Accumatic

ACCUMATIC™ BRINE SYSTEM

The Accumatic™ brine system consists of a brine tank and an internal (also called Throat & Nozzle Assembly) or external brine ejector mounted inside (injector) the Task Master III™ or mounted externally (educator) as part of a valve nest. The brine tank consists of a brine valve, a brine well, a salt platform, and an overflow assembly.

The brine system applies a salt solution to the softener to regenerate the cation exchange resin. Saturated brine (26% NaCl by weight) is drawn from the brine tank by the ejector. Each model of softener has a different ejector to generate a different brine flow rate. The corrosion proof ejectors are sized to dilute the saturated brine to 10% NaCl by weight. This brine concentration minimizes salt use during regeneration.

To create the saturated brine, dry salt is added to the brine tank, where it is dissolved in water. Since there is always an excess of salt, the brine solution is saturated. In the high grid plate design, the dry salt is not allowed to fill the bottom of the brine tank.

The saturated brine is drawn from below the grid plate (and below the salt bed) eliminating salt bridging and mushing. The Accumatic™ system controls the amount of brine solution added during regeneration and automatically refills the brine tank with water after regeneration. Because of the high grid plate, brine volume is not dependent upon void space in the salt bed. Brine drawn during regeneration is repeatable and accurate.

Features:

- **Made from Rugged PVC Pipe.** The Accumatic™ brine valve is available in ⅜, ½, ¾", 1" and 1¼" sizes. All sizes are constructed of heavy duty Sch.80 PVC. The sizes are I.D. as in pipe size, not O.D. as in tubing size. Our ⅜" ID brine valve is the same size as other ½" O.D. valves. The Accumatic brine valve is made from pipe, not tubing.
- **Very precise measurement of brine.** The Accumatic™ valve provides accurate volumetric control of brine draw. The same amount is drawn every time. The voids of the salt do not affect the brine draw.
- **Brine check** in brine valve prevents air draw into mineral tank.
- **Positive pressure** is applied to seat the brine valve to prevent brine contamination during the service cycle.
- **Standard systems** have a fixed brine float which is factory preset at a brine draw which works for the system. Brine draw can be adjustable by adding the optional adjustable brine float.

Accumatic™ Brine System Information

Water King Model No.	Brine Tank Size (in)	Throat x Nozzle Int./Ext. Ejector Pipe Size, Color	Salt Draw (lbs)	Preset Capacity (Kgr)	Platform Height (in)	Brine Line / Brine Valve (in)	Salt Storage (lbs)	Regen's in Storage
50	18x40	#53 x #28 IE, Green	29	49	11	½"/⅜"	320	11
70	18x40	#53 x #28 IE, Green	29	69	11	½"/⅜"	320	11
100	24x40	#45 x #22 IE, Orange	51	100	11	½"/⅜"	570	11
120	24x40	#45 x #22 IE, Orange	51	120	11	½"/⅜"	570	11
150	24x40	#31 x #7 IE, Gold	66	153	16	½"/⅜"	500	8
180	24x40	#31 x #8 IE, Gold	66	196	16	½"/⅜"	500	8
240	24x50	#27 x 1/4" IE, Brown	91	245	21	½"/⅜"	640	7
300	24x50	#27 x 1/4" IE, Brown	91	293	21	½"/⅜"	640	7
450	30x50	#27 x 1/4" IE, Brown	145	432	24	½"/½"	900	6
600	39x60	3/16" x 3/8" EE, 3/4", Red	244	594	24	--/½"	2,000	8
750	39x60	3/16" x 3/8" EE, 3/4", Red	244	731	24	--/½"	2,000	8
900	42x60	7/32" x 7/16" EE, 1", White	274	837	24	--/1"	2,400	9
1200	50x60	5/16" x 5/8" EE, 1-1/2", White	388	1,170	24	--/1¼"	3,300	9
1650	60x60	23/64" x 23/32" EE, 1-1/2", Blue	559	1,609	24	--/1¼"	4,800	9
2100	60x60	23/64" x 23/32" EE, 1-1/2", Blue	559	1,809	24	--/1¼"	4,800	9
2550	72x60	13/32" x 13/16" EE, 1-1/2", Yellow	805	2,486	24	--/1¼"	7,000	9
3000	72x60	13/32" x 13/16" EE, 1-1/2", Yellow	805	2,700	24	--/1¼"	7,000	9

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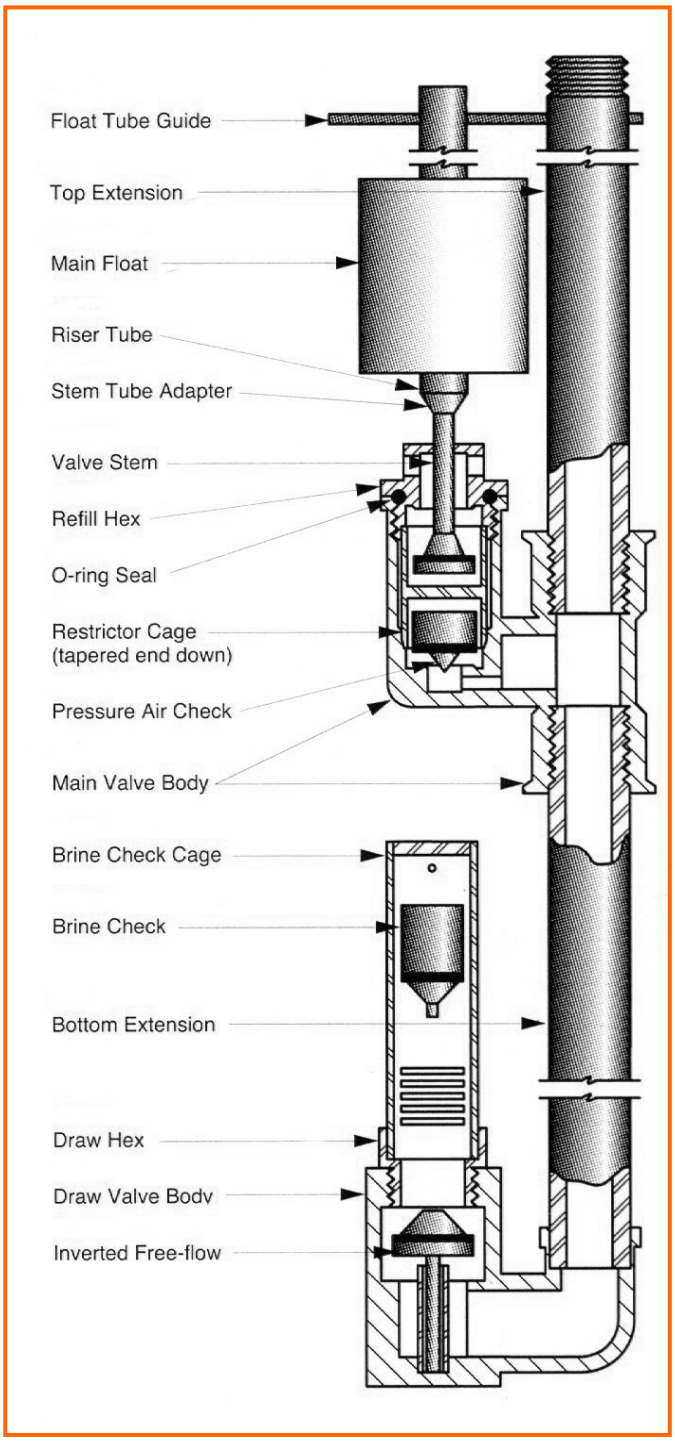
ACCUMATIC™ BRINE SYSTEM OPERATION

1. The Task Master III™ valve shifts to the brine position. Flow now passes through the brine injector mounted inside the valve body (internal injector). (See part #2 on the exploded view of the Task Master III™.) The injector draws a vacuum on the brine line.
2. This vacuum releases the brine valve seal (originally seated by incoming fill water pressure). The Free-flow valve drops open allowing brine to be drawn from the tank. As water is drawn from the tank, the main float will drop to allow re-fill. At the same time, the vacuum draws the air check valve closed to prevent the drawing of air through the re-fill valve.
3. The unit will continue to draw brine until the water level in the brine tank reaches the bottom of the brine riser tube. At this time the brine check will seat. This again prevents air from being drawn into the system. The Task Master III™ valve remains in brine position and water continues to pass through the injector even though it is not drawing brine. This cycle is called Slow Rinse. Slow rinse ends when the cycle timer advances the piston to the Fast Rinse position.
4. In the Fast Rinse position (and all other positions except Brine Draw) the brine line is under positive pressure. This positive pressure lifts the inverted free-flow valve and the air check valve and allows water to begin refilling the brine tank.
5. Refilling continues until the water level in the brine tank reaches the preset level and the float causes the brine valve seat and seal. The continuing positive pressure on the brine line maintains this seal.
6. The fresh water, which entered the brine tank, is now in contact with solid salt. Over the next few hours, the water becomes saturated with salt creating saturated brine.



Component Information:

- **Brine Tank** Is manufactured from High Density Polyethylene or fiberglass with no accessories or perforations.
- **Brine Well.** 505007 and 505011 is 4" diameter and 505014 and 505015 is 5" diameter.
- **Grid Plate.** Plastic Salt Platforms are used for Brine Tanks 30" in diameter and smaller. Masonite Salt Platform with nylon screen are used on Brine Tanks 39" in diameter and larger.
- **Grid Support.** Brine tanks with 18" in diameter shall have plastic legs. Brine tanks with 24" through 30" in diameter shall have Schedule 40 PVC legs. Brine tanks with 39" in diameter and larger shall have Super Web type support.
- **Brine Line Assemblies.** For simplex units with 30" diameter brine tanks and smaller, the brine line assembly consists of six feet of polypropylene brine line and appropriate Fast & Tite tube fittings.
- **Brine Director Assemblies.** For twin and twin alternating units with 30" diameter brine tanks and smaller a brine director is required. The brine director assembly consists of a ¾" brine director (Part № 200442), polypropylene brine line and appropriate Fast & Tite tube fittings.
- The brine system for MF systems 750 and larger with brine tanks 39" in diameter and larger requires an external brine injector. The brine line assembly consists of a ductile iron diaphragm valve, a brass check valve, and a brass ball valve with appropriate galvanized NPT pipe fittings. The interconnecting piping between the brine tank and the mineral tanks is not provided with the standard system and is installed by others. These systems with external eductors do not require brine directors.

Accumatic™ Brine System Components Part Numbers

Tank Size (in)	Brine Tank Assy	Injector / Eductor	Brine Tank Part No.	Brine Valve	Brine Well	Salt Platform	Grid Support	Brine Line Assy	Brine Director Assy
18x40	805060	507121	200010-1	706022	505007	200190-1	N/A	200126-2	200442-2
18x40	805061	507121	200010-1	706022	505007	200190-1	200629-1	200126-2	200442-2
24x40	805075	507122	200375	706022	505007	200613	200260	200126-2	200442-2
24x40	805076	507125	200375	706022	505007	200613	200262	200126-2	200442-2
24x50	805077	507127	200376	706022	505011	200613	200264	200126-2	200442-2
30x50	805177	507127	200561	706044	505014	200528	200520	200126-3	200442-3
39x60	805178	320400-2	200589-RM	706044	505015	200532	SW3924	806695	N/A
42x60	805179	320400-4	200590-RM	706055	505015	200533	SW4224	806696	N/A
50x60	805169	320400-10	200592-RM	706066	505015	200536	SW5024	806690	N/A
60x60	805170	320400-8	200591-ZZ	706066	505015	200537	SW6024	806690	N/A
72x60	805171	320400-12	200593-ZZ	706066	505015	200538	SW7224	806690	N/A