

'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%)

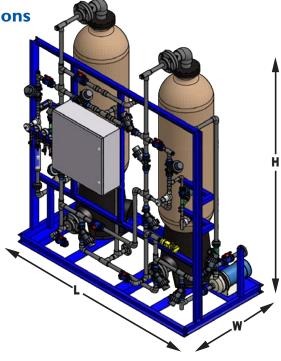
Available Options

- 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 | FLOW RATES | | TANK SIZE | RESIN VOLUME CATION | RESIN VOLUME ANION | PIPE SIZE | WASTE VOLUME | ACID PER REGENERATION | CAUSTIC PER REGENERATION | OVERALL DIMENSIONS (LxWxH, INCHES) | SHIPPING WEIGHT (LBS.) | OPERATING WEIGHT |
|-----------------|---------------------|------------|-----------|-----------|---------------------------|--------------------------|--------------|-----------------|--------------------------|-----------------------------|--|------------------------------|---------------------|
| | | SERVICE | | | | | | | | | | | |
| | GRAINS | MINIMUM ② | MAXIMUM ③ | INCHES | CU. FT. | CU. FT. | INCHES | GALLONS ④ | GALLONS ⑤ | GALLONS ⑥ | ♡ | 8 | (LBS.) |
| 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 |





Notes

- ①System 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.
- ②Minimum 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.
- ⊕ Wastewater from the regeneration process may require neutralization prior to final discharge. Size drain flows equal to the maximum flow rating.
- © 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.
- © 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.
- 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.
- ® Shipping weights are estimate only. Weights include resin and support gravel, which are added to the tanks after installation.