

**i-PULSE**

**MULTI-FLEX PLATFORM**

**MZ7 SERIES**

**i-PULSE**



DISTRIBUTOR

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Fine Art Workshop  
i-PULSE

**i-PULSE CO., LTD.**

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●The products shown in the photographs in this catalogue may differ slightly from the standard specifications.  
●Specifications and appearance are subject to change without prior notice. (February 2008)

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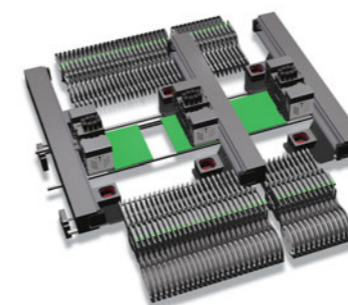
**i-PULSE CO., LTD.**



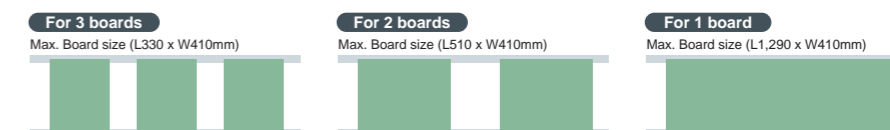
**50,000CPH** (IPC9850)  
0.055sec/chip  
**65,000CPH** (Under optimum conditions)

The M7 succeeds in condensing all elements needed in a mounter, namely compatibility, high-speed, high-precision and multi-functions into a compact mid-speed machine size. The lateral fly multibeam system stresses easy operation and maintenance with high-productivity per surface area, for streamlined, high-efficiency mounting while eliminating losses from head interference. A structure for arraying multiple beams over the base gives the optimal combination of beams and heads required for the customer's production setup and productivity needs.

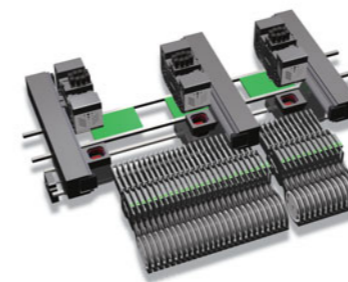
**M7-3L** MULTI-FLEX PLATFORM 3-BEAM 3-STAGE MODEL



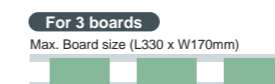
- Minimal mechanical interference loss with laterally flying type 3-beam 3-gantry head (24 nozzles)
- Max. Placement speed 0.055sec/chip (IPC9850 / 50,000CPH)
- Component types : 164 types (8mm tape conversion)
- Excels at high-speed component placement
- One unit handles wide range of board sizes



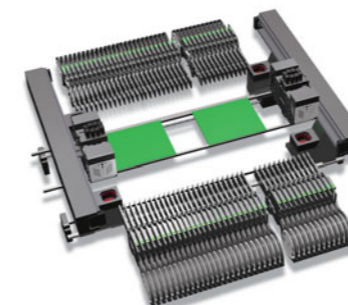
**M7-3S** MULTI-FLEX PLATFORM 3-BEAM 3-STAGE MODEL



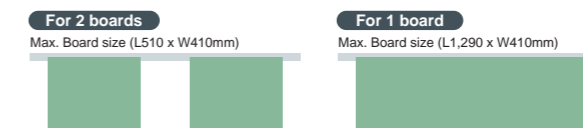
- Minimal mechanical interference loss with laterally flying type 3-beam 3-gantry head (24 nozzles)
- Only front side feeder bank
- Max. Placement speed 0.055sec/chip (IPC9850 / 50,000CPH)
- Component types : 82 types (8mm tape conversion)
- Ideal model for small-size board production
- Compatible with reel-to-reel systems as well as small-size board production



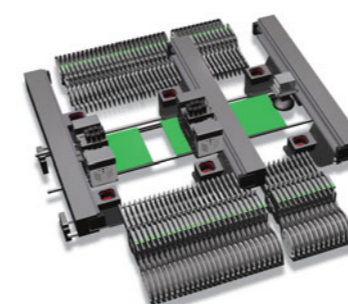
**M7-2L** MULTI-FLEX PLATFORM 2-BEAM 2-STAGE MODEL



- Total priority to efficiency with lateral flying type 2-beam 2-gantry head (16 nozzles)
- Max. Placement speed 0.083sec/chip (IPC9850 / 33,000CPH)
- Component types : 164 types (8mm tape conversion)
- Compatible for large-size board production
- Handles extra-large size boards by making maximum use of effective head operating area



**M7-3i** MULTI-FLEX PLATFORM 3-BEAM 3-STAGE, Expanded function model (Equipped with inspection head / Upon special request)



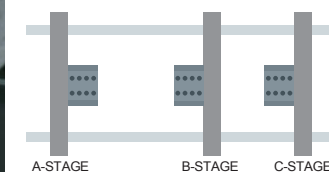
- Inspection head equipped in downstream stage covers even inspection process after mounting components as a single machine
- Max. Placement speed 0.060sec/chip (IPC9850 / 42,000CPH)
- Component types : 164 types (8mm tape conversion)
- Mounting data converts to inspection data if needed



**High-Precision Gantry Head**



8 nozzles (rows of 4) 15mm pitch  
Z-axis individual AC servo control  
Theta-axis individual AC servo control

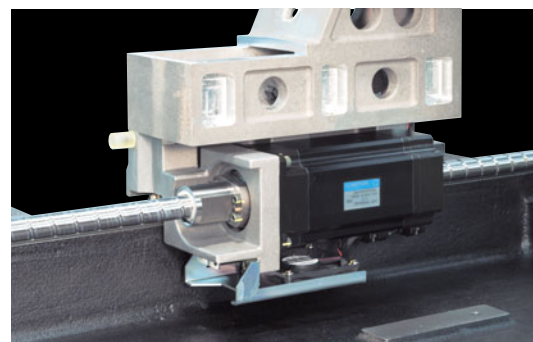


**Light-Weight Compact Nozzles**



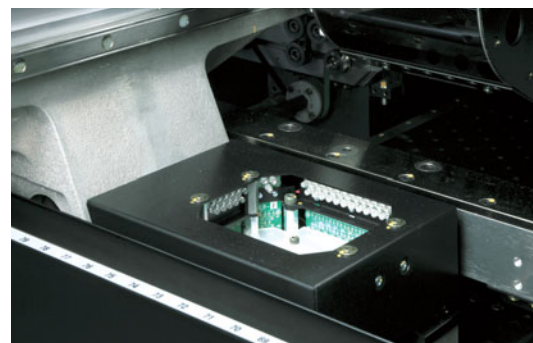
Simple and durable to reduce maintenance needs, these newly developed nozzles provide stable mounting precision. Built-in spring for ultra-small chips dramatically reduces the shock load on the component.

**Built-in Direct Drive**

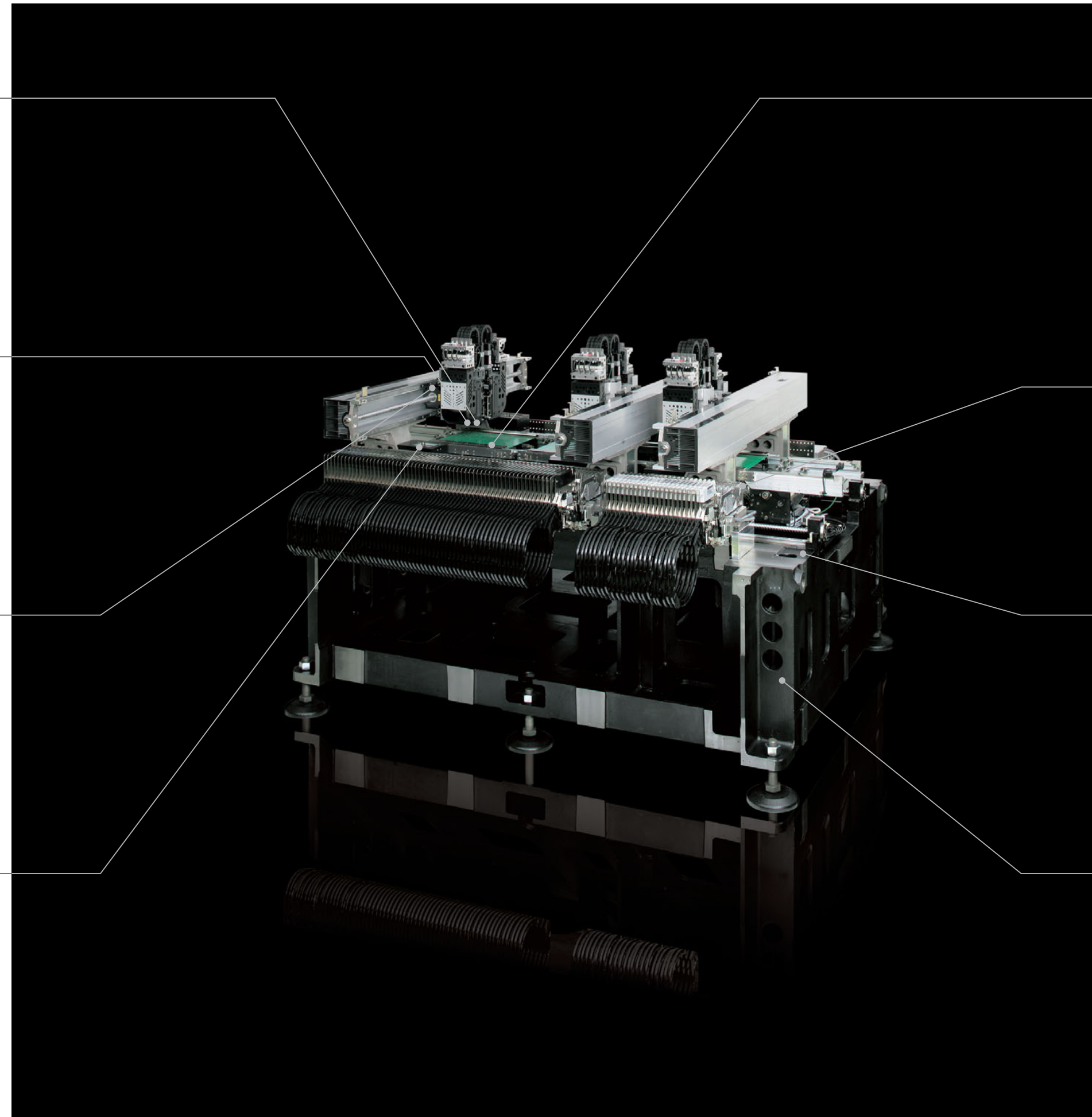
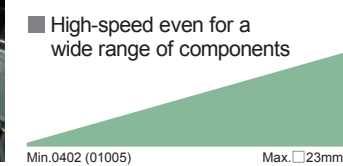


Focusing on established features, the X and Y axes use built-in servomotors. Slim-shaped motor to make the overall machine size more compact.

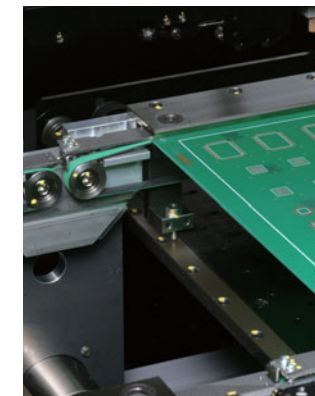
**Component Recognition**



Beam scan camera linked to the X/Y axes is a new concept for zero-loss axes movement time.

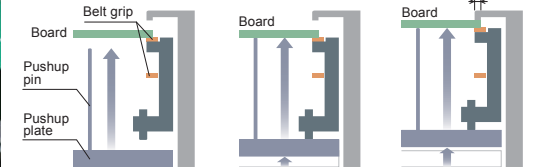


**Board Clamp Conveyor**

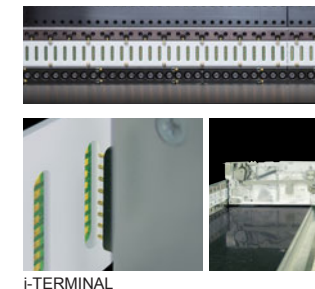


We eliminated the pushup pin height adjustment and changeover task by linking the pushup mechanism to the board thickness. A belt grip securely clamps the boards at a 3mm component non-placement area on the board edge. Using with auto conveyor width adjustment helps streamline the work process.

■ Height from pushup plate to board is always the same regardless of board thickness



**Intelligent Feeder function (i-TERMINAL)**

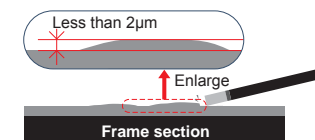


Usable with intelligent feeder function (optional) for avoiding feeder set errors and component reel set errors, etc.

**Scraping and Lapping**

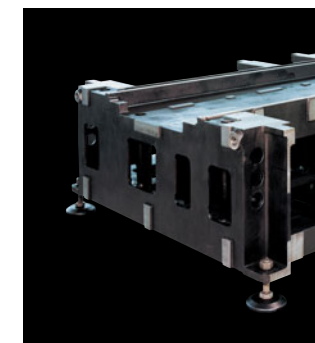


A technique developed by craftsmen at the i-PULSE Fine Art Workshop. Hand-scraping "Kisage" forms a flat frame surface down to the micron level. Lapping the individual parts maintains precision during machine part assembly.



A nameplate of the Kisage craftsman is attached as proof of the pride and effort devoted to its manufacture.

**Rigid Machine Frame of Low Vibration**

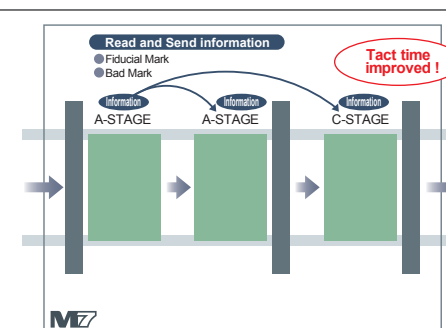


The one-piece cast frame is the result of a long search for both high speed and high precision.

## Functions and expandability that show off M7 performance

### Fiducial Mark Transfer function

Fiducial mark offset data loaded at the A stage is transferred for use in the downstream B and C stages. This eliminates time lost in recognizing the fiducial mark in other stages and shortens the cycle tact.



### Bad Mark Transfer function

Bad mark data loaded in the A stage is transferred to the B and C stages, to automatically skip the mounting of NG (defect) boards. This improves the cycle tact.

### Stack Tray Feeder (Upon special request)

Holds up to 30 stacked trays of identical components. Ideal for boosting productivity by eliminating tray changeover downtime.



### Swap Tray Feeder (Upon special request)

Tray feeder holds 2 trays of identical components. When one tray runs out of parts it is automatically swapped with a full tray. Component trays can be changed even while the M7 is operating.



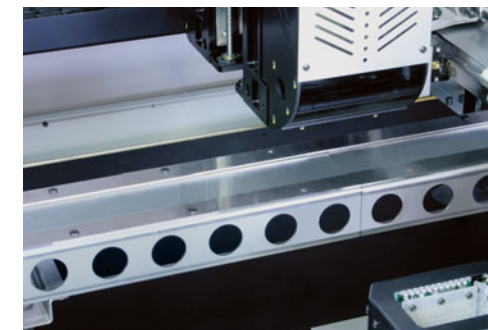
### Inspection Head Specifications (Upon special request / M7-3i)

Inspection head (AOI) is mounted in the C stage, so one M7 unit can both place and inspect components. We offer an optimal head configuration matching the customer's manufacturing setup. Compact shape is ideal for making production line length shorter.



### Reel-to-Reel System

Delivers ideal performance and optimal solutions needed for COF mounters. Effective for SMT line reduction and cost performance.



### M7 Series Specifications

Item	M7-3L	M7-3S	M7-2L
Board size	L50 x W30mm – L330 x W410mm	L50 x W30mm – L330 x W170mm	L50 x W30mm – L510 x W410mm
Board thickness	0.4 – 4.8mm		
Flow direction	Left to Right		
Conveyor speed	Max. 420mm/sec		
Placement speed (under optimum conditions)	0.055sec/CHIP, 65,000CPH	0.055sec/CHIP, 65,000CPH	0.083sec/CHIP, 43,000CPH
Placement speed (IPC9850)	50,000CPH	50,000CPH	33,000CPH
Placement accuracy A ( $\mu\pm 3\sigma$ )	$\pm 0.040$ mm/CHIP		
Placement accuracy B ( $\mu\pm 3\sigma$ )	IC $\pm 0.025$ mm		
Placement angle	$\pm 180^\circ$		
Z-axis control	Individual AC servomotor		
$\theta$ -axis control	Individual AC servomotor		
Component height	15mm (Preplaced components Max. 10.5mm)		
Components applicable	0402 (01005) – □23mm IC		
Component carriers	8 – 56mm tape, stick		
Drawback check	Vacuum check and vision check		
Multi language display	Japanese, Chinese, Korean and English		
Board locating method	Board Clamping Conveyor, Free-thickness PCB backup. Front reference, Auto conveyor width adjustment (servo control)		
Component types	164 types (8mm tape conversion)	82 types (8mm tape conversion)	164 types (8mm tape conversion)
Board transfer height	900 $\pm$ 20mm		
Dimensions, weight	L1,990 x D1,695 x H1,450mm, approx. 2,300kg	L1,990 x D1,350 x H1,450mm, approx. 2,000kg	L1,990 x D1,695 x H1,450mm, approx. 2,200kg
Power	3phase 200, 208, 220, 240, 380, 400, 416V $\pm$ 10% 50/60Hz		
Power consumption, capacity	3.2kW, 12kVA	2.4kW, 12kVA	3.2kW, 12kVA
Air and consumption	0.5Mpa, 276N $\ell$ /min A.N.R.		

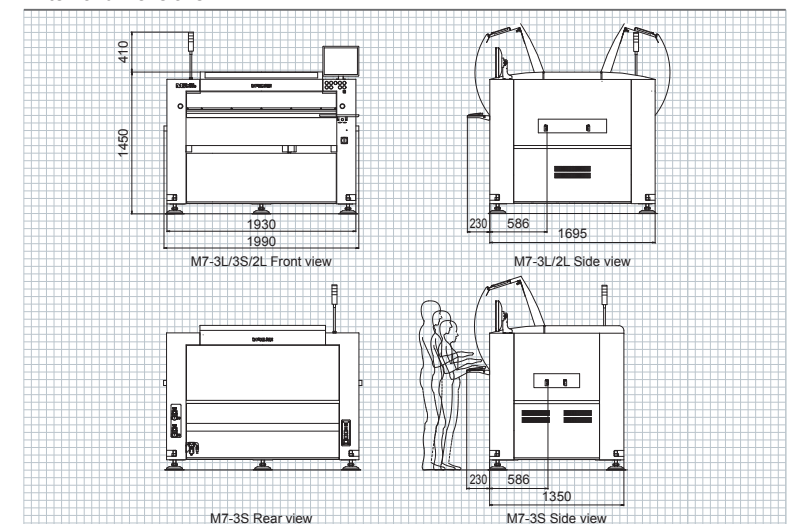
### Option

Part Code / No.	Description
M7E-RTOL	Transport direction : Right to Left
M7E-ANC1 / 2 / 3	Auto Nozzle Changer
M7E-RBC1 / 2 / 3	Rear beam camera
M7E-CXEN	Conveyor extension 200mm, input
M7E-CXEX	Conveyor extension 200mm, output
M7E-CSVF	Component Setup Verifier (Basic)
M7E-FRLF	Feeder Relocatability (Enhanced)
LC1-M5T00-00	Extra barcode reader
LC8-M3700-00	Feeder bank changer CFB-3
M7E-UPM7	Uninterrupted power supply UPS-M7
M7E-RRCV	Rear reference conveyor
M7E-RSSW	Rear side operation
M7E-ROPL	Rear side operation with LCD monitor
LC0-M5P00-00	Feeder setting bench
KJ3-MY020-10	Tape splicer for 8mm paper tape
KJ3-MY031-00	Joint tape 1,000pcs (10 x 100 sheets)
LG4-MM100-00	Reject conveyor RC-54
LG0-M5E01 / 3 / 5 / 6-00	Waste tape box TB-2A / 5A / 8 / 9
LG0-M5G00-40	Feeder stocker PFS-3
LG0-M5C00-00	Set master PCJ-1
M7E-ASCF	Antistatic Acrylic Cover
M7E-CPCK	Laser lead coplanarity sensor
Refer to option catalog	Offline software iOSII
Refer to another list	Feeder models

### Feeder models

Model	Intelligent	Component Carrier	Remarks
Standard			
	F2-82M Motor cam feeder	8mm tape	0402 (01005) 2mm index for 0603 (0201) 1005 (0402) } Common use
F1-82-0603	F2-82-0603	8mm tape	2mm index for 0603 (0201)
F1-82-1005	F2-82-1005	8mm tape	2mm index for 1005 (0402)
F1-84	F2-84	8mm tape	4mm index
F1-12	F2-12	12mm plastic tape	4-12mm index
F1-16	F2-16	16mm plastic tape	4-16mm index
F1-24	F2-24	24mm plastic tape	4-24mm index
F1-32	F2-32	32mm plastic tape	4-32mm index
F1-44	F2-44	44mm plastic tape	4-44mm index
F1-56	F2-56	56mm plastic tape	4-56mm index
PS-T1S		Stick (single)	Max. component W13 x L19 x T4.5mm
PS-T1M		Stick (single)	Max. component W31 x L31 x T4.5mm
PS-MS3		Stick (multi)	A number of sticks can be set

### External dimensions



※Specification and appearance are subject to change without prior notice.



MULTI-FLEX PLATFORM  
**M7**SERIES

- Placement speed : 0.055sec/chip (Under optimum conditions) (M7-2L : 0.083sec/chip)
- Placement accuracy : CHIP 40 $\mu$ m, IC 25 $\mu$ m
- Components applicable : 0402 (01005) CHIP (Standard) to □23mm
- Component types : 164 types (M7-3S : 82 types) (8mm tape conversion)
- External dimensions : L1,990 x D1,695 x H1,450mm (M7-3S : D1,350mm)