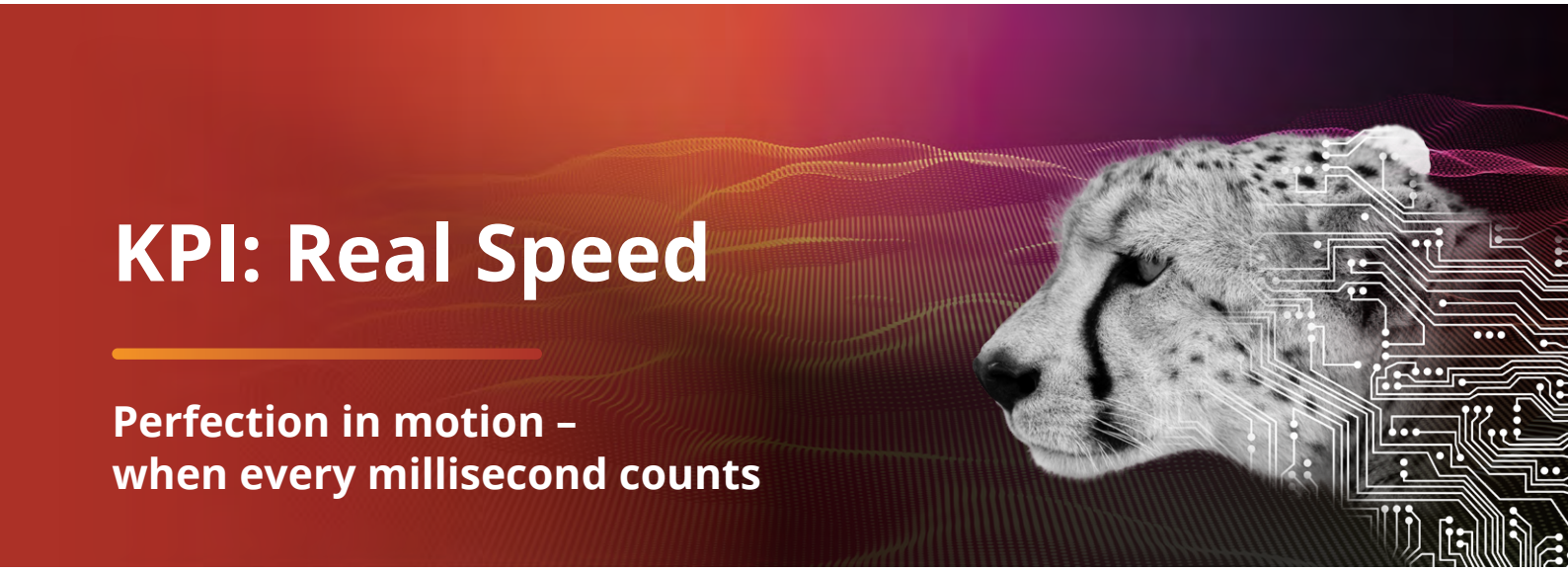
ASMPT enabling the digital world

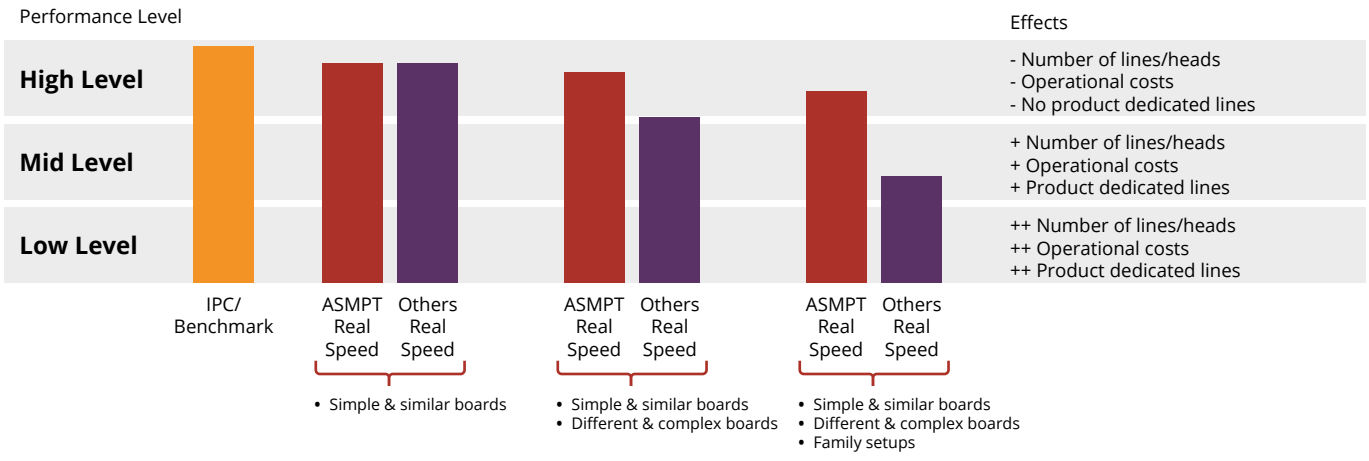


KPI: Real Speed

Perfection in motion – when every millisecond counts

Especially in high-mix/low-volume production environments, the maximum values determined in standardized benchmark tests are rarely realized. To nevertheless achieve high placement speeds for complex PCBs with wide ranges of components, the technology must be precisely tailored to the requirements of modern products.

Significant speed advantages for demanding products



Real speed comparison of ASMPT placement machines and competitors' products: The relatively small performance losses under demanding production conditions show how well ASMPT machines are tailored to customers' needs.

Is your investment really profitable?
Five key 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.

Placement machines from ASMPT achieve a high real speed KPI even under demanding conditions

What is crucial for high real speed?

- Maximum speed without compromise
- Maximum flexibility for high-mix assemblies
- Accurate component inspection that does not slow down the machine's operation
- Fast yet accurate component placement
- Optimized handling of odd-shaped components (OSCs)

How does ASMPT achieve a high real speed KPI?

- SIPLACE high-speed placement heads
- Component cameras are integrated into the placement heads
- SIPLACE placement heads with broad component ranges
- Optimized SIPLACE vision systems
- Adjustable accuracy
- Flexible OSC features

For what is the real speed KPI particularly important?

- High-mix/low-volume production
- Processing of complex special components
- Mixed production with family setups

Real speed begins in the details – with perfect interaction between all components

SIPLACE Placement Head CP20: Designed for maximum speed with standard components

The SIPLACE Placement Head CP20 uses a turret head that picks up 20 components per cycle and places them at maximum speed.

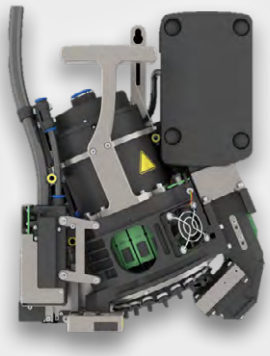
Your benefits:

- **Optimized travel paths:** Fewer time-consuming movements between feeders and the circuit board thanks to a component camera and a component sensor, both integrated into the placement head.
- **Maximized placement performance:** Up to 48,000 cph for exceptional efficiency.
- **Broad component spectrum:** Ranging from 0201 (metric) to 8.2 × 8.2 mm on all segments for maximum speed and optimally balanced lines.

Practical experience has shown that the SIPLACE Placement Head CP20 can cover roughly 94 % of the placement positions in an average SMT production with great efficiency.

SIPLACE Placement Head CP20

Consistently designed for speed



Max. part range in mm: 8.2 × 8.2

Data basis:
Customers: 40
Different parts: ~40,000

Placement positions: ~2.5 million

Coverage of Placement: 94 %

SIPLACE Placement Head CPP: Performance and flexibility perfectly combined for demanding mixed-assembly applications

The SIPLACE Placement Head CPP combines speedy collect-and-place and flexible pick-and-place modes, which enables it to cover an exceptionally broad component spectrum with great efficiency.

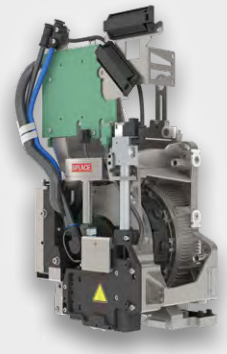
Your benefits:

- **Reduced changeover effort:** No need to change heads for OSCs thanks to custom-tailored nozzles and grippers.
- **Flexible assembly:** Processes components measuring up to 27 × 27 x 15.5 mm (L×W×H) together with standard components.
- **High efficiency:** Processes components up to 10.5 mm tall in fast collect-and-place mode.
- **Automated adaptation:** Changes seamlessly between collect-and-place and pick-and-place modes.
- **Maximized line performance:** Optimally balanced line for higher overall productivity.

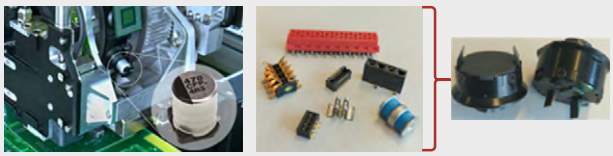
Practical experience has shown that the SIPLACE Placement Head CPP can cover roughly 98 % of the placement positions in an average SMT production with great efficiency.

SIPLACE Placement Head CPP

Powerful all-rounder



Max. part range: 50 × 40 × 15 × 5 mm



Data basis:
Customers: 40
Different parts: ~40,000

Placement positions: ~2.5 million

Coverage of Placement: 98 %

Fast. Precise. Integrated: The SIPLACE Vision System with high-resolution camera in the placement head

For maximum performance when challenging products are involved, the optical inspection system of SIPLACE placement machines makes a crucial difference.

Your benefits:

- **Integrated inspection:** No extra time needed during normal pickup and placement cycles.
- **Efficient capture:** No additional travel required to move the component past the camera.
- **Maximum speed:** No delay caused by on-the-fly alignments and individual component inspections.

With the high-resolution SIPLACE Vision System, even larger components with fine structures can be inspected without sacrificing speed.

SIPLACE Vision System

Inline vision for maximum throughput

Maximum speed – without compromising on precision

SIPLACE placement machines deliver a consistently high level of performance even when the highest levels of accuracy are required.

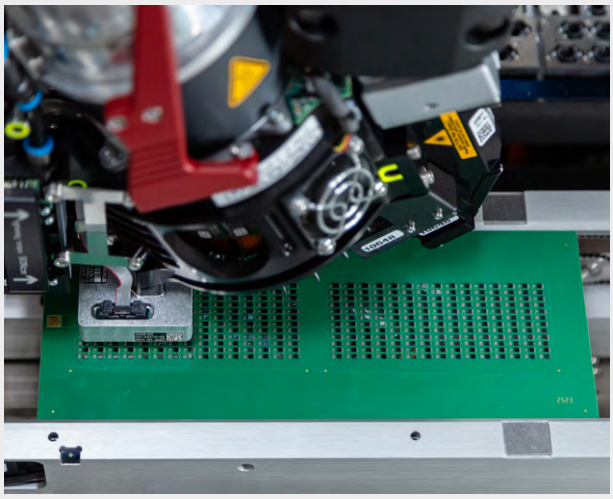
Your benefits:

- **Optimized performance:** Hardware and software are specially tuned for maximum speed and accuracy.
- **Variable precision:** On the SIPLACE TX micron, the placement accuracy can be set individually for each component.

Placement machines from ASMPT enable electronics manufacturers to optimally master the demanding balance between accuracy and speed.

On-demand placement accuracy

Precision without loss of speed



SIPLACE OSC Package: Maximum efficiency in the pick process for complex component shapes

SIPLACE placement machines achieve a high real speed KPI for OSCs by adjusting the travel speed in accordance with the specific component being processed.

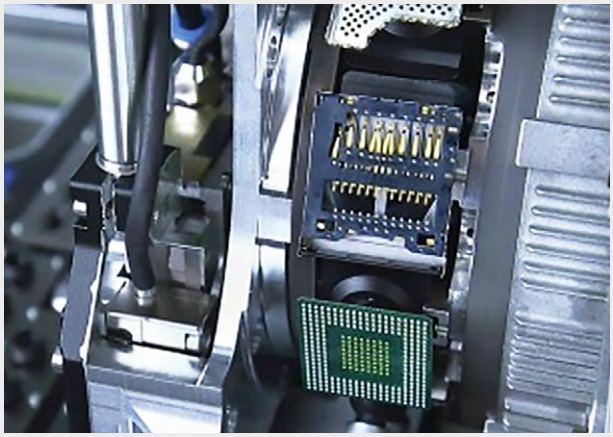
Your benefits:

- **Dynamic adjustment:** Automatic determination of maximum permissible acceleration.
- **Efficient programming:** Single-click transfer of parameters to the programming system.

With the OSC Package, SIPLACE machines deliver consistently high performance even with complex special components.

SIPLACE OSC Package

Efficient picking, precise placement



Intelligently integrated for maximum performance – when hardware and software work together perfectly

SMT Analytics: Supplemental software for throughput analysis and optimization

SMT Analytics makes it easy to identify potential causes of production slowdowns. The ASMPT software analyzes the SMT process in depth and localizes production obstacles that might otherwise go undetected.

Your benefits:

- **Analysis of machine conditions:** Generates an overview of production process and line operation.
- **Precise localization:** In-depth analyses make hidden production obstacles visible.
- **Optimization options:** SMT Analytics identifies opportunities to increase overall production efficiency.
- **Expert system:** Based on many years of process optimization experience.

SMT Analytics

Real Speed – Your benefits at a glance

- High-speed CP20 turret head for maximum speed
- Highly flexible CPP placement head for maximum freedom in mixed placement
- Integrated component camera on every Collect & Place placement head
- No time lost due to component inspection
- Individually adjustable placement precision
- OSC package for fast processing of special components
- Automatic determination of maximum acceleration
- Supporting software SMT Analytics
- In-depth analysis of the entire SMT process
- Detection of production obstacles that often go unnoticed

More about KPIs

ASMPT

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