

The world's most  
accurate printer  
provides extraordinary  
performance.



**MPM**

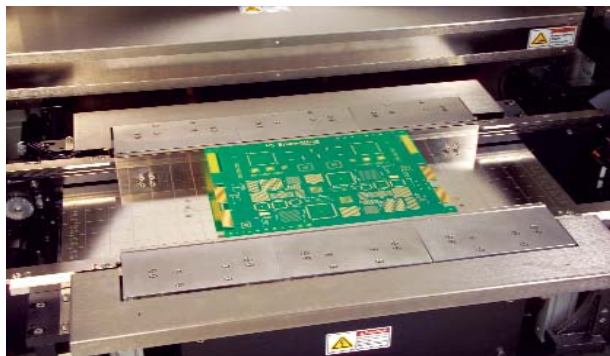
## Accela® Stencil Printer

The premier printing platform for the perfect  
balance of throughput and quality

# MPM

## Accela

### Introducing the World's Most Advanced Stencil Printer



### Increasing Throughput and More

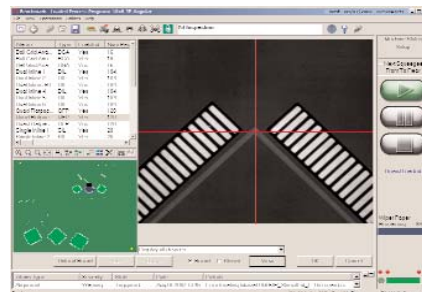
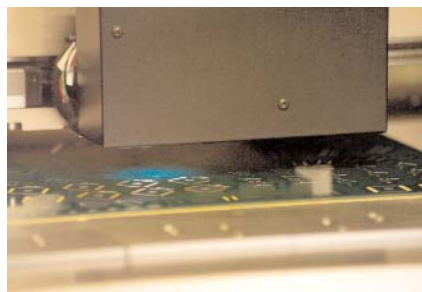
The MPM® Accela printer from Speedline is the ultimate printing solution for manufacturers of high-volume, high-technology circuit boards. Accela processes the largest, thinnest or most complex boards with unprecedented speed, accuracy and ease. Its leading edge design incorporates the best features of our proven platforms and includes 11 patents and patent-pending innovations.

An industry break-through, parallel processing, allows critical operations to occur simultaneously, not serially, resulting in unmatched raw throughput - gains of 20% or more good boards per hour! But Accela doesn't stop there. Other advantages include:

- Highest accuracy and repeatability
- Advanced consumables management for fast setup and changeover
- Proven reliability
- Outstanding flexibility and ease of use

### Advanced High-speed, Post-print Inspection

The Accela incorporates SpeedVision™, the industry-leading throughput enhancement to Speedline's patented texture-based 2D inspection tools, BridgeVision® and StencilVision™. Instead of a device-by-device approach, this unique system uses full, field-of-view image acquisition and advanced camera motion techniques to achieve unparalleled inspection capabilities at line speed. Speedvision inspects angular devices, detects bridging and logs quantitative component and program level data into the standard, on-board SPC package.



OEM and CEM manufacturers face shrinking profits and ferocious competition. They need a printing solution that maximizes uptime, improves final product yield, generates more quality boards per hour, and increases the return on their capital investment. The Accela printer is that solution.

## Providing Superior Accuracy



Accela's substantial yield improvement over traditional printers isn't solely due to the parallel processing that allows increased inspection frequency. The critical metric isn't just boards per hour: it's good boards per hour.

Accela delivers 12.5 micron accuracy at 6 sigma for alignment and 25 microns at 6 sigma for printing performance. That precision reduces waste from errors and bad boards. It also makes it the most accurate, repeatable stencil printer ever — a fact verified by an independent, third-party testing company. This unsurpassed performance provides both the highest throughput and the greatest yield for even the most difficult applications. This is especially important as the lead-free transition presents additional challenges for the printing process.

### Paste Dispenser

Located between the blades to reduce travel and cycle time.

### Stencil Cleaner

Operates in parallel with inspection, dispensing, and alignment routines to maximize throughput.

### Stencil Shuttle

Patent-pending design moves to the back of the machine to allow simultaneous activities to maximize throughput.

### Vision System

Comprehensive inspection capabilities including 2D, BridgeVision, and StencilVision.

### Software

Easy-to-use, icon-based Benchmark® software with Windows® XP for improved performance.

### CANopen Controls

Electrical architecture that supports parallel processing to maximize throughput.

### Frame

Zanite™ material provides solid foundation for superior accuracy and repeatability.



## Traceability and Verification

Process control is the cornerstone of quality production. Among the Accela's many process control tools is barcode reading capability for product traceability and process verification. A machine-mounted barcode scanner reads and stores board data from anywhere on the substrate to provide traceability for SPC. A handheld barcode reader is offered to scan stencil, paste, blades, tooling, boards, and pump size to provide process verification and prevent entry into production if incorrect materials are scanned.

## Supplying Significant Cost Savings

Certainly higher yield performance promises quicker payback. But this printer is built to lower users' cost of ownership in every other way as well.

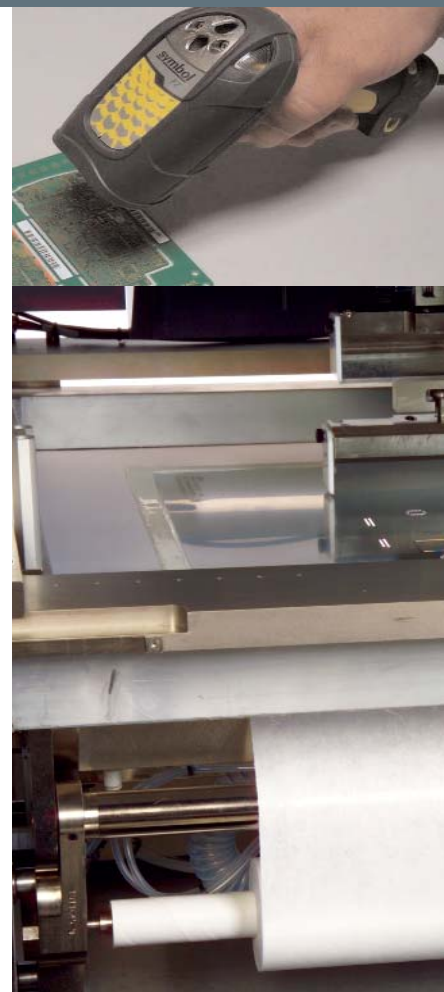
It is designed to optimize consumables management while minimizing downtime to increase utilization. It is easy to use, easy to service, and is constructed to provide the lowest maintenance costs of any printer in its class.

## Offering Robust Reliability

Manufacturers producing critical-specification assemblies demand assured uptime and long service life. Accela fulfills their strictest requirements. It's a solid platform that performs the most challenging customer tasks with exceptional reliability. The base configuration of the Accela provides a comprehensive set of capabilities. With a broad option set, it can be configured to meet any manufacturing challenge.

Feature	Standard	Option
Windows® XP Operating System	X	
Benchmark Software	X	
SPC Data Collection	X	
Closed-Loop Squeegee Head	X	
CANopen Control System	X	
Adjustable Stencil Shelf	X	
Look-Up/Look-Down Vision*	X	
Vacuum Wiper* with Solvent Capability	X	
Flat-Panel Display	X	
Three Stage Transport Rail System	X	
Rheometric Pump*		X
Automatic Paste Dispenser		X
Temperature Control Unit		X
Pad Coverage 2D Inspection		X
Texture-Based BridgeVision and StencilVision™*		X
Product Traceability (w/Externally mounted barcode)		X
Process Verification (w/Handheld barcode scanner)		X
Gel-Flex® Tooling*		X

\* Patented Technology



## The Flexibility to Handle Any Job

The new Accela platform handles a myriad of applications - from printing on the highest-density, most complex boards to meeting lead-free manufacturing requirements.

It offers the operator tool-free hardware interfaces with a modular design featuring CANopen electronic architecture for advanced communications and easy maintenance and upgradeability. On the software side, Accela features an exclusive, easy-to-use Benchmark graphical user interface running under Windows XP for effortless networking.



## Creating a New Standard

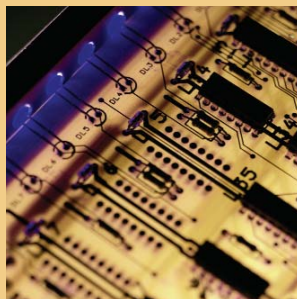
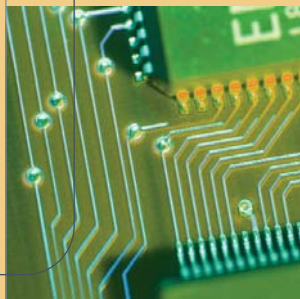
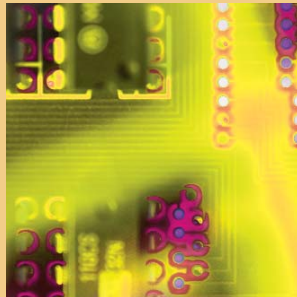
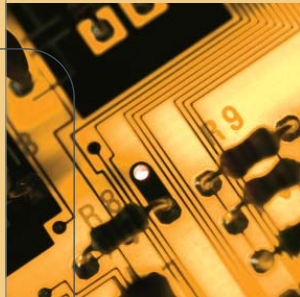
Printer cycle time is a common metric used throughout the industry. But cycle time is only a single factor in printer productivity – perhaps not even the most important. What about board handling time, print process parameters, squeegee use, stencil cleaning, and other critical elements?

A standard based on throughput is needed. One that takes into account all critical factors to establish a truly useful measure of printer productivity.

With the innovative MPM Accela stencil printer, that new standard becomes a reality. Simply put, Accela produces more good boards per hour.

Aided by unique parallel processing, its throughput is unmatched. And Accela's design minimizes every single source of downtime: product setup, product changeovers, consumables replenishment, maintenance, and repairs. Result: throughput gains of more than 20% over the nearest competitor.

LIKE NO OTHER  
PRINTER ON THE  
MARKET, ACCELA TRULY  
OPTIMIZES THE QUALITY,  
NUMBER, AND COST OF  
BOARDS PRODUCED PER  
HOUR.



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## MPM ACCELA® SPECIFICATIONS

### BOARD HANDLING

Maximum Board Size (X x Y)	558 mm x 508 mm (22" x 20")
Minimum Board Size (Y x X)	50.8 mm x 50.8 mm (2" x 2")
Board Thickness	0.152 mm (0.006") to 12.7 mm (0.500"), excluding warpage tolerance
Maximum Board Weight	7 kg (15 lb)
Board Edge Clearance	Configurable to 3 mm (0.120") or 5 mm (0.200")
Maximum Underside Clearance	25 mm (1.0")
Transport Speed	8 mm/sec to 1270 mm/sec (0.3"/sec to 50"/sec)
Transport Height From Floor	813 mm to 1041 mm (32" to 41")
Transport Track Feed Direction	Left-Right, Right-Left, Right-Right, Left-Left
Conveyor Length	Choice of 1416 mm (55.7"), 1727 mm (68"), or 2048 mm (80.6")
Board Hold-Down	Integrated y-snuggers, top clamps (software-enabled), underside centermost vacuum, venturi vacuum
Board Support Methods	Magnetic pins and blocks standard, dedicated workholders and Gel-Flex™ optional

### PRINT PARAMETERS

Maximum Print Area (X x Y)	558 mm x 508 mm (22" x 20")
Snap-off	-0.025 mm to 12.7 mm (-0.001" to 0.500")
Print Speed	6 mm/sec to 305 mm/sec (0.25"/sec to 12"/sec)
Print Force	0.4 kg to 22 kg (0.9 lb to 50 lb)
Print Stroke	±280 mm (±11") from center
Stencil Frame Size	737 mm x 737 mm (29" x 29") adjustable to 584 mm x 584 mm (23" x 23") for tubular frames. Optional stencil frame adapter for cast frames.

### VISION

Vision Field-of-View (FOV)	10.6 mm x 8.0 mm (0.417" x 0.315")
Fiducial Types	Standard shape fiducials (see SMEMA standards), pad/aperture
Camera System	Single camera – patented look up/down vision

### PERFORMANCE

Total System Alignment	±12.5 microns
Accuracy and Repeatability	(±0.0005") at 6 sigma, Cpk of greater than or equal to 2.0*

Qualification is performed using production environment process variables; print speed, table lift and camera movement are included in the capability figure.

Wet Print Deposit	±25 microns
Accuracy and Repeatability	(±0.001") at 6 sigma, Cpk of greater than or equal to 2.0*

Based upon actual wet printing with positional accuracy and repeatability verified by a 3rd party measurement system.

Cycle Time	Less than 5.5 sec
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### FACILITIES

Power Requirements	200 to 240 V AC (±10%) single phase @ 50/60Hz, 15A
Air Supply Requirements	100 psi at 4 cfm (standard run mode) to 18 cfm (vacuum wipe) (6.89 bar @ 1.9 L/s to 8.5 L/s), 12.7 mm (0.5") diameter line
Height (excluding light tower)	1950 mm (76.7") max at tallest board load height
Depth	2169 mm (85.4")
Conveyor Width	Choice of 1416 mm (55.7"), 1727 mm (68"), or 2048 mm (80.6")
Cover Width	1357 mm (53.4")
Front and Rear Clearance	432 mm (17")
Minimum	
Machine Weight	2205 kg (4850 lb)
Crated Weight	2722 kg (5990 lb)

\* The higher the Cp, the lower the variability with respect to the process specification limits. In a process qualified as a 6 Sigma process (i.e., one that allows plus or minus 6 standard deviations

## 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).

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.



Knowledge in process