

KPI: Availability

**Right on track –
when downtime is not an option**



A line's overall equipment effectiveness (OEE) is not determined by its occasional peak performance, but by its actual productive operating time. Crucial factors include: quick setup changeovers, minimal maintenance, intelligent automation functions, and a high degree of equipment flexibility.

SIPLACE placement machines from ASMPT offer consistently high availability even in environments with a high degree of order volatility

What is crucial for high availability?

- Coverage of a wide range of components
- Low maintenance requirements
- Low product specificity of the line

For what is high availability particularly important?

- Deadline compliance
- Fast response to rush jobs
- Fulfillment of time-critical orders
- Optimized hardware utilization
- Ability to operate with optimal shift models

How does ASMPT achieve high availability?

- Hardware and software support for family setups
- Maintenance-free SIPLACE feeders
- Highly available and maintenance-friendly SIPLACE placement heads
- SIPLACE smart features
- Automatic program downloads during product changeovers
- Accurate planning and optimization

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.

Maximum availability: When all systems work together perfectly

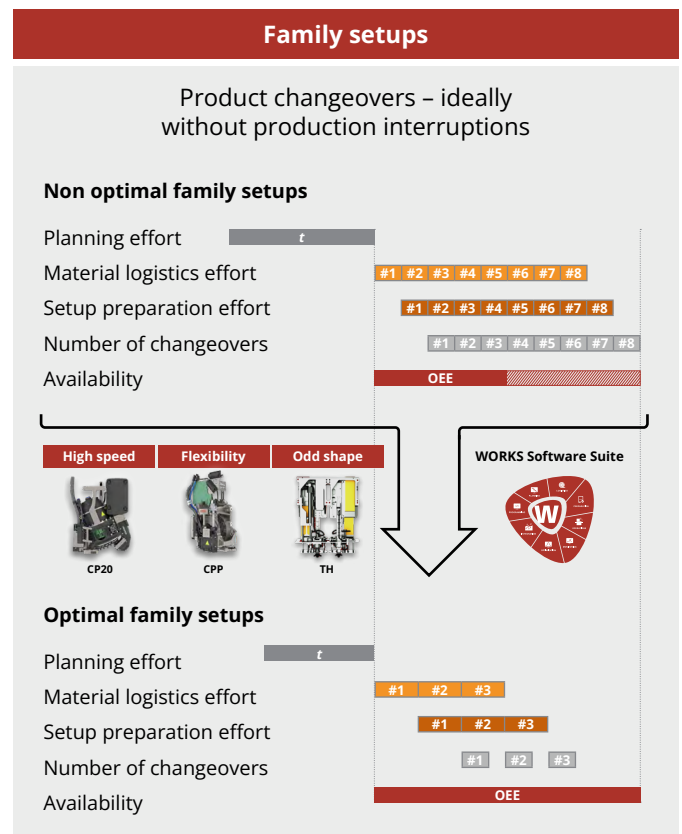
Family setups: Maximum availability thanks to optimal line utilization

SIPLACE placement machines maximize their availability by reducing setup changeover times and enabling seamless transitions between production runs.

Your benefits:

- **Maximum efficiency:** Long, uninterrupted production phases for more productivity.
- **Speedy setup changeovers:** Changeover tables make it possible to quickly switch between production jobs.
- **Uninterrupted production:** No more emptying of the line for product changeovers thanks to Automated Program Change.

Family setups optimize the line utilization and maximize the OEE – thanks to the flexible hardware and software from ASMPT.



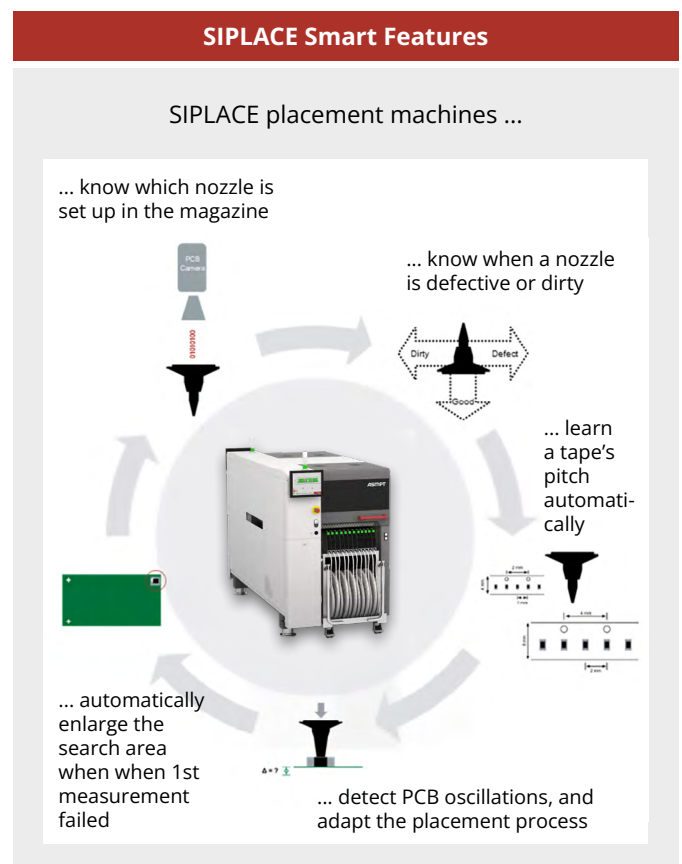
SIPLACE Smart Features: Non-stop production – despite external trouble factors

Varying pitches in component tapes, nozzle wear, fuzzy fiducials, nozzle vibrations... factors like these can easily interrupt the production flow. SIPLACE placement machines recognize many of them automatically and take targeted countermeasures in order to keep the production running smoothly.

Your benefits:

- **Intelligent fault detection:** Defects and dirty nozzles get detected automatically.
- **Dynamic pitch adjustment:** Automatic detection of varying pitches in component tapes.
- **Precise placement:** Automatic correction of circuit board oscillations for maximum accuracy.
- **Expanded fiducial search:** Automatic adaptation of the search radius when a fiducial goes undetected.
- **Efficient nozzle management:** Integrated database for recognizing nozzle types in the magazine.

ASMPT's automatic correction functions increase machine availability and make the staff's work easier.



Equipment that's productive, not undergoing maintenance

Major components in SIPLACE placement machines are designed to require minimal or no maintenance.

Your benefits:

- **Low-maintenance SIPLACE placement heads:** SIPLACE placement heads require little maintenance and are easy to keep operational.
- **Fast recommissioning:** SIPLACE placement heads quickly start up again after maintenance.
- **Intelligent calibration:** An internal data memory makes recalibration easier.
- **Maintenance-free SIPLACE feeders:** All SIPLACE feeders require no maintenance.
- **Maximum availability:** Durable components ensure trouble-free operation.

Maximum productivity instead of time-consuming maintenance: All central components of SIPLACE placement machines are designed for minimal maintenance, thus ensuring a continuously high level of availability.

Order flexibility: Optimize availability with freely selectable production lines

Thanks to their adaptable technology, SIPLACE placement machines make it possible to manufacture products on multiple lines. This reduces interdependencies, raises the production capacity, and facilitates efficient production.

Your benefits:

- **More flexibility:** Greater degrees of freedom on the factory floor for optimized manufacturing processes.
- **More efficient setup strategies:** Reduced planning effort thanks to fewer family setups.
- **Reduced costs:** Lower setup and logistics expenses for more efficient production.
- **Maximum throughput:** Side-by-side production increases capacity and shortens production times.

More choice for more flexibility: For each product, SIPLACE placement machines offer multiple manufacturing options that can be used alternatively or simultaneously, depending on the user's needs. This makes it possible to benefit from more production reliability, improved capacity utilization, and flexible adaptability to changing requirements.

Maintenance

More availability and lower costs

High speed



CP20

3.7 h/year

Flexibility



CPP

2.3 h/year

Odd shape



TH

0.5 h/year

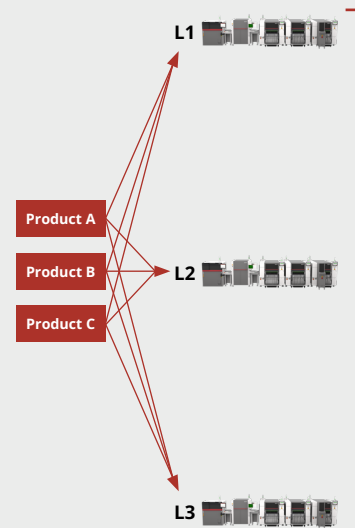


Maintenance-free feeder design

Maintenance-friendly placement heads and maintenance-free feeders deliver more availability and lower costs.

Order flexibility

Low line-specificity makes the factory more efficient



Fewer family setups

- Less logistics and preparation effort
- Fewer setup changeovers
- > **More availability**
- > **More real speed**

Fewer product-specific lines

- Lower number of lines

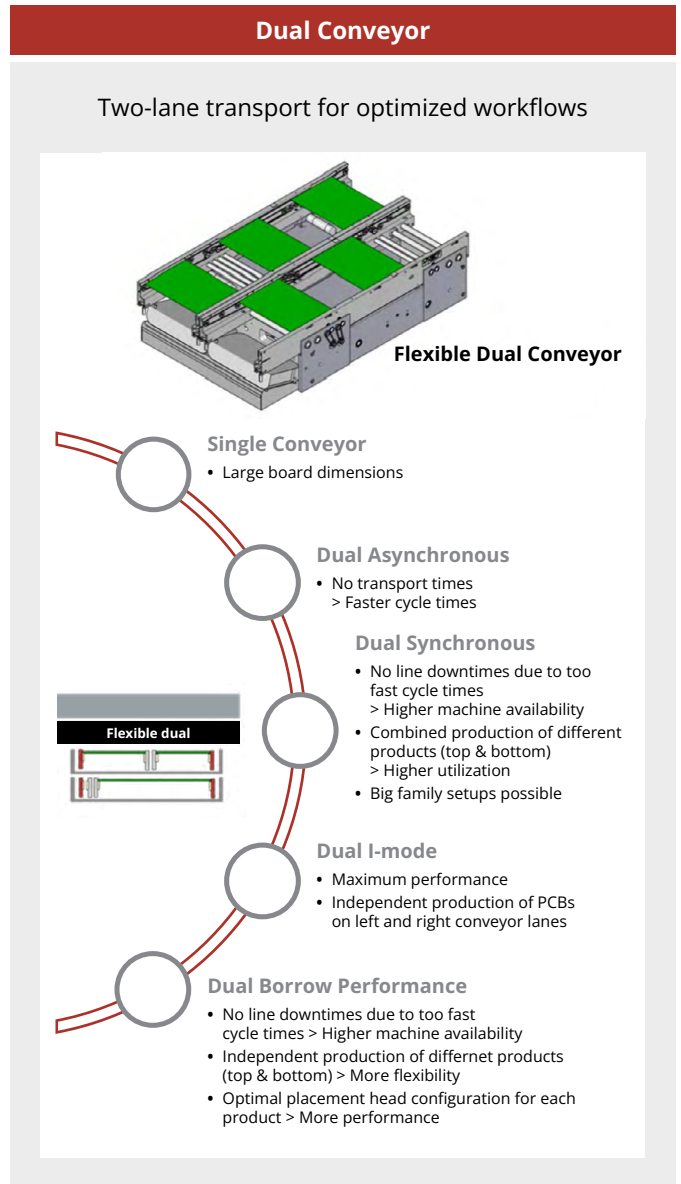
Dual-lane transport process for continuous and efficient placements

Availability 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.



Smart Pin Support for automatic placement of support pins

Smart Pin Support from ASMPT is an option 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 assist:** 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 availability during product changeovers.



Automatic Waste Disposal System: So that waste doesn't slow down your production

In SMT production, large amounts of waste are generated – for example, in the form of empty component tapes. You no longer need to burden your scarce skilled workers with disposal tasks. An automatic conveyor system, installed underneath the machines, collects the waste from the entire SMT line into a single container.

Your benefits:

- **Increased productivity:** Fewer manual assists.
- **Lower costs:** Shorter downtimes.
- **Higher degree of automation:** Seamless third-party AMR integration.

Ideally, the same AMR that performs the automatic changeover at the line can also take over the waste disposal.

Automatic Waste Disposal System

Relieves skilled workers, saves time and costs



On a line with four SIPLACE SX machines, the Automatic Waste Disposal Systems can save **up to 250 labor hours** per year.

Remote Smart Factory: Remote maintenance increases availability

Remote Smart Factory represents the next level of service: Through a global and highly secure IT infrastructure, ASMPT establishes direct connections between its support teams, your technicians, and your machines.

Your benefits:

- **Direct access:** Remote interventions for fast problem resolution.
- **Full data visibility:** Machine and process parameters available anytime, anywhere.
- **Secure connections:** Comprehensive protection against hacking.

High availability is achieved faster and more easily when it's the data that travels – not the technicians.

Remote Smart Factory

Maximum uptime through remote maintenance



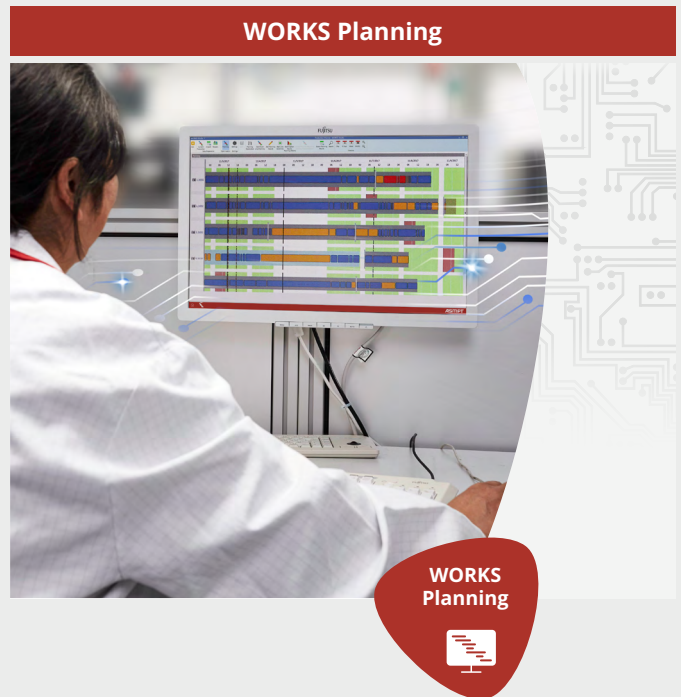
Intelligently integrated for consistently high availability: When hardware and software work together perfectly

WORKS Planning: Multiline production planning and setup optimization

Supporting software for production planning and setup optimization across multiple lines. WORKS Planning combines flexibility and efficiency in order processing.

Your benefits:

- **Optimal order allocation:** For optimal line utilization.
- **Reduced setup effort:** By combining production orders into family setups.
- **Reduced transportation effort:** WORKS Planning determines which components can remain in the setup area to be available for subsequent orders.
- **Cooperation with WORKS Logistics:** Data transfer for detailed planning.
- **Precise forecasting:** For detailed resource planning and to avoid bottlenecks.
- **Integrative solution:** One solution for all lines.



Availability – Your benefits at a glance

- Long productive operating times thanks to family setups
- Support for a wide range of components for versatile production requirements
- Maximum availability thanks to optimal line utilization
- Low-maintenance SIPLACE placement heads
- Maintenance-free SIPLACE feeders
- Optimized production sequence reduces downtime and setup effort
- Smart Pin Support for smooth product changeovers
- Parallel production enables higher capacity through flexible use of multiple production lines
- Automatic error detection and correction keep the line running
- Fully automated program changes enable seamless changeovers
- Software-supported planning and control reduce complexity and increase utilization
- Remote Smart Factory for maximum availability
- Fewer manual assists with the Automatic Waste Disposal System

ASMPT

More about
KPIs



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