ASMPT enabling the digital world

DEK NeoHorizon iX platform

Maximum flexibility for the Integrated Smart Factory

Flexible configuration, reliable process 3

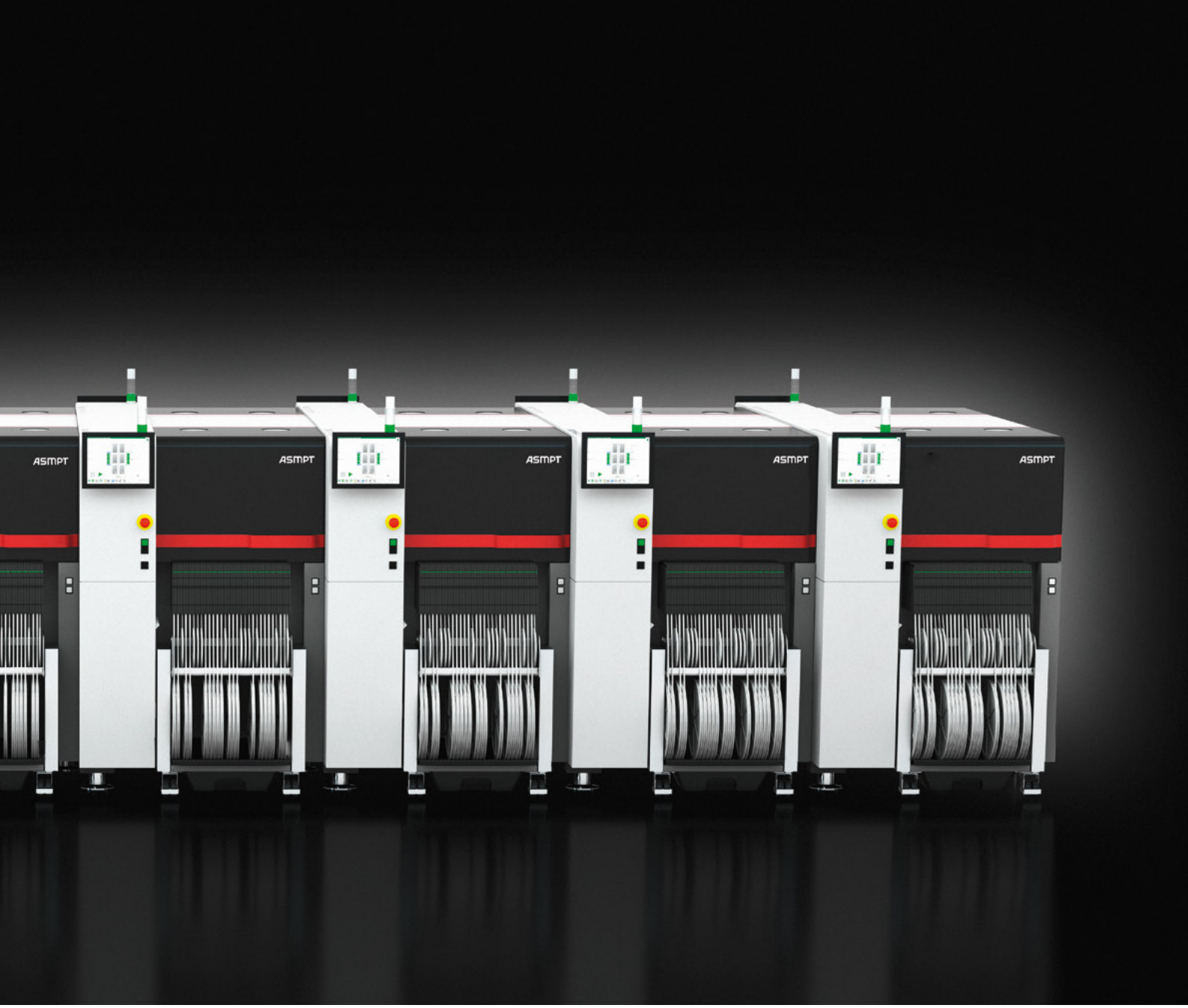
DEK NeoHorizon iX platform:
The solid foundation for your success 5

DEK Productivity Tools:
Everything you need for your printing solution 6

Printing:
Maximize your process reliability 8

Inspection solutions:
Verify results quickly and reliably 10

DEK NeoHorizon iX platform at a glance 11



Flexible configuration, reliable process

Important decisions are often made at the beginning, and your SMT line is no exception. Your screen printer plays a critical role for quality, productivity and yield.

With the DEK NeoHorizon iX you can't go wrong. With their advanced features, the new models provide a powerful and highly accurate solution for any application. In addition, the DEK NeoHorizon Back-to-Back advances the ASMPT concept of an ingeniously simple dual-track solution that can be turned into two single-track machines at any time. You protect your investment and can respond to changes when they occur.

The modular structure of the DEK NeoHorizon iX gives you total flexibility. Improve your process inspection with the trailblazing HawkEye technology. Reduce the time and cost of manual assists with material management solution. Minimize your cleaning time and material consumption with the new, highly efficient DEK Typhoon Duo understencil cleaning system. ASMPT innovations constantly push the limits in quality and productivity. At the same time, the new printers feature advanced integration capabilities, making them the future-proof solution for modern smart-factory concepts.

ASMPT combines all this with custom-tailored services: Training, maintenance, process optimization, stencils, clamping systems, and much more. With ASMPT's printing specialists, you have the global experts for printing and SMT processes at your side.

ASMPT

DEK NeoHorizon iX platform: The solid foundation for your success

The DEK NeoHorizon iX shines with more than new design. It's modular interior is also much improved and highly reliable. Whether in high-mix contract manufacturing or high-volume applications with high throughput requirements – the DEK NeoHorizon iX is the right printing platform, and the ASMPT team is the right partner for you.

Benchmark for accuracy

The DEK NeoHorizon iX platform is based on an exceptionally stable frame design. With its torsional rigidity and high intrinsic resonance frequency, the machine's frame provides the foundation for longevity and long-lasting accuracy. With its advanced controllers and bus systems, the DEK NeoHorizon iX achieves a process repeat accuracy of up to ±20 µm @ 2 C_{pK} based on the external AVS measurement system. Each printer is certified and ships with an AVS certificate.

The frame provides lots of space and the bus system a wide range of interfaces for basic components like precision drives, digital camera modules and high-precision guides and slides, as well as for many productivity-enhancing options: the DEK Productivity Tools. In short, it is the perfect framework for your individual printing solution.

State-of-the-art software: Instinctiv DEK V9 Software

Experience how intuitive modern machine interfaces can be with Instinctiv DEK V9 Software. With its touchscreen, keyboard and trackball operation, graphical interfaces, multiple languages and integrated video-based help, the Instinctiv DEK V9 Software supports the easy, quick and error-free operation of your DEK NeoHorizon iX printer.

Do you want to add more options to your DEK NeoHorizon? With ISCAN (Intelligent Scalable Area Network), the new configuration is scanned with just a few clicks and additional performance is available. And thanks to its interfaces, the DEK NeoHorizon can fine-tune its printing process based on data imported from modern SPI systems.

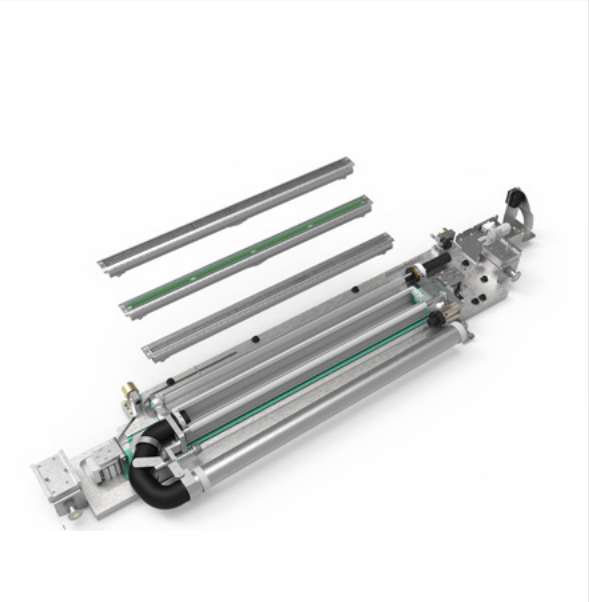
Service and solid process expertise

Stencil printing is a critical and highly demanding process that requires experienced partners in addition to good hardware and software. With ASMPT you have competent experts at your side for selecting and implementing your printing solution, training your employees, optimizing your processes, producing high-quality stencils, and supporting all of this with excellent services.

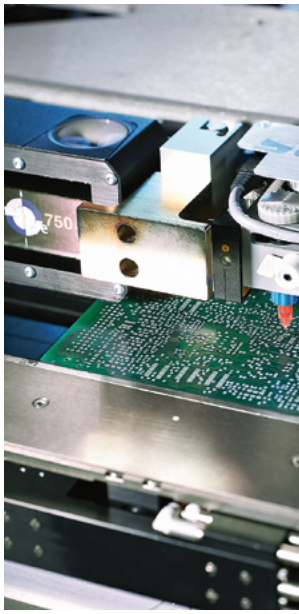
Complex PCBs also require thoroughly coordinated processes. Our Centers of Competence have the experts and the knowledge you need for all process steps along the entire production line.

DEK Productivity Tools:
Everything you need for your printing solution

DEK NeoHorizon Back-to-Back dual-track solution



High-speed understencil cleaning: DEK Typhoon



Perfect dispensing:
DEK Stinger

The right configuration for every job

High-volume production, high-mix runs of small lots, pin-in-paste, ultra-fine apertures for super-small components, stepped stencils, PCBs with unusual substrates, many different paste types – no matter what your production requirements are and what processes you use: the DEK NeoHorizon iX platform always accommodates the right configuration for your printing process.

Think beyond your current challenges. With the modular DEK NeoHorizon platform you can easily add DEK Productivity Tools in standalone machines or in our innovative DEK NeoHorizon Back-to-Back dual-lane solution.

B2B setup: Flexible and dual-lane

With its three sections, the DEK High-Throughput 3-Segments Conveyor lets you move circuit boards into and out of the printing area simultaneously for even shorter cycle times.

DEK NeoHorizon iX printers can be operated and maintained totally from the front. The DEK NeoHorizon Back-to-Back setup makes for a uniquely flexible dual-track solution.

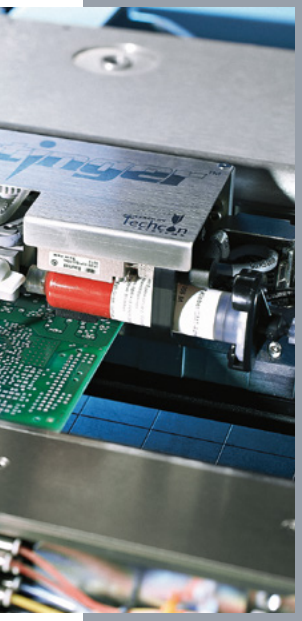
Dual-lane for twice the performance:

- Both units remain separately controllable, for example to run a different product on each track
- The units can be split up again at any time
- Full-size printing area

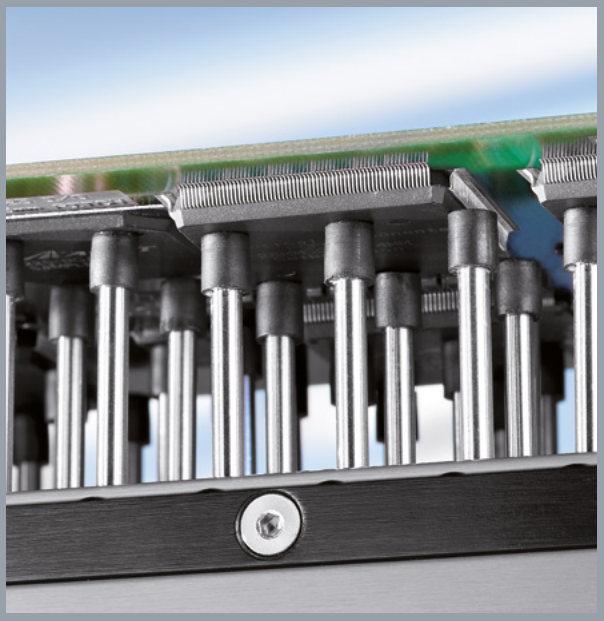
Faster cleaning, more throughput

The DEK NeoHorizon iX offers two modes for automatic understencil cleaning: the new IUSC and the latest high speed cleaning system developement DEK Typhoon. Both cleaning systems are controlled via the instinctive DEK V9 Software.

Options like the DEK ProDEK option enables a close loop connection to almost all SPI systems on the market. Alternatively its possible to connect the DEK NeoHorizon to the unique software WORKS Process Expert, which enables a fully automatic printing process and flexible cleaning cycles.



DEK NeoHorizon with Temperature Control Modul (DEK TCM)



Flexible tooling with DEK Grid-Lok

Our most important Productivity Tools at a glance:

- **Conveyors – Minimize your cycle times**
  - DEK High-Throughput Conveyor
  - DEK NeoHorizon Back-to-Back setup (highly flexible dual-lane transport)
- **Understencil cleaning – Cut cleaning times in half**
  - New high speed DEK Typhoon
  - IUSC with replaceable cleaning bar
- **DEK material management**
  - DEK Paste Roll Height Monitor
  - DEK Automatic Paste Dispenser (Cartridges or cans)
  - DEK Stinger (automatic adhesive or solder paste dispensing on the PCB)
- **Verification & traceability solution**
  - Verification of all printing materials
  - Stencil service life management with SmartStencil
  - Total traceability link to manufacturing execution systems
- **Inspection – Optimize your print quality**
  - DEK HawkEye 750
  - DEK HawkEye 1700
  - DEK ProDEK (closed-loop interface to external SPI systems)
- **Additional tools**
  - DEK Grid-Lok (automatic board support)
  - DEK All Purpose Clamping (APC)
    Freely programmable top-down and lateral (snugger) clamping for improved fastening for close-to-the-edge printing
  - DEK TCM (Temperature Control Modul)

Printing:
Maximize your process reliability

Temperature, humidity, paste preparation, squeegee types, idle time – the process window for optimal printing results is small and depends on many factors. From Roll Height Monitor to the DEK material management – the DEK NeoHorizon iX platform offers the level of process reliability you want and need. The result: more quality and fewer assists.

DEK Paste Roll Height Monitor

Small sensor with a big impact: The latest version of the DEK Paste Roll Height Monitor calculates the amount of solder paste on the stencil with great accuracy by measuring the cross-section of the solder paste application.

Since an insufficient amount of solder paste reduces the printing quality, the system either stops the printer until more paste is applied manually or it applies it automatically via the DEK Automatic Paste Dispenser if the paste quantity falls below a certain threshold.

The new DEK Paste Roll Height Monitor also checks for an excessive amount of paste on the stencil. If this is the case, it stops the printer and instructs the operator to reduce the paste quantity.

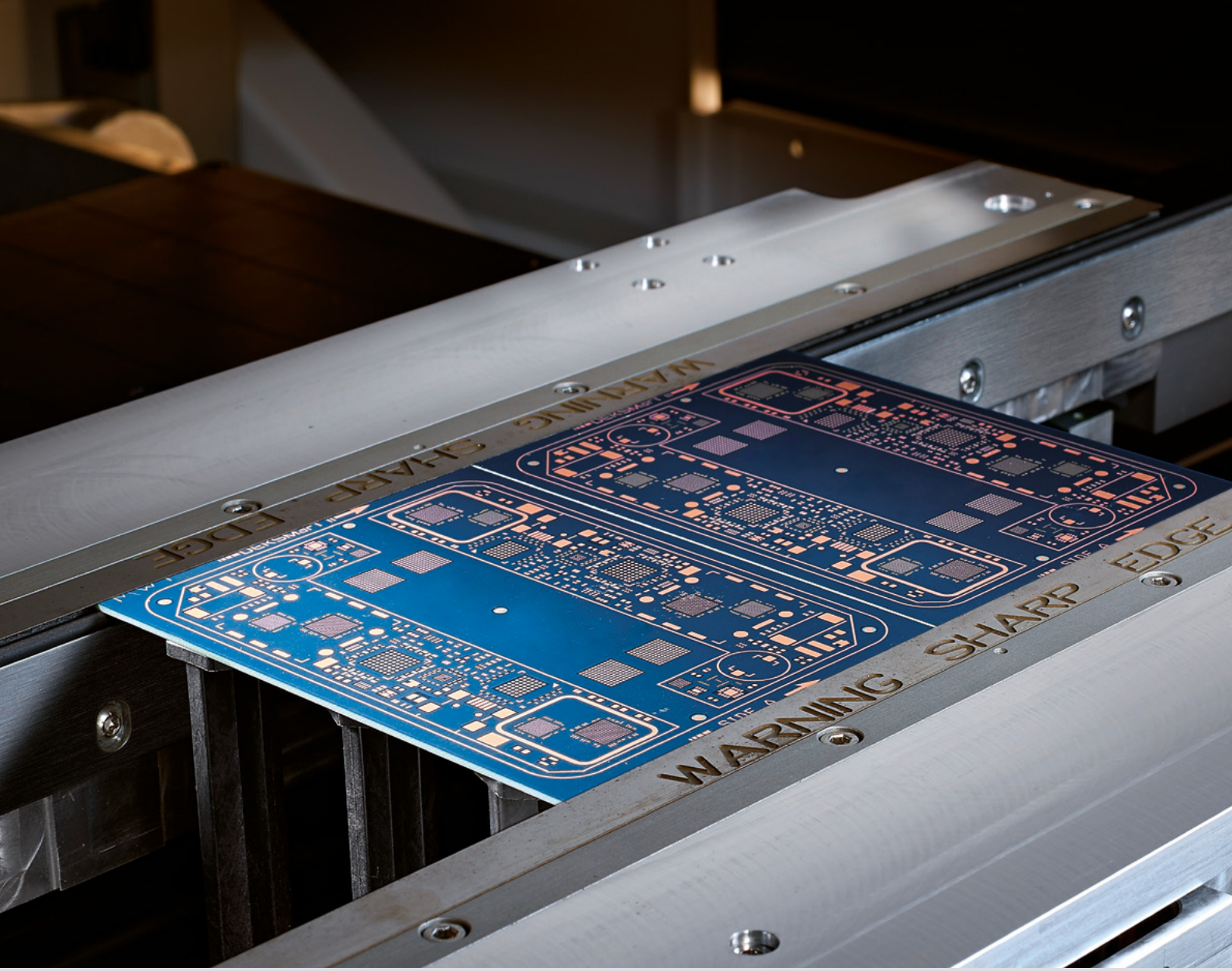
Print media dispenser:
DEK Automatic Paste Dispenser

The DEK Automatic Paste Dispenser (cartridge or can) is the alternative to manual paste application. In combination with the DEK Paste Roll Height Monitor, the dispenser system ensures the correct supply of the printing medium, improves the printing process quality, enables faster product changeovers, and reduces the number of manual assists.

DEK Material Management

The combination of DEK Paste Roll Height Monitor and DEK Automatic Paste Dispenser (cartridge or can) options enables an optimized printing process with no operator interaction and prevents the output quality from being hurt by the application of too much or too little solder paste.

The DEK Material Management system controls the paste quantity automatically and is an important prerequisite for the smart SMT factory. It eliminates any downtime caused by the need for manual paste application.



The new DEK All Purpose Clamping (APC) system
Total freedom in PCB clamping

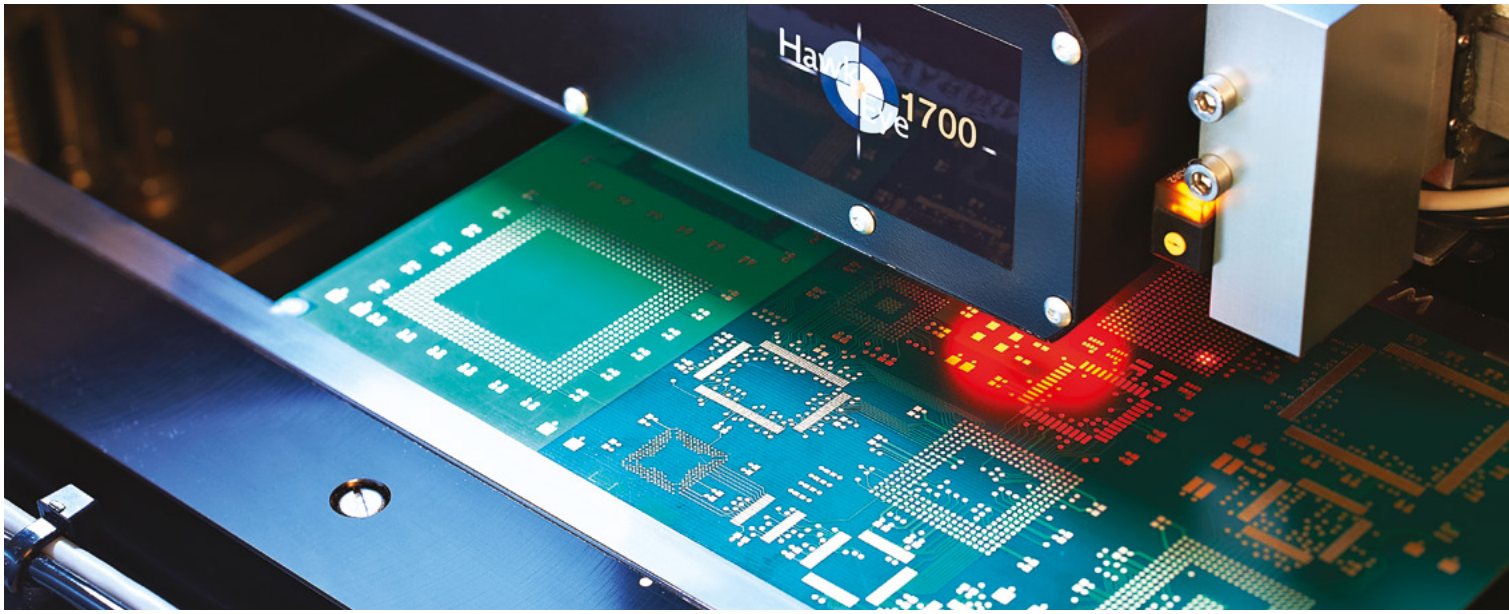
Top-down only, lateral only or a combination of both: our new DEK APC system leaves all options open. It keeps even thick and slanted boards reliability in place. Our innovative clamping system reliably adjusts and holds securely in place.

And best of all, the clamps retract to the board's top edge, allowing you to print extremely close to the edge.

The new DEK APC is freely configurable. The clamping force can be set for each specific product and monitored by the system.

The DEK APC is further proof that ASMPT is your competent, reliable and highly innovative partner for the printing process – yesterday, today and tomorrow.

Inspection solutions:
Verify results quickly and reliably



DEK HawkEye

The DEK NeoHorizon iX platform extends its modular approach to verification and inspection. Users have access to various internal and external solutions for checking the printing results, preventing the placement of misprinted circuit boards, and continuously optimizing the printing results.

DEK HawkEye

To quickly verify the printing results in the printer itself, our specialists have developed the extremely powerful, camera-based DEK HawkEye for verifying solder paste deposits. Freely configurable, DEK HawkEye can optically verify up to 100 percent of the paste deposits and instantly reject any faulty boards.

Two systems are available:
DEK HawkEye 750 and DEK HawkEye 1700. The DEK HawkEye 1700 delivers a three times larger verification window for the reliable inline control of large circuit boards and multi-cluster boards.

DEK ProDEK

DEK ProDEK is our interface for integrating external SPI solutions. With DEK ProDEK, you can optimize the alignment of the NeoHorizon iX and its cleaning intervals based on a closed control loop that includes the SPI solution and statistical processes. The SPI solution can even trigger a cleaning cycle directly when needed.

Results speak for themselves

Talk with our experts about your applications, your printing needs, and the configuration options for the DEK NeoHorizon iX that work best for you. We look forward to working with you to identify the solution that best fits your requirements – from the modular printing platform to DEK Productivity Tools to services in the areas of consumables, stencil manufacturing and process consulting. Our ultimate goal is to provide you with the best possible printing process in your production.

DEK NeoHorizon iX platform at a glance

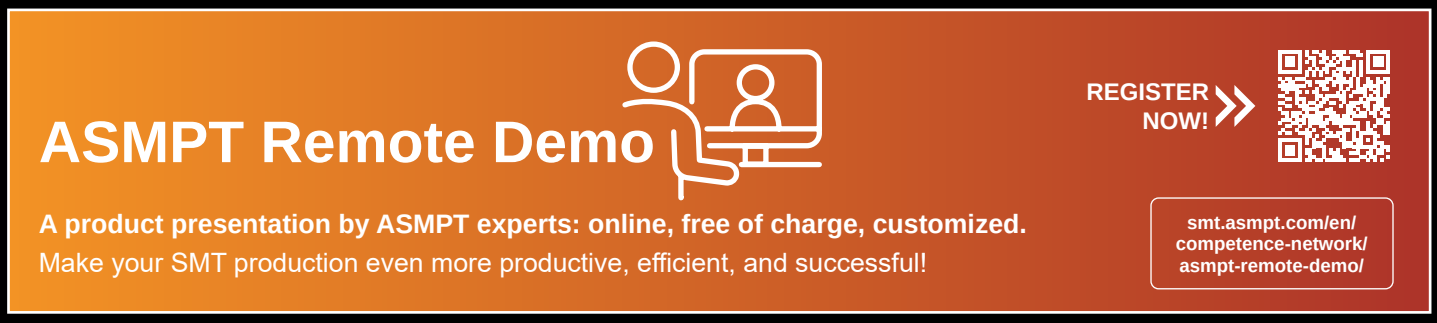
	DEK NeoHorizon 03iX	DEK NeoHorizon 01iX
Standard configuration	DEK NeoHorizon 03iX	DEK NeoHorizon 01iX
Machine alignment capability	±12.5 µm @ > 2 C_{mk} (±6 Sigma)	±12.5 µm @ > 2 C_{mk} (±6 Sigma)
Wet print capability (C_{pk})**	±25 µm @ > 2.0 C_{pk}, (±6 Sigma), AVS-certified	±20 µm @ > 2.0 C_{pk}, (±6 Sigma), AVS-certified
Standard cycle time	8 seconds + process	6.5 seconds + process
Maximum printing surface	510 mm (X) × 508.5 mm (Y)	510 mm (X) × 508.5 mm (Y)
User interface	Touchscreen, keyboard and trackball, Instinctiv DEK V9 Software	Touchscreen, keyboard and trackball, Instinctiv DEK V9 Software
Camera	DEK HawkEye 750 digital camera with 2-way LED illumination	DEK HawkEye 1700 digital camera with 2-way LED illumination
Squeegee adjustment	Motorized with squeegee pressure feedback	Motorized with squeegee pressure feedback
Stencil loading	Semi-automatic	Automatic, incl. squeegee drip catcher
Stencil alignment	Motorized (actuators); aligned on X- and Y-axis and rotation	Motorized (actuators); aligned in X- and Y-axis and rotation
ProFlow	Optional	Optional
Understencil cleaning	IUSC 300 mm/400 mm/520 mm	DEK Typhoon 300 mm/400 mm/500 mm
Technical documentation	Printed documents: User manual, installation instructions, circuit diagrams. Technical instructions and videos that explain all operating steps are preinstalled.	
Compressed air supply	5-8 bar at ~5 litres/minute	
Power supply	100 Volts to 240 Volts ±10 %. Single phase 50/60 Hz	
Weight	Approx. 690 kg depending on selected options	

* The machine and repeat accuracy qualification will be conducted using production-typical process variables.
Machine dimensions in millimeters

** Wet print capability (C_{pk}) for each printing system (DEK NeoHorizon) standardized with external measuring system AVS.

ASMPT Remote Demo

Want to learn more about Open Automation? Request one of our Remote Demos.
Our experts will develop a product presentation in form of a webinar for your specific needs and requirements.



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