ENVIRO FILTER®

AH-18 Duplex Softener

Installation and Start up

Tack för att ni valt en vattenreningsutrustning från AQUA INVENT.
Vi hoppas att ni skall vara nöjd med denna kvalitetsprodukt i många år.
Välkommen att kontakta oss om ni har några frågor!

AQUA INVENT

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1.0 GENERAL

AH-18 Duplex is a fully automatic volume controlled twin tank softener. One tank is in service position and delivers soft water, the other one is in regeneration or in stand by position. This gives softened water 24 hours pro day without interruptions.

Technical data

Pressure vessels	Ø 184 mm
Pressure vessel height	1125 mm
Connection in/out	1'' BSP
Drain flow max	5,7 l/min
Flow capacity (Max peak flow)	20 l/min
Flow capacity (Continues)	15 l/min
Index capacity	52 000 litres / °dH
Softening capacity at ..9,7 °dH	..5000 litres
Salt consumption	2,2 kg / reg
Brine tank	100 l
DLFC	1,5 GPM
BLFC	0,5 GPM
Injector	# 1
Meter	¾" Paddle

2.0 INSTALLATION

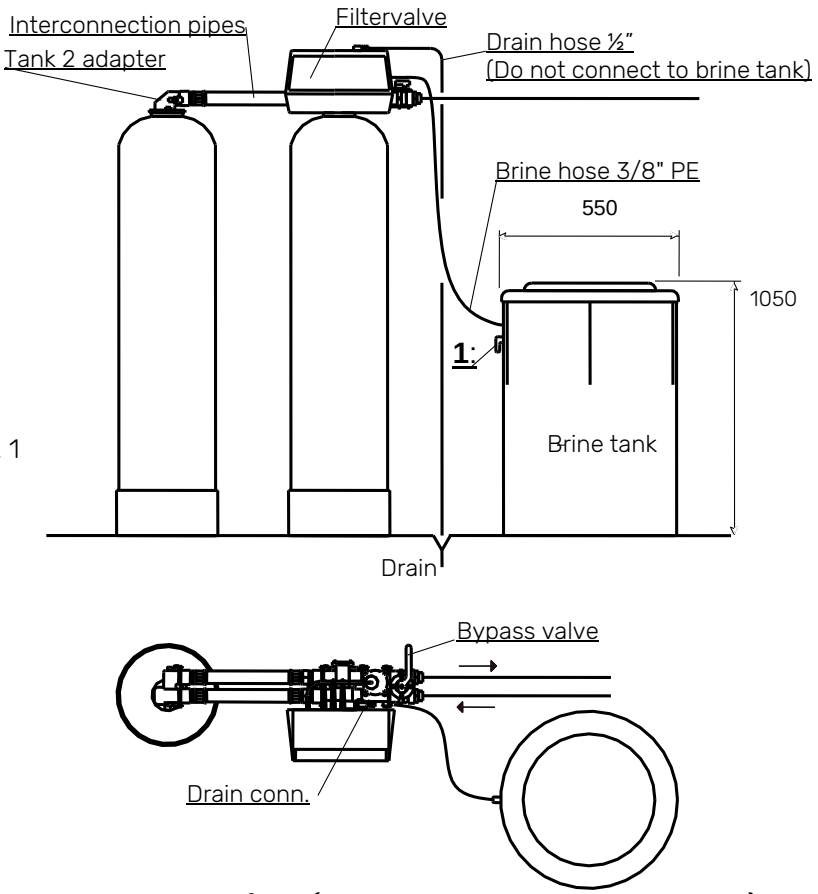


Fig. 1

1: Brine tank" Overflow" (to be separately connected to drain)
Note this should never be connected together with filter valve drain hose!

Drain connection
Connect To drain

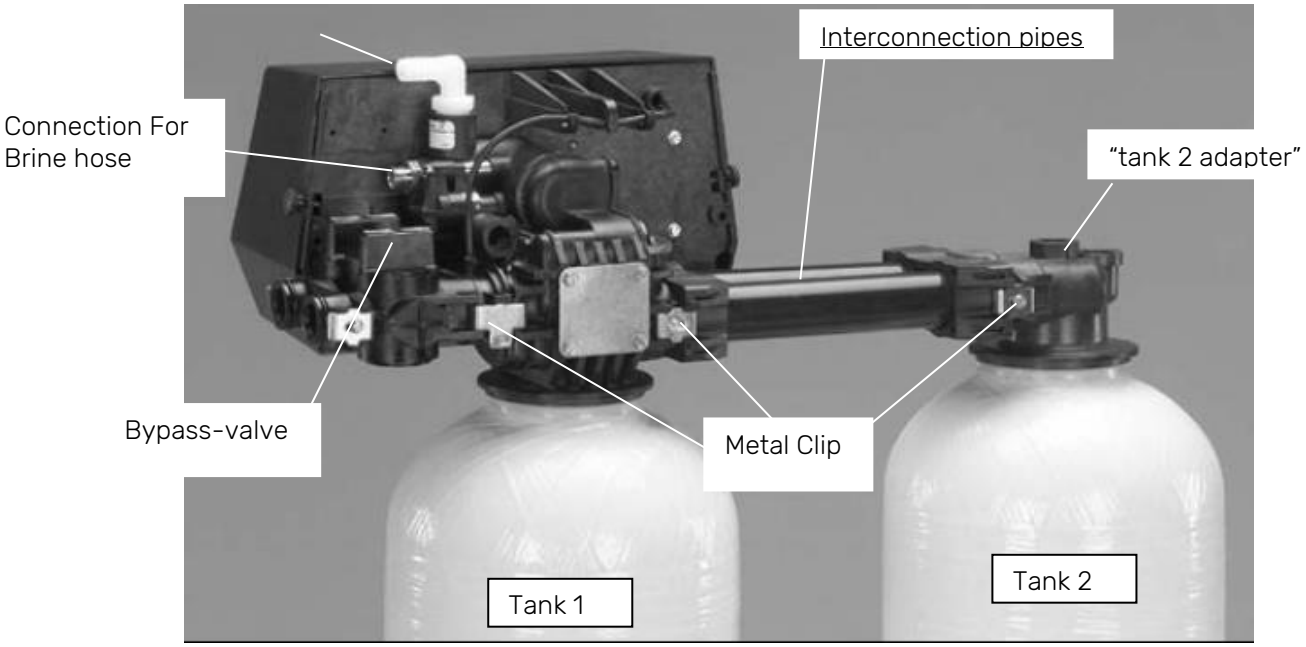


Fig 2. Backside of Filter valve 9100 SE

1. Place the softener tanks where you want to install the unit.

   NOTE: Be sure the tanks are in level and on a firm base.

2. Make the connection between tank 1 and tank 2 with delivered interconnection pipes. Lubricate the O-rings with silicon grease and push gently the pipes into the filter valve respectively the "tank 2 adapter". Push the plastic yokes against the valve respectively the adapter and secure them with the metal clip.

3. Adapt the bypass valve to the filter valve by gently pushing it into the filter valve and secure with the metal clip.

4. Connect incoming and outgoing water lines to the bypass valve (be aware of flow direction, marked with arrows). Perform all plumbing according to local plumbing codes. It is recommended to install a T-piece with sample valve in the outgoing water line (this gives the possibility to make water tests with the delivered "hardness test kit").

   - Use minimum a ½'' hose for the drain (included in delivery). Never connect filter valve drain line with brine-tank overflow fitting!

5. Be sure the floor under the brine tank is clean and in level.

6. Connect brine tank and filter valve with delivered 3/8'' PEH hose.

7. Place the bypass valve in **Bypass** position.

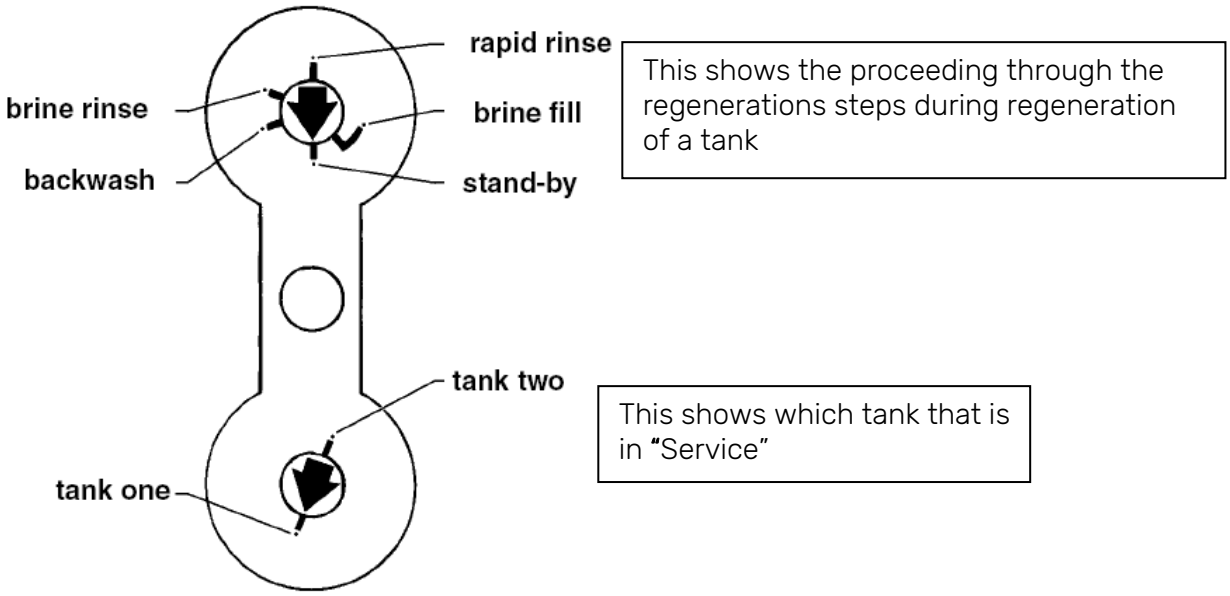
   - Turn on the main water supply.
   - Open a cold soft water tap nearby and let water run a few minutes or until the system is free of foreign material (usually solder) resulting from the installation. Close the water tap when water runs clean.

8. Make all electrical connections according to codes. Plug the valve transformer into an approved power source (wall socket).

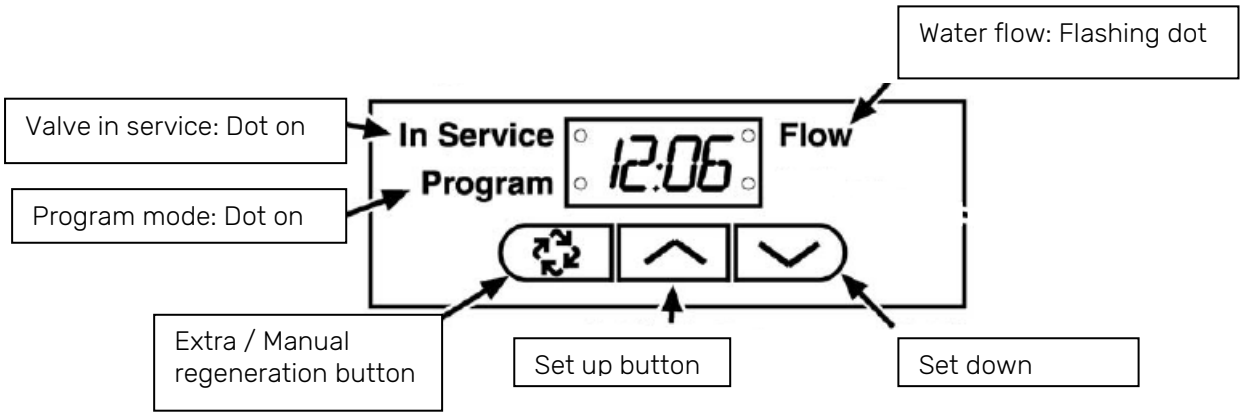
9. Tank one has a control valve (filter valve) and tank two has an adapter.

10. Look on the right side of the control valve, it has indicators showing which position the control valve is in during “Regeneration” and which tank is in “Service”.

    - The figure below shows the valve in “Service” position with tank one supplying conditioned water and tank two in standby.

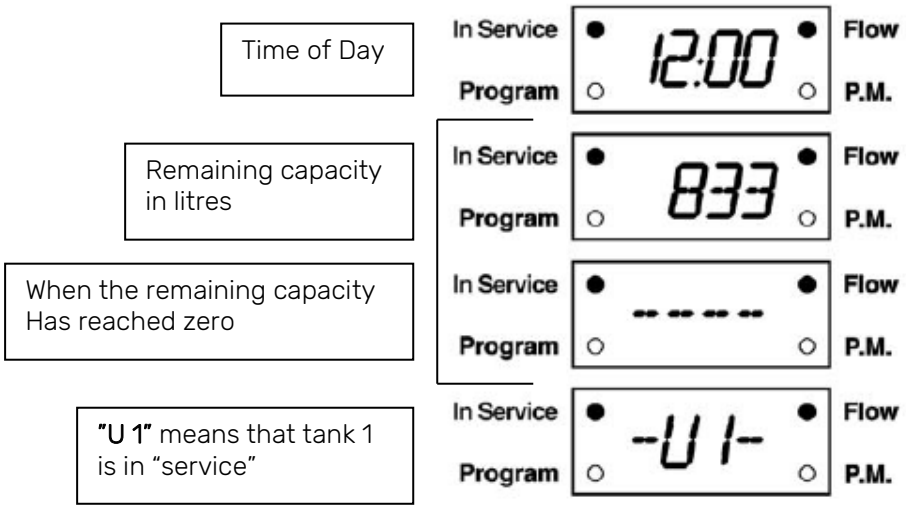


3.0 SE Timer



In normal operation, the “Time of day” display alternates with “volume remaining” and tank “In service”. As treated water is used, the “Volume remaining” display counts down in litres from a preset value to zero (-----). Once this occurs a “Regeneration” cycle initiates immediately. Water flow through the unit is shown by flashing of the “Flow dot indicator”.

3.1 Timer display during normal operation



3.2 Set Time of Day

When the valve is in "Service", press either "Set up" or "Set down" (▲▼) buttons once to adjust the time of day by one digit. Press and hold to adjust several digits.

3.3 Set treated water capacity

1. Checking softening capacity

   To calculate softening "capacity"
   By dividing index capacity in litres (see Technical data, page 1) with raw water hardness in °dH and you will obtain the softeners softening capacity in litres.

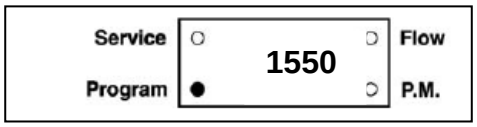
   From this value 400 litres (regeneration water) is deducted and this new value is programmed into the timer under 3. below. (See also *STEP 3 in Master programming,* page 6).

   Example:

Index capacity	52 000 l / °dH
Hardness	20 °dH

$$\frac{52\,000}{20} - 400 = 2\,200 \text{ litres to be programmed as capacity.}$$

2. Press and hold both the "Set up" and "Set down" (▲▼) buttons for 5 seconds.
3. Set the softening capacity (treated water capacity), that is calculated above by using ▲ or ▼ buttons.



4. Press the ⚙ "Extra Reg. Button", and the display shall show "A Off". If not, us ^ or v buttons to display "A Off".
5. Press the ⚙ "Extra Reg. Button" to exit the program.

4.0 START UP

1. Press the ⚙ "Extra Reg. Button" for 5 seconds to advance the valve to regeneration step 1 (Backwash). Open partly for incoming water and let the water slowly enter the filter in order to purge out air from the tank. Important: If opened too rapidly or too much for the water media may be lost.

   When all trapped air has been purged out and the drain water flows steadily, open a little bit more for water and let the water flow to drain for two minutes.

2. Press the ⚙ "Extra Reg. Button" once to advance the valve to regeneration step 2 (Brine draw / slow Rinse). Wait until the motor stops.

3. Press the ⚙ "Extra Reg. Button" once to advance the valve to regeneration step 3 (Rapid Rinse) and let the water flow to drain for 3 minutes.

4. Press the ⚙ "Extra Reg. Button" once to advance the valve to regeneration step 4 (Brine tank Refill). Let the water flow into the brine tank for 5 minutes.

5. Press the ⚙ "Extra Reg. Button" once to advance the valve to Service position (Running position).

6. Repeat previous step 1 and 2 in order to start up the other tank.

7. Press the ⚙ "Extra Reg. Button" once to advance the valve to regeneration step 3 (Rapid Rinse). Open fully for incoming water and let the valve automatically advance further through remaining steps until it reaches Service position.

8. Fill salt into the brine tank until the brine tank is filled to ¾.

9. The start up is now finished; the softener now can be left to run automatically.

   - Make sure that the by-pass valve is in position for delivering softened water.

5.0 Checking master programming

Also see Appendix “SE Timer supplemental service Manual”.
Set Time of day to 12:01 with ⌃ and ⌄ buttons. Then press and hold ⌃ and ⌄ buttons for 5 seconds to get into the programming menu. The display shows “U-2” (first program step).

By pressing the ⚙ “Extra Reg. Button” once per display you will step through the programmed values (if necessary the ⌃ and ⌄ buttons will adjust these values).

Master Programming Chart

Step	Programmed values for AH-18	Options	Description
1		*U -- 1*	US Gallon
	U -- 2		Litres / 24 hours
		U – 4	m^3 / 24 hours
2		*7 – 1*	Time clock delayed
	7 -- 2		Meter Immediate
		7 -- 3	Meter Delayed
3	To be filled in ..5000……	Step less	Softening capacity, depending on raw water hardness.(see page 4)
4	A Off		Regeneration Day Override off (cancelled)
		A – 7	Regenerates every 7 days
5	.1 – 7	Step less	Regeneration cycle 1 Backwash time in minutes
6	.2 - 47	Step less	Regeneration cycle 2 Brine draw / Slow rinse time in minutes
7	.3 - 6	Step less	Regeneration cycle 3 Rapid rinse time in minutes
8	.4 – 3,7	Step less	Regeneration cycle 4 Brine tank refill time in minutes
9	.5 – Off		
10	F – 5,3		Flow meter type metric
11	0 – 2		Twin tank operation
12		0 – U_1 0 – U_2	Tank 1 in service Tank 2 in service
13	LF 50	 *LF 60*	50 Hz Line Frequency 60 Hz Line Frequency
Master Programming mode is excited. Normal operation is resumed.			

6.0 Maintenance

Once a year:

- Inspect and clean brine tank.
- Clean injector screen, injector throat and injector nozzle, see Appendix “Model 9100 Service manual”.

AH 18 Duplex Twin-tank water softener

1. Appendix I

Service Manual valve 9100

Vi kan vattenrening!

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