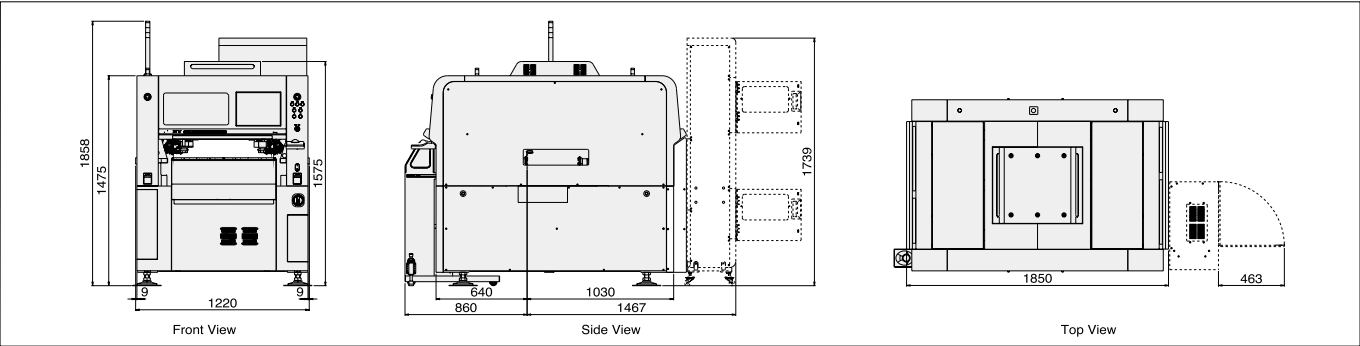


■Specifications	SI-G200	
PWB size	50 x 50 to 460 x 410 mm (no 3-stage feature for boards longer than 330 mm) PWB thickness: 0.5 to 3.0 mm	
PWB exchange time	1.8 seconds (optimum condition)	
PWB transport direction/reference	Right to left or left to right/front	
Cassette type	Sony cassette	
Additional features	Automatic conveyor width adjustment, Automatic PWB thickness adjustment, Component verification function	
Operational controls	Front and Rear: Color LCD touch panel display and handy console	
Power supply/consumption	AC 3-phase 200V±10%, 50/60Hz, 4.0 KVA	
Air pressure/consumption	0.49 to 0.5Mpa, approx. 10 L/min. (approx. 50N L/min.)	
Dimensions of main unit	1,220(W) x 1,850(D) x 1,575(H) mm (without the tray changer)	
Weight	2,200 kg	

	High-speed head	Multifunction head
Cassette loading capacity	40 front cassettes + 40 rear cassettes (80 cassettes in total)*	40 front cassettes + 40 rear cassettes, or 17 cassettes + 15 x 2 trays (*)
Head configuration	24 nozzles/2 heads (12 nozzles/1 head)	16 nozzles/2 heads (8 nozzles/1 head)
Nozzle change	-	Sequential change of 24 nozzles
Component size ranges	0402 chip up to a 12 mm square (movable camera) A 6 to 25 mm square (fixed camera) Component height: 6 mm	"1005 chip to 100 x 50 mm Component height: 13 mm"
Placement tact time (optimum conditions)	0.08sec/2 heads/movable camera (45,000 CPH)	0.16sec/2 heads (22,500 CPH)
Parts release detection	Component identification using a camera (movable camera only)	Component identification using a camera
Placement precision	±0.045 (3σ) mm	±0.040 (3σ) mm
Main options	Cassette trolley, fixed camera, splicing cassette, multiple-pitch cassettes	Cassette trolley, splicing cassette, multiple-pitch cassettes, component reject conveyor, tray changer

* 8mm cassettes

■External dimensions



■Software

CPS-Pro2 (Cellular Programming Station)

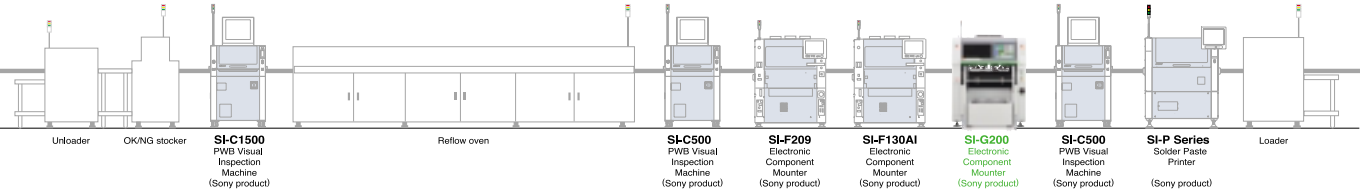
Software for creating mount programs offline.

DAS (Data Arrangement Software)

Automatically programs the optimal nozzle assignment, cassette position and placement sequence.

Multi-pitch parts feeding cassette

Supports multiple pitches. Minimizes types of parts cassettes which contributes to less investment.



⚠ Safety notice: Prior to use, be absolutely certain to read and understand the Operating Instruction to ensure proper use of this product.

●Specifications and dimensions listed in this brochure are subject to change without notice due to product improvement.

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The contents of this literature are as of Sep. 2006

SONY

Electronic Component Mounters
SI-G200



CELLULAR
MOUNTER



Sony Manufacturing Systems Corporation

Used material: 100% recycled paper, recyclable
Zero-VOC (Volatile Organic Compound) vegetable oil ink

037E-0610-05-01A

Further productivity and efficiency

High-speed head

The SI-G200 high-speed mounter, boasting a two-head model inheriting the advantages of the precision, space-saving design, The high-performance mounter responds to combination of its replaceable "high-speed head" and "multifunction head" so as to best match the

placement tact time of 0.08 seconds, is a two-cellular mounter, including high mounting and low power consumption. various operational needs by allowing a flexible head" and "multifunction head" so as to best production line.

Multifunction head

CELLULAR MOUNTER

45,000CPH

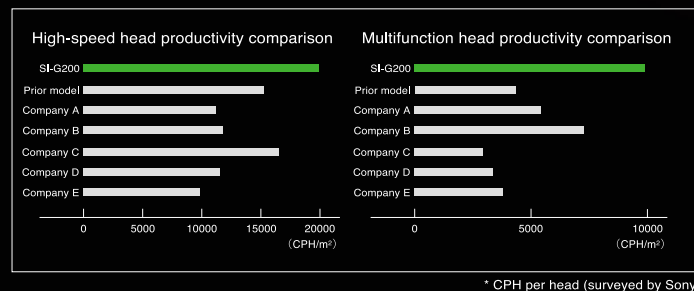
Higher performance makes difference in competitiveness.

1.2m width

Smaller footprint makes difference in efficiency.

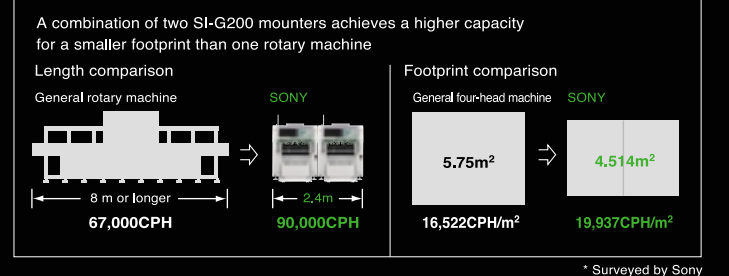
Top-class productivity per footprint

The two-head model uses one head for placement and the other head for pickup. It achieves a dramatically shorter pickup and placement rotation time by making the two mount heads operate simultaneously between the cassette and the PWB. The SI-G200 boasts top-class productivity, placing up to 45,000 components per hour (CPH)-a 70% improvement over the 25,900 CPH of Sony's SI-F130



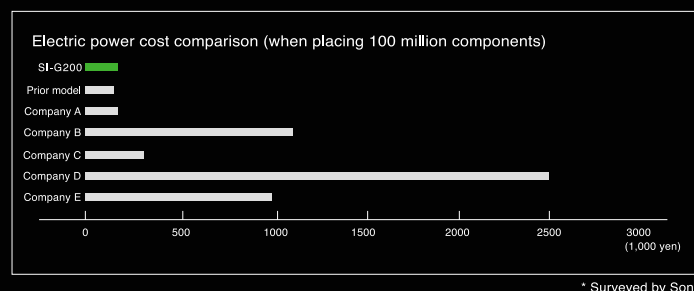
Compatible with an existing line as a dedicated chip mounter

The SI-G200 enables a capacity increase of 45,000 CPH with a mere 1.2 m footprint. It can be installed at the center of the production line to dramatically save space or can be easily added to an existing line as a dedicated chip mounter. The number of mounters can be finely adjusted to meet any need for reducing production capacity or footprint, allowing for a more strategic production system.



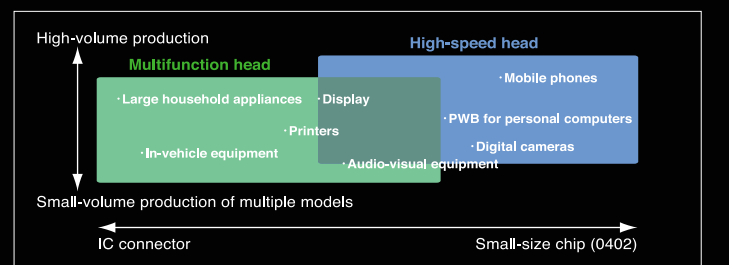
Economic mounting as previous model: Lowest power consumption compared to competition

While the CPH value is an important productivity factor, the running cost is equally important. Sony emphasizes energy efficiency in all of its products to minimize the running cost and environmental friendly. The SI-G200 is also extremely power-efficient.



Flexible in responding to small-size components and large, odd shaped components

The SI-G200 provides a high-speed head, supporting placement of small chip components, and a multifunction head, supporting large, odd shaped components. By effectively combining the two heads, it can be used as a high-speed chip shooter capable of mounting a large volume of components or as a multipurpose mounter supporting wide variety of PWB components. Additionally, its space-saving, compact design with a 1.2 m width enables a flexible line configuration.



Sony's cellular mounter has further expanded the possibilities for placement and offers a solution for a more strategic production system.

Portable MP3 player

Mobile phone

Portable game

IC recorder

Digital camera

Video Camera

Personal Computer

***"High-speed head"
Sony's original Planet Head®
supporting placement of
0402 and 0603 chips***

The Planet Head® of the SI-G200 is a mount head mainly 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 outstrips that of large-size 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 tact time the most. As a result, the head achieves high productivity with the effective tact time closely approaching the nominal tact time.

* Tact time when using two high-speed heads

Highly accurate and highly reliable component recognition



The head recognizes components based on the Flying 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, so it does not miss any small chip components being picked up in a standing position.

Appropriate correction 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 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 a system that arranges nozzles in a row, each nozzle in both the high-speed head and the multifunction head has an independent mechanism. As each nozzle is free from interference from other nozzles, it can be appropriately corrected to achieve excellent pickup rate.

Nozzle mechanism that requires less frequent
maintenance



While the nozzle heavily 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 to maintaining high accuracy and high productivity.

0.16 seconds*

Higher placement accuracy results in better performance

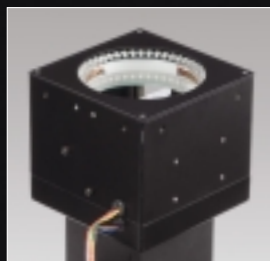
Sony applied the technology of its revolutionary Planet Head to a general-purpose head to produce this multifunction head. The head uses a two-megapixel CCD camera. By recognizing eight components with different shapes at once, it achieves a placement tact time of 0.16 seconds, the fastest in the industry for a general-purpose head supporting odd shaped components, and a high mounting precision of $\pm 40\mu\text{m}$. It also minimizes the difference between the theoretical tact time and actual tact time by automatically calculating the "order involving minimum movement" on a PWB and conducting placement in that order.

* Tact time when using two multifunction heads

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 thickness with high precision, so it does not miss any small chip components being picked up in a standing position.

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 accumulates 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.

Consumer electronic

Display

Audio IC

Car navigation

Video signal

Car audio

Personal Computer

Versatile "Multifunction head" supporting large, odd shape components

The "multifunction head" of the SI-G200 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 tact time of 0.16 seconds by recognizing these components at once.

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