot will blink when delayed regeneration is on.

Info

To cancel the manual delayed regeneration: press ♻ again. The regeneration dot disappears.

Immediate regeneration

1. Press and hold ♻ for 3 seconds to initiate immediate manual regeneration.
   - ⇨ The controller will display a cascading symbol "--" as it cycles to backwash.
   - ⇨ The controller will proceed through a complete regeneration.

8.3 To advance regeneration cycles

1. Simultaneously press ♻ and 🕐 to advance to the next cycle.
   - ⇨ When the camshaft reaches the next cycle, "C#" will be displayed.
2. Repeat ♻ and 🕐 to advance through each cycle.

8.4 To cancel a regeneration

1. Press and hold ♻ and 🕐 for 3 seconds during any regeneration cycle to cancel it.

- ⇨ The controller will skip the remaining regeneration cycles and return to the service position. It may take 1 to 2 minutes.
- ⇨ The time of day will be displayed when the controller reaches the service position.

9 Maintenance

Mandatory

Cleaning, maintenance and service operation shall take place at regular intervals and must be done by qualified personnel only in order to guarantee the proper functioning of the complete system.

Report maintenance done in the Maintenance chapter of the User Guide document.

Failure in respecting above instructions may void the warranty!

9.1 General system inspection

9.1.1 Water quality

9.1.1.1 Valve used for softening

1. Raw water total hardness.
2. Treated water hardness.

9.1.2 Mechanical Checks

1. Inspect general condition of softener/filter and associated ancillaries and check for any leaks, ensure valve connection to piping is made with adequate flexibility as per manufacturer instruction.
2. Inspection of electrical connections, verify wiring connections and search for evidence of overloading.
3. Verify settings of electronic timer, verify regeneration frequency, and make sure the valve configuration is appropriate for media and tank size.
4. Check water meter, if present, report water meter settings and compare with previous inspection.
5. If water meter is present, verify total water consumption compared to previous visit.
6. If pressure gauges are installed before and after softening/filtering system, verify and record static and dynamic pressure, reporting pressure drop. Verify that inlet pressure respects valve and softening/filtering system limits. Verify that pressure drop stay stable year on year, adapt backwash duration if required.
7. If pressure gauges are not present, but suitable points exist, install temporary pressure gauge(s) to perform precedent point.

9.1.3 Regeneration test

9.1.3.1 Valve used for softening

1. Check condition of brine tank and any associated equipment.
2. Check salt level in brine tank.
3. Initiate regeneration test.
   - ⇨ Check brine draw during brine draw stage.
   - ⇨ Check brine tank refill.

- ⇨ Check operation of safety brine valve, where fitted.
- ⇨ Check for brine draw off levels.
- ⇨ Check for resin loss at the drain during regeneration.
- ⇨ Where fitted, check for satisfactory operation of solenoid, i.e. outlet shut off during regeneration and/or brine line shut off valve(s).

4. Test and record Total Hardness of outlet water from softener vessel(s).

9.2 Recommended maintenance plan

Items	1 year	2 year	3 year	4 year	5 year
Injector & filter	Clean	Clean	Clean	Clean	Clean/ replace if necessary
Refill controller**	Clean	Clean	Clean	Clean	Clean/ replace if necessary
DLFC**	Clean	Clean	Clean	Clean	Clean/ replace if necessary
Bypass (if present, contains O-rings**)	-	-	-	-	Clean/ replace if necessary
Flappers	-	-	-	-	Replace
Flappers spring	-	-	-	-	Replace
O-Rings**	Check for watertightness / clean or replace in case of leakage	Check for watertightness / clean or replace in case of leakage	Check for watertightness / clean or replace in case of leakage	Check for watertightness / clean or replace in case of leakage	Check for watertightness / clean or replace in case of leakage
Motor, motor cable and optical sensor harness	Check	Check	Check	Check	Replace
Optical sensor	Check	Check	Check	Check	Replace
Inlet Hardness	Check	Check	Check	Check	Check
Residual hardness	Check / adapt mixing screw if necessary	Check / adapt mixing screw if necessary	Check / adapt mixing screw if necessary	Check / adapt mixing screw if necessary	Check / adapt mixing screw if necessary
Electronic / settings*	Check	Check	Check	Check	Check / replace if necessary
Transformer*	Check	Check	Check	Check	Check / replace if necessary

Items	1 year	2 year	3 year	4 year	5 year
Turbine (if present, internal or external model)***	Check / clean	Check / clean	Check / clean	Check / clean	Replace
Turbine cable (if turbine present)	Check	Check	Check	Check	Replace
Valve watertightness	Check	Check	Check	Check	Check
Valve to piping watertightness	Check	Check	Check	Check	Check

* Electronical parts – durability strongly affected by power source quality and stability

** Elastomer durability is strongly affected by raw water concentration in chlorine and its derivate

*** Wear part.

9.3 Recommendations

9.3.1 Use original spare parts

Caution - material

Risk of damage due to use of non-genuine spare parts !

To ensure correct operation and safety of the device, only use original spare parts and accessories recommended by the manufacturer.

Usage of non-genuine spare parts voids all warranties.

Parts to keep in stock for potential replacements are motor and optical sensor, controller, transformer, injectors, flapper kit, O-ring kit, refill flow controller and DLFC.

9.3.2 Use original approved lubricants

- Production:
  p/n 1014082 (NFO “Chemplex” 862 Silicone Comp.);
- spare part:
  p/n 42561 (SILICONE LUBRICANT PACK).

9.3.3 Maintenance instructions

- Disinfect and clean the system at least once a year or if the treated water has an off-taste or an unusual odor;
- perform a hardness test every year at both inlet and treated water.

9.4 Cleaning and maintenance

9.4.1 First steps

Before any cleaning or maintenance procedure, complete the following steps:

Mandatory

These operations must be performed before any cleaning or maintenance procedure !

1. Unplug the wall-mounted transformer.
2. Shut off water supply or put bypass valve(s) into bypass position.
3. Relieve system pressure before performing any operations.

9.4.2 Refill flow controller cleaning

1. Using a Torx key, unscrew and extract the refill flow controller (**4**).
2. Clean the refill flow controller (**4**) using compressed air or with a soft brush.Make sure the refill controller groove is perfectly clean.
3. Check for O-rings integrity.
4. Check for ball (**5**) integrity (if present).
5. Clean the refill flow controller chamber (**6**) before reinserting the refill flow controller (**4**).
6. Reverse above procedure steps to rebuild.

9.4.3 Injector and injector screen cleaning

1. Using a Torx key, unscrew and remove the injector cap (**3**).

Caution - material

Take care not to damage the injector (2).

2. Using pliers, gently extract the injector (**2**) from valve body.
3. Clean the injector (**2**) using compressed air, a soft brush or possibly a pin.
4. Unclip the injector screen (**1**) and clean it with a soft brush.

Info

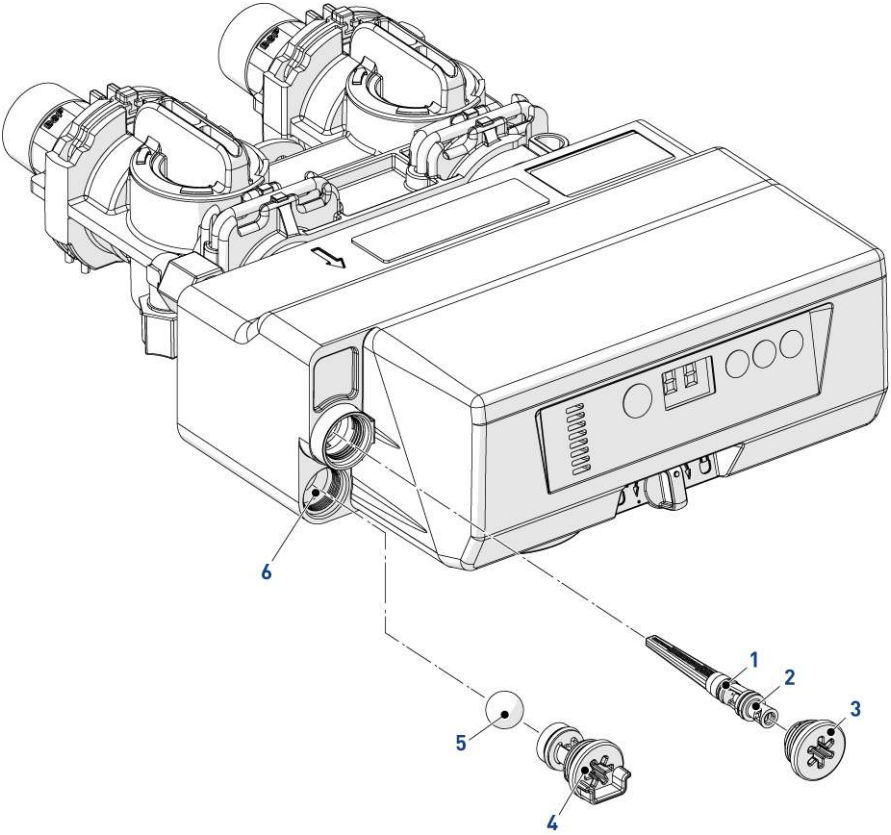
Use of descaling agent such as white vinegar might be required in case of impurities on the injector screen (1) and on the injector (2).

5. Check for O-rings integrity.
6. Reverse above procedure steps to rebuild.

Info

The injector screen is assembled on the injector.

Use your finger to press on the injector to position it correctly when putting it back into the valve.


6
1
2
3
5
4

9.4.4 Backwash flow controller cleaning

1. Remove the clip (**1**).
2. Unscrew the backwash controller (**4**) by hand.

Caution - material

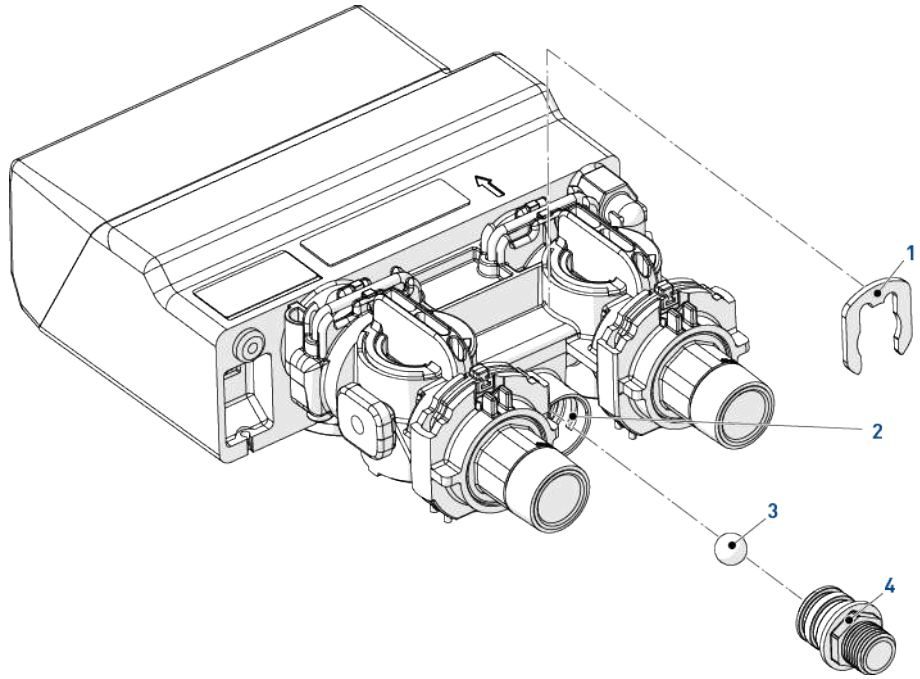
Pay attention to not lose the backwash controller ball (3) that is inside.

3. Clean the backwash controller (**4**) using a soft brush or compressed air.
4. Clean the backwash controller grooves and backwash controller chamber (**2**).
5. Reverse above procedure steps to rebuild.

Caution - material

Remember to put the backwash controller ball (3) inside the plug when reassembling.

When reassembling the backwash controller (4), slowly screw by hand or by mean of a Torx key.



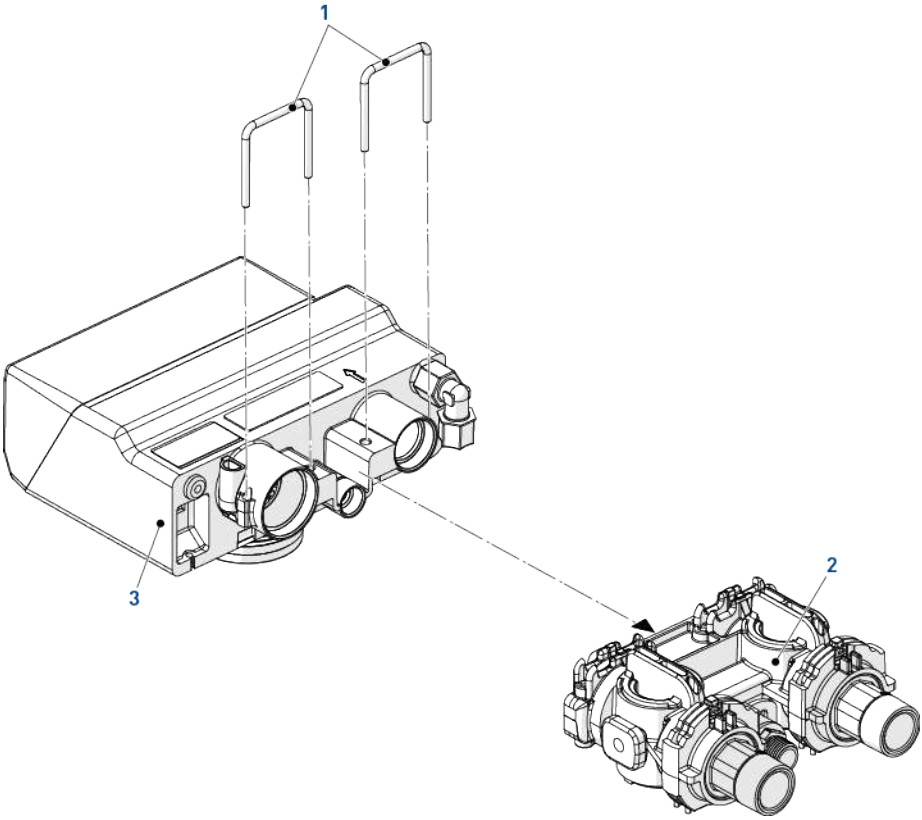
9.4.5 Manifold/bypass removal

Info

Depending on the installation configuration, the valve may be equipped with a manifold or a bypass.

The following procedure applies to both configuration.

1. Remove the "U" clips (**1**) (a screwdriver can be used as a lever if required).
2. Remove the manifold/bypass (**2**) from the valve body (**3**).



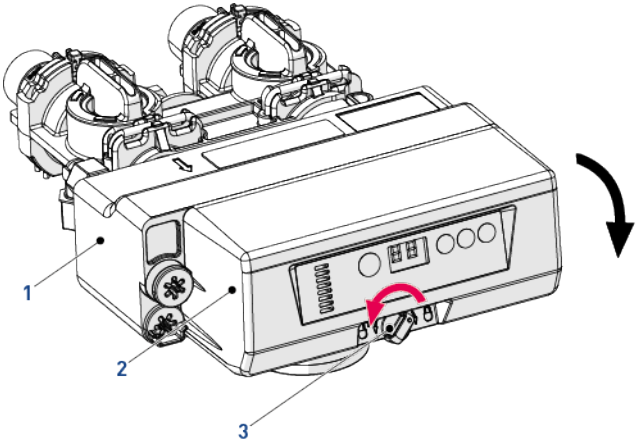
9.4.6 Motor and camshaft replacement

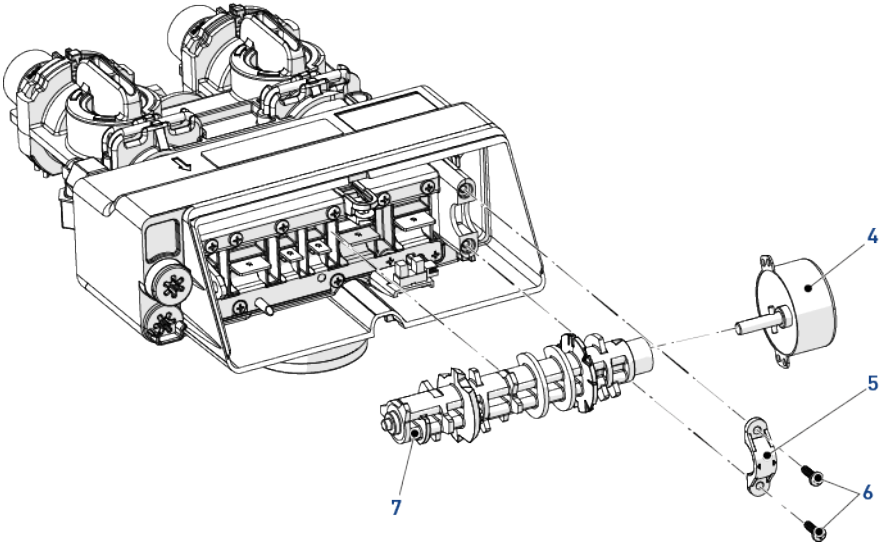
1. Turn the locking clip (**3**) on the left to unlock the controller (**2**).
2. Remove the controller (**2**) from the valve body (**1**).

Caution - material

Be careful with cables connections when disassembling the controller (2).

3. Loosen the screws (**6**) and remove the clamp (**5**).
4. Remove and disassemble the camshaft (**7**) from the motor (**4**).
5. Reverse above procedure steps to rebuild.


1
2
3


4
5
6
7

9.4.7 Flappers cleaning or replacement

Info

To replace or clean the flappers, you first have to disassemble the camshaft and the motor. See Motor and camshaft replacement [→Page 53].

1. The optical sensor (**5**) is clipped on the front edge, gently press on the clips to release the optical sensor (**5**) from its location.

⚠ WARNING

Take care with sharp edges.

Use of protective glove is highly recommended to remove the spring (**4**).

2. Loosen the four screws (**6**).
3. Using a screwdriver, release the spring (**4**) from the flappers (**1**) and swipe the spring (**4**) on the bosses to remove it.
4. Loosen all the screws (**3**).
5. Remove the front plate (**2**) in order to access to the flappers (**1**).
6. Clean or replace the flappers (**1**).

Caution - material

The outline of the flapper seat can be seen on the flapper side.

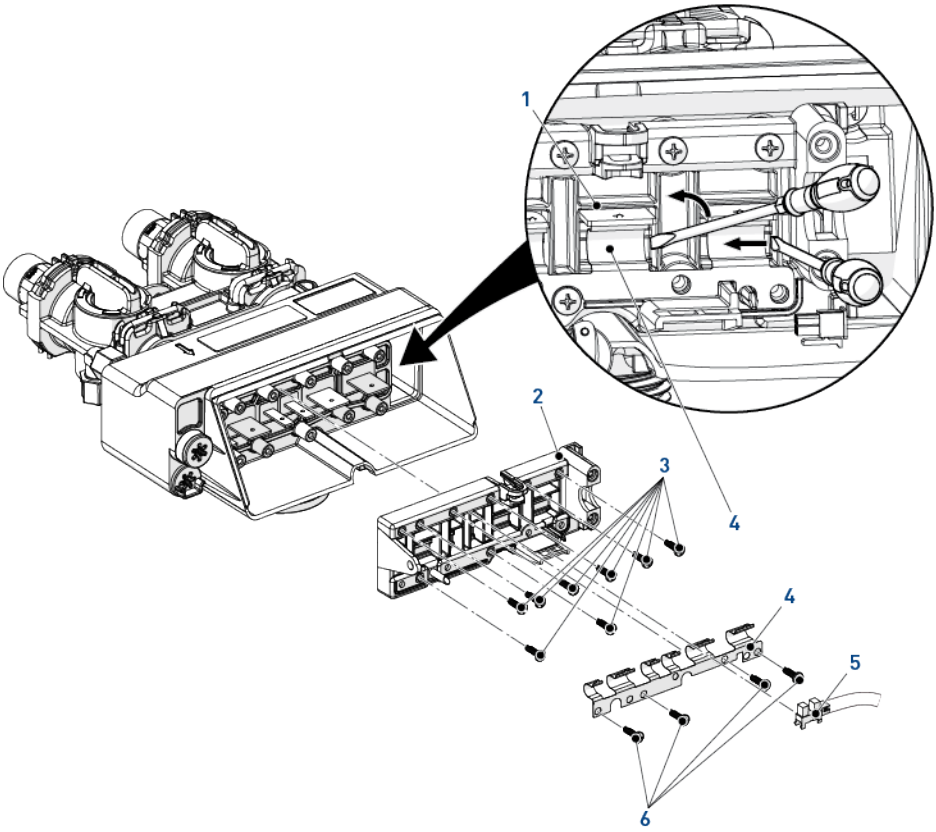
If the outline is irregular, this may indicate that debris is or has been preventing the flapper (**1**) from closing, and potential damage.

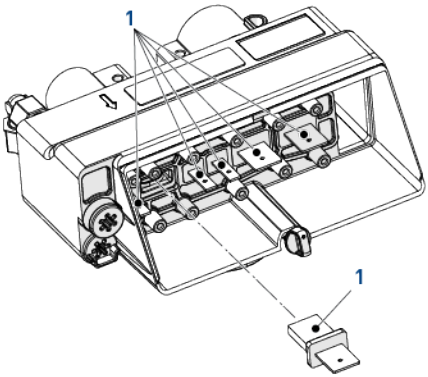
7. Reverse above procedure steps to rebuild.

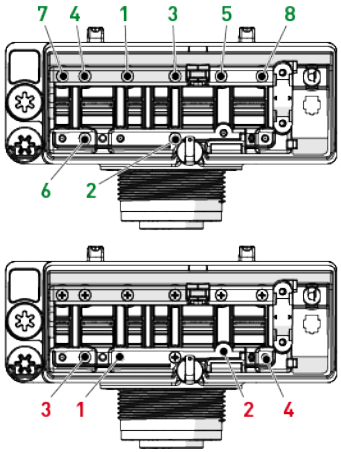
Caution - material

When refitting the front plate (2), always follow the screwing order indicated in green.

When refitting the spring (4), always follow the screwing order indicated in red.


1
2
3
4
4
5
6


1
1


7
4
1
3
5
8
6
2
3
1
2
4

10 Troubleshooting

Err. code	Cause	Solution
E 1	Program settings have been corrupted.	Press any button. If "E 1" does not clear. Replace the controller.
E 3	Controller does not detect the camshaft position and is returning to the service position.	Wait until the controller returns to the service position.
	Camshaft is not turning during "E 3" display.	Check if the motor is connected. Verify that the motor wire harness is connected to the motor and to the controller module. Verify if the optical sensor is connected and in place. Verify if the motor gear has engaged the camshaft. If everything is connected, replace components in this order: 1. Motor Assembly and optical Sensor. 2. Controller.
	Camshaft is turning more than 5 minutes to find Home position.	Verify if the optical sensor is in place and connected to wire. Inspect for debris in the camshaft slots. If the motor continues to rotate indefinitely, replace the following components in this order: 1. Optical Sensor. 2. Control.

Issue	Cause	Solution
Brine tank overflow.	Loose in brine line connection.	Ensure all brine line connections are tight.
	Drain line restricted with debris.	Clean the drain controller. See Cleaning and maintenance [→Page 49].
Flowing or dripping water at drain or brine line after regeneration.	Debris is preventing #3 or #4 valve disc from closing.	Remove debris.
	#3 or #4 valve disc worn.	Replace valve discs. See Flappers cleaning or replacement [→Page 55].

Issue	Cause	Solution
Hard water leakage after regeneration.	Improper regeneration.	Repeat regeneration after making certain correct brine dosage was set.
	Leaking of external bypass valve.	Replace the bypass valve. See Bypass assembly [→Page 30].
	O-Ring around riser pipe damaged.	Replace o-ring.
Controller will not draw brine.	Restricted drain line.	Remove the restriction.
	Injector plugged.	Clean the injector and screen. See Cleaning and maintenance [→Page 49].
	Debris is preventing valve discs from closing.	Remove foreign matter from valve discs.
Controller will not regenerate automatically.	AC adapter or motor not connected.	Connect the power.
	Defective motor.	Replace the motor. See Motor and camshaft replacement [→Page 53].
	Meter clogged with debris.*	Remove and clean the meter.* See Cleaning and maintenance [→Page 49].
Controller regenerates at wrong time of day.	Time of day set incorrectly.	Set correct the time of day. See Time of day [→Page 37].
Intermittent brine draw.	Low water pressure.	Maintain a minimum pressure of 1.3 bar (20 psi).
No conditioned water after regeneration.	No brine in brine tank.	Add brine to brine tank.
	Injector plugged.	Clean the injector and screen. See Backwash flow controller cleaning [→Page 51].
Backwashes or purges at excessively low or high rate.	Incorrect drain controller used.	Replace with correct size controller.
	No drain line flow controller.	Install drain line flow controller. See Drain line flow controller [→Page 29].
	Restricted drain line.	Remove restriction.
Run out of conditioned water between regenerations.	Controller improperly programmed.	Verify salt dosage and regeneration interval settings. See Programming [→Page 35].
Flow indicator on controller does not display service flow.*	Bypass valve in bypass position.*	Remove bypass valve from bypass position.* See Bypassing [→Page 30].
	Meter cable dislodged from valve.*	Fully insert meter cable into valve.*
	Meter clogged with debris.*	Remove and clean the meter.* See Cleaning and maintenance [→Page 49].

* 368 valve with 606 controller only.

11 Disposal

The device must be scrapped in accordance with directive 2012/19/EU or the environmental standards in force in the country of installation. The components included in the system must be separated and recycled in a waste recycling center that conforms with the legislation in force in the country of installation. This will help to reduce the impact on the environment, health, safety and help to promote recycling. Pentair does not collect used product for recycling. Contact your local recycling center for more information.

WWW.PENTAIR.EU