

New placement platform from ASMPT

SIPLACE V: The booster for the intelligent factory

New machine concept, new performance class, new era: With the highly innovative SIPLACE V placement platform, ASMPT SMT Solutions is pursuing ambitious goals — and achieving them. The market and technology leader is once again setting new standards in real performance, quality, flexibility, and investment protection.

It is clear at first glance that ASMPT is bringing a fundamentally new concept to the highly competitive market with the SIPLACE V. The machine structure has been completely redesigned. This includes new covers as well as significantly stiffer frames and connecting elements that permit higher accelerations on the main axes. The travel distances have also been further optimized, resulting in a noticeable increase in performance. In key and future markets such as automotive and industry, IT and network infrastructure, consumer electronics and smartphones, performance is up to 30% higher.

Great real performance in a small space

Important to know: The performance boosts were not only measured using standard benchmarks but above all under the kind of real production conditions that prevail on shop floors all over the world today. Assembly tasks are becoming more complex, package densities are increasing, and quality requirements are becoming more stringent. No wonder, then, that many placement machines fall well short of advertised promises in practice. ASMPT, on the other hand, was able to bring its many years of experience in all areas of production technology to bear in the optimization process and thus achieve consistently high real performance, i.e., the actual performance achieved during operation, even under the most difficult conditions.

Like all ASMPT placement machines, the SIPLACE V also impresses with its excellent floor space performance. The entire high-speed platform requires only 1.1 by 2.4 meters (SIPLACE V) of floor space. The newly developed, significantly slimmer Tray Unit V contributes to a further footprint reduction.

New generation of placement heads

ASMPT has also advanced SIPLACE's technology in the placement heads. The platform features highly efficient linear drives and measuring systems with increased resolution, enabling significantly higher speed and precision — and thus forming the basis for

improved real performance. Building on this, ASMPT has further developed the three SIPLACE placement head variants, each of which is designed for different areas of application:

The SIPLACE CP20, a collect-and-place head, now places up to 52,500 components per hour and covers a component range from 016008M to $8.2 \times 8.2 \times 4$ mm. Particularly crucial for high-density products: With a further increase in accuracy to $25 \mu\text{m}$ @ 3σ , the CP20 brings a new level of quality to the high-speed line.

Users who need maximum flexibility for complex mixed assemblies rely on the SIPLACE CPP with a component range from 01005 to $50 \times 40 \times 15.5$ mm. This head switches between collect-and-place, pick-and-place and mixed modes in response to software commands and places up to 28,000 components per hour with placement forces of up to 15 N.

For the increasingly important processing of special and BGA components, for example in AI applications, ASMPT offers the high-precision SIPLACE TWIN VHF pick-and place head, which can handle OSCs measuring up to $200 \times 150 \times 55$ mm (SIPLACE VL). The placement speed is automatically optimized and reaches up to 6,000 components per hour with a placement force of up to 100 N.

Flexibility in the high-speed range

A key development goal for the SIPLACE V was to combine flexibility and high-speed performance in a single platform. Today, users are no longer being forced to choose between maximum placement performance and variable application options. To this end, user-friendliness has been significantly improved as well. A new universal head interface allows placement heads to be easily exchanged during operation. The interface now has only one central connection plug, meaning that the change can be carried out without any special knowledge or training.

The platform is also flexible in terms of configuration. The SIPLACE V is available as a single or dual-portal version, with the option of integrating a 3D Koplan module and additional internal cameras. Each placement machine can also be equipped with two area magazine changers, which can now also be loaded with tray cassettes. For transport, there is a choice of single or double transport: the latter processes two printed circuit boards measuring up to 400×280 mm

each, while single transport allows boards up to 700 × 520 mm.

The feeder capacity has also been significantly expanded. Up to 90 8-mm feeders can be used independently of installed options such as the Smart Pin Support. With this function, the machine sets support pins fully automatically to ensure perfect placement quality — a separate pin picker is no longer necessary. The pins are placed directly by the placement head and then automatically checked for correct positioning.

Proven quality, consistently refined

The SIPLACE V platform features ASMPT's established quality assurance functions, supplemented by important enhancements. These include, for example, the complete traceability of all processed components from the reel or package to the finished product, as required in particular in the automotive industry. The component cameras now have a higher resolution, ensuring even greater inspection and placement precision. Each component is checked individually and in real time for presence and quality in multiple steps.

A unique selling point in the industry are the SIPLACE collect-and-place placement heads with individually controllable rotary drives on each nozzle segment. This concept enables particularly precise placements in two stages: Immediately after being picked up, the component is pre-adjusted in its angular position so that only minimal final corrections are required during the actual placement. Precise alignment is critical to success, especially with very high packing densities, as incorrectly placed components can no longer center themselves during the soldering process and, in the worst case, can lead to short circuits and rejects. The SIPLACE V platform also automatically compensates for variable pick-up positions and PCB warping, achieving optimal results even under suboptimal conditions.

In addition, the processing of odd-shaped components (OSC) — i.e., particularly heavy or large-volume components — has been further improved on the SIPLACE V platform. In combination with functions such as Smart Pin Support and 3D Coplanarity Inspection, even complex designs can be built with maximum process reliability.

Closed-loop sensor technology also makes a key contribution to quality assurance. SIPLACE placement machines detect and combine component height and PCB profile in real time to precisely adjust the placement force. In this continuous, self-learning control loop, fluctuations on both the PCB and the components are automatically detected and compensated for — an integrative technology that sets new standards in quality assurance.

Compatibility with the SIPLACE world protects the user's investment

SIPLACE placement machines — such as the SIPLACE SX or SIPLACE TX — have become established in numerous SMT production facilities and are market leaders in many areas. They stand for high processing speed, precision, stable processes, and maximum component flexibility. ASMPT's hardware portfolio is complemented by DEK solder paste printers and the Process Lens SPI system for comprehensive coverage of almost all process steps in SMT production. A wide range of configuration options, a broad selection of accessories and powerful software solutions combine to form a fully integrated overall system.

The new SIPLACE V platform fits seamlessly into this portfolio while at the same time taking it to a new level. It is based on experience gained from countless production facilities worldwide and was developed specifically for the requirements of tomorrow. For users, compatibility means above all investment protection. SIPLACE X feeders that have already been purchased — which often account for up to 30 percent of the total investment in a line — can continue to be used, as can the proven SIPLACE cameras. This allows a line to be upgraded step by step to the SIPLACE V level — with the same performance in a smaller space or with more performance in the same footprint.

The same applies to the software. In the ASMPT world, everything is interlinked and consistently aligned with Industry 4.0 standards. The practical machine software, the line-oriented applications of the WORKS Software Suite for things like planning, material flow, process optimization and monitoring, as well as ASMPT's Factory Solutions all works with the SIPLACE V. The principle of intelligent manufacturing remains the same: Process data is collected in real time via standardized interfaces such as The Hermes Standard (IPC-HERMES-9852) and IPC-CFX, processed centrally, and made available exactly where it is needed for quality assurance and predictive optimization.

Ready for the future

Investing in the SIPLACE V platform today lays the foundation for efficient and competitive electronics manufacturing in the years to come. The modular platform offers ample reserves for future pick-and-place head generations, which will deliver significant additional performance improvements. Further optimization and innovation can be expected from ASMPT in this area.

The platform is also prepared for automation because it was designed so that additional rationalization steps — such as automated feeding by autonomous vehicles — can be integrated at any time. The SIPLACE VL variant is also available for applications with large-format PCBs and components that are up to 55 mm tall.

In addition, the SIPLACE V's internal communication has been converted to the industry standard Ethernet. This not only enables low latency and high bandwidth but also paves the way for future expansions. Furthermore, ASMPT's integrative data concept creates ideal conditions for the use of AI tools, which will soon play an important role in electronics manufacturing.

Successful synthesis with enormous future potential

With the SIPLACE V platform, ASMPT has once again set a milestone in electronics manufacturing. It already enables significant increases in capacity and, thanks to its robust, future-oriented design, forms the basis for future innovations. For the first time, it has become possible to achieve maximum flexibility even in the high-speed range.

The platform also sets new standards in floor space performance while remaining fully compatible with existing ASMPT manufacturing solutions. By being ready today for the challenges of tomorrow, the SIPLACE V opens up new perspectives in all key industries: In automotive manufacturing, it supports the zero-defect strategy with seamless traceability and improved OSC processing. In consumer electronics, it ensures maximum OEE (overall equipment effectiveness) for high-volume and high-mix/high-volume production, while keeping operating costs low. For smartphone production, it offers maximum precision for the smallest components and odd-shaped components. And in IT and network infrastructure manufacturing, it impresses with its reliable processing of large-format PCBs and complex layouts.

The SIPLACE V is thus a placement platform that not only meets current requirements but will have a lasting impact on the industry and take electronics manufacturing to the next level.



(Image credit: ASMPT)

Live at productronica

“The completely redesigned SIPLACE V platform is our clear response to the future challenges facing key industries in electronics manufacturing,” explains Thomas Bliem, Vice President of R&D at ASMPT SMT Solutions. “With a performance boost of up to 30 percent, it marks a real turning point in intelligent manufacturing and opens up completely new possibilities for our customers — for more productivity, flexibility, and quality. It is particularly important to us that we achieve this boost not only in theoretical benchmarkings, but above all in highly complex, real-world manufacturing environments.” Live at Productronica: the new SIPLACE V at the ASMPT booth A3.377.

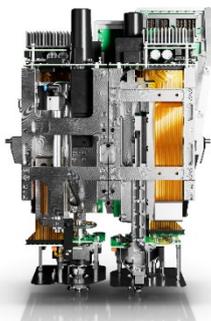


Martin Zistler, Vice President, Global Engineering, Zollner Elektronik AG

“After placing approximately 25,000 flat assemblies and 7.3 million components, we can confirm that the field test of the SIPLACE V platform in our high-mix, low-volume production was a complete success. The new placement machines from ASMPT once again set new standards in terms of performance, flexibility, quality, and effective placement performance.”



45 free 8-mm slots per location, regardless of the options selected. All existing X-feeders remain fully compatible, including the Linear Dipping Unit, Power Connector, SIPLACE Glue Feeder, and SIPLACE Measuring Feeder.
(Image credit: ASMPT)



The specialist for large and unusually shaped components: The SIPLACE TWIN VHF processes components measuring up to 200 × 150 × 55 mm (SIPLACE VL) with up to 100 newtons of force precisely and reliably. It is ideal for complex components such as BGAs or components for AI applications.
(Image credit: ASMPT)



Smart Pin Support is now even easier and faster: The pins are placed directly with the placement heads, eliminating the need for a separate pin picker.

(Image credit: ASMPT)

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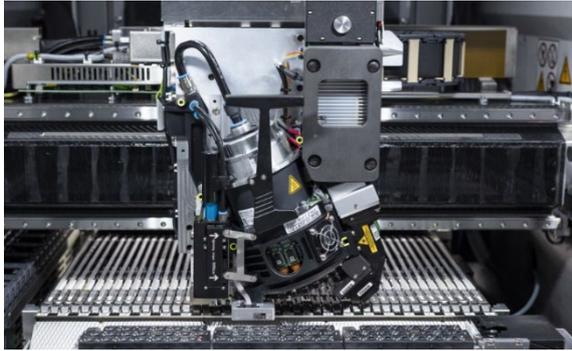
The new SIPLACE V platform gives electronics manufacturing a decisive boost not only in terms of performance, but also in terms of quality, flexibility, and future-proofing.

(Image credit: ASMPT)



Ready for the future: Latency-free data transfer using free space optics forms the basis for big data management and analysis.

(Image credit: ASMPT)



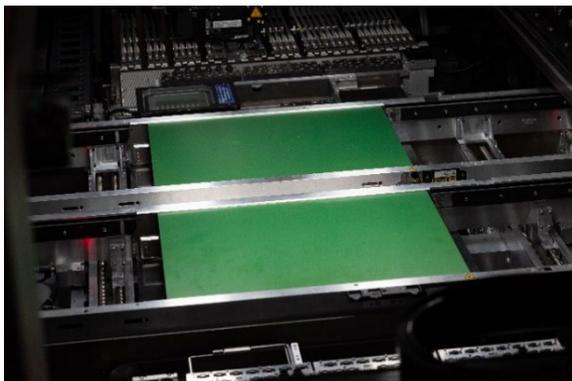
The new SIPLACE CP20 collect-and-place head has been specifically optimized for maximum performance and precision. With up to 52,500 cph at 25 μm @ 3 σ , it sets new standards for high-speed applications in electronics manufacturing.
(Image credit: ASMPT)



Compact and powerful: Top performance in a footprint of just 2.4 by 1.1 meters.
(Image credit: ASMPT)



The SIPLACE CPP is the all-rounder for demanding mixed placement applications. Thanks to software-controlled switching between collect-and-place, pick-and-place, and mixed modes, it processes up to 28,000 components per hour with placement forces of up to 15 newtons.
(Image credit: ASMPT)



The SIPLACE V offers maximum flexibility. It supports PCBs measuring up to 700 x 520 mm and offers a choice of single or dual gantry configurations, single or dual conveyor, and optional 3D Coplanarity Module.
(Image credit: ASMPT)