

Service Manual

Commercial Valves

Evo & Evo+



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1- DESCRIPTION & EQUIPMENT ADJUSTMENTS

Commissioning date		Hardness unit	(ppm, °th, °dh)
Installation number		Nominal Capacity	m ³ x unit
Valve serial number		Inlet water hardness	unit
Tank size		Treated water volume	litres
Resin type		Outlet water hardness	unit
Resin volume	litres	Salt quantity per cycle	kg

Regeneration Mode

Time clock		
Metered immediate		
Metered delayed		
Other		

Adjustments

days
m ³
m ³
m ³

Regeneration Type

Down flow		Up flow	
1) Backwash	min	1) Brining & rinse	min
2) Brining & rinse	min	2) Backwash	min
3) Rapid rinse	min	3) Rapid rinse	min
4) Brine tank refill	min	4) Brine tank refill	min

Hydraulic adjustments

Injector number

Drain Flow Rate Control (DLFC)

2- INSTALLATION INSTRUCTIONS

-2-1 LINE PRESSURE

A 2 bars minimum pressure is absolutely necessary to provide a normal efficiency of the control valve. Maximum pressure must not exceed 8 bars, in order to prevent troubles on all installation.

It is recommended to install a pressure regulator upstream to the system.

If water line is shut down, take care to prevent any depression (negative pressure), which could destroy the tank. Isolate the system with the bypass or with shut off valves on the inlet and outlet of the system. If the risk persists, a vacuum breaker system should be installed.

-2-2 ELECTRICAL SUPPLY

Use only the 7,5Vdc power supply delivered with the valve. If the power supply shows signs of damage, it must be replaced.

Make sure that the electrical line is equipped with a suitable protection and that the power outlet cannot be switched off accidentally.

-2-3 WATER SUPPLY

Existing water line should be clean and neat, free from lime scale and iron. It should comply with current regulations. Make the necessary changes to prevent troubles. Connection to drain must be made through a disconnecter, must not exceed 2 meters above the valve nor 5 meters in total length.

It is strongly recommended to install a pre-filter upstream to the system.

-2-4 TEMPERATURE

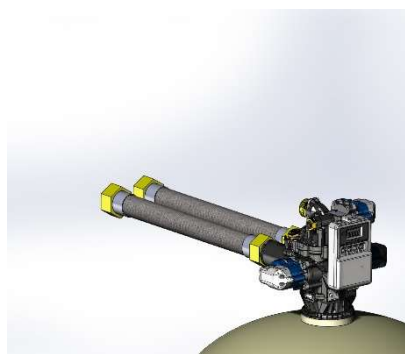
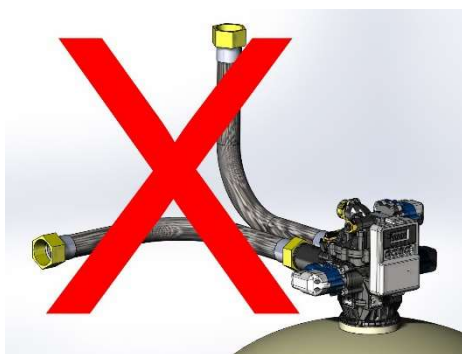
Air and water temperature should not exceed 45°C. Temperature should not fall below 1°C. Freezing can break or strongly damage the equipment and cause water leaks.

-2-5 INSTALLATION OF THE SYSTEM

Install the system and its brine tank, shielded from the rain and from an excessive humidity on a flat and solid floor.

Connection of equipment to water line should be done by a qualified person, according to current applicable regulations. The brine tank overflow outlet must be connected to the sewer system, with a disconnecter.

During installation, soldering operations should be made with no equipment in place. Excessive heat can cause severe damage to the equipment.



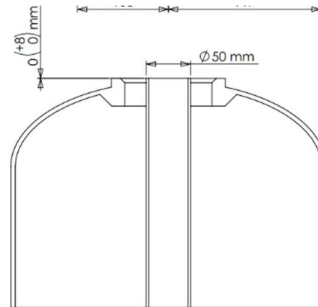
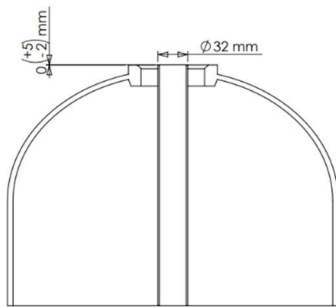
Connection pipes must not apply stress onto the valve.

The connection to the valve should be made with flexible pipes. If the pipes arrive perpendicular to the valve, the use of rigid elbows is required.

3- INITIAL SET-UP

-3-1 The distributor tube must be cut flush to the vessel according to the below tolerances :

- 2" ½ NPSM adaptor, Tube $\varnothing$ 32 mm : H = 0 mm, Tolerances : +5mm/-2mm
- 4"-8UN-2A adaptor, Tube $\varnothing$ 50 mm : H = 0 mm, Tolerances : +8mm/-0mm



Chamfer the top of tube, in order to avoid damaging the O-Ring. Lubricate the top of tube with Capper's silicon grease exclusively to facilitate the installation. Other lubricant may damage plastic parts and may not comply with potable water regulations. Lubricant spray are prohibited.

-3-2 Hand tighten the valve onto the tank. Never use extra tools nor levers that apply excessive force on components. Do not apply grease on the main thread as it could result in over-torque and excessive stress on plastic components.

-3-3 Connect the system to the water line.

-3-4 Control that the tank is perfectly vertical on front and on side.

-3-5 Connect the drain port with a matching fitting. Use reinforced flexible PVC hose or rigid PVC.

-3-6 Connect the brine tube to the valve. Use a $\varnothing$ 9,52mm (3/8") or 12,7mm (1/2") OD tube. Assembly with the quick connection system fitted on the valve doesn't require any tool.

-3-7 Ensure that the pipework upstream and downstream of the installation is free of welding residues and any particles.

Open the valve upstream of the system to pressurise it. Check that there are no leaks in the realised connections.

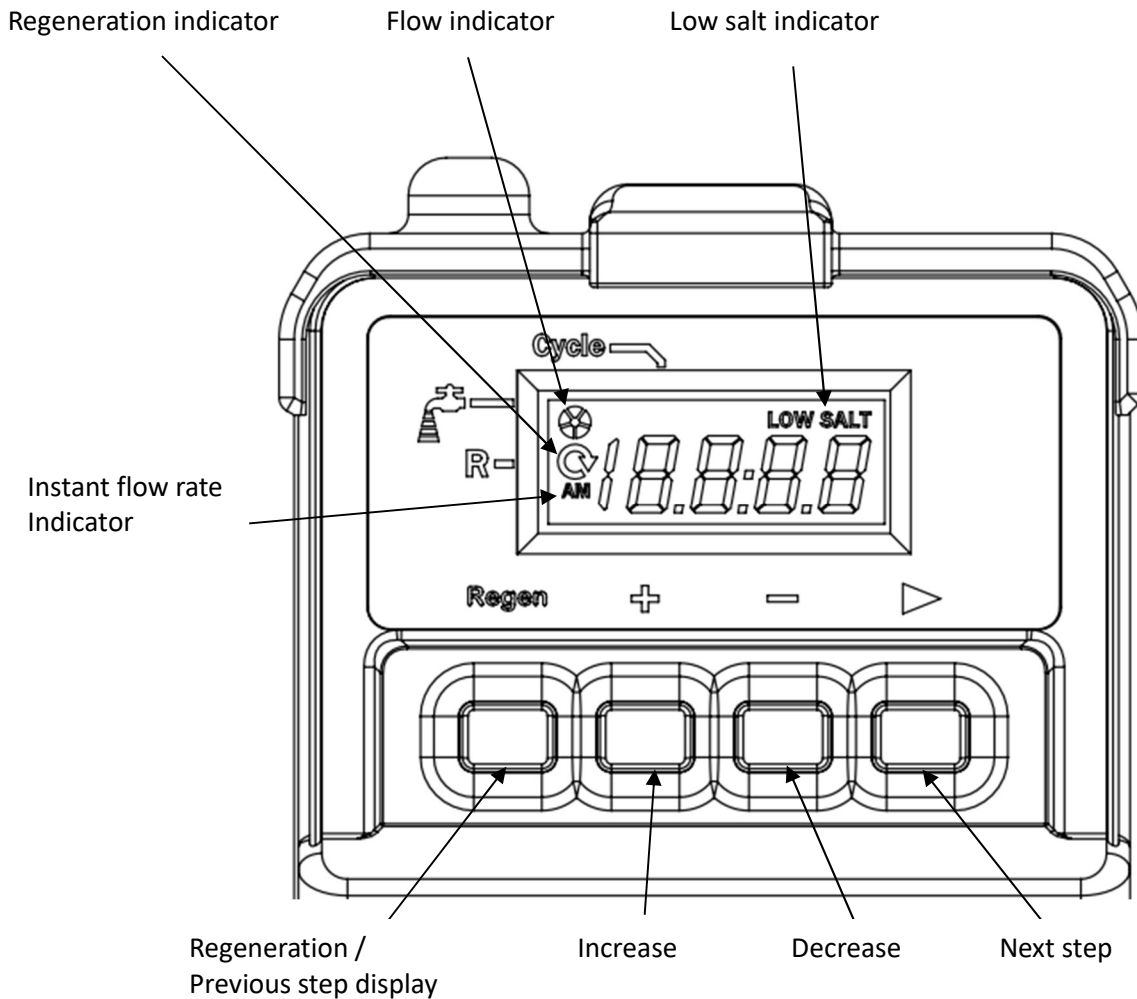
Open a water tap downstream of the installation and allow the water to flow gradually into the system. When the system is full of water (flow noise stops), wait until the outlet water is perfectly clear and free of air bubbles before closing the tap again.

-3-8 Plug the power adaptor to the valve and the power line.

Adjust time of day (see -4-1) : the valve is in operation

-3-9 Finalise installation of your complete system following the installation manual (brine tank fill, etc...)

4 – USER INTERFACE



-4-1 ADJUST TIME OF DAY

Press « Increase » or « Decrease » to adjust time of day.

A power failure will cause the display to blink indicating the need to adjust the time of day. The blinking stops after adjustment.

-4-2 DISPLAY THE REMAINING VOLUME (METERED SYSTEM ONLY) :

Press « Next step » to switch from time of day to remaining volume. Every 10 seconds, the display shows alternately the remaining volume or the instant flow rate (in l / min). During the display of the instant flow rate, the AM indicator is activated to differentiate from remaining volume display. Press « Next step » again to switch back to time of day. After a regeneration, the display shows the remaining volume.

-4-3 TRIGGER A REGENERATION

Press on the left button to program a regeneration (regeneration indicator blinks). Hold the button longer for immediate regeneration start.

-4-4 SERVICE POSITION

The display shows the remaining volume (alternating with instant flow rate). To display time of day, press « Next ».

5- ADVISORY NOTE

Cappers is only a valves manufacturer; the following points are not part of its scope :

- Sizing of water treatment installations
- Media selection
- Valve configuration
- Components assembly
- Installation of the equipment

The components (valve, bypass, distributor tube, SBV) being sold and delivered separately, Cappers is not liable for the final result of installations made with its material; the installation must be done by a qualified person.

6- TROUBLESHOOTING

INCIDENTS	CAUSES	SOLUTIONS
The system does not regenerate	1) Wrong setting 2) Power loss 3) Defective connection with meter cable 4) Other	1) Check settings 2) Restore the power supply by a professional 3) - Verify that the volume decreases when water is used (flow indicator runs) - Verify cable connection and its state. - Clean up or replace the turbine 4) Contact your installer
Hard water on outlet	1) Salt needed 2) Wrong settings 3) Lack of maintenance 4) Other	1) Add salt in the brine tank 2) Check settings (Electronic board, mixing device, riser tube seal) 3) Follow maintenance recommendations 4) Contact your installer
Brine level too high	1) Wrong settings 2) Insufficient brine draw 3) Lack of maintenance 4) Other	1) Check settings 2) Clean up the injector and verify the water tightness of brine line 3) Follow maintenance recommendations p 8 4) Contact your installer
Error message	1) Failure alarm	1) Follow indications in the next chapter
Salt Alarm remains displayed	1) Necessary reset	1) Press and hold the right key
Other	1) Other	1) Contact your installer

7 – ERROR MESSAGES

To reset error messages, press and hold “Next step” button for 30s.

ERROR MESSAGE	CAUSES	SOLUTIONS
Er 01	1) Short circuit in actuator 2) Piston motion blocked 3) Short circuit in board 4) Other	1) Inspect actuator (oxidation) 2) Check if foreign body inside the valve 3) Inspect board (oxidisation) 4) Contact your installer
Er 02	1) Error in actuator connection 2) Motion duration too long 3) Main piston blocked 4) Other	1) Check that actuator is correctly plugged in, then reset error message (press and hold “Next”) 2 and 3) Check if foreign body inside the valve, then reset error message (press and hold “Next step”) 4) Contact your installer
Er AX (X is the number of detected actuator)	1) The number of actuators entered does not correspond to the number of detected actuators. 2) Actuator disconnected. 3) Actuator or actuator cables out of order.	1) Set the correct number of valve actuators in menu 23h23. 2) Connect again actuator. 3) Replace actuator and its cable.
Er-C	Main actuator is damaged.	Replace main actuator.

8 – MAINTENANCE

Tools required for complete valve maintenance:

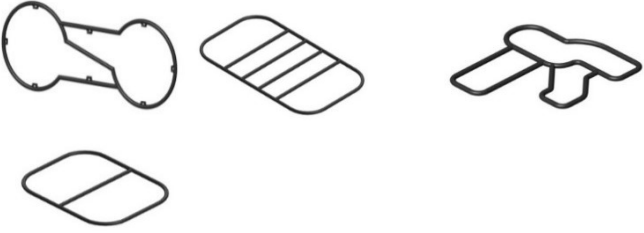
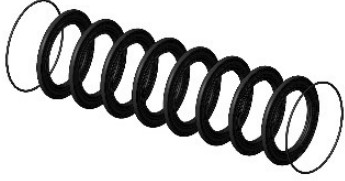
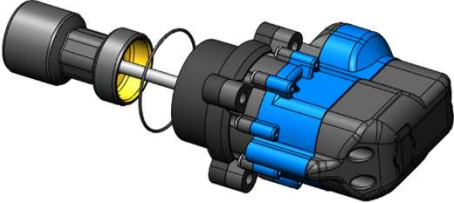
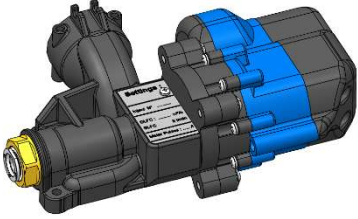
- Pozidriv Screwdrivers (PZ1, PZ2 & PZ3)
- Flat-blade screwdriver
- Adjustable wrench or reversible ratchet with socket (19, 21, 26, 29 et 34 mm)

Tightening torque recommendations for the various screws (M5 and M6) and plugs :

Recommended tightening torque	Value (N.m)	Tool
Injector plug	12,5	21 mm hexagon
Standard mixing nut	6,5	19 mm 12 sided
HF mixing nut	12,0	29 mm hexagon
Brine connection	5,5	26 mm hexagon
M5 screws	3,0	PZ2
M6 screws	4,5	PZ3

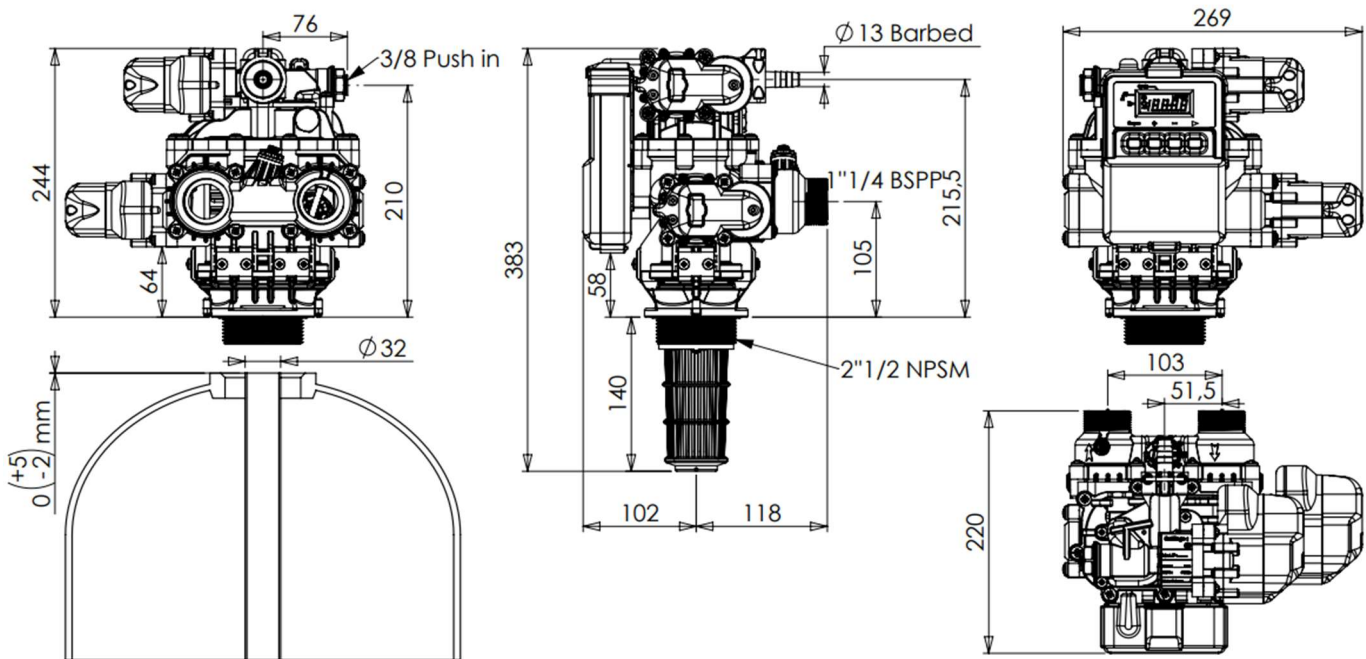
9 – USUAL SPARE PARTS

The following table gathers the most usual spare parts. Do not hesitate to contact us for any specific request.

Names and references	Recommendation
 Static seals kits : breech, tank adapter, connector et brine valve: Kj-40-D0-3112	Check : Every disassembly Replacement if damaged Recommended greasing with Cappers grease: Lu-00-L0-184
 Evo main seals kit : Kj-40-D0-3104	Check : Every year Replacement : Every 3 years Recommended greasing with Cappers grease: Lu-00-L0-184
 Evo main actuator and piston kit : Ka-40-D0-3145	Check : Every year Replacement if damaged
 Brine seals kit (x2) : Kj-40-D0-475	Check : Every year Replacement : Every 3 years Recommended greasing with Cappers grease: Lu-00-L0-184
 Evo 3/8" 5l/min motorised brine valve : Ka-40-D0-3123 Evo+ 1/2" 12l/min motorised brine valve : Ka-40-D0-3124	Check : Every year Replacement if damaged
2"1/2 vessel seal (10p) : Kj-34-E0-520 Ø 32 mm distributor tube Oring (10 p) : Jo-34-E0-1050-10 4" vessel seal (10 p) : Jo-34-E0-1156-10 Ø 50 mm distributor tube Oring (10 p) : Jo-34-E0-1155-10	Check : Every disassembly Replacement if damaged Recommended greasing with Cappers grease: Lu-00-L0-184
Silicone grease : Lu-00-L0-184	Only use Cappers silicone grease, other lubricants may damage plastic parts or may not comply with applicable regulations. The use of spray lubricant is prohibited.

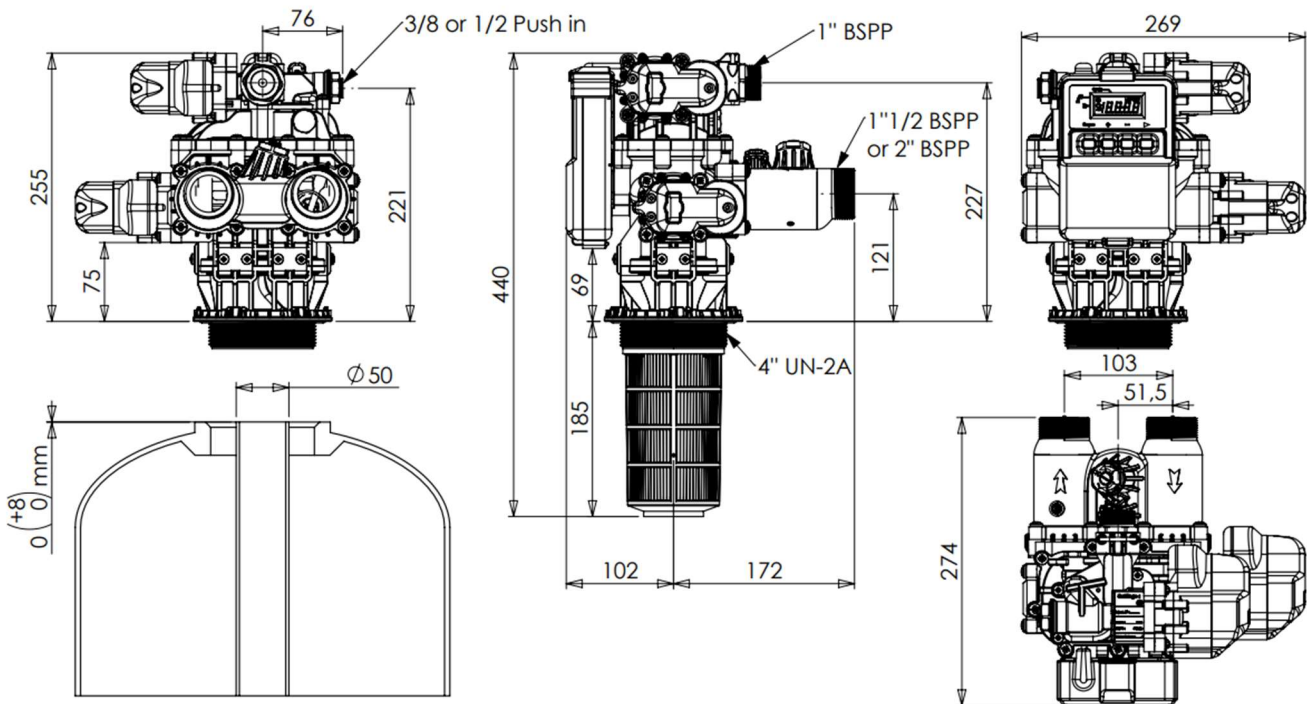
10- DIMENSIONS & CHARACTERISTICS

-9-1 VALVES WITH 2 1/2" THREADED ADAPTER



1 1/4" BSPP Inlet/Outlet connectors with simple mixing
3/8" quick connect BLFC
plastic barbed $\phi 13$ mm DLFC

-9-2 VALVES WITH 4" THREADED ADAPTER



1 1/2 BSPP Inlet/Outlet connectors with two mixings
3/8" or 1/2" quick connect BLFC
1" BSPP brass DLFC

9-3 TECHNICAL INFORMATION

Valve compliant with the European directives

- N° 89/339/EEC, Electromagnetic Compatibility
- N° 73/23/EEC, Low voltage
- N° 2002/95/CE, RoHs
- Sanitary conformity ACS 19 ACC LY 306

Service pressure: min. 2 bars – max. 8 bars

Qualification tests: 2 to 12 bars – 250 000 cycles

Service temperature: min 1°C – max. 45°C

Standard power source: Switching power supply - 230 V / 7,5Vdc – 2 A – DC

Net weight: 3.25 kg to 4 kg (depending on configuration)

11– VISUAL

