



Z-ION Installation and Retrofit Instructions

Ventura, Ventura MPC, and Cape Horn Xtreme Versions



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Rev 6/16

Thank you for choosing Spectra's Z-Ion system! This revolutionary adaptation of an ancient technology effectively and safely protects the membrane and filters on your Spectra watermaker.

The Z-Ion system introduces a stream of metallic ions that kill the organisms in your watermaker and create an environment that prohibits them from growing and going anaerobic. The result is that your system will be kept ready to operate without any additional flushing, external power sources, pickling chemicals, or complex procedures.

When properly installed and maintained it will protect your watermaker for 30 days.

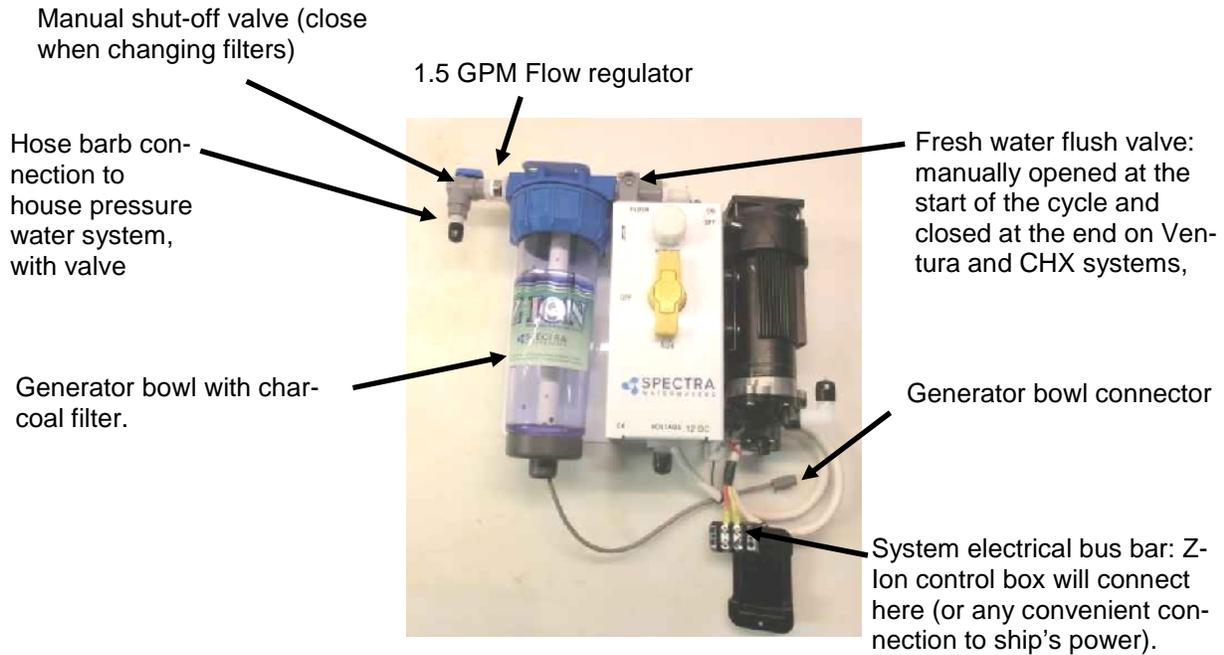
Please check the contents of this kit to ensure it is complete. Report any missing items to Customer Service immediately. Any shortages must be reported within 30 days of receiving the equipment.

Included in this kit:

- Z-Ion Generator and Control Module
- Carbon Block Filter
- Installation Kit

Components for Manual Systems (Ventura and Cape Horn Xtreme)

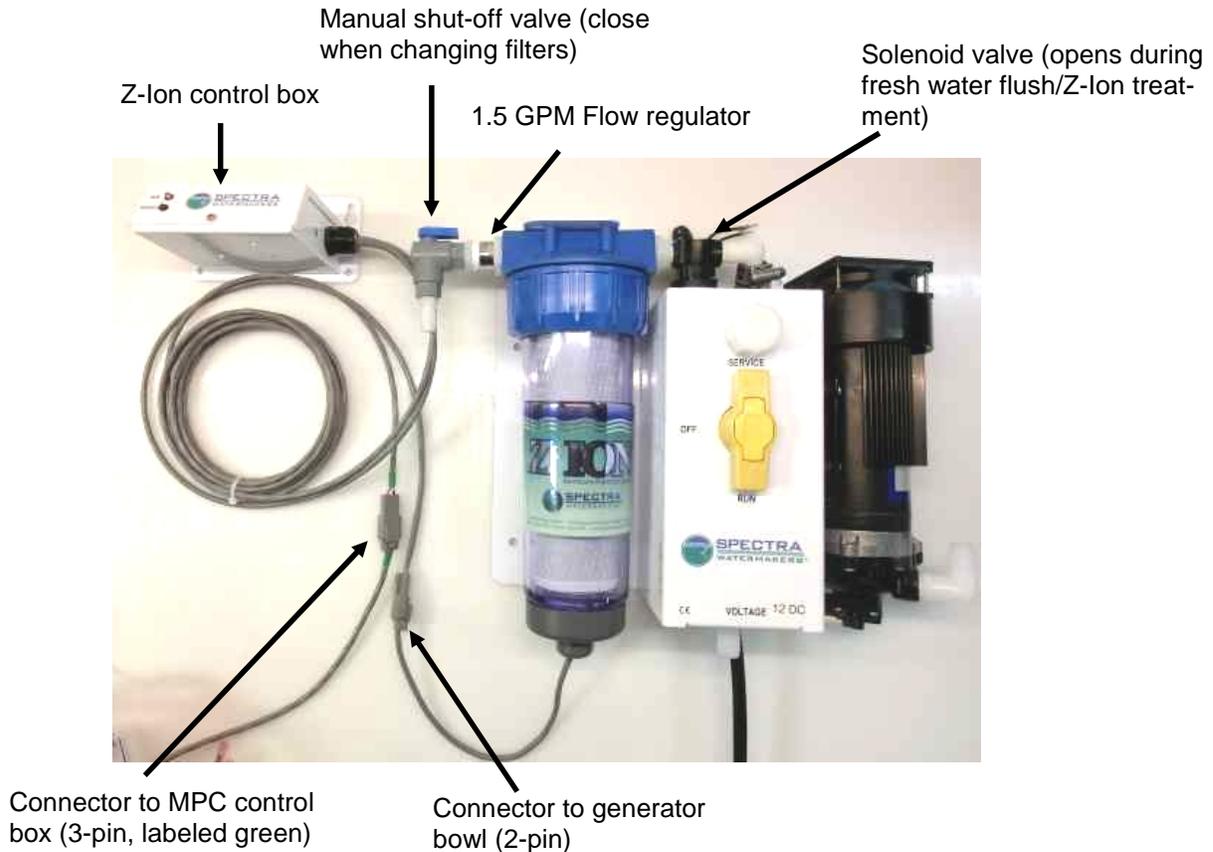
Ventura Feed Pump Module (Feed Pump Module A on Cape Horn Xtreme):



Control Box:



Components for Ventura MPC Systems



Note: If your system has an MPC circuit board with chip/software version A37 or older, it must be upgraded to version A39 to take full advantage of the Z-Ion's capabilities. A Z-Ion treatment protects your system for up to 30 days at a time. MPC versions prior to A39 allow the Flush Interval Timer to be set for a maximum of 5 days, while the A39 is programmable up to 30 days. The Z-Ion will work fine in daily operation with any version of the MPC, but only the A39 boards allow the automatic 30 day flush regimen. Contact your Spectra dealer about the A39 upgrade.

Plumbing Installation (All Systems)

Installation should always be carried out by a qualified technician to avoid problems and ensure warranty coverage.

Turn off the domestic fresh water pump and bleed any remaining pressure in the pipes.

Locate feed pump module

Remove the bowl from the fresh water flush module, and replace with the Z-Ion generator bowl.

If the carbon filter element is new, it may be reused in the Z-Ion bowl.



The retrofit kit will include an additional shut-off valve, for filter changes, as well as a flow regulator. Replace the hose barb with this assembly. Wrap hose barb fitting with 8 turns of Teflon tape to seal.



Electrical: Ventura and Cape Horn Xtreme

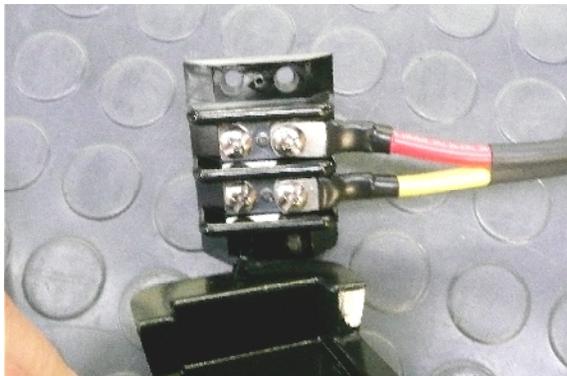
Mount the control box adjacent to the feed pump module.

Turn the main DC breaker off or remove the main power fuse to the watermaker.

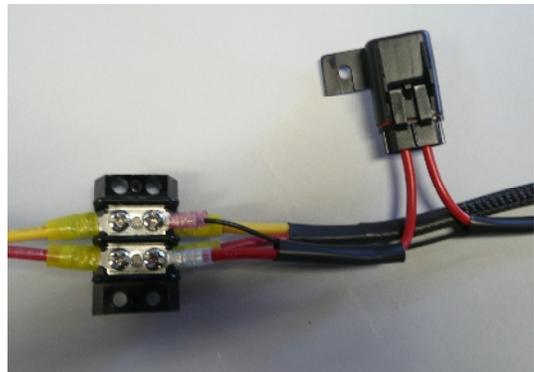
Locate the DC Bus Bar for the watermaker (or any other DC power source), as shown below.

Connect the DC power leads from the Z-Ion Control Box to the Incoming DC Bus Bar.

- Pay attention to polarity!
- Connect Red (fuse) to DC +
- Yellow (or black) to DC -
- Replace protective cover



Z-Ion Fuse holder: Install in a dry location with easy access.



Electrical: MPC Systems

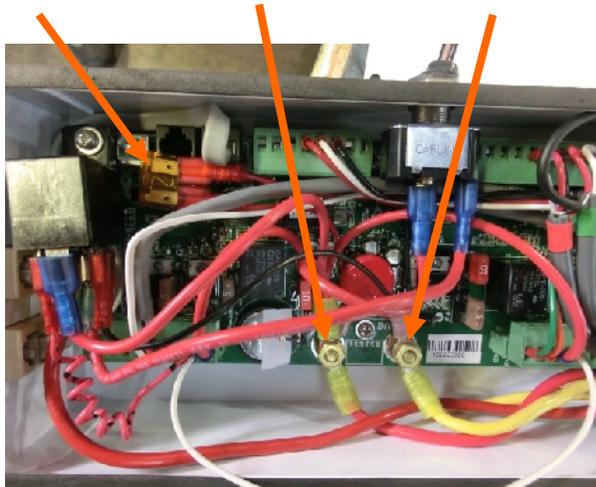
Mk II-Z Systems: Starting in early 2015, all MPC systems came “Z-Ion ready,” as noted by the Z suffix in the product name. Mk II-Z systems come pre-wired for the Z-Ion, with a 3-wire cable connected to the MPC board, and a 3-pin connector marked with green heat shrink tubing. The cable provides both power and the trigger signal, so there are no additional electrical connections. Simply connect the green connector from the Z-Ion to the pigtail, and all the electrical connections are made.



Mk II Systems: Older systems do not have the pigtail pre-wired to the MPC board, so these connections must be made to complete the electrical connections. Once made, this cable will provide both power and the trigger signal to the Z-Ion, so there are no additional electrical connections.

Disconnect the power to the system. Route the Z-Ion cable through the black grommet on the MPC box: You may need to remove the Z-Ion fuse to do this. There are three wires that need to be connected to the MPC circuit board: positive (red), negative (black), and the “trigger” wire (white). The positive wire has an in-line fuse, to protect the Z-Ion. Both the positive and negative wires have ring terminals for installation on the BAT+ and BAT- terminals. The white trigger wire will need to be combined with the wire for the fresh water flush solenoid, crimped into a blue ferrule (included) and screwed into the FWF terminal on the lower left hand green plug on the MPC board.

Fuse Red wire to BAT+ Black wire to BAT-



White wire, combined with red wire from fresh water flush solenoid, crimped into blue ferrule, and attached to FWF terminal



Z-Ion Manual Operation: Ventura and Cape Horn Xtreme

The Z-Ion should be energized at all times, but will only consume power when operating. Upon initial power-up the LED will flash red/green and then will turn solid green.

Follow the instructions for Normal Operation and Fresh Water Flush in your owner's manual. For treatment with the Z-Ion, the process is the same, only the Z-Ion will release silver and copper ions into the flush water when you turn on the generator with the on/off switch. Turn on the ion generator at the same time that you open the flush valve.

The operation cycle begins and the LED will flash green/amber. The cycle will continue until you turn off the ion generator or the adjustable timer times out (factory set for 15 minutes).

Turn off the ion generator at same time that you close the flush valve. If you forget to turn off the ion generator, the Z-Ion will time out after 15 minutes, so no harm will be done to the unit.

If the voltage is out of range, below 10V or above 56V, the LED will flash red every two seconds and the unit will shut down.

Each fresh water flush with the Z-Ion will protect your watermaker for up to 30 days, after which the process must be repeated.

After 720 cycles the service light on the front of the control box will light up, indicating that the probes on your Z-Ion may be wearing down, and should be tested. The service light is just a reminder, and the Z-Ion will go on functioning while it is lit. For testing procedures, see the next page.

To reset the service counter, touch two magnets, at the same time, to the two red reed switches on the Z-Ion circuit board, labeled Switch 1 and Switch 2.

Z-Ion Operation: Ventura MPC

Operation is automatic. Whenever the MPC system carries out a fresh water flush, the Z-Ion will be activated. See above for operational details.

Testing the system

No adjustment is necessary as the unit has been set up at the factory for your watermaker, though it is important the fresh water flush cycle is operating correctly.

Once the installation is complete and the unit is powered up, run the system to fill it with seawater and carry out a fresh water flush per the instructions. The LED on the Z-ION controller should flash as the unit cycles. Close to the end of the flush cycle, take a sample of the brine discharge. If the brine discharge thru-hull isn't accessible you will need take a sample from the brine outlet on the Clark Pump, or use the brine discharge service hose. Once you have obtained a sample, check it with a salinity meter to make sure the salinity is below 1000 PPM.

If the system is not keeping your pre-filters free from bacteria growth (usually black) please contact your distributor for assistance.

Z-ion Specifications

The Z-ION controller has been specifically designed to batch process (produce) metallic ions for system disinfection. This process has been around for many years, used in pool and spa treatment systems. The Spectra Z-ION is designed specifically to work with our watermakers as there were no other products available in this size range.

Features

- 10-48 VDC inlet voltage
- 10-38V output @1.5A Current controlled
- Timed auto shutoff (15 minutes)
- Current output is set at the factory

Operation

The unit can have power on at all times. Upon power up the LED will flash red/green and then goes green. Upon the trigger being actuated by going high the operation cycle begins. The unit will produce the set point current by adjusting the voltage applied on the electrodes. The LED will flash green/ amber as the polarity cycles. The cycle will continue until either the trigger voltage is removed or the adjustable timer, times out.

<u>Led light</u>	<u>Operational Status</u>
Solid Green	Standby
Flashing Red / Green	Starting up
Flashing Green / Amber	Running
Fast flashing red	Replace Z-ION rod assembly
Flashing Red every 2 seconds	Voltage is out of range, below 10V or above 56V, the LED will flash red every two seconds and the unit will shut down.