

The ideal wave  
soldering system  
for low-to-medium  
volume lead-free  
production.

Innovative subsystem  
technologies

Advanced control  
system

Exceptional system-  
wide accessibility



# Electrovert<sup>®</sup>

**VectraES<sup>™</sup> Wave Soldering System**  
Repeatability, Reliability, Value

# Electrovert

## VectraES

ServoSpray™ Fluxing System

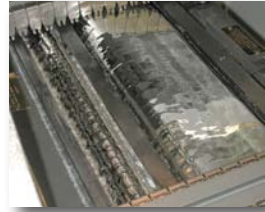
4' of Bottom Convection

UltraFill™ Nozzle with FloLift™ Technology

Solder Pot Height Adjustment

Wet Finger Cleaning System

Manufactured at Speedline's North American facilities, the Electrovert VectraES sets the industry standard for value leadership in wave soldering systems.



### Advanced Process Capability

Like all Electrovert wave soldering systems, the VectraES is designed to handle lead-free and difficult applications. As technology leaders, Electrovert incorporates a number of features to support difficult and challenging process environments. The cast iron solder pot and its components are resistant to the corrosive properties of lead-free solders, and are capable of withstanding temperatures up to 315°C (600°F). All stainless steel components that contact solder feature ElectroCoat™ corrosion-resistant surface conversion, and grade 1 (pure) titanium is available as an option.

- UltraFill with FloLift technology is the ideal nozzle for today's lead-free process, promoting positive hole fill, decreasing the potential for bridging, and reducing dross generation



### Advanced Operator Interface

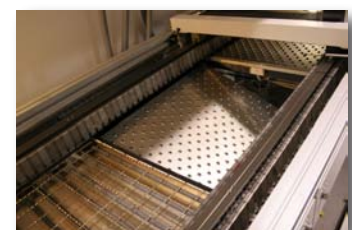
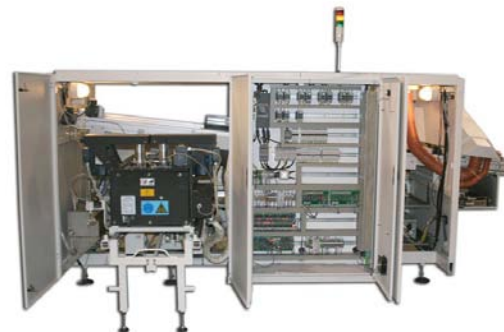
The VectraES features the familiar Windows® operating system with user-friendly, pull-down menus. This system supports networking with other computers, downloading of recipes and remote access to operating data.

- Storage for 5000+ unique recipes
- Process notes function provides the operator with work and process instructions tied to the recipes via a data link to a storage server
- Datalogging traceability feature offers the capability to capture important process parameters, either board-based or time-based
- Security password protection prevents unauthorized changes to process recipes

### System-Wide Accessibility

Exceptional front access is achieved with lift-up hoods, a fold-down pneumatic panel and swing-out corner doors. The rear of the system features multiple hinged doors providing access to electrical panels, fluxer, flux tank and solder pot.

- Drop-down preheaters for easy removal and maintenance
- Automated, roll-out solder pot
- Slide-out fluxer module



# VectraES Features



**ServoSpray**

The standard fluxing system is the ServoSpray™, a servo-controlled, reciprocating spray module featuring air atomizing nozzle technology to ensure spray uniformity and positive hole penetration. A self-cleaning nozzle and pressure tank flux delivery system are also included.



**ServoJet**

**ServoSonic**

The patented ServoJet™ with FluxJet™ and the ServoSonic™ spray fluxing systems are also available as options on the VectraES. Both high-performance fluxing systems ensure complete through-hole penetration, a repeatable process, and reduced flux usage.



**Auto Lead Clearance**

Auto Lead Clearance Adjustment is a standard feature on the VectraES. This recipe-driven solder pot height adjustment feature ensures accuracy and exceptional process repeatability. This automatic control also allows for quick and repeatable changeover when required.

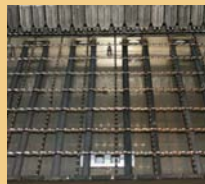


**Unload Conveyor Extension**

A robust finger conveyor with adjustable width from 2" to 18" (50mm to 460mm) supports various finger configurations. Optional automatic width adjust and an unload conveyor extension maximize performance and productivity.



**Low Mass Forced Convection Preheat Module**

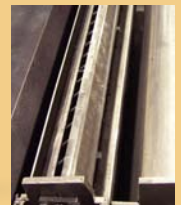


**Radiant Preheat Module**

With up to 6' (1.8m) of preheat capacity, the VectraES is capable of delivering optimal topside temperatures while minimizing product  $\Delta T$ 's. The VectraES is available with both radiant (calrod) and convection (Low Mass Forced Convection) preheat technology. Each one-piece preheat module is designed to be interchangeable via optional quick-disconnect plugs and easy drop-down removal, promoting the ultimate in process flexibility. Radiant preheat provides fast reaction time and works well with alcohol-based fluxes, while the Low Mass Forced Convection preheat module is ideally suited to water-based, VOC-free fluxes. The combination of these two technologies provides exceptional thermal performance and process flexibility.



**UltraFill with FloLift**



**Rotary Chip with FloLift**

The solder module consists of a high-capacity cast iron roll-out solder pot and low-maintenance pump with AC motors. Configured with the UltraFill with FloLift technology, available for air or nitrogen operation, this system is ideal for process improvements in lead-free soldering. When used in conjunction with the optional Rotary Chip with FloLift technology, maximum wetting is achieved, virtually eliminating skips or misses.

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 **Speedline**  
technologies

**Knowledge in Process**

#### VECTRAES SPECIFICATIONS

Process Width	2" to 18" (50 mm to 460 mm)	
Machine Length	122.7" (3117 mm)	
Machine Length with External Fluxer	147.5" (3746 mm)	
Machine Width	61" (1557 mm)	
Machine Height	68" (1727 mm)	
Fluxer	ServoSpray	S
	ServoJet	0
	ServoSonic	0
Preheat	Length	Up to 6' (1.8 m) with external fluxer
	Low Mass Forced Convection (LMFC)	S ( 2 bottom), additional preheaters optional
	I/R Preheat	0
Wave	Combination Mix	0
	UltraFill	S
	Rotary Chip	0
Conveyor	Auto Lead Clearance	S
	Automatic Width	0
Exhaust Requirements	Finger Cleaner	S
	Two (2) 8" (208 mm) stacks; port 1 - 450 cfm; port 2 - 650 cfm	
Air Requirements	60-120 psig (415 to 830 kPa)	
Nitrogen Requirements	0.5" FNPT inlet fitting with 60 to 120 psig (415 to 830 kPa)	
	0 - Optional; S - Standard	



#### Process Knowledge and Support

At Speedline Technologies, we deliver world-class products, performance, and unparalleled service and support programs. With the VectraES comes the proficiency of our Electrovert process experts that allows us to solve real-world applications issues. *Knowledge in Process* for superior performance.

#### 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 equipment; 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).

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