

Robert W. Boyes

# Speedline's MPM Accela

The new stencil printer platform maximizes parallel processing.

*Ed.: This new section spotlights significant advances in equipment and materials for electronics manufacturing. Claims are those of the manufacturer and are not verified by CIRCUITS ASSEMBLY.*

Speedline Technologies in February introduced the MPM Accela stencil printer. The new printer is loaded with innovations backed by two new U.S. patents with nine additional patents pending. The next-generation printer introduces dramatic innovations in parallel processing technology that render traditional cycle time claims obsolete. Its debut shifts the focus to measurements that high-end electronics manufacturers are really interested in: throughput and yield. With superior accuracy and repeatability and increased throughput, the Accela enables manufacturers to concentrate on the quality, number and cost of good boards produced per hour.

The printer produces the most boards per hour of any industry printer – delivering raw throughput gains of more than 20% over the closest competitor. Typically, customers use a cycle time metric as a method to compare printers. However, cycle time does not predict how fast the manufacturing line will really run or the final quality of the printing process. By comparing throughput rates – which includes all the steps required to turn a bare PCB into a quality finished board – customers will have a more accurate idea of how their manufacturing line will actually perform.

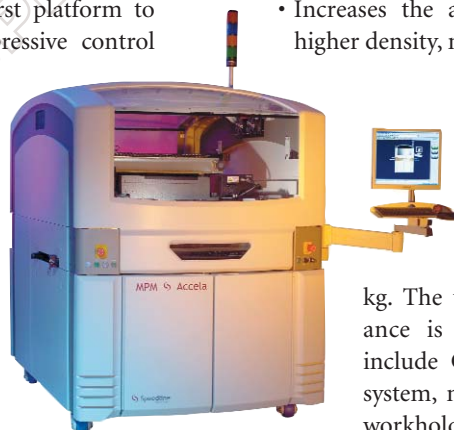
The Accela printer is able to reach these throughput rates through extensive use of CANopen control architecture and the patented theory of operation. Although CANopen controls are currently available on other machines, the Accela printer is the first platform to fully use the capabilities of this impressive control architecture. This machine has been designed from the ground up – mechanically, electrically and software operationally – to maximize the parallel processing capabilities provided by CANopen.

The new printer's superior accuracy and repeatability are verified by CeTaQ, the capability measurement specialists for SMT equipment. The independent certification verifies that the novel printer will meet  $\pm 12.5$

$\mu\text{m}$  at six-sigma for alignment and  $\pm 25 \mu\text{m}$  at six-sigma for printing performance. And because lead-free materials do not spread during the reflow process as much as tin-lead materials, that difference is going to make it even more imperative that the printing process is as accurate as possible. Through extensive laboratory testing, all variables that impact the lead-free printing process have been identified.

Other highlights:

- Axes can move at the same time without electrical or mechanical limitations.
- Alignment, wiping, dispensing, transport and inspection can occur simultaneously.
- Stationary stencil cleaner designed for easy access and simple changeover.
- Optimizes board handling for the industry's fastest cycle time: less than 6 sec.
- Provides a consistent line pulse rate for improved line optimization.
- Offers 3 mm and 5 mm edge clearance changeover without additional parts and an adjustable stencil shelf for maximum flexibility.
- Uses Benchmark software for improved operator interface and easy networking and provides a common interface across multiple Speedline platforms.
- Dramatically reduces setup, changeover and consumable downtime (20 min. to 5 min.), and features tool-free hardware interfaces.
- Expanded inspection capabilities including contrast-based 2-D, texture-based BridgeVision and StencilVision for the fastest quantitative printer-based inspection.
- Increases the application range including higher density, more complex boards including lead-free manufacturing requirements.



The printer handles boards of 50 x 50 mm to 500 x 500 mm, thicknesses of 0.15 to 12.7 mm, and weights up to 7 kg. The underside component clearance is 25 mm. Support options include Gel-Flex conformal support system, magnetic pins and dedicated workholders.

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