Overview

The Marlo ‘MSB’ Series Automatic Separate-Bed Deionizer (DI) systems are engineered to economically produce high purity water through the removal of total dissolved solids (TDS). Each MSB system is constructed using robust, industrial-grade components and materials for reliable operation and exceptional performance. Standard designs are available for product flow rates of 5-600 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

- Carbon steel resin tanks with vinylester lined interior
- Aquamatic diaphragm style control valves (up to 3”, air-actuated)
- Butterfly style control valves (4”-6”, air-actuated)
- Volume, time, or conductivity initiated regeneration cycle
- Pre-sized chemical eductors (acid & caustic containers by others)
- 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: Carbon steel with Safety Blue exterior paint
- Tank Lining: Vinylester (applied at 40-50 mils DFT)
- 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

Operating Parameters

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

Available Options

- ASME Code stamped resin tanks
- Duplex alternating systems (2-skids required)
- Recirculation pump systems (for low-flow periods)
- Rubber lined tank interior surfaces
- Regenerant chemical tank and pump systems
- Alternate PLC systems
- CPVC exterior piping
- 304/316 Stainless steel exterior piping
- Stainless steel internal distributor piping
- Automatic butterfly or ball control valves
- Alternate ion exchange resins
- Wastewater neutralization systems
- Regeneration with sulfuric acid (H2SO4)
- Forced-draft decarbonator systems (CO2 removal)

Quality Products for Quality Water
### 'MSB' Series Specifications

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>CAPACITY (Kilograms)</th>
<th>FLOW RATES</th>
<th>TANK SIZE</th>
<th>RESIN VOLUME</th>
<th>RESIN VOLUME</th>
<th>PIPE SIZE</th>
<th>WASTE VOLUME</th>
<th>ACID PER</th>
<th>CAUSTIC PER</th>
<th>OVERALL DIMENSIONS (LxWxH, INCHES)</th>
<th>SHIPPING WEIGHT (LBS.)</th>
<th>OPERATING WEIGHT (LBS.)</th>
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**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 include 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.

**'MSB' Series Dimensions**

- Chemical tanks (shown in broken lines) are provided by others.