

FMF FILTERS

STANDARD FEATURES

TASK MASTER III™ - 1½" VALVE – SIDE MOUNT

ERCt ELECTRONIC TIMER WITH 99-DAY CYCLE

REMOTE BACKWASH INITIATION IS INCLUDED. (CAN BE USED WITH A DIFFERENTIAL PRESSURE SWITCH OR WITH REMOTE OPERATION SYSTEM.)

CARBON STEEL EPOXY LINED AND COATED VESSELS

MULTIPLE POINT ABS DISTRIBUTOR

STAINLESS STEEL BW FLOW CONTROL MOUNTED ON VALVE

110V, 60HZ, 1Ø

AVAILABLE WITH MULTI MEDIA, FILTER SAND,

ACTIVATED CARBON, FILTER AG, AND MANGANESE GREEN

OPTIONAL FEATURES

ASME CODE TANKS

MULTIPLE TANK CONFIGURATIONS

DEMAND INITIATION WITH ERCd AND A FLOW METER

SHUT OFF KIT (SOK) TO PREVENT RAW WATER BYPASS DURING BACKWASH CYCLES

PRESSURE GAUGE AND TEST TAP KIT

SKID MOUNTING

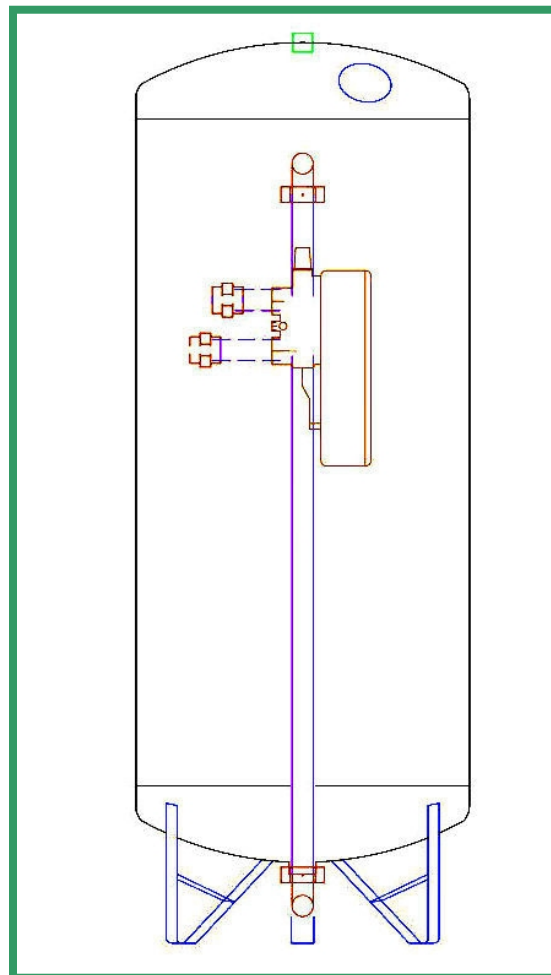
220V, 50Hz, 1Ø

INTERNATIONAL VALVE CONFIGURATIONS: ENGLISH

EUROPEAN, AUSTRALIAN, JAPANESE, AND CHINESE

OPERATING CONDITIONS

25 TO 100 PSI ♦ 120°F



FILTER APPLICATION TABLE

GENERAL SPECIFICATIONS. APPLIES TO ALL TYPES OF MEDIA.									
MODEL	Dia. (in.)	Side Sheet	Bed Area (ft. ²)	Pipe (in.)	Media (ft ³)	Underbed (lbs)	Width (in.)	Depth (in.)	Height (in.)
FMF 150	20	54	2.18	1 ½	5	100	20	31	70
FMF 240	24	54	3.14	1 ½	8	250	24	35	71
FMF 300	30	60	4.90	1 ½	10	350	30	44	81
FMF 600	36	60	7.10	1 ½	20	400	36	50	83
MODEL	Continuous Flow rate in gpm at 5 gpm/ft ²	HEAD LOSS IN PSI AT 5 GPM/FT ²							
		Fine Sand	Filter AG	Activated Carbon	Green Sand	Multimedia			
FMF 150	12.1	7.0	2.3	2.3	2.8	9			
FMF 240	15.7	8.5	2.7	2.7	3.5	10			
FHF 300	24.5	8.1	0.8	0.8	2.4	10			
FMF 600	35.4		1.8	1.8					
MODEL		BACKWASH RATE IN GPM							
		Fine Sand	Filter AG	Activated Carbon	Green Sand	Multimedia			
FMF 150		30	20	20	30	35			
FMF 240		35	25	25	35	50			
FMF 300		60	40	40	60	70			
FMF 600			60	60					
MODEL		SHIPPING WEIGHT IN POUNDS							
		Fine Sand	Filter AG	Activated Carbon	Green Sand	Multimedia			
FMF 150		830	450	460	760	900			
FMF 240		1390	790	800	1290	1485			
FMF 300		1850	1100	1140	1725	2285			
FHF 600				1930	3125				

FILTRATION CYCLES

- ◆ **SERVICE.** The water flows downward through the media and is clarified. The solids accumulate in the media bed.
- ◆ **BACKWASH.** When the filter begins to clog or when the head loss though the bed increases, flow rates are dramatically reduced and often solids “break through” the filter and water quality deteriorates. To clean the filter bed, the flow is reversed, fluidizing the media bed, and is directed to drain. This is called backwash. The flow required is specific to the media. If too much flow is applied, the bed can be flushed from the tank and if too little flow is applied, the bed will not fluidize properly and will not be cleaned. Improper cleaning leads to mud ball formation and channeling in the filter. The FRF, and FMF and FMF-FG Series use nozzle type backwash rate-of-flow controllers. Backwash is made possible by shifting the Task Master™ III valve so that it allows the water to enter the bottom of the filter tank and flow upward through the media bed, thus backwashing filtered solids to drain.
- ◆ **FILTER TO WASTE.** When a filter is returned to service after backwash, the initial effluent solids concentration from the filter is high. The bed must be repacked and begin to remove some particulates before it can become effective. Thus, the first few gallons of a filter run are usually wasted. This part of the cycle is called filter to waste or rinse.

TASK MASTER III™

1 ½ inch Commercial Industrial Water Filter Valve
Application: Top mounted in Water King FRF Series
Side mounted in Water King FMF Series ,

- The Task Master III™ is a **316 Stainless Steel 1 ½ inch**, five cycle, water softener control valve.
- There is only one moving part – the piston.
- The valve body is **316 SS and the piston is stainless steel with EPDM seals and inserts.**
- The valve has two different tank adaptors allowing top mount on a fiberglass tank or side mount on the face piping on a steel tank.
- The housing for the brine ejector is cast into the valve body making it an integral part of the valve.
- The piston is motor driven and is not dependent on water pressure. It shifts smoothly without water hammer. The drive assembly positions the plunger for each of the five cycles.
- The valve design assures synchronization of the drive assembly with the **electronic timer** and **optical sensors** making certain the piston is correctly positioned for each of the five cycles of softening.
- ERcT 99-day electronic timer with ability to independently program each cycle time.
- ERcd demand regeneration timer with variable reserve.
- The electrical enclosure carries a NEMA 4 rating.
- Since brining and process control often must be coordinated with the regeneration cycles of a softener, the valve is designed to provide an on/off signal and dry contacts for external electrical functions.
- **Temperature rating is 180°F. Operating pressure is 125 psi.**
- **71 gpm backwash rate (at 25 psi head loss)**
- Certifications: UL, CSA, TÜV and CE. ANSI/NSF 61 (pending)
- Valve is assembled, tested and all machining and programming is done in Louisiana or other states in the United States. Raw cast metal components, molded plastic and electronic circuit boards for valve are from China, Fiberglass vessels are manufactured in Chardon, Ohio. Filter Media is all from the United States.



FILTER CONTROLS

TIME CLOCK. Most filters are set to backwash daily or every other day with the standard 99–day electronic controllers (ERcT).

DIFFERENTIAL PRESSURE. As a filter run progresses, the filter becomes clogged developing pressure loss across the bed. A differential pressure gauge placed between the filter inlet and outlet measures this head loss. Each filter can be equipped with an ERcT controller with remote backwash initiation by the differential pressure switch. The differential pressure transmitter is not included in the base system. Remote backwash initiation requires only programming changes.

MULTIPLE FILTERS. Timed Sequential Filters operating in parallel all clog simultaneously and thus must be backwashed at the same time or sequentially. Water King often supplies multiple filters with a lead unit having a time clock and the remaining units backwashing in sequence based on remote initiation by the lead unit.

DEMAND INITIATION. Filters can be set up to backwash after a preset volume of filtrate has been produced. This is done with an ERcd filter controller and a flow meter.

PART # 720075-6

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 III valve.



CAT 506.4

FMF SERIES SPECIFICATION

MINERAL TANK (STANDARD NON CODE VESSELS). The non-code vessel shall be A36 carbon steel or better rated at 100 psi working pressure designed to a factor of safety of 3.0. The inlet and outlet shall be 3000 psi NPT full couplings. The inlet shall be in the side wall and the outlet shall be in the center of the tank bottom shell. Each tank shall have a top center fitting. Tanks 36" Ø and larger shall have lifting lugs. Tanks 20", 24", and 30" Ø shall have a 4" x 6" handhole in the side shell and in the top dome. Tanks 36" Ø and larger shall have a 4" x 6" handhole in the top dome and an 11" x 16" or larger manway in the side shell.

MINERAL TANK (OPTIONAL CODE VESSELS). ASME code stamped tanks shall be available. Tank shall be clearly specified as code or non-code with a specified working pressure. Tanks "built to ASME code but not stamped" shall not be acceptable as ASME code. An ASME U1 form shall be provided with each ASME code tank.

COATING AND LINING. Tanks shall be prepared for internal and external coating with a SPCC 11 near white sand blast. (Internal and external coating shall be two - 3 to 4 mill coats of white Series FC22 Tnemic Epoxy). Paint shall be applied according to manufacturer's recommendations.

INTERNALS. The bottom distributor shall be a multipoint system using 2½" Ø single point ABS molded distributor heads with 2½" of slotted length and a 1½" NPT female threaded connection. The slots shall be .012" - .016" wide to retain mineral and the total slot area shall be equal to or larger than the unit pipe size. A top dome splash distributor with an opening equal to or larger than the unit pipe size shall be installed in the mineral tank. The internal distributor piping shall be SCH 80 PVC.

PIPING. The filter(s) shall ship with face piping mounted on the vessels. Face piping shall be schedule 40 galvanized carbon steel with NPT or grooved fittings.

Media. The media shall be as specified elsewhere.

Control Valve Specifications. The main control valve(s) shall be the Task Master III™ with electronic controller to actuate the cycles of backwash, rinse and service. For manganese green sand filters, an additional cycle and educator shall be included to inject potassium permanganate. 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 tank adapter gasket shall be cork. The valve shall operate with a single motor driven piston positioned by optical sensors. Valve inlet and outlet shall be 1 ½" FNPT. Backwash drain shall be ¾" or 1 ½" depending on flow. For filters the ½" FNPT eductor shall be plugged. For manganese greensand filters, the one piece eductor shall be installed in the valve. The valve shall be equipped with threaded ¼" FNPT ports for the installation of sample taps and pressure gauges. (Taps and gauges are optional.) Unfiltered water by-pass shall be available during all backwash cycles at 70 gpm or at the peak flow rate of the unit, at a pressure drop less than 25 psi, whichever is less. 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.

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.

HIGH TEMPERATURE (OPTIONAL). The temperature rating can be raised to 180°F by specifying Viton seals for the shut off kits (-V), high temperature epoxy for the vessels, and 10% cross-linked resin. Also specify CPVC internals with SS distributors. Use EPDM for the tank adaptor gasket (Part No. 400636). Add -HT to part number and model number.

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.

SHUT OFF KIT (SOK) ON MF 1 ½" SYSTEMS. A "no unfiltered water bypass" option is obtained by adding a shut off kit. For a 1 ½" SOK a single cast iron diaphragm valve with Buna Seats operated by a solenoid shall be installed on the outlet.