**RF Series Specifications**

Top Mount Task Master IV on fiberglass tanks

1. ****Scope. The softener shall consist of mineral tank(s) and internals containing resin and brine tank(s) complete with brine valve(s). Each mineral tank shall have a control valve with integral controller. Furnish a Water King Model RF Water Softener.
2. 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, 120ºF operating temperature with 4”-8 UN threaded top opening.
3. Internals.
	1. For mineral tanks 24” diameter and less, the distributor shall be a 2½” Ø single point nonmetallic molded distributor head with 2½” of slotted length and a 1½ inch female socket welded connection. The slots shall be 0.012" - 0.016" wide to retain resin or other media and the total slot area shall be equal to or larger than the unit pipe size. The distributor pipe shall be 1½” schedule 40 white PVC.

RF-100-TA with Optional Skid Mounting

* 1. For mineral tanks 30” diameter and larger, the distributor shall be a hub and lateral type. The slots in the laterals shall be 0.012" - 0.016" wide to retain resin or other media and the total slot area shall be equal to or larger than the unit pipe size. The distributor pipe shall be 1½” schedule 40 white PVC.
1. 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. Nominal exchange capacity shall be 30,000 grains per cubic foot when regenerated at 15 lbs of salt per cubic foot of resin. The bottom of this mineral tank shall be filled above the distributor with flint gravel sieved between 1/8” and 1/16” (# 20).
2. 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 be volumetrically controlled, not timed. The brine valve shall have a low level air check valve.
3. Control Valve. The main control valve(s) shall be the Task Master IIV™ 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 IV™ 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 ½” FNPT. Adaptors are available to provide 2” FNPT inlet outlet. Backwash drain shall be ¾” or 1 ½” depending on flow. The brine inlet shall be ½”. The one-piece brine 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.) 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. To prevent hard water bypass add a shut off kit to each 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).
4. Controller. The softening process shall be regulated by an Electronic Regeneration Controller (ERC) with regeneration based on time of day (ERCt), or demand (measured by a totalizing flow meter) (ERCd).
5. Skid Mounting. (Optional – must be specified at time of order.) The softener mineral tanks shall be pre-loaded with resin and mounted on an epoxy coated carbon steel skid. The brine tank shall be shipped loose. Interconnecting piping, drains and a three valve bypass shall be installed. Pipes shall be secured by Unistrut supports. Piping shall be schedule 40 galvanized steel or schedule 80 PVC.
6. 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.
7. Warranty. Water King, Inc. warrants to the original purchaser (“Purchaser”) that the Industrial and Commercial Water Conditioning Equipment (“Products”) are free from defects in materials and workmanship for twelve (12) months from the date of shipment. Water King will repair or replace with a rebuilt unit, at its sole option and discretion, products proven to be defective within the warranty period. In addition, the fiberglass reinforced pressure vessel(s) shall be warranted for a period of five (5) years by the vessel manufacturer. (Additional terms and conditions apply.)
8. System Operating Conditions. Maximum temperature shall be 120°F. Maximum Pressure shall be 125 psi. The temperature rating can be raised to 150°F by specifying Viton seals for the shut off kits (-V), vinyl ester resin for the mineral tanks, and 10% DVB cross-linked resin as the media.
9. Pressure gauge and test tap kit. A kit containing two liquid filled, stainless steel pressure gauges with 2 ½” Ø face, two stainless steel ball valve sample taps with hose barb connections and associated stainless steel 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 IV™ valve.
10. Shut off kit. (Included on twin and multiple tank units. Not used on single tank units.) Hard water bypass during regeneration shall be prevented by a shut off kit to include a cast iron body diaphragm valve and a solenoid valve with wiring, tubing and fittings.
11. Qualifications. A company that has continuously manufactured water softeners for at least twenty (20) years shall construct this equipment.