

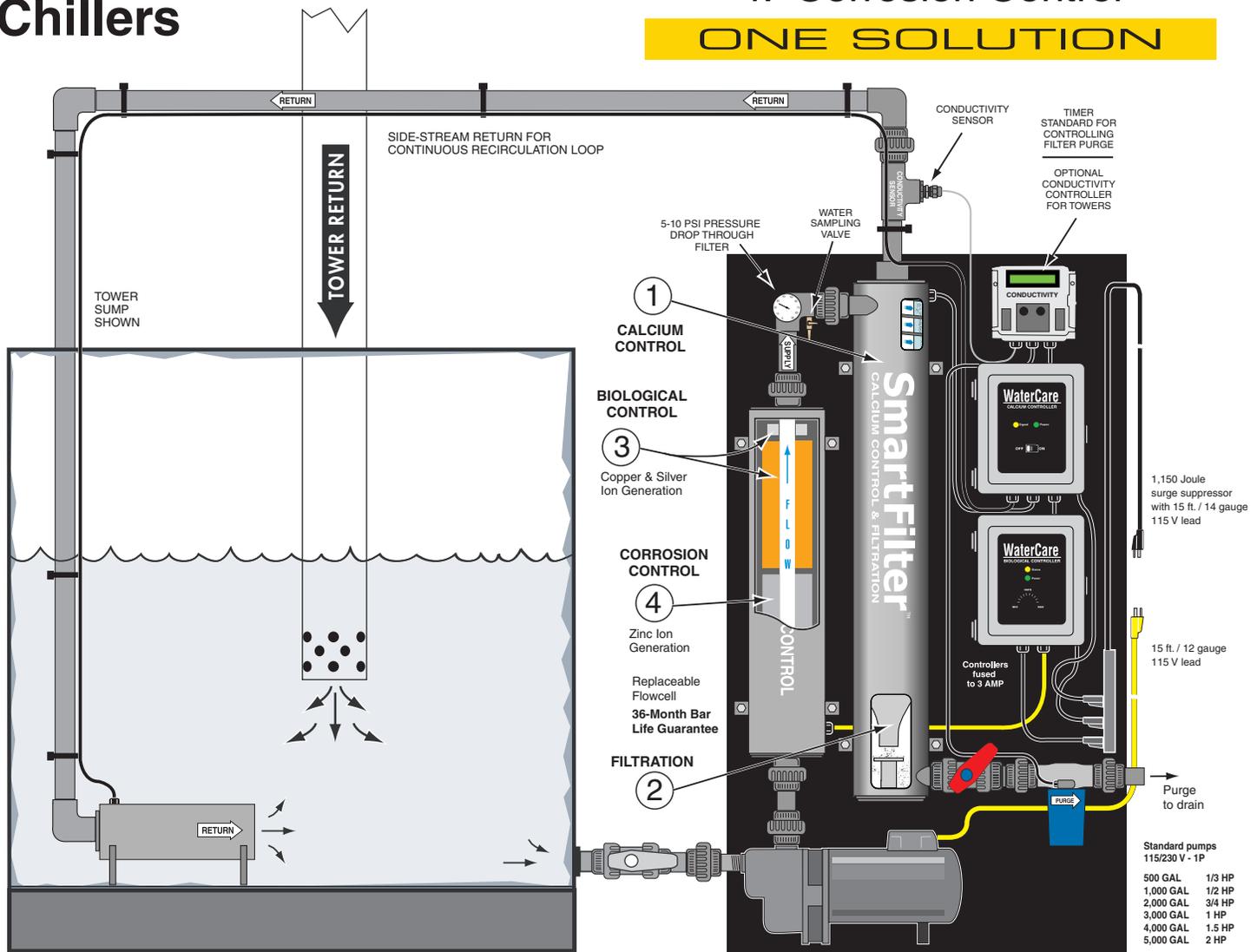
# NEXTEQ<sup>V</sup> WaterCare™ Systems

## Process Cooling Water Cooling Towers, Evaporative Condensators & Chillers

### FOUR PROBLEMS

1. Calcium Control
2. Filtration
3. Biological Control
4. Corrosion Control

### ONE SOLUTION



**1. Calcium Control** - Scale forming calcium carbonate ions in water have a polar charge. Each calcium ion is held in solution within a sphere of hydration made up of between 100 and 200 water molecules.

Inside the flowcell an electromagnetic field is produced several thousand times per second. This process accelerates the ions back and forth rapidly, removing the sphere of hydration, forcing the calcium carbonate ions to precipitate as a non-scale forming mineral crystal (aragonite). The integral centrifugal filter removes these crystals from the continuously recirculating water.

Testing has also shown a 10% to 13% reduction in the surface tension of treated water that is attributed to the declustering of the natural groups of water molecules.

**2. Integral Centrifugal Filtration** - The flow entering the flowcell sets up centrifugal forces that drive suspended solids in the recirculating water to the outer wall of the filter housing. Continuous flow pushes the debris to the bottom of the filter where a cone accelerates the flow increasing gravitational forces to improve filtration.

The pressure drop at the bottom of a cone expels the suspended solids. Debris collects in a storage area in the base of the filter housing to be purged to drain periodically using an actuated ball valve controlled by either a Timer or Conductivity Controller.

**3. Biological Control** - Positively charged copper and silver ions are attracted to negatively charged microorganisms. Copper ions disrupt the microorganism's respiration process (ability to metabolize nutrients & oxygen). With the cell wall vulnerable, silver ions penetrate the organism's DNA/RNA to inhibit the organism's ability to reproduce. Ask for the **Mechanisms of Action of Copper & Silver Ions** page for more detailed information.

**4. Corrosion Control** - The electrochemical potential created between protected and unprotected (corroding) surfaces attracts the dissolved zinc ions to protect unprotected areas.

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