



Speedline
technologies

ACCEL[®]

MICROELECTRONICS CLEANING SYSTEMS

CAMALOT[®]

DISPENSING SYSTEMS

ELECTROVERT[®]

REFLOW SOLDERING, WAVE SOLDERING & CLEANING SYSTEMS

MPM[®]

PRINTING SYSTEMS

www.speedlinetech.com

High Performance Stencil Printer – Accela®



Accela®

Premier printing platform for the perfect combination of high throughput and high quality

- Wipe, align, dispense & inspect – Simultaneously
- Parallel processing increases throughput by 20% to 80% boards per hour
- Provides consistent pulse rate for improved line utilization
- Industry-leading accuracy & repeatability for optimized quality
 - Vision Alignment Repeatability: ± 12.5 microns at 6 sigma ($Cpk \geq 2.0$), as verified by CeTaQ
- Fast quantitative inspection with patented BridgeVision®, StencilVision™ & SpeedVision™
- Advanced traceability and process control
 - Barcode scan provides historical data retention
 - Set-up verification ensures all hardware, materials, and process settings are correct prior to start-up
- Cycle time : less than 5.5 seconds

General Purpose Stencil Printers



Momentum® Series

Advanced printing solution with innovative and outstanding capability

- Vision Alignment Repeatability: ± 12.5 microns ($\pm 0.0005''$) @ 6 sigma ($Cpk \geq 2.0$), as verified by CeTaQ
- State of the art digital camera and optics technology
- Speedline patented Solvent delivery method
- Expanded 2D inspection capabilities, with patented BridgeVision®, StencilVision™ and RapidView™
- CANopen motion control architecture
- Unmatched Tooling Capability :
 - EdgeLoc™ board clamping
 - Quik-Tool™ support tooling
 - Tool-less dedicated work holders
 - Automatic pin placement with video teach
 - Camera verification for pin placement
- Adjustable Stencil Shelf allows both cast and tubular frames that have outside dimension of 22" (558.8 mm) or greater to be used without adapters
- Speedline patent-pending technology :
 - Squeegee compliance routine
 - Closed-loop print head
- Speedline Benchmark™ software and Windows® XP Operating System
- Cycle Time : 11 seconds



Momentum®+

- Vision Alignment Repeatability: ± 12.5 microns ($\pm 0.0005''$) @ 6 sigma ($Cpk \geq 2.0$)
- Cycle Time : 9 seconds

Momentum® HiE

- Vision Alignment Repeatability: ± 12.5 microns ($\pm 0.0005''$) @ 6 sigma ($Cpk \geq 2.0$)
- Cycle Time : 7.5 seconds



Momentum® Elite

- Vision Alignment Repeatability: ± 12.5 microns ($\pm 0.0005''$) @ 6 sigma ($Cpk \geq 2.0$)
- Triple track conveyor system
- Cycle Time : 6 seconds

Momentum® Dual Lane Series

- Patented Dual lane transport system
- Vision Alignment Repeatability: ± 12.5 microns ($\pm 0.0005''$) @ 6 sigma ($Cpk \geq 2.0$)
- Cycle Time : 7.5 seconds (HiE) Single rail
6 seconds (Elite) Triple track

MPM 125™

A cost-effective printing solution

- Vision Alignment Repeatability: ± 12.5 microns ($\pm 0.0005''$) @ 6 sigma, ($Cpk \geq 2.0$)
- CANopen motion control architecture
- Speedline Benchmark™ software and Windows® XP Operating System
- Cycle Time : 13 seconds

SMT, Hybrid and Semiconductor Applications

Solder Paste, Surface Mount Adhesive, Conductive Adhesives, Flux Dispensing, Solder Mask, Flip Chip Underfill, Encapsulation (Dam & Fill, Globtop) and Thermal Greases



XyflexPro®+

Fast, Accurate and Flexible Dispensing System

- Delivering Increased speed rating of 30% and twice the accuracy of most dispensers
- XY placement accuracy of ± 38 microns (± 0.0015 ") @ 3 sigma
- 45,000 dots per hour (3.00mm pitch)
- In-line configuration
- Closed-loop linear servo motor and encoder gantry

XyflexPro®+ DLM (Dual Lane Multi-Task Dispensing System)

- Multi-tasking capability for enhanced productivity
- Faster cycle time for increased throughput
- Up to 6 zones of heat



FX-D®

Stand-Alone or In-Line Dispensing System

- Configurable as either a Stand-Alone or In-Line platform
- Ideal in R&D labs and high volume manufacturing environments
- "Plug and Play" design architecture that allows for fast process changeover
- Lower cost dispenser with mid to high end performance
- Single or Dual head configuration
- Precision ball screw drive system with closed-loop DC servo motors
- Dispense area: 20" x 20" (508mm x 508mm)
- ± 50 microns (± 0.002 ") @ 3 sigma XY accuracy
- 30,000 dots per hour (3.00mm pitch)

CAMALOT® High Precision Pump Technology

Award Winning Technology



SmartStream®

- A non-contact dispense pump well-suited for underfill applications
- Patent pending design uses a positive displacement technique to create a "Stream" of material
- Closed-loop servo drive ensures fast, repeatable performance
- Innovative design eliminates mechanical ball-to-seat contact, thus reducing wear on parts
- Narrow stream width for access into densely packed areas
- Supplied with spare fluidic module, <2 minutes of downtime due to cleaning



680 SD

- Ideally suited for line type applications
- Uses patented no-drip design
- Carbide parts as standard
- High flow rates



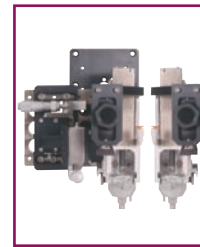
635 SD

- Ideally suited for dot type applications
- Uses footed or unfooted needles
- Precise material delivery
- Minimal maintenance



Dual Mode Weight Scale

- Adjustable target weight tolerance
- Averaging function
- Variable pattern weighing capability
- Scheduling modes for collection or correction of dispense weight
- Low cost of ownership: utilizes disposable cups



Dual Head Synchronous Dispense Mode

- Reduces dispense time by 50%
- Patented operation capable of detecting panel rotation and auto switch to an "asynchronous" dispense mode.

ELECTROVERT® Reflow Soldering Systems

Award Winning Technology



OmniMax™ Series

7 & 10-zone High Performance Convection Reflow Soldering System

- IsoThermal Chamber Technology™ (ICT) provides maximum thermal transfer & control for SMT & Semiconductor standards**
- Efficient design delivers significant energy and N2 savings
- Independent Closed-loop blower control in each heating & cooling zone
- Industry first dripless cooling technology*
- Intelligent Flux Control™ (IFC) with RunMax Technology*
- Windows based OS with easy to use software control
- Standard features include data logging and optional barcode for full product traceability and tracking
- Multi track conveyor options provide maximum product throughput and flexibility
- CE or UL compliant



OmniES™ Series

7 & 10-zone Forced Convection Reflow Soldering System

- Innovative approach of utilizing IsoThermal Chamber Technology provides high performance convection at the lowest possible cost of ownership**
- Efficient design delivers significant energy savings
- Independent Closed-loop blower control in each heating & cooling zone
- Full machine assessability to every section of the machine ensures ease of maintenance
- Windows based OS with easy to use software control
- Standard features include data logging and optional barcode for full product traceability and tracking
- Multi track conveyor options provide maximum product throughput and flexibility
- CE or UL compliant

ELECTROVERT® Wave Soldering Systems

Award Winning Technology



Electra®

Advanced High Performance Wave Soldering System for High Volume Manufacturing

- Patented ServoJet™ spray fluxing system featuring FluxJet™ technology
- Capable of 8' (2.4m) of bottom Vectaheat™ and 6' (1.8m) topside HVC forced convection preheat
- Recipe-driven dual wave air or nitrogen nozzle technology:
 - Patented UltraFill™ with FloLift main wave
 - Non-clogging Rotary™ with FloLift chip wave technology
- DwellMax Plus™ option for maximum topside hole fill
- Recipe-driven solder pot height adjustment (auto lead clearance)
- Wet finger cleaning system
- Recipe-driven auto width adjust conveyor system



VectraElite™

Advanced Medium to High Volume Wave Soldering System

- ServoSpray™ spray fluxing system with self-cleaning capability
- Capable of 6' (1.8m) of bottom Vectaheat™ and 4' (1.2m) topside HVC forced convection preheat
- Recipe-driven nozzle technology:
 - Patented UltraFill™ with FloLift main wave
 - Non-clogging Rotary™ with FloLift chip wave technology
- Recipe-driven solder pot height adjustment (auto lead clearance)
- Wet finger cleaning system



VectraES™

Advanced Low to Medium Volume Wave Soldering System

- ServoSpray spray fluxing system with self-cleaning capability
- 4' (1.2m) of bottom convection preheat as standard
- Patented UltraFill™ with FloLift main wave
- Non-clogging Rotary™ with FloLift chip wave technology
- Recipe-driven solder pot height adjustment (auto lead clearance)
- Wet finger cleaning system

ELECTROVERT® Reflow and Wave Soldering Options/Features



Intelligent Flux Control™ (IFC) with RunMax Technology*

- 2-stage filtration system
- Allows for full maintenance of flux collection units during production
- Programmable self-cleaning feature



DwellMax Plus™ Nozzle System*

- Recognized as an industry leading solution for difficult soldering applications
- Delivers the best topside hole fill
- Provides cost savings through reduced dross generation, reduced maintenance, and higher first pass yields



ServoJet™ (Servo-Controlled Reciprocating Spray Fluxing System)

- Accurate flux control reduces bridging
- Improved hole penetration
- Reduced flux consumption
- Variable selective fluxing
- Applicable for a wide range of fluxes



ServoSpray™ (Servo Controlled Reciprocating Spray Fluxing System)

- Features air atomized spray technology
- Economical spray fluxing solution

* Patented
** Patent Pending

ELECTROVERT® Cleaning Systems

Award Winning Technology

Aquastorm® Series

In-Line Aqueous Cleaning Systems

- Lead-free cleaning
- Patented Hurricane Jet™ nozzle technology utilizes a coherent sheet of unmatched high impact force to penetrate under and around fine pitch components
- JIC spray bars provide pin-point coherent streams of high impact fluid that help blast away residue layers
- Vee Jet™ cleaning provides a specially tapered overlapping spray pattern for even spray coverage across the entire conveyor width
- S-Jet™ nozzle technology creates a unique impingement pattern for enhanced cleaning
- ElectroAir™ knife produces a directed flow of high-pressure air for superior drying performance
- Windows®-based PC control that allows control and monitoring of important cleaning parameters along with adding product traceability to cleaning processes (barcode)



Aquastorm® 200

- Dual tank, suited for RMA fluxes requiring saponifier, water-soluble organic acid fluxes, and enhanced reliability in no clean applications

Aquastorm® 100

- New chemistry and drying features
- Matches footprint to application

Torrid Zone™ Drying System

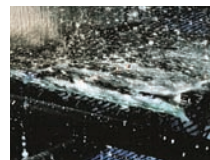
- Forced convection drying module ideal for difficult to dry PCBs
- PCBs exit the Torrid Zone "Test Ready"
- Available on both Aquastorm 100 and 200 cleaning systems

ELECTROVERT® Cleaning Option/Features



ElectroAir™ Knife Technology

- Most efficient air delivery of any air knife design
- Unique design maximizes impact force
- Provides exceptional penetration under low standoff area array components



Hurricane Jet™ Spray Nozzle*

- Unmatched performance combining impact force with high volume
- Penetrate and flush out contaminants from under and around fine pitch and low standoff area array components

* Patented

ACCEL® Cleaning Systems



MicroCel™

Centrifugal Cleaning System

- Pre-mixing feature recirculates wash tank to prevent chemistry separation
- Completely clean, totally dry product delivery
- Spin under immersion wash & rinse, spray rinse and spin dry
- Featuring solvent versatility, zero-discharge, short cycle times
- No visible residues underneath components at 45X+ optical inspection



MicroLine™

In-Line Cleaning System

- Small footprint reduces facility costs
- Integrated flow module provides high performance flooding and cleaning action
- Touch-free cleaning capability to clean parts in carriers in-line
- Tri-belt design allows the inlet belt to remain clean and reduces dragout from the wash
- Zero-discharge closed-loop system

WORLD HEADQUARTERS

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Overview 09/2011.E01

ACCEL®	CAMALOT®	MPM®
Cleaning Systems	Dispensing Systems	Printing Systems
<ul style="list-style-type: none"> • MicroCel™ • MicroLine™ 	<ul style="list-style-type: none"> • XyflexPro®+ • XyflexPro®+ DLM • FX-D® 	<ul style="list-style-type: none"> • Accela® • Momentum® Series • Momentum® Dual Lane Series • MPM 125™
ELECTROVERT®		
Reflow Soldering Systems	Wave Soldering Systems	Cleaning Systems
<ul style="list-style-type: none"> • OmniMax™ Series • OmniES™ Series 	<ul style="list-style-type: none"> • Electra® • VectraElite™ • VectraES™ 	<ul style="list-style-type: none"> • Aquastorm® Series

Process Knowledge and Support

At Speedline Technologies, we deliver world-class products, performance, and service, but it is our process knowledge that really makes the difference. The proficiency of our experts at Accel, Camalot, Electrovert, and MPM allows us to solve real-world electronics processing issues. Knowledge in Process for superior performance.

ABOUT SPEEDLINE TECHNOLOGIES

Speedline Technologies is the global leader in process knowledge and expertise in the PCB assembly and semiconductor industries. Based in Franklin, Massachusetts, the company sells 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.

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.