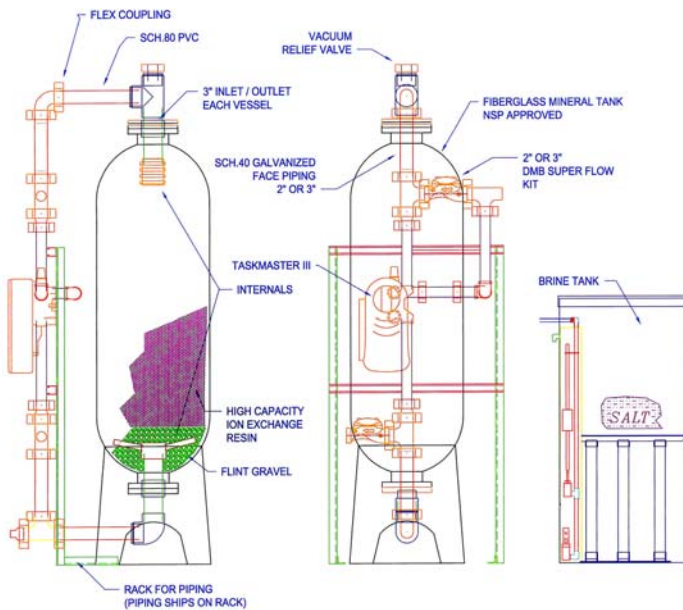


# MF-FG Series Water Softeners



## STANDARD FEATURES

TASK MASTER III™ - 1 1/2" / 2" - FIVE CYCLE - 316 STAINLESS STEEL VALVE - SIDE MOUNT  
 2" OR 3" SUPER FLOW KIT (SERVICE FLOW BYPASS DIAPHRAGM VALVES)  
 ERCT ELECTRONIC TIMER  
 POLYGLASS MINERAL TANKS  
 ACCUMATIC™ BRINE SYSTEM  
 WK100 WATER SOFTENING RESIN - MADE OF POLYSTYRENE WITH 8% DIVINYLBENZED CROSS LINKS  
 NON METALLIC HUB AND LATERAL DISTRIBUTOR  
 110V, 60Hz, 1Ø  
 GROOVED / THREADED SCHEDULE 40  
 GALVANIZE FACE PIPING

## OPTIONAL FEATURES

ASME CODE FIBER GLASS TANKS  
 DEMAND INITIATION  
 TWIN, TWIN ALTERNATING, TWIN PARALLEL, TRIPLEX, AND QUAD CONFIGURATIONS  
 DEMAND REGENERATION WITH ERCd AND PW SERIES METER  
 PRESSURE GAUGE AND TEST TAP KIT  
 SKID MOUNTING  
 220V, 50Hz, 1Ø

## OPERATING CONDITIONS

25 TO 100 PSI • 100°F MAXIMUM TEMPERATURE



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<b>MF FG Series Sizing Information</b>											
	<b>Dia. X Height<sup>1</sup> (in.)</b>	<b>Capacity (Kgr)</b>	<b>Salt Applied (lbs)</b>	<b>Contin-uous Flow (gpm)<sup>2</sup></b>	<b>Peak Flow (gpm)<sup>3</sup></b>	<b>Back-wash<sup>4</sup> (gpm)</b>	<b>Resin (ft<sup>3</sup>)</b>	<b>Gravel (lbs)</b>	<b>Brine Tank (in)</b>	<b>Salt Storage (lbs)</b>	<b>Brine Valve (in)</b>
MF FG-150-1½	21x62	153	66	49	65	10	5	100	24x40	500	¾
MF FG-150S-2				50	75						
MF FG-180-1½	21x62	196	106	48	64	10	6	100	24x50	580	¾
MF FG-180S-2				60	90						
MF FG-240-1½	24x72	245	106	51	67	15	8	150	24x50	580	¾
MF FG-240S-2				80	120						
MF-300-1½	30x72	293	106	55	71	25	10	250	24x50	580	¾
MF-300S-2				100	150						
MF-300S-3				100	150						
MF-450-1½	36x72	432	145	53	70	35	15	250	30x50	900	½
MF-450S-2				110	146						
MF-450S-3				150	225						
MF-600-1½	36x72	594	244	55	72	35	20	350	39x60	2,040	½
MF-600S-2				119	156						
MF-600S-3				200	300						
MF-750-1½	42x72	731	244	55	71	50	25	350	39x60	2,040	½
MF-750S-2				116	152						
MF-750S-3				214	296						
MF-900-1½	48x72	837	274	56	73	60	30	500	42x60	2,370	1
MF-900S-2				123	160						
MF-900S-3				254	342						
MF-1200-1½	48x72	1,170	388	57	74	60	40	1,100	50x60	3,360	1 ¼
MF-1200S-2				126	163						
MF-1200S-3				274	364						

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**DELIVERING EXPERIENCE, QUALITY, AND SERVICE SINCE 1934**

**NOTES ON APPLICATION TABLE:**

1. Capacities listed are based on 20 grains per gallon at intermittent flow rates, and are 95% of lab results
2. Continuous flow rates are listed at 10 gpm/ft<sup>3</sup> of resin or 15 psi pressure drop, whichever is less.
3. Peak flow rates are listed at 15 gpm/ft<sup>3</sup> of resin or at 25 psi pressure drop, whichever is less.
4. Drains at installation sites must be able to dispose of water at the backwash rate for periods up to 20 minutes.
5. Dimensions listed are actual unit height. At least one additional foot should be allowed for loading mineral tanks.

**MF - FG Series Specification (MF 150 to 1200 up to 3" piping)**

**Mineral Tank.** The mineral tank shall be "polyglass" consisting of an inner shell of virgin polyethylene and an external shell of continuous fiberglass roving. Tanks shall be rated at 150 psi operating pressure, 120°F operating temperature with 6" flanged top and bottom opening. [ASME code fiberglass vessels are optional.](#)

**Internals.** The upper distributor shall be a single point or high flow 3" slotted Bajonet style distributor. The bottom distributor shall be a 3" hub and lateral Bajonet style system.

**Piping.** The softener(s) shall ship with face piping and support rack on a pallet separate from the vessels. The rack mounted piping shall be attached to the tank inlet and outlet via two grooved flex couplings. The flex couplings allow for tank expansion. Face piping shall be schedule 40 galvanized carbon steel with NPT fittings for 1 1/2" and 2" piping. Piping for superflow or service flow bypass shall be schedule 40 grooved fitting galvanized carbon steel.

**Vacuum Relief Valve.** An 1 1/2" vacuum relief valve shall be installed at the top of each vessel.

**Media.** The resin shall be sodium form polystyrene 8% divinyl benzene cross linked resin with clear spherical beads. Resin beads shall be 16-50 US Standard Mesh with a particle size range of 0.3 to 1.2 mm. The resin shall be clean and packaged in sealed plastic bags weighing 55 lbs or less. Underbedding shall be #20 graded washed flint gravel sieved between 1/8" and 1/16".

**Brine System.** The brine system shall be of the Accumatic™ high grid plate design. The brine tank shall be blow molded or rotationally molded HDPE, including a cover. The system shall include a SCH 80 PVC float operated brine valve to control refill shut-off and refill flow rate. Brine volume is to be repeatedly accurate within 10% and not dependent on salt bed void space for brine volume. Brine draw is to volumetrically controlled, not timed.

**Control Valve Specifications.** The main control valve(s) shall be the Task Master III™ with electronic controller to actuate the cycles of backwash, brine, slow rinse, fast rinse, and service for a water softener (or backwash, rinse and service for a filter). The control valve(s) shall be Task Master III™ 5-Cycle, multi-port control valve(s) with machined passivated CF8M Type 316 Stainless Steel body, Type 316 Stainless Steel piston assembly, and EPDM (NSF61 and WRAS Approved) inserts and seals with electronic controller and drive motor assembly in a NEMA 4/IP65 Style Enclosure. The valve shall operate with a single motor driven piston positioned by optical sensors. Valve inlet and outlet shall be 1 1/2" FNPT. Backwash drain shall be 3/4" or 1 1/2" depending on flow. The brine inlet shall be 1/2". The one piece brine eductor shall be installed in the valve. The valve shall be equipped with threaded 1/4" FNPT ports for the installation of sample taps and pressure gauges. (Taps and gauges are optional.) Hard water by-pass shall be available during all regeneration cycles at 70 gpm or at the peak flow rate of the unit, at a pressure drop less than 25 psi, whichever is less. No hard water bypass option is obtained by adding a shut off kit to the valve. The valve shall be of a single piston design and shall not use multiple plungers or diaphragm valves. Maximum rated power shall be 125 watts with available current options of 115 VAC, 230 VAC, 100 VAC, 200 VAC, in 50 or 60 Hertz. Ambient operating temperature range shall be 34°F (1°C) to 150°F (65°C). Fluid temperature range shall be 34°F (1°C) to 180°F (82°C). Operating pressure range shall be 20-125 psi (1.38 - 8.6 bar). The valve shall have UL, CSA, TÜV and CE certifications. ANSI/NSF 61 certification is pending.

**Super Flow Systems (-S).** A Super Flow Kit (SFK) shall consist of an inlet and an outlet diaphragm valve operated by a solenoid, which opens the valves when the unit is in service and closes the valves when the unit

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is in regeneration or standby. For the 2", 3", 4" and 6" SFKs the valves shall be DM200B, DM300B, grooved end, polyester coated and lined, 235 psi cast iron diaphragm valves.

**Simplex (-SX).** Simplex systems shall have regeneration initiated by time of day or "clock time". SX systems shall have one brine tank, one Taskmaster III™ control valve, one ERCt controller. Ordering an optional shut off kit will prevent hard water bypass.

**Simplex Meter Systems (-SM).** Simplex metered systems shall have regeneration initiated by gallons treated (demand). SM systems shall have one brine tank, one Taskmaster III™ control valve, one ERCd controller, one PW, PWS or TM series flow meter, and two shut off kits (one for each vessel). Regeneration initiation and meter display shall be provided by the ERCt. Ordering an optional shut off kit will prevent hard water bypass.

**Twin (-T).** Twin systems shall consist of two mineral tanks with attached Taskmaster III™ control valves and one brine tank with a brine director. Regeneration initiation shall be by an ERCt time initiated electronic regeneration controller on each unit. Vessels will regenerate on time of day.

**Twin Alternating (-TA).** Twin alternating units operate so that once a predetermined amount of water has passed through the flow meter the ERCd initiates regeneration of the exhausted unit placing its twin in service. One unit is on line and one is either in standby or service. The ERCd demand initiated regeneration controller controls the regeneration cycles for both of the twin alternating units. TA systems shall have two mineral tanks, two Taskmaster III™ control valves, one brine tank with brine director, one ERCt controller, one PW, PWS or TM series flow meter and two shut off kits. Regeneration initiation and meter display shall be provided by the ERCt.

**Twin sequential (-TS).** In twin sequential (TS) mode both units are in service unless a unit is in regeneration. The flow through both units is directed into a single meter. Once a predetermined amount of water has passed through the flow meter the ERCd initiates sequential regeneration of both units. When regeneration of the primary tank is complete, the ERCd sends an initiation to the ERCt on the secondary tank causing it to regenerate. Twin sequential systems shall have two mineral tanks, two Taskmaster III™ control valves, one brine tank with brine director, one ERCd controller, one ERCt controller, one PW, PWS or TM series flow meter and two shut off kits. An advantage of the sequential configuration is that the secondary unit can operate independent of the primary unit. Regeneration initiation and meter display shall be provided by the ERCd. The ERCt controls the cycle times on the secondary vessel.

**System Operating Conditions.** Maximum temperature shall be 100°F. Maximum Pressure shall be 100 psi. The pressure rating can be increased to 125 psi by specifying 125 psi vessels. The temperature rating can be raised to 180°F by specifying Viton seals for the shut off kits (-V), high temperature epoxy (placite) for the vessels, and 10% cross-linked resin.

**Other items.** A standard soft water soap test kit shall be provided. A complete set of instructions, including installation, loading, start-up, adjustments, servicing, and a parts list shall be provided with the equipment.

**Qualifications.** A company that has continuously manufactured water softeners for at least twenty (20) years shall construct this equipment.

**Pressure gauge and test tap kit.** A kit containing two liquid filled, stainless steel pressure gauges with 2 ½" Ø face, two brass ball valve sample taps with hose barb connections and associated brass connection fittings shall be provided for mounting in the 1/4" FNPT predrilled and tapped ports in the inlet and outlet of the Task Master II valve.

## MF - FG SERIES SPECIFICATION (MF FG 900S-3 AND MF 1200S- 4 AND -6)

**External Brine Ejector.** Brine shall be drawn directly into inlet of the mineral tank using an EE series external ejector. This venturi type device shall be SCH 80 PVC with 1" or 1 ½" FNPT connections. The venturi shall be chemically bonded to the housing. The venturi shall be precision machined. Maximum temperature shall be 140°F. The external injector shall provide both brine flow and brine dilution.

**Brine Inlet Valves.** Brine shall enter the vessels through a DM100 or DM150 125 psi cast iron diaphragm valves with Buna Seats. A bronze check valve and a bronze ball valve with stainless steel ball shall provide brine line isolation.