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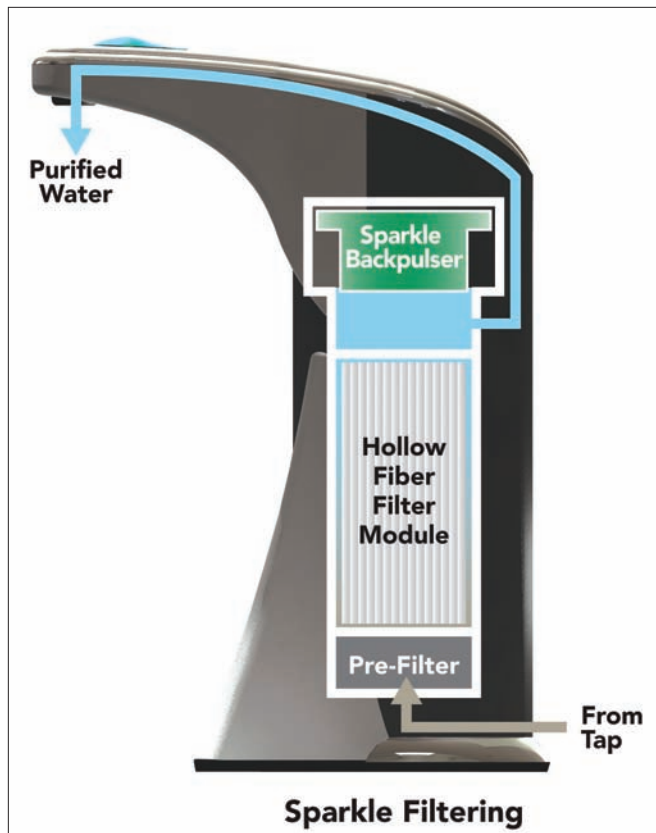
Sparklefilter[®] by SpinTek[™]

Auto "BackPulse"
Removes Bacteria
Continuously



Automatic Backpulse - Safer Water Quality

By William A. Greene, President, SpinTek Filtration Inc.



One of the most effective ways to clean a membrane drinking water system is to backflush the filter by sending the clean filtrate produced by the filter back through the membrane layer at a higher pressure than the feed pressure.

Conventional filters use a resilient bladder configuration whose collapsible bladder can never produce more pressure than the feed pressure. This limiting factor prevents the constant pressure necessary for continual cleaning of bio-solids.

Sparklefilter® is a high-flux yet compact proprietary drinking water system with an automatic backpulsing cup that sends filtered water through the hollow fibers in reverse, flushing away all solids and biological contaminants. Its inno-

novative anti-fouling technology uses "outside-in" hollow fiber membranes engineered for durability and burst strength to allow rigorous backflushing.

HOW IT WORKS

In the service mode, feed water enters the Sparkle system and passes through the prefilter and the hollow fibers; fills the filtrate chamber and exits as clean, fresh drinking water. In the backflush mode, the feed water pushes the "backpulsing cup" and with the drain open, cleans the membrane module by reversing the filtrate flow.

Sparkle's anti-fouling technology creates reverse flow pressure that remains constant during the cleaning cycle because of the unique design of dual non-resilient collapsible chambers (DNC2).

This ability to produce amplified pressure provides a distinct advantage over conventional resilient bladder filters by allowing consistent backflushing every time. The integral prefilter reduces fouling, simplifying the system and eliminating additional plumbing. And, for added water storage, a pressurized bladder can be added.

While Sparkle will remove all bacteria and suspended solids that are very small in size, the performance of the filter is enhanced by an integral pre-filter for solids removal. In addition, other filters or absorbers can be added for specific contaminant removal such as arsenic, chlorine, mercury, etc., depending upon location and feed water make-up.

The system is versatile and price

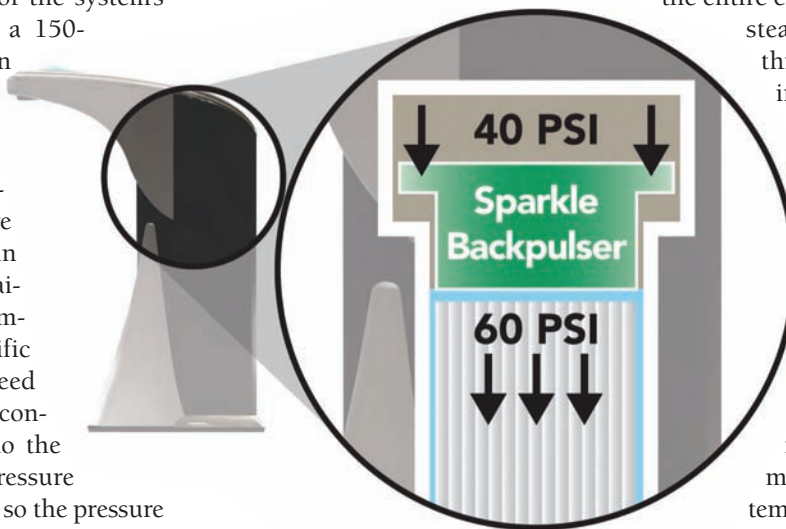
competitive and can be used effectively anywhere in the world: residential drinking water, whole-house filtration, industrial applications, or as a stand-alone in rural areas and developing countries with no external power source.

PRINCIPLE OF THE SPARKLE DNC2

The backflush side of the system's pressure amplifier has a 150-percent-larger area than the filtrate side, so when a water pressure of 40 psig is applied to the backflush side it creates a backflush pressure of 60 psig. The ratio in the chambers can be tailored to specific membranes and specific applications. The feed water pressure creates a continuous force applied to the backflush side of the pressure 'cup' and stays constant, so the pressure of water driven backward through the membrane stays constant. This continues until the entire volume of backflush water has been completely used and the feed chamber is completely collapsed or the cycle is stopped.

Sparkle's pressure amplifier design eliminates the problem of feed water pressure variances—the membrane is

continually provided with enough backflush pressure. The backflush pressure is always at a fixed ratio greater than the feed water based upon the sizing of the filtrate and backflush areas of the cup. While the backpulse design provides specific amounts of water each time, additional backflush water is available on demand.




Pressure Amplifier

CONCLUSION

When reverse backflush pressure is constant and greater than feed pressure, membrane filters clean more efficiently and last longer. With backflush pressure always lower than feed pres-

sure, conventional resilient bladder configurations lack the pressure needed for continuous cleaning of bio-solids. Sparkle's proprietary pressure amplifier design solves this problem with a larger surface area backflush chamber than the filtrate chamber, plus a backpulser "cup" providing consistent flow of backflush water during the entire cleaning cycle. The result is steady backflush pressure throughout the entire cleaning cycle, providing constant and efficient contaminant removal.

Sparklefilter is manufactured by SpinTek Filtration Inc., specializing in engineered solutions for industrial, commercial and oily wastewater applications. The company offers ultra-filtration (UF) tubular membrane modules and systems and compact rotary membrane systems (ST-II) using stainless steel membranes for harsh nuclear or wastewater applications. The company designs and manufactures solvent extraction (SX) media filters and CoMatrix® coalescers for copper, nickel and zinc mining operations, as well as oil field and refinery applications worldwide. 

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Sparklefilter® Ultrafiltration Comes Home.

*Drinking
water pure*



*Custom
hollow fiber
membranes*



Unique Sparklefilter® Benefits

- Efficient hollow fiber membrane module
- Automatic or manual cleaning
- Constant backflush pressure
- No external power required
- Scalable
- Affordable

Patent pending

SpinTek's revolutionary Sparklefilter® Water Purifier combines innovative Hollow Fiber (HF) Membrane technology with a unique self-cleaning backflush system. Finally there's a home unit that doesn't need expensive and quickly contaminated filter elements.

HIGH-PRESSURE CLEANING The Sparklefilter® Pressure Amplifier design creates a backflush that is always at a higher pressure, guaranteeing effective cleaning no matter what the feed pressure.

VERSATILE DESIGN Sparklefilter® requires no external power, and is small enough to fit on a countertop. Prefilters for special applications can be easily added, and the technology can be scaled to whole house or large industrial systems.

STEP UP TO Sparklefilter® Sparklefilter® is manufactured by SpinTek Filtration Inc., specializing in engineered solutions for industrial, commercial and residential filtration applications. Visit www.spintek.com, or call 714-236-9190 today.