

# Mixed Bed Deionization Systems

Rubber Lined Steel Tanks: 22 to 190 GPM

**MBDI  
SERIES**

The Pure Aqua MBDI series mixed bed deionizers are engineered for large-sized deionization (DI) applications, these dependable units feature precision electronics and performance components. They serve water treatment applications where only trace amounts of dissolved solids are allowed. The cation and anion exchange processes take place in a single vessel where extremely high-water purity is achievable. On-site chemical regeneration of the resin also occurs within the vessels after an automatic separation step.

## Standard Features

- Automatic or semi-automatic operation
- Automatic regeneration when water quality falls
- Constant monitoring of water quality
- Solid-state reliability PLC control for trouble-free service
- No untreated bypass water
- Alternate regeneration water source piping
- Automatic shut down in the event of power failure
- Two-stage air mix
- Steel tanks with rubber lining
- Simultaneous regeneration and chemical displacement
- Programmable purge prior to regeneration
- Electrical: 120VAC, 1-Phase, 60Hz, 10 Amp
- High capacity, cation and anion exchange resins

## Available Options

- Regeneration chemical tanks (hydrochloric acid & sodium hydroxide)
- Air compressor
- Sound or light alarms for end-of-cycle notifications
- Brine kill for high purity systems
- 220V/1Ph/50Hz power supply



Schedule 80 PVC Internals



Sight Glass



Rubber Lined Tanks



Air Regulator



MB24-PVN/M9065

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Ion exchange can be defined as a reversible exchange of ions between a solid (resin) and a liquid containing dissolved ions. Mineral salts are comprised of cations and anions. Since deionization requires the removal of all ions, both the negatively charged anions and positively charged cations, minerals capable of attracting both are required. These materials are known as anion and cation exchange resins.

Pure Aqua deionizers are fixed bed systems in which ion exchange resins are contained in pressure vessels. The water is then forced through the resin. After a service run, the resin becomes exhausted and unable to remove additional ions so it must be regenerated with strong acid and base solutions to restore its ion exchange capacity.

## Applications

Pure Aqua deionizers are often used in applications requiring very high water quality, usually as polishers after reverse osmosis. Many industries use DI systems:

- Paint
- Chemicals
- Electronics
- Textiles
- Plating
- Electro deposition
- Cosmetics
- Metalworking lubricants
- Glass/mirror
- Boiler feed
- Humidification control
- Vehicle washes
- Film processing
- Ice plants
- Horticulture/greenhouse
- Food/beverage processing
- Printing
- Testing and materials
- Research and development
- Glassware rinse
- Hospitals/medical facilities



PLC Control Panel

Model #	Nominal Exchange Capacity (Grains)	Service Flow Rate (GPM)		Pipe Size	Mineral Tank Size	Resin Qty. (ft <sup>3</sup> )		Shipping Weight (lbs)
		Avg.	Peak			Cation	Anion	
MB20-PVN/M9060	82,000	22	33	2"	20"x108"	3.3	4	1,300
MB24-PVN/M9065	112,000	31	47	2"	24"x108"	4.5	5.5	1,700
MB30-PVN/M9070	170,000	50	75	2"	30"x108"	7	8.5	2,300
MB36-PVN/M9075	250,000	70	105	2"	36"x108"	10	12.25	3,300
MB42-PVN/M9080	350,000	100	145	3"	42"x108"	14	17.25	4,400
MB48-PVN/M9085	450,000	125	190	3"	48"x108"	18	22.25	5,800

Note: system nominal capacity is based on a raw water having no more than 100 ppm of total dissolved solids (as CaCO<sub>3</sub>) 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. We always recommend to have an RO system as a pretreatment before the MBDI.

Shipping weights are estimate only. Weights include resin and support gravel, which are added to the tanks after installation.

Pure Aqua also supplies: Custom Engineered Solutions, Multimedia Pretreatment, Activated Carbon Pretreatment, Water Conditioning, Chemical Dosing Systems, Ultraviolet (UV) Sterilizers and Ozonation Systems.



**PURE AQUA, INC.**  
Water Treatment and Reverse Osmosis Systems  
sales@pureaqua.com +1 (714)432-9996  
www.pureaqua.com +1 (844)309-7501





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