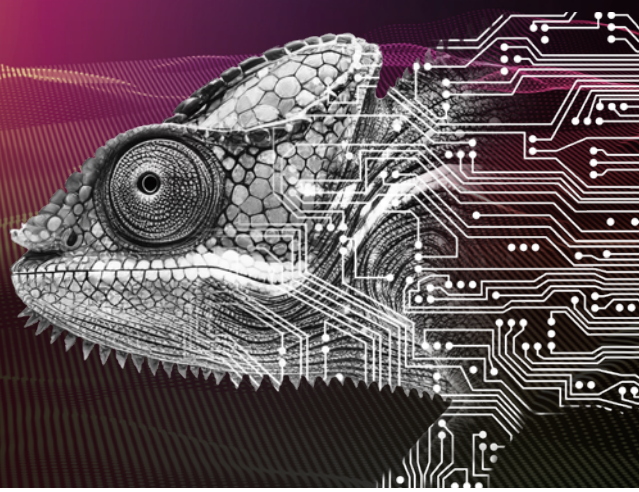
ASMPT enabling the digital world

KPI: Flexibility



Systematic flexibility – when variety becomes standard

The flexibility of the production equipment is directly proportional to the degree of efficiency with which the electronics manufacturer can balance his lines and optimize them for maximum OEE. Unusual products, rush orders, high mix low volume or unexpected events during ongoing production operations pose no problems for our adaptable technology.

SIPLACE placement machines from ASMPT make it possible to adapt quickly and easily to changing production jobs

What is crucial for flexibility

- High machine capability
- Broad component spectrum
- Adaptable conveyor system
- Software support for setup optimization

How does ASMPT achieve a high level of flexibility?

- SIPLACE placement heads with broad component ranges
- Efficient family setups
- Flexible dual conveyors
- Smart Pin Support
- Recognition of alternative components and housing shapes
- Special nozzles
- SIPLACE OSC package
- Flexible feeder solutions

Where is flexibility particularly important?

- Lines with small to medium lot sizes and great product diversity, for example in contract manufacturing
- Fast response to rush jobs
- Fast response to unexpected production situations

Is your investment really profitable?
Five KPIs provide the answer.

When purchasing placement machines, there is much more to consider than just the purchase price. To make informed decisions, you need to keep an eye on long-term operating costs – and thus the total cost of ownership (TCO). A key factor for a profitable investment is overall equipment effectiveness (OEE), which can be measured and optimized using **five key performance indicators (KPIs)**: Real Speed, Quality, **Flexibility**, Availability, and Ease of Use.

Flexibility is based on the seamless integration of hardware and software

CPP: One placement head, three placement modes

The SIPLACE CPP placement head operates in three distinct modes.

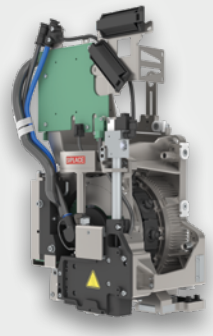
Your benefits:

- **Collect and Place:** Components are picked up and temporarily stored in a revolver-style turret before being placed – ideal for high-volume processing of small standard components.
- **Pick and Place:** Each component is picked individually and placed immediately – optimal for larger or non-standard components.
- **Mixed Mode:** A combination of both modes within a single placement cycle. E. g., the head can place one component using the collect mode and the next using the pick mode – perfect for complex mixed-component assemblies.

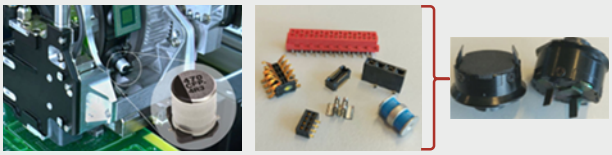
The CPP placement head delivers maximum component flexibility without the need to change heads or compromise on speed.

SIPLACE Placement Head CPP

Powerful all-rounder



Max. part range in mm: 50 × 40 × 15.5



Family setups with maximum flexibility

A family setup reduces unnecessary production interruptions, provided it is optimally planned and implemented. SIPLACE placement machines support this strategy with flexible SIPLACE placement heads and powerful software tools.

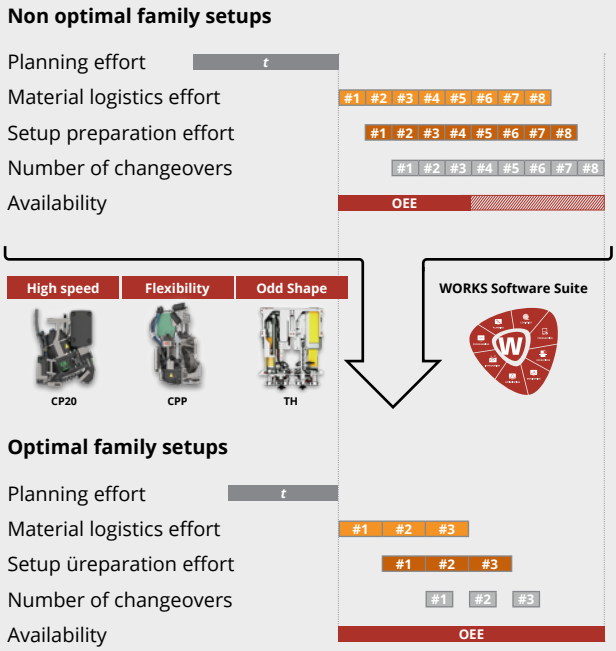
Your benefits:

- **Maximum flexibility:** Component-flexible placement technology supports high degrees of freedom in family setups.
- **Intelligent planning:** Supportive software for setup optimization, intralogistics, and production control.
- **Efficient processes:** Reduced planning effort thanks to intelligent software integration.
- **Optimized material flow:** Seamless supplies on the line without waiting or delays.
- **Minimized setup effort:** Shorter setup times thanks to optimized family setups.
- **Faster changeovers:** Fewer production interruptions due to sophisticated sequencing.
- **More line productivity:** Optimized setup strategies minimize production interruptions.

Perfect interaction of production hardware and software is crucial for efficient family setups. ASMPT offers both, precisely matched to each other for maximum productivity.

Family setups

Logical production sequences reduce the setup effort



Dual-lane transport process for flexible and efficient placement

Flexibility in the way PCBs are transported is a critical factor for maximum OEE. The conveyor technology of SIPLACE placement machines offers a broad spectrum of options for a wide range of production requirements.

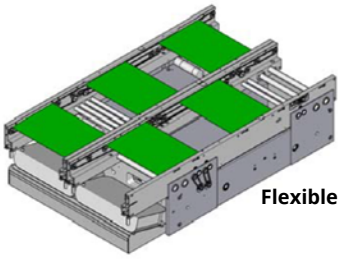
Your benefits:

- **Versatile positioning options:** Support for multiple positioning modes.
- **Flexible transport options:** Choice of single-lane and dual-lane transport.
- **Easy adaptation:** Easy changes with software-based switching.
- **Smooth throughput:** No more conveyor bottlenecks.

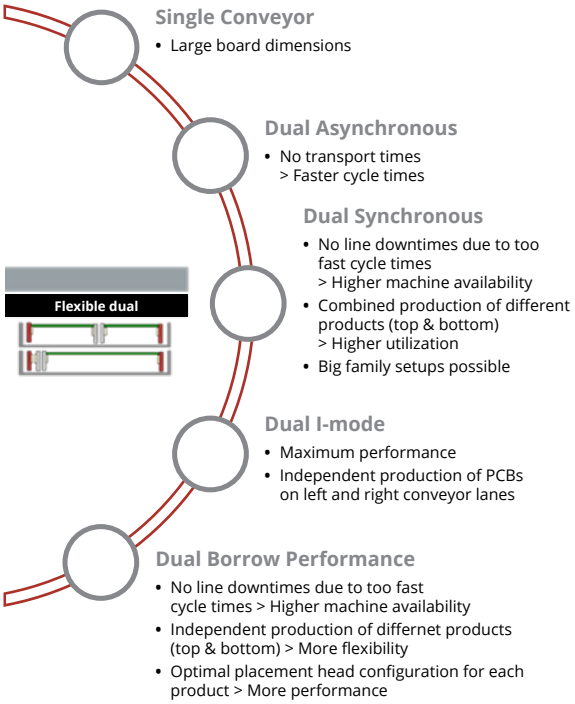
ASMPT's dual conveyor ensures the highest OEE regardless of product variations and production requirements.

Dual Conveyor

Two-lane flexibility for optimized workflows



Flexible Dual Conveyor



Smart Pin Support for automatic placement of support pins

Smart Pin Support from ASMPT is an option for the precise, fully automated positioning of support pins for PCBs in the SMT placement process.

Your benefits:

- **Automatic position detection:** Pins are always placed in the optimal location.
- **No manual intervention:** Support pins get positioned automatically.
- **Continuous verification:** A camera measures both pin position and height.
- **Significant time savings:** Approximately 20 minutes saved with every product changeover.

Smart Pin Support ensures maximum flexibility during product changeovers.

Smart Pin Support

Flexible support for PCBs

Recognition of alternative components and package shapes

With its high-resolution camera system, the SIPLACE placement machine can identify components even if they were delivered in slightly different package variants.

Your benefits:

- **Reliable differentiation:** Variations in components are detected, and unsuitable ones are automatically rejected.
- **No unnecessary production downtime:** Thanks to predefined tolerance windows.

This provides a competitive advantage, especially in high-mix production and prototyping.

Alternative component and package shape recognition

Components may vary –
placement quality remains consistent

Special nozzles and grippers

SIPLACE placement systems offer a wide range of specialized nozzles and grippers for the reliable handling of unusual package types and highly sensitive components.

Your benefits:

- **Solutions for every requirement:** Even for highly complex and non-standard package shapes.
- **Extensive selection:** Many special nozzles and grippers available for immediate online ordering.
- **Personalized support:** Our support team assists in selecting the right tool.
- **Multi Gripper Kit:** A modular system that allows customers to configure their own custom grippers.
- **Custom development and manufacturing:** Tailored to individual customer specifications.

ASMPT provides the ideal pickup tool for every component – or manufactures it as needed.

Special nozzles and grippers

A Solution for every requirement

SIPLACE Vision Teach Station

To simplify the capture of new component geometries, ASMPT offers a measurement workstation that uses the same camera and software as the SIPLACE Vision System.

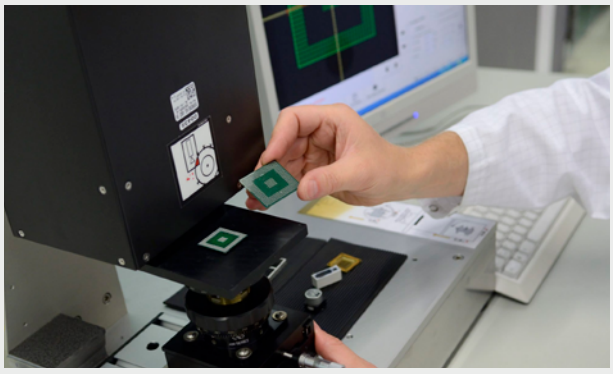
Your benefits:

- **User-friendly:** Easy and flexible measurement of new components.
- **Parallel:** Measurement without interrupting production.
- **Simple:** Component Shape Wizard simplifies scanning.
- **Fast:** Speeds up NPI processes.

Components not yet in the database can be added in just a few steps.

SIPLACE Vision Teach Station

Introduce new products quickly and reliably



SIPLACE OSC Package

This optional extension for SIPLACE placement systems optimizes the processing of special components with non-standard shapes such as large connectors, THT components, or particularly large and heavy devices.

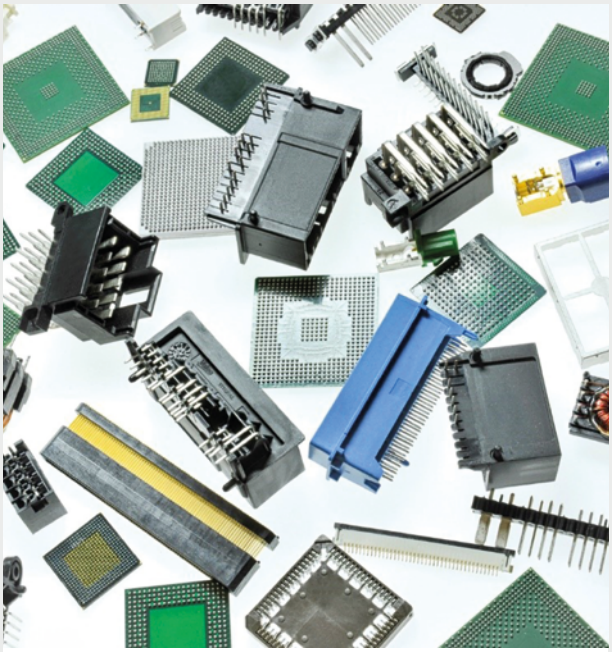
Your benefits:

- **High placement forces:** Up to 100 N.
- **High transport forces:** Enables placement of components weighing up to 500 grams.
- **Snap-In detection:** Verifies that mechanically secured components are properly latched.
- **3D real-time contact measurement:** Detects issues such as bent THT pins.
- **Crack detection:** Identifies cracks and fractures using the PCB camera.

With the OSC Package, manufacturers achieve maximum component flexibility.

SIPLACE OSC Package

Master every challenge



Special handling for specialized production

SIPLACE placement systems can be adapted to any product through flexible feeder options.

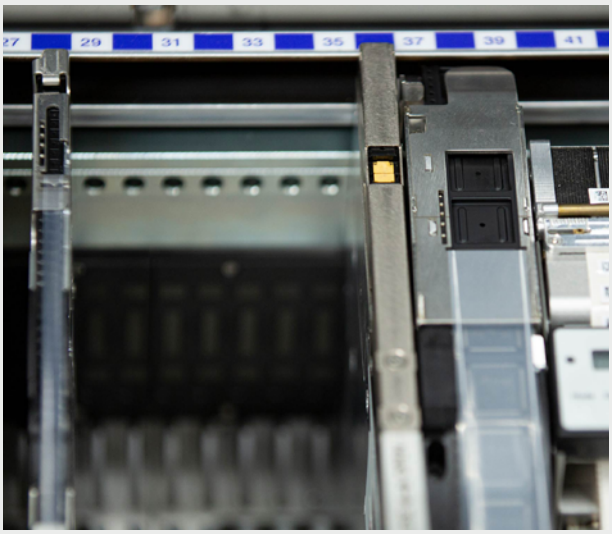
Your benefits:

- **Linear dipping unit:** Automatically applies flux for optimal soldering results.
- **SIPLACE Measuring Feeder:** Feeder-integrated measurement unit for verifying electrical properties of components.
- **SIPLACE Glue Feeder:** Feeder-integrated glue unit for precise dot dispensing.
- **Power connector:** Enables power supply for feeder setup and error recovery without interrupting machine operation.

Retrofit options provide maximum flexibility – even for unique products and demanding quality requirements.

SIPLACE Measuring Feeder

Electrical verification of components before placement



Intelligently integrated for maximum flexibility: When hardware and software work together perfectly

WORKS Operations: The application for smart working in the intelligent factory

Supporting software for qualification-oriented staff deployment across multiple lines. WORKS Operations makes the potential of skilled staff available.

Your benefits:

- **Smart operator pool:** Workload-based deployment of employees across multiple lines in accordance with their respective qualifications.
- **Intelligent user guidance:** Precise, prioritized and time-optimized display of work orders on mobile devices with all the information needed to quickly complete these orders.
- **Practice-oriented analysis:** Identification of particularly trouble-prone machines and weak spots in the process, with exact identification of the amount of work required.

WORKS Operations

Flexibility – Your benefits at a glance

- Support for a wide range of component sizes and types for diverse production requirements
- Software-supported setup optimization minimizes downtime
- Efficient product changeovers
- Optimal production sequencing with optimized family setups
- Reduced setup effort
- No production interruptions
- Dual-lane transport system for maximum flexibility without bottlenecks
- Reliable processing of large, heavy and irregular components with the OSC Package
- Flexible feeder solutions
- Qualification-oriented, cross-line employee deployment optimizes resource utilization

More about KPIs

ASMPT

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