



**SPECTRA**  
WATERMACHINES™

# Z-Brane

*Electronic Water Treatment System*



# Z-Brane™

## Electronic Water Treatment System

Spectra Watermakers Inc. introduces a final solution to the problem of Watermachines storage with the revolutionary **Z-Brane™**. This technology is designed to change the way Watermachines are used and maintained forever by eliminating the need for chemicals to clean and store membranes.

Using the proven Z-Guard™ technology, Spectra now is applying it directly to the watermachine membrane to prevent scaling and biological fouling, the principle cause of membrane failure in reverse osmosis systems. Fouling has been labeled as unavoidable by many sources. The origin of fouling varies and can be mineral, biological or a combination of both.

Bio-film is the slick coating or slime found on wetted surfaces produced by many types of microbes. A thin layer of bio-film usually coats the interior of piping, filters and membranes when exposed to water. This bio-film provides both habitat and food supply for a range of bacteria and scale forming compounds. Bio-film is the cause of odors and discoloration in pre-filters and storage tanks. The Z-Brane™ will eliminate conditions that foster bio-fouling and scaling.

### How Z-Brane™ Works

As water enters the membrane it is exposed to a powerful electrostatic field of the electrode charging all water molecules in a positive orientation. This positive charge prevents particulates from bonding to one another, preventing the formation of sludge, scale and biological fouling. The wetted charged surfaces form a strong boundary layer preventing particles from bonding. Bacteria are rendered inactive and unable to absorb nutrition to replicate into colonies. With the Z-Brane™ you can prevent watermachine membrane fouling and scaling now and forever.

### Convenient

No more hoses, buckets or messy chemicals. The inconvenience of having to apply storage chemicals to a Watermachine during lay-up periods is gone forever. Spectra's new environmentally sound technology will set you free to enjoy cruising and the better things in life rather than doing time in the bilge worrying about short or long term membrane storage.

### Do Not Use Chemicals

Any use of cleaning and storage chemicals will substantially shorten the usable life of reverse osmosis membranes. Even when your watermachine is in constant use or idle for periods of time, the Z-Brane™ will not allow bio-growth or scaling to attack your system as it maintains the overall performance of your watermachine and dramatically increases the life of the membrane.

### 100% protection

Spectra's "Keep Alive" backup system will protect the watermachine even if you have a primary power failure. The Z-Brane™ power supply circuitry will automatically switch to a secondary power source in the event of a primary failure.

The ZB-1 is designed for units with only one membrane

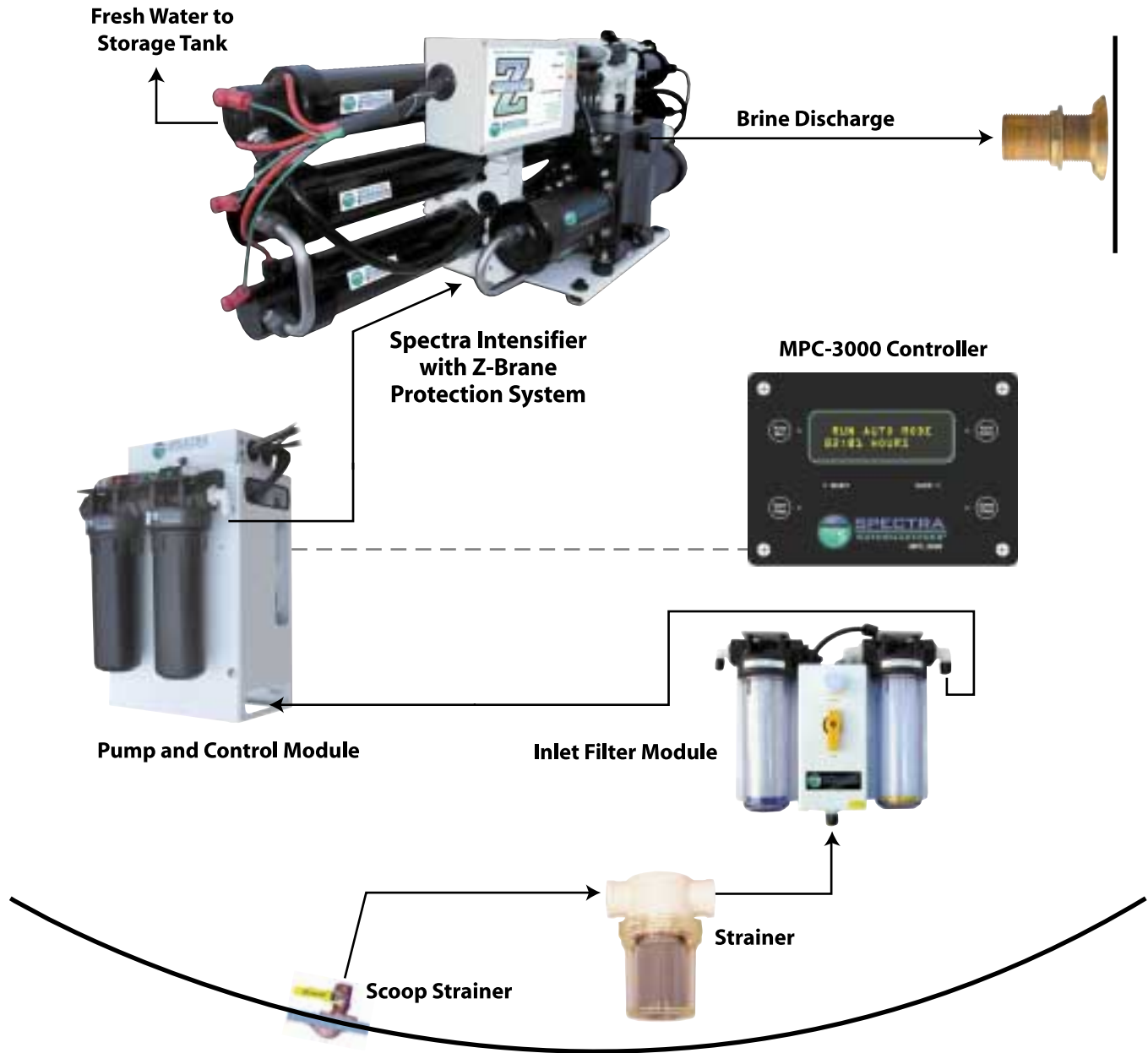
The ZB-2 is designed for units with two membranes

The ZB-3 is designed for units with three membranes

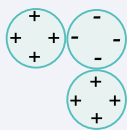
U.S. Patent Pending

**For more information ask your distributor or call 415 526-2780**

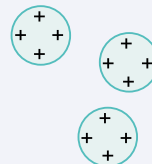
# System Layout



## How Z-Brane Technology Works



Under normal circumstances dielectric particles attract each other. This process allows small micro organisms to grow.



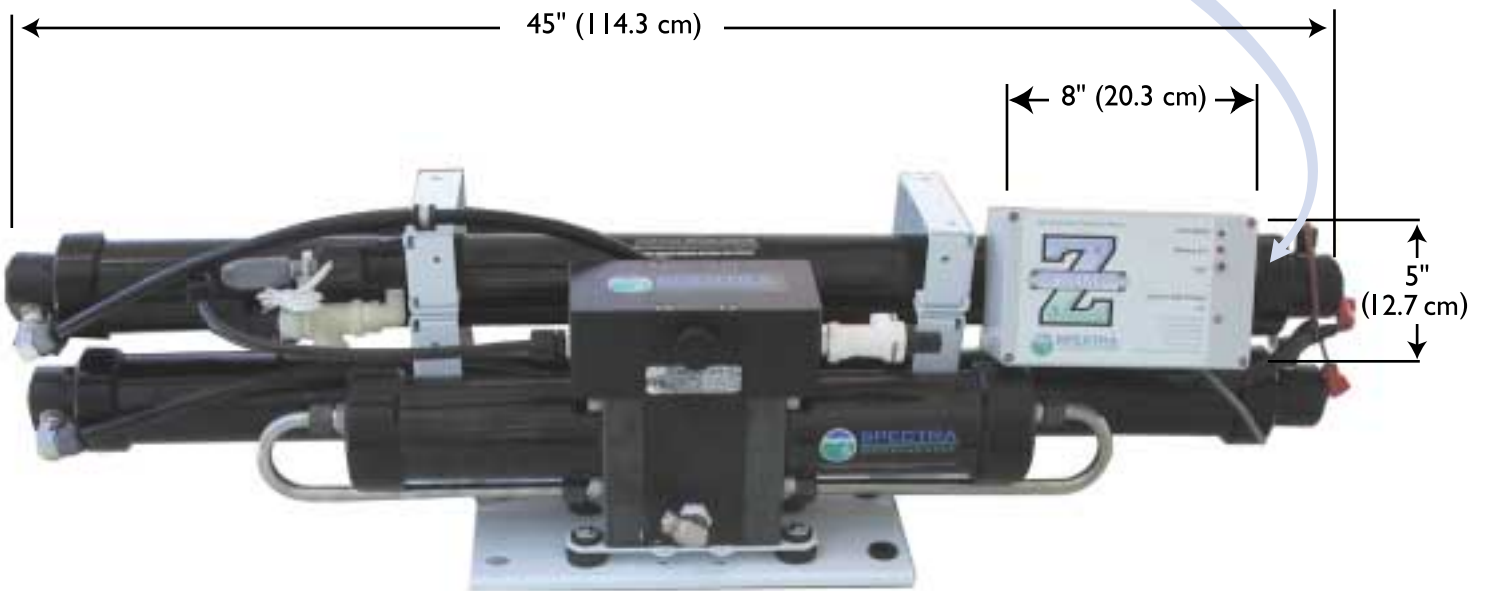
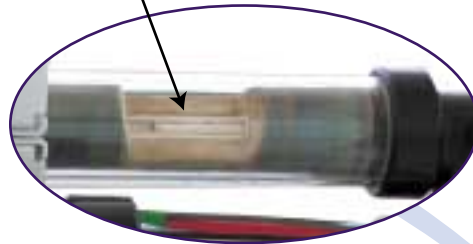
**Z-Brane** technology repels dielectric particles by lowering the Zeta-Potential reversing ion charges. Micro organisms cannot build-up because they don't attract.

As water enters into the membrane pressure vessel chamber, particles exposed to the powerful electrostatic field of the Z-Rod electrode experience an elevation in surface charge. This positive charge prevents the particles from approaching close enough to bond to each other or nearby surfaces. This prevents scale, sludge and biological fouling. Wetted surfaces also form a strong boundary layer which prevents particles from attaching. Bacteria are unable to attach, absorb nutrition, or replicate into colonies.

**Got an unusual application? Call a Spectra Tech at 415 526-2780**

# Z-Brane™ Specifications

Detail: Z-Brane Installed in Spectra Membrane



Depth of Control Unit = 3" (7.6 cm)



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