J-Solution Corporation

We Ready For industry 4.0

MAI-SERIES_NEW

J
SOLUTION
SOLUTION OF INNOVATION

ODD Shape Insertion Machine/Robot

FA Equipment Manufacture

Selective Soldering Machine

SMT Total Solution

Mirae Corporation

Founded in 1983, our company is a source of pride for Korea as a leader in the high-tech industry, having been the first to domestically produce semiconductor test handlers and chip mounters.

Our equipment is sold all over the world in Europe, Asia, the Middle East, and the Americas. All of our executives and employees work together in unanimity to move forward as a global company. We are proud of our excellent technological skills and countless patents and strive to provide the best customer service to impress our customers at all times.

We will continue to grow into a trusted and loved company by our customers and create a cheerful workplace for our employees. Moreover, we believe that the spirit of dreaming for the bright future of our shareholders, company, and nation will open new doors for the future of Mirae Corporation.

We promise to pioneer the way for a more valuable future based on our decades-long history, and we invite you to keep an eye on our company with more interest and love.

Thank you.

CEO
Mirae Corporation

Mirae

Hybrid Insertion System
MAI-Series

Our Hybrid equipment integrates lead-type component insertion systems using Through Hole Technology with highly dependable SMT mounter technology, in order to optimize performance and quality

Model		Unit	MAI-H4T	MAI-H6T	MAI-H8T	MAI-12T
Optimal	Module	CPH (sec / Chip)	17,000 (0.21)	17,000 (0.21)	30,000 (0.12)	33,000 (0.11)
	QFP		9,000(0.40)	11,500 (0.31)	21,000 (0.17)	23,000 (0.15)
IPC-9850	Module		12,500 (0.29)	13,500 (0.27)	17,000 (0.21)	18,500 (0.19)
	QFP		7,500(0.48)	9,000 (0.40)	11,000 (0.33)	12,000 (0.30)
Accuracy	Module (3σ)	mm	±0.050			
	QFP (3σ)					
Head		Number	4	6	8	12
Gantry		Structure	Single		Dual	
Component Range			0603 ~ 50 x 50, 90 x 30			
PCB Size	Standard	mm	700 x 510 x 5.0	600 x 510 x 5.0	700 x 510 x 5.0	600 x 510 x 5.0
	Minimum		75 x 50 x 0.4 50 x 50 x 0.4 (Option)			
Component Height (Max)			55			
Power		V (Hz)	3 Phases 200 / 208 / 220 / 230 / 240 / 380 / 400 / 415 / 430 (50/60)			
Air		MPa	0.55			
Dimension		mm	1,580 x 2,090 x 1,560			
Weight		kg	About 2,000		About 2,100	

Applicable Components

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Technologies (Machine)

Laser & Side Light Vision System

Applying lasers and optical triangulation method, adjust the mounting position based on lead detection results, and determine the presence of lead bent or missing leads.

System	Inspection Method		Result
Laser Vision			
Side Light Vision			

Auto Clinching

A component lead clinching system can prevent fall-out and slanting issues while the PCB is in motion.

Fall-Out / Slanting	Method	Result

ZHMD (Z-Height Measurement Device)

To prevent PCB defects caused by miss-inserted components, compare the component height before and after insertion and measure the evenness of the PCB using automatic level compensation.

Before Inserting | After Inserting | Determination

Side Push

Use a side push technique with a nozzle to press pre-inserted components, especially for those that require further insertion.

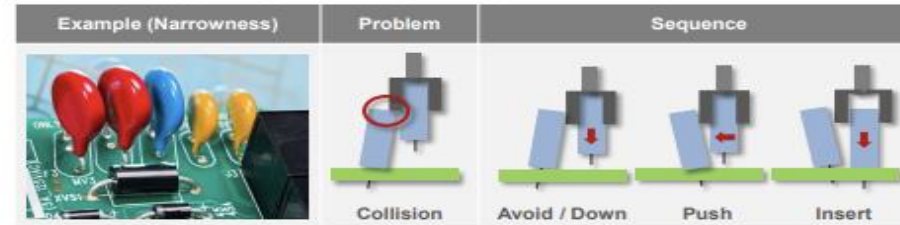| Example (Shield Cap)	Sequence		
	Pre-Insertion	1st Push	2nd Push
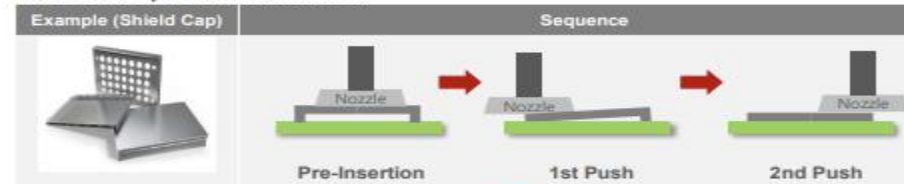
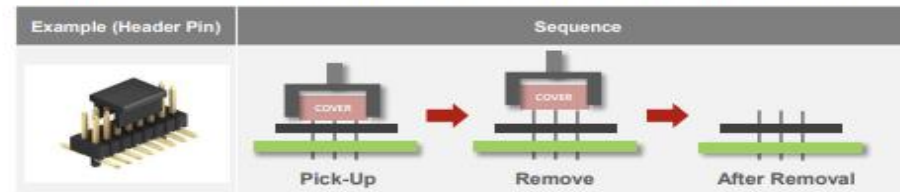Mirae **M**

Technologies (Machine)

Avoid

To prevent collisions with other components or insertion defects, use a sequence that involves avoiding, pushing, and inserting the components

Example (Narrowness)	Problem	Sequence		
	Collision	Avoid / Down	Push	Insert

Component Removal

Function for removing component cover or protective cap before inserting component

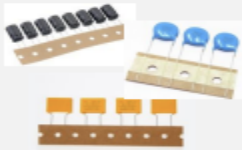| Example (Header Pin)	Sequence		
	Pick-Up	Remove	After Removal

Software Option

M.E.S	• to transmit collected production-related data to a server • for an immediate response to any production-related problems through a real-time monitoring system • to track the history of production and defects through collected data.	
Barcode	• to transmit QR code or barcode information of a component or PCB to a server • To track a history of production and defect • Equipped with an OCR inspection function (Optical Character Recognition system)	
Auto Program Change	• to automatically change the production model through PCB barcode recognition • to automatically adjust the conveyor width and assign nozzle and feeder based on information from the barcode • to minimize the idle time associated with program setting.	

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Feeder & Nozzle

Radial Feeder

Feeding system for components in Radial (Vertical) package type

Image	Spec		Package
	Package Type	Radial (Vertical Reel)	
	Applicable QTY	Maximum 16ea	
	Current	2 A	
	Power	48 W	
	Feeding Method	Step Motor	
	Dimensions (mm)	800 x 110 x 180	
	Weight (kg)	8	
	Function	Lead Cutting / Bending	

Axial Feeder

Feeding system for components in Axial (Horizontal) package type

Image	Spec		Package
	Package Type	Axial (Horizontal Reel)	
	Applicable QTY	Maximum 16ea	
	Current	2 A	
	Power	48 W	
	Feeding Method	Step Motor	
	Dimensions (mm)	770 x 99 x 302	
	Weight (kg)	8	
	Function	Lead Cutting / Bending	

Stick Feeder

Feeding system for components in stick package type

Image	Spec		Package
	Package Type	Stick (Tube)	
	Applicable QTY	Maximum 16ea	
	Current	Less than 1A	
	Power	24 W	
	Feeding Method	Step Motor / Air	
	Dimensions (mm)	1,020 x 97 x 375	
	Weight (kg)	17	
	Function	Lead Cutting / Forming	

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Feeder & Nozzle
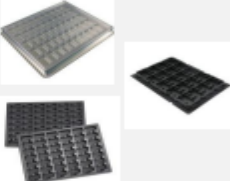
Bowl Feeder
Feeding system for components in bulk or irregular package type

Image	Spec		Package
	Package Type	Bulk or irregular package	
	Applicable QTY	Maximum 4ea	
	Current	Maximum 3 A	
	Power	600 W	
	Feeding Method	Vibration & Air	
	Dimensions (mm)	800 x 1400 x 1500	
	Weight (kg)	300 ~ 400	
	Function	Hopper / Escape (Pick-Up)	

Single / Dual Large Tray Feeder
Feeding system for components in tray package type

Image	Spec		Package
	Package Type	Tray	
	Applicable QTY	Maximum 1ea	
	Tray QTY	20 (Single) / 64 (Dual)	
	Tray Size (mm)	430 x 355 (S) / 500 x 290 (D)	
	Feeding Method	Servo Motor / Air	
	Dimensions (mm)	642 x 1,184 x 1,359 (S) 1,238 x 1,534 x 1,713 (D)	
	Weight (kg)	600	
	Function	Automatic Tray Change	

Reel Feeder
Feeding system for SMT components in tape reel package type

Image	Spec (8mm Basis)		Package
	Package Type	Tape Reel	
	Applicable QTY	Maximum 20ea	
	Dimensions (mm)	658 x 12 x 419	
	Weight (kg)	1.5	

Nozzle
Key part for picking up and inserting components

Image	Remark
	• Custom-made for optimum performance based on the material, size, weight, and other factors of the components. • Supports the use of up to 12 types of nozzles through an automatic nozzle changer (ANC). • Features surface heat treatment coating for preventing corrosion and maximizing the product's lifespan.

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Thank you

Your Future, Our Future