UV PURE Pure, safe water. Always.

ULTRAVIOLET DISINFECTION EXTENDS THE LIFE OF WATER SOFTENER BEDS.

Situation
The basis of almost all water softening systems is ion exchange equipment. Inside this equipment, a bed of organic material is used as the media for the softening process. Although the organic, bead-like resin is well suited for this process, it is an organic material much like carbon filters, and is therefore a breeding ground for bacteria and other microorganisms. This causes a problem because if bacteria and microorganisms are allowed to grow and multiply in such a setting, the softener media will lose its capacity to perform the ion exchange, as well as deliver the desired flow to the user.

Current Solutions
In almost every case, the answer to this problem has been chlorine. Chlorine has the ability to disinfect the softener bed and has been the only viable solution to disinfecting softener beds. However, there are drawbacks to using chlorination as the disinfection method. First, the process of treating with chlorine is time consuming for the operator. Second, chlorination has been proven to breakdown the softening media, therefore limiting the capacity of the softening system to perform the exchange. Third, chlorine is a carcinogen and conventional wisdom would argue that reduction of chlorine in our drinking water is the way to go.

The Emerging Solution: UV Disinfection
With the widespread acceptance of the Crossfire™ technology used in Hallett™ UV disinfection systems, the use of ultraviolet disinfection is now the emerging solution for disinfection of water softeners' beds. In the past UV had not been an option, because conventional ultraviolet disinfection technology is unable to handle anything but "treated" water in order for the system to do its job properly. Standard specifications on conventional systems require very tight operating parameters. Due to the pre-treatment variables found in both surface waters and ground waters, such as iron, manganese and hardness, it is virtually impossible to find a situation where the water prior to "treatment" is acceptable for disinfection using conventional UV systems. In fact, in almost all applications, conventional systems require the use of a softening system BEFORE the UV system in order to operate properly.

Now, UV Pure's patented, automatic "self-cleaning" technology overcomes this operational challenge. Hallett™ systems can operate within a very broad water condition parameters. The chart below is a comparison of the operating parameters for a conventional system versus Hallett systems.

Operating Parameters — Conventional vs Hallet Systems

	Conventional Systems	Hallett Systems
Maximum Hardness	7 grain	50 grains
Maximum Iron Content	.3 ppm	3 ppm
Maximum Manganese Content	.05 ppm	.5 ppm

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