

Unsurpassed cleaning,  
high-efficiency drying,  
low cost of ownership,  
ease of maintenance,  
and minimum down-  
time all come together  
in the ELECTROVERT  
Aquastorm, a world-class  
printed circuit board  
cleaning system.



# Electrovert<sup>®</sup>

## Aquastorm<sup>®</sup>

### In-line Aqueous Cleaning System

# Electrovert

## Aquastorm

The Aquastorm is a versatile, high-performance cleaning system designed to optimize the PCB cleaning process while minimizing overall cost. Its compact footprint and patented cleaning and drying technologies make the Aquastorm an energy efficient and cost effective cleaning system.

### Versatile, Proven Cleaning Performance

The Aquastorm series includes two models that accommodate virtually any cleaning requirement. The Aquastorm 200, with its dual-tank design, is ideally suited to RMA and no-clean flux applications that require chemistry, as well as removal of water-soluble organic acid flux. The Aquastorm 100 features a space-saving, single tank design and excels with water-soluble organic acid and water-based no-clean fluxes.

### User Interface

The Aquastorm is configured with a Windows®-based operating system that provides familiar pull-down menus and has data-logging and barcode capability. The system is easily networked for downloading of recipes and remote access to operating data.

- Quick and easy viewing of system pressures, water levels, pump and blower operation, temperature, and fill/drain operation
- Process notes function
- Security password protection



### Cleaning Technology

Functional sections of a cleaner are designed to accomplish different tasks in removing contamination. Some sections maximize flooding, while others maximize impact force for cleaning tight spaces. The Aquastorm uses proprietary pump and nozzle technology throughout the system to optimize performance.



The Aquastorm's appropriately sized modules and strategic manifold placement increase throughput while ensuring thorough removal of contaminants. The Aquastorm features perforated rails, curtain containment, and a cabinet designed to manage wash solution within the system for maximum conservation of costly chemistries. The wet chemical isolation module is powered by the recirculating rinse pump to ensure optimal prerinsing and to facilitate closed-loop recycling of the rinse section. Even the exhaust is separated between the wash and rinse modules to minimize chemical migration through the system.

### Drying Performance

Efficient and complete drying is crucial to the cleaning process. An effective system will increase throughput, providing cost savings and superior return on investment. The Aquastorm series offers several drying options, including the high-performing Torrid Zone™ for unmatched flexibility in configuration and performance.

### Lead-Free Process Ready

The importance of cleaning electronic assemblies increases dramatically with lead-free soldering. Higher temperatures are required in lead-free soldering, and wetting is much more difficult. To improve 'wettability', the flux compositions may require higher activation. High-solid flux formulations commonly leave more undesirable residue and require cleaning.



A successful cleaning system must be able to handle the harsh demands of the lead-free process. The Aquastorm's unique technologies, such as the patented Hurricane Jet™ and JIC nozzles, provide unmatched impact force to penetrate under and around components and clean even the most challenging flux residues.

# Aquastorm Features



## Hurricane Jet™

The Hurricane Jet's patented nozzle technology produces a coherent sheet of high-pressure water across the entire width of the conveyor belt. This unmatched high impact force allows water to penetrate under and around fine pitch components.



## S-Jet™ Nozzle Technology

This unique patent-pending nozzle design produces large water droplets for enhanced cleaning performance when operating at a lower rate of pressure. The oscillating action of the S-Jet helps to better clean and flush flux residues in the prewash to reduce foaming in the recirculating wash.



## Simplified Plumbing

Equipped with orbitally welded, stainless steel plumbing to eliminate pressure drops and leaks, all sections can be replaced or upgraded in minutes to maximize uptime and process flexibility. Plumbing sections have quick-disconnect fittings for ease of maintenance.



## Torrid Zone Drying Power

Integrated into the machine cabinet, the Torrid Zone delivers superior drying power. Typical performance includes drying complex assemblies to within 0.1 gram of prewashed dry weight. The module reduces exhaust requirements by 44% and uses 15% less power when compared with conventional drying systems, providing a rapid return on investment.



## Windows® Operating System

All process parameters are configured in the Aquastorm's computer-controlled operator interface. System pressure, water levels, and temperatures are easily accessed. Data logging and barcode capability are features that enhance and streamline the production process.



## Complete Accessibility

Rear panels can be easily removed for maintenance with the added benefit of single door removal to access the wash and rinse tanks. Front doors provide quick access to electrical panels, computer, heaters, floats and thermocouples. The hinged, tempered glass windows provide optimum viewing and access.



## ElectroAir™ Knife

The ElectroAir stainless steel airknife is a standard feature on the Aquastorm. This fully adjustable, corrosion resistant design delivers more efficient air flow while maximizing impact force.

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#### AQUASTORM STANDARD FEATURES

Textured polypropylene, scratch-resistant exterior  
Quick connect plumbing fittings  
Removable front and rear panels  
Windows® OS with monitor and keyboard  
PC closed-loop conveyor speed  
Orbitally welded stainless steel plumbing  
Triple welded tanks  
Standard Vee Jet spray nozzles  
Hurricane Jet technology  
Isolation module for aqueous-based chemistries (200)  
Exclusive ElectroAir knife drying  
30" adjustable incline conveyor (200)  
Password protection  
Auto standby photocell  
Light tower  
CE/UL listing

#### AQUASTORM OPTIONS

Dual Hurricane Jet technology  
S-Jet nozzle technology  
Torrid Zone dryer  
5 micron filter system  
24" process width  
Prewash/final rinse flow meter  
Chemical isolation package  
Radiant panel dryers  
15 HP blower upgrade  
Checkmate hold-down conveyor

#### AQUASTORM SPECIFICATIONS

##### Machine Dimensions (LxWxH)

Aquastorm 100 4910mm (193") x 1518mm (60") x 1302mm (51")

Aquastorm 200 7333mm (287") x 1518mm (60") x 1302mm (51")

Aquastorm 200 Torrid Zone 8045mm (317") x 1518mm (60") x 1302 mm (51")

##### Cleaning Dimensions

508mm (20") x 102mm (4")

610mm (24") x 102mm (4") - optional

##### Exhaust Requirements

Wet Section: One (1) 309mm (12.17") stacks: 34m<sup>3</sup>/min (1200 SCFM) @ 25mm (1") of H<sub>2</sub>O static pressure

With Dual Dryer Option: One (1)309mm (12.17") stacks: 34m<sup>3</sup>/min (1200 SCFM) @ 25mm (1") of H<sub>2</sub>O static pressure

With Torrid Zone Option: One (1) 152.4mm (6") exhaust #1: 14.1 - 19.8m<sup>3</sup>/min (500 - 700 SCFM) @ 25mm (1") of H<sub>2</sub>O static pressure; One (1) 152.4mm (6") exhaust #2: 8.5 - 11.3m<sup>3</sup>/min (300 - 400 SCFM) @ 25mm (1") of H<sub>2</sub>O static pressure

##### Standard Utility Requirements

460 Volt, 60 Hz, 3 Phase, 198 amps maximum  
Alternate voltages available

##### Drain Plumbing Requirements

Main drain line: 1 ½" male pipe thread stainless steel  
Closed-loop drain: 1 ½" male pipe thread stainless steel

#### ABOUT SPEEDLINE TECHNOLOGIES

Speedline Technologies is the global leader in process knowledge and expertise for the PCB assembly and semiconductor industries. Based in Franklin, Massachusetts, U.S.A., the company markets five best-in-class brands – Accel microelectronics cleaning; Camalot dispensing systems; Electrovert wave soldering, reflow soldering, and cleaning equipment; MPM stencil and screen printing systems; and Protect global services, support, and training solutions. For more information, visit us at [www.speedlinetech.com](http://www.speedlinetech.com).

Speedline Technologies maintains an ongoing program of product improvement that may affect design and/or price. We reserve the right to make these changes without prior notice or liability.