The "compact high-speed mounter" has evolved.

CELLULAR MOUNTER

Sony Manufacturing Systems Corporation

http://www.sonyms.co.jp/

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Sony's cellular mounter has further expanded the possibilities for placement and offers a solution for a more strategic production system.
"High-speed head"  
Sony's original Planet Head®  
supporting placement of 0402 and 0603 chips

The Planet Head circuit board is designed for the placement of chip components. It even supports small chip components including 0402 and 0603 chips. It is a patented rotary head with 12 radially arranged nozzles and an overlap function. Capable of rotating in both directions, the head optimizes pickup and placement sequences and minimizes the placement tact time.

0.08 seconds
Higher placement speed leads to greater operation capacity

The Planet Head boasts a placement tact time of 0.08 seconds, a speed that outperforms that of large-scale machines. The head, consisting of one head and 12 nozzles, can rotate in both directions upon pickup or placement. It automatically calculates the cassette position and the placement position and conducts the pickup and placement in the "most efficient order." Through automatic calculation, the head conducts placement in the "order involving minimum movement," which affects the last time the model. As a result, the head achieves high productivity with the effective last time closely approaching the nominal tact time.

* Ten times faster than the high-speed heads

Highly accurate and highly reliable component recognition

The head recognizes components based on the Picking Vision method using a CCD camera. Due to the imaging approach, it can identify irregular shapes that are difficult to identify using a laser transmission sensor. It can also identify the thickness with high precision, as it does not miss any small chip components being picked up in a standing position.

Appropriate connection and high pickup rate achieved through automated pickup position correction

The head automatically corrects the component pickup position and improves the pickup rate. It accumulates images of the rate of component pickup for each cassette during operation. Based on this, it accurately calculates and corrects the differences in the pickup position at the center of the nozzle and the center of the component, achieving a high pickup rate. Unlike a system that arranges nozzles in a row, each nozzle in both the high-speed head and the multifunction head has an independent mechanism. Each nozzle is free from maintenance than other nozzles, it can be automatically connected to achieve excellent pickup rates.

Nozzle mechanism that requires less frequent maintenance

While the nozzle head repeats up-and-down and rotational movements. Sony improved the nozzle mechanism to extend the regular maintenance cycle (lubrication, removal of extraneous matter, etc.) to double the length (compared to the F-Series). This reduces the downtime of the production line. This feature along with the function to correct placement accuracy contributes in maintaining high accuracy and high productivity.
0.16 seconds*
Higher placement accuracy results in better performance

Sony applied the technology of its revolutionary Pinhead head to a general-purpose head to produce this multifunction head. The head uses a two-megapixel CCD camera. By recognizing eight components with different shapes at once, it achieves a placement last time of 0.16 seconds, the fastest in the industry for a general-purpose head supporting odd shaped components, and a high mounting precision of ±4µm. It also minimizes the difference between the theoretical last time and actual last time by automatically calculating the "torer moving minimum movement" on a PWB and conducting placement in that order.

*See component usage using new multifunction head

Supports wide variety of components

By setting a large nozzle at a desired place using a nozzle changer, the head can support placement of large components up to the size of 100 x 50 mm. The nozzle changer can store up to 24 kinds of nozzles and automatically replaces them by program control.

Highly accurate and highly reliable component recognition

The head recognizes components by using a two-megapixel CCD camera. Due to the imaging approach, it can identify irregular shapes that are difficult to identify using a laser transmission sensor. It can also identify the components with high precision, so it does not miss any small chip components being picked up in a standing position.

Versatile "Multifunction head" supporting large, odd shape components

The "multifunction head" of the SH-S200 is a versatile mount head that supports placement of components from the size of a 1005 chip up to 100 x 50 mm.

The rotary head with eight radially arranged nozzles can pick up a maximum of eight components.

The head achieves a placement last time of 0.16 seconds by recognizing these components at once.

It guarantees high versatility and high-speed, high-accuracy placement performance at the same time.

Appropriate correction and high pickup rate achieved through automated pick up position correction

The head automatically corrects the component pickup position and improves the pickup rate. It automatically takes images of the state of component pickup for each cassette during operation. Based on this, it constantly calculates and corrects the differences in the pickup position at the center of the nozzle and the center of the component, achieving a high pickup rate.

Unlike in a system that arranges nozzles in a row, each nozzle has an independent mechanism. As each nozzle is free from interference from other nozzles, it can be appropriately corrected and achieve an excellent pickup rate.