

**TANKS**

<b>System Feed</b>	Flow Configuration	Alternating Duplex
Volume per Vessel	Minimum 200 Gallons	Regeneration
		Countercurrent

**SKID MOUNTED COMPONENTS**

<b>Feed Pump</b>	Cycle Time	50 minutes
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<b>Number</b>	One (1)	<b>Cation Exchangers</b>
<b>Horsepower</b>	1 HP	HCl per Cycle
<b>Material</b>	316 SS	1.5 gallons
		Waste per cycle
		80 gallons

<b>Bag Filter</b>	Grains Capacity	28,000
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<b>Number</b>	One (1)	<b>Anion Exchangers</b>
<b>Filter Rating</b>	5-micron	NaOH per cycle
		1.3 gallons

<b>Cation &amp; Anion Exchangers</b>	Waste per Cycle	89 gallons
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<b>Number</b>	Two (2) of each	Grains Capacity
<b>Vessel Size</b>	10" x 40"	25,200

**UTILITIES**

<b>Construction</b>	PE Lined Fiberglass	Electrical Voltage.
		208-230/460

<b>Cation Resin</b>	Strong Acid	Full Load Amps
		10/5

<b>Anion Resin</b>	Strong Base	Make-up Water
		10 gpm

<b>Volume per Vessel</b>	1.4 ft <sup>3</sup>	<b>PHYSICAL DATA</b>
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<b>Controls</b>	Footprint (LxWxH)	43" x 28" x 70"
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<b>Controller</b>	Click PLC	Shipping/Operating Wgt
		650/900 lbs

<b>Drum Low Level Sensors</b>	One (1) of Each	Frame/Coating
		304SS/Polyurethane

<b>OPERATING SPECIFICATIONS</b>	Piping	Schedule 80 PVC
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<b>Feed Water Quality</b>		
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<b>Temperature.</b>	40°F-110°F
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<b>pH</b>	3-10 SU
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<b>TSS</b>	<5 mg/L
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<b>TDS</b>	<450 mg/L
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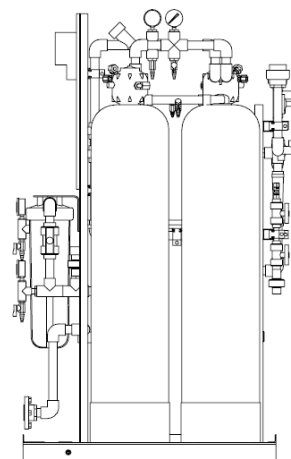
<b>Chlorine</b>	<2 mg/L
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<b>Product Water Quality</b>	
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<b>TDS</b>	<3 mg/L
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<b>Conductivity</b>	<5 uS
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<b>System Flow</b>	10 gpm
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**Meter Disc Number**

Operating Capacity	1	2	3	4	5	6	7	8
Loading in mg/l	50	150	200	300	350	300	450	550
Regen. Frequency	5,950	2,975	1,983	1,488	1,190	992	850	744

**Operating Profile** Removes ions from tap water through a two-stage, separate bed ion exchange process. A water quality > 3 TDS will be achieved when the equipment is operated within parameters as listed. The deionizer shall provide a near continuous flow of deionized water through the use of a duplex (two tank) configuration. This duplex configuration shall operate with 50% of the resin in reserve or in regeneration. System regenerations shall be initiated by measuring the feed water quality and flow rate, to accumulate the total loading on the system. Once the accumulated load surpasses the system's operating capacity setpoint, a regeneration is initiated.

**System Pump** The system shall use a 1.0-HP multi-stage centrifugal pump to pressurize water to the proper operating pressures and flow for the deionizer. The pump is designed to draw water from an atmospheric source. A return loop is used to provide a continuous flow of water pass the pump during operation, preventing low flow conditions. Pump construction shall be 316 stainless steel.

**Bag Filter** - There is one (1) bag filter housing rated for 15-gpm flow with isolation valves allowing filter change-out. The housing is constructed of reinforced polypropylene with nominal 5-micron filter bags

**Regeneration Valve** One is used with each set of cation and anion vessels, providing service and regeneration control. Inlet and outlet ports accept a 3/4" quick connect, double O-ring sealed adapter made of PVC. The valve requires a minimum inlet operate pressure of 60 psi, to drive valve functions. The valve controls the counter-current regeneration process including acid draw opposite the service flow and rinsing employing a fixed-flow eductor

**Media Tank** The tanks shall measure 10" in diameter and 40" tall. A total of two each cation and anion tanks will be used with one tank of each in service at all times. Tanks made of fiberglass reinforced polyester with a 2.5" threaded top opening are designed for a maximum working pressure of 125 psi and hydrostatically tested at 300 psi. Tanks. The upper and lower distribution system shall be of a slot design providing even distribution of regeneration water.

**Deionization Media** Each Cation deionizer includes 1.4-ft<sup>3</sup> per tank of 10% cross-linked high-capacity, strong acid resin with an exchange capacity of >20,000 grains/ft<sup>3</sup> when regenerated with 4-lbs. of hydrochloric acid. Each anion deionizer also includes 1.4-ft<sup>3</sup> of high-capacity strong base anion resins with an exchange capacity of >18,000 grains/ft<sup>3</sup> when regenerated with 6-lbs of NaOH. Inert plastic beads shall be used to pack the resin tanks, while still allowing the resin minimum space for expansion.

**System Skid** All system components are skid mounted and prewired. Installation hook-ups shall be limited to plumbing and electrical connections. Skid construction shall be from 304 grade stainless steel. Finish shall include cleaning and sandblasting. Skid dimensions shall not exceed 43" L x 28" W x 70" H. Skid design shall include anchoring feet for securing skid to foundation and grounding lugs for properly grounded electrical components.

**System Controls** – Operation, monitoring, and control of the integrated system utilizes a click PLC. The system shall use an integrated controller that measures the resistivity of the process water. The controller will divert water not meeting an adjustable set point through a purge valve and send it to drain. Water above the adjustable set point will be directed to the process outlet of the system. System operations and alarms can be set at the integrated system controller.

