

**BREAKTHROUGH  
TECHNOLOGY**

# EnviroGuard™

## 100% CLOSED-LOOP STENCIL CLEANERS

EnviroGuard™ is the first and only aqueous stencil cleaner able to clean *all* types of solder paste with a 100% closed-loop process – wash and rinse! Smart Sonic matched the unique properties of its 440-R® SMT Detergent to a specifically designed filtration/UV system that facilitates 100% closed-looping and zero VOCs of both the wash and rinse solutions. Normal operation requires the filters to be changed only twice annually and the liquid hazardous waste never exits the system!

Like a wastewater evaporator the EnviroGuard filtration system is “zero discharge” but at a fraction of the cost, no venting requirements, much easier maintenance and all water is reused rather than released to atmosphere as vapor. Smart Sonic are the only stencil cleaners verified by the U.S. Environmental Protection Agency (EPA) for specific parameters of environmental safety, user safety and cleaning efficiency. And now, they are 100% closed-loop!

**SMT**ART SONIC®

**Call Today!**

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EnviroGuard™ is available on all Smart Sonic models

# EnviroGuard and EnviroGuard-Plus

## 100% Closed-loop Filtration (ECF) Systems

### Description

Because of the unique properties of Smart Sonic's 440-R<sup>®</sup> SMT Detergent, the ECF Systems can be designed to meet the specific purity, flow rate, and throughput requirements of the Smart Sonic Ultrasonic Stencil Cleaning Process. **ECF Systems are designed for use only when using 440-R SMT Detergent as the chemical additive for cleaning non water washable solder paste or for systems using DI water without chemical additives for cleaning water washable solder paste and water washable flux residues. The ECF System may not perform to specification if other chemical additives are utilized.** To meet purity requirements, system designs combine various advanced water treatment technologies with state-of-the-art materials of construction. System designs can vary depending on specific requirements. Generally, the Smart Sonic ECF System will consist of a unique two-stage mixed bed ion exchange with its required pretreatment of activated carbon, micron filtration and gravity filtration. An ultraviolet (UV) light system is utilized to prevent long term microbe contamination. The ECF resin filter operating life can be increased using deionized (DI) or reverse osmosis (RO) water to initially charge the system and as make-up water to compensate for evaporation and "drag-out".

**Particulate Pretreatment Stage** - Collects large particulates such as solder paste to extend the useful life of the micron filter.

**Adsorption Pretreatment Stage** - Removes of a broad spectrum of organic contamination. This is a separate filtration tank and is designed to be regenerated when ever the primary DI filter requires a maintenance exchange.

**Primary Treatment Stage** - A proprietary DI media "neutralizes" the wastewater by removing free ion molecules created by the solder paste and 440-R SMT Detergent. A resistivity monitor with an alarm set point of the desired megohm purity is placed in-line between the primary deionizer and polishing deionizer. This provides a convenient quality control device to indicate exhaustion of the primary deionizer. The ion-exchange resins are regenerated by Smart Sonic using a proprietary process.

**Polishing / Security Treatment Stage** - An identical DI media tank is placed in-line after the resistivity monitor. This DI tank provides final "polishing" of the water and serves as a back-up to the primary DI filter assuring the operator of high quality DI rinse water at all times. When the resistivity monitor alarm of the Primary DI filter is sounded, the primary DI filter is taken offline and the polishing DI filter is moved to the primary position. This allows for a fresh DI filter to always serve as a polishing treatment and provide the security of high quality DI rinse water. A resistivity cell light is placed in-line after the polishing DI filter to provide a convenient quality control device to indicate a minimum final water quality. The polished water then enters a UV light system to prevent long term microbe growth.

**Filter Regeneration** – The 8" x 24" Adsorption Pretreatment and Primary Treatment filters are returned to Smart Sonic's regeneration facility using the provided preaddressed shipping containers. In house turn around of regenerated filters is typically 48 hours. All tanks are labeled and serialized so customers will receive their own tanks back without concern of outside contamination. Operating life of the filters under normal operating conditions (20 cleaning cycles per day) is typically 3 – 6 months depending on the size and design stencils, rinse cycle time and amount of contamination presented to the system. Removal of excess solder paste from stencils will extend the operating filter life. Precleaning of stencils using chemical wipes, alcohol, etc. is NOT recommended.

The standard EnviroGuard system is designed to be used with the Model 1500/1550 Semi-automated Stencil Cleaners. The EnviroGuard-Plus system incorporates a separate holding vessel for treated water and is designed for use with fully automated stencil cleaners.

Specifications*	EnviroGuard (standard model)	EnviroGuard-Plus
Overall Dimensions	24" x 43" x 37"H	24" x 60" x 37"H
Resin Tanks	8" x 24"H with easy disconnects	same
Utilities Required	115 Volt, 2 Amps	115 Volt, 10 Amps
Water Inlet	½" NPT	same
Cabinet construction	Stainless Steel	same

\* Specifications are subject to change without notice.