

'MSB-F' Series Deionization Systems



Overview

The Marlo 'MSB-F' Series Automatic Separate-Bed Deionizer (DI) system offers a corrosion resistant alternative for the economical production of high purity water in industrial applications where DI exchange tank service or reverse osmosis (RO) systems are not desired.

Standard designs are available for product flow rates of 5-250 GPM. All systems are completely factory skid mounted, pre-piped, pre-wired, and pre-tested for minimal installation time and cost. Duplex alternating systems are available when continuous DI water demand is required.

Standard Features

- Composite FRP resin tank with tri-pod base
- Aquamatic diaphragm style control valves (air-actuated)
- Volume, time, or conductivity initiated regeneration cycle
- Pre-sized chemical eductors
- High capacity, cation and anion exchange resins
- Tank isolation valves & system bypass valve
- Inlet/outlet tank and dilute chemical sampling valves
- Factory Hydro-Tested at 100 psig

Materials of Construction

- Resin Tanks: FRP
- Exterior Piping: Sch 80 PVC
- Internal Distributors: Sch 80 PVC / ABS
- Control Valves: Noryl Thermoplastic
- Chemical Eductors: PVC
- Skid: Painted, Carbon Steel

Controls / Instrumentation

- Allen-Bradley MicroLogix PLC system
- Allen-Bradley PanelView operator terminal
- NEMA-4X electrical enclosure
- Signet product water flowmeter
- Signet product water conductivity meter
- Visual-type rotameter for chemical dilution water
- Inlet/Outlet tank pressure gauges

Standard Operating Parameters

- Inlet Pressure: 30-100 psig
- Electrical: 120VAC, 1-Ph, 60 Hz.
- Pneumatic: 80-100 psig (Dry, Oil-Free Air)
- Temperature: 35-110°F
- Cation Resin Regenerant: HCL (30%)
- Anion Resin Regenerant: NaOH (50%)

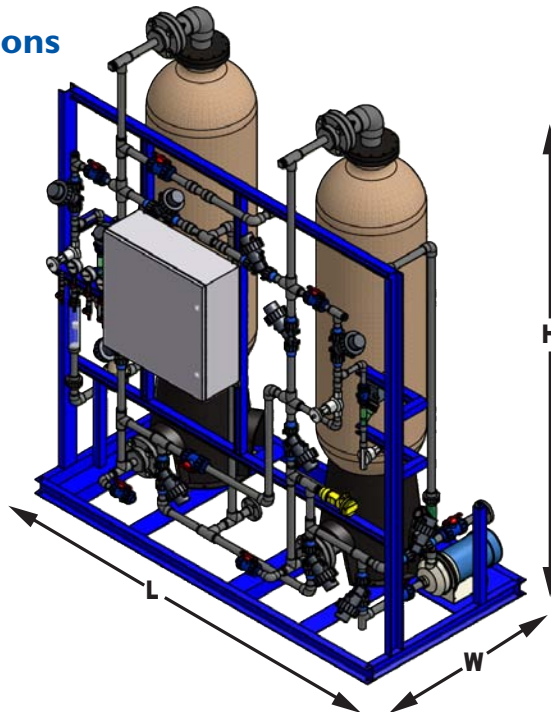
Available Options

- ASME rated resin tanks
- Duplex alternating systems (2-skids required)
- Recirculation pump systems (for low-flow periods)
- Regenerant chemical tank and pump systems
- Alternate PLC systems
- CPVC exterior piping
- Automatic butterfly or ball control valves
- Alternate ion exchange resins
- Wastewater neutralization systems
- Regeneration with sulfuric acid (H₂SO₄)

'MSB-F' Series Specifications

MODEL NUMBER	NOMINAL CAPACITY ①	FLOW RATES		TANK SIZE	RESIN VOLUME CATION	RESIN VOLUME ANION	PIPE SIZE	WASTE VOLUME	ACID PER REGENERATION	CAUSTIC PER REGENERATION	OVERALL DIMENSIONS (LxWxH, INCHES) ⑦	SHIPPING WEIGHT (LBS.) ⑧	OPERATING WEIGHT (LBS.)
		SERVICE											
	GRAINS	MINIMUM ②	MAXIMUM ③	INCHES	CU. FT.	CU. FT.	INCHES	GALLONS ④	GALLONS ⑤	GALLONS ⑥			
MSB-1865 F	85,000	5	20	18x65	4.5	4.5	1	630	12.5	5.5	80x38x96	1,950	3,915
MSB-2162 F	110,000	7	30	21x62	6	6	1	840	16.5	7.5	88x40x98	2,060	4,030
MSB-2472 F	185,000	9	40	24x72	10	10	1.5	1,400	27.5	12.5	94x44x101	2,740	5,340
MSB-3072 F	275,000	14	60	30x72	15	15	1.5	2,100	42	19	108x52x106	3,830	7,560
MSB-3672 F	365,000	20	85	36x72	20	20	2	2,800	55.5	25	120x58x106	4,980	9,630
MSB-4272 F	460,000	28	115	42x72	25	25	2	3,500	69	31.5	132x66x108	7,670	14,950
MSB-4872 F	640,000	37	150	48x72	35	35	3	4,900	97	44	144x72x112	9,890	19,230
MSB-6386 F	920,000	65	250	63x86	50	50	3	7,000	139	63	180x87x113	15,300	29,260

'MSB-F' Series Dimensions



Notes

- ① System nominal capacity is based on a raw water having no more than 15 grain/gallon (approx. 250 ppm) of total dissolved solids (as CaCO₃) and free of color, oil, turbidity, and organic matter. A complete water analysis is required to more accurately predict system capacity and product water quality.
- ② Minimum flow rates are established to prevent flow channeling within the resin bed, which can lead to lower capacity and product water quality.
- ③ At a pressure drop not exceeding 15 psig.
- ④ Wastewater from the regeneration process may require neutralization prior to final discharge. Size drain flows equal to the maximum flow rating.
- ⑤ Acid dosage for the cation resin tank is based on 8 lbs. per cubic foot of 30% hydrochloric acid (HCL). Acid drums or carboys are to be provided by others.
- ⑥ Caustic dosage for the anion tank is based on 8 lbs. per cubic foot of 50% sodium hydroxide (NaOH). Caustic drums or carboys are to be provided by others.
- ⑦ Dimensions are estimate only. Actual dimensions may vary based on job-site space limits, piping layout, and selected options. Dimensions shown are for a single, cation-anion tank skid and do not included space for chemical regenerant containers. Allow a minimum of 24" above the height dimension for resin loading.
- ⑧ Shipping weights are estimate only. Weights include resin and support gravel, which are added to the tanks after installation.