

High Speed Radial Inserter RL132



RL132

High Speed Radial Lead Component Insertion Machine

Radial Machine Development

1999



RHS

- Tact Time 0.25s
- 14400 (Ideal CPH)
- 80 component inputs

2001



RHS2

- Tact Time 0.2s
- 18000 (Ideal CPH)
- 80 component inputs

2003



RHS2B

- Tact Time 0.17s
- 21,176 (Ideal CPH)
- 80 component inputs

2009



RL131

- Tact Time 0.17s
- 21,176 (Idea CPH)
- Sequencer Configuration
- 40 / 80 component inputs

2012

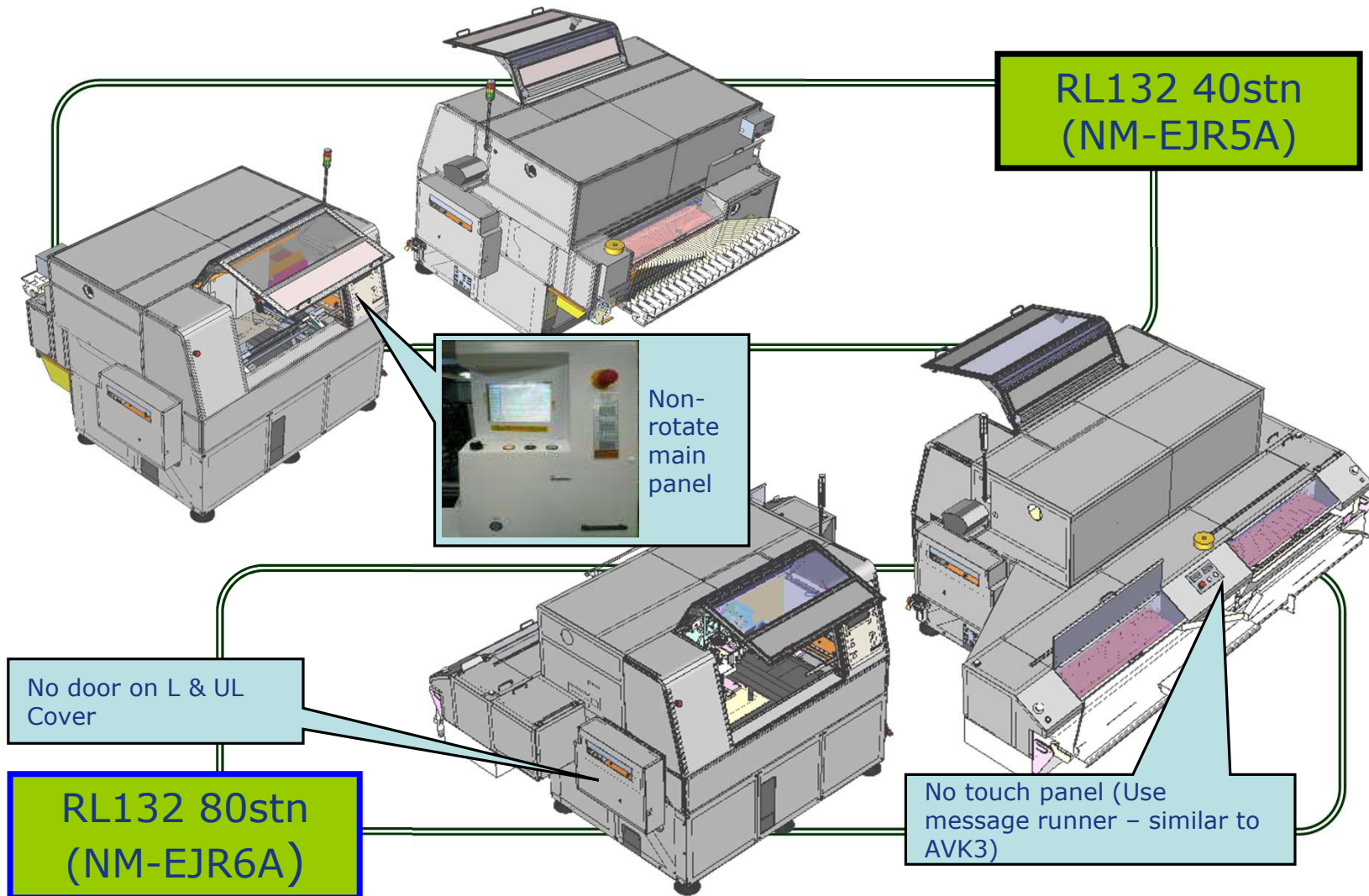


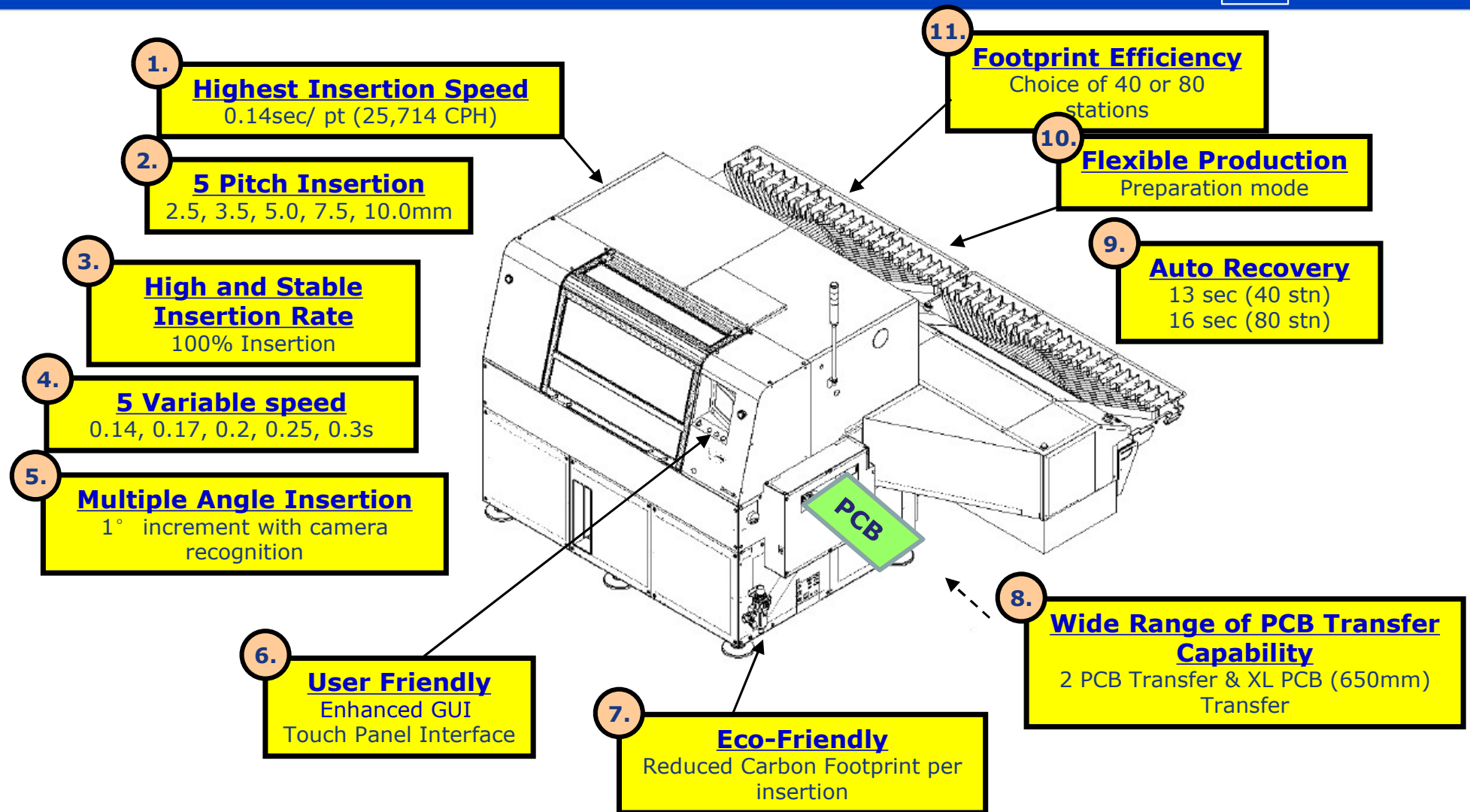
RL132

- Tact Time (0.14s)
- 25,714 (Ideal CPH)
- Sequencer Configuration
- 40/80 component inputs



- Machine Outlook
- Key Features
- Product Features
- Space Saving
- Common Machine Parts
- Insertion technology comparison
- Main Specifications





Audio Video Appliances



Power Supply, Office Appliances



Home Appliances



Lightings



(1) Insertion Speed

- Tact time : 0.14s
- 5 Selectable Speeds: 0.14, 0.17, 0.2, 0.25 & 0.3s
- Able to maintain insertion tact of 0.14s within 36 x 36mm XY movement

(2) Insertion Angle

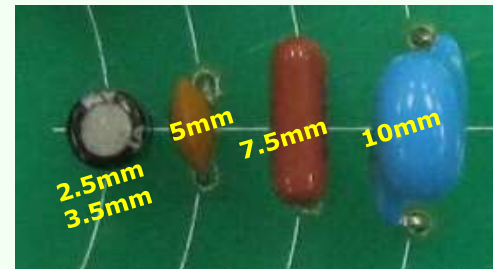
- Multi angles insertion



0 to 360 degree angle insertion

(3) 5 Lead Pitch Types Insertion & Large Component

- 2.5, 3.5, 5.0, 7.5 and 10mm Pitch insertion capability



- 4 Models
 - Single pitch: 2.5mm
 - 2 pitch: 2.5/5mm
 - 3 pitch: 2.5/3.5/5mm, 2.5/5/7.5mm
 - 4 pitch: 2.5/5/7.5/10mm

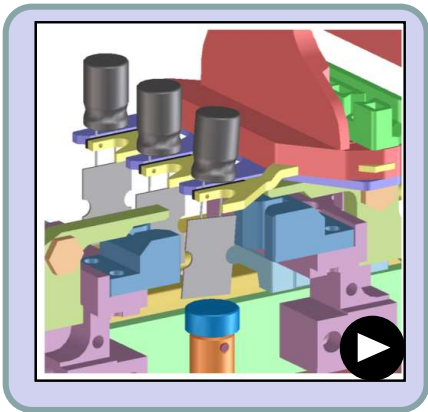
Custom specification

- Max Component Dimensions
 - Height: 23mm, Ø: 13mm
 - Height: 26mm, Ø: 13mm

Custom specification

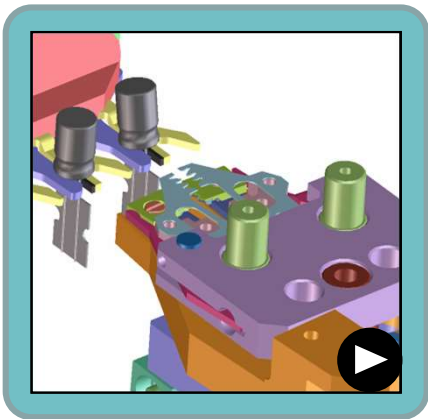
(4) High & Stable Insertion Rate

Unique mechanical features to achieve higher insertion rate & quality



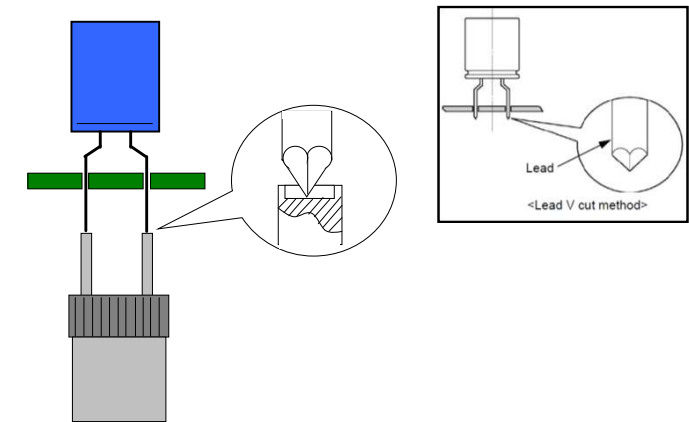
Component Lead Correction

Straighten the bent-lead of component achieve higher insertion rate



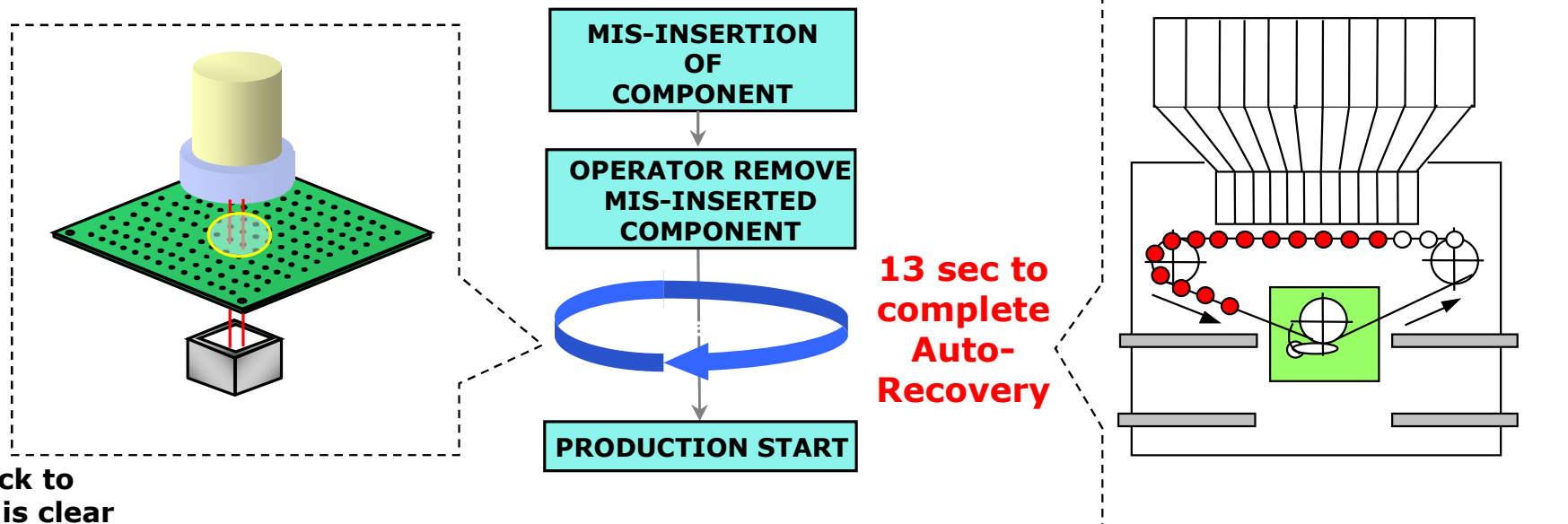
V-Cut

Component lead cut at V-shape to enhance insertion performance

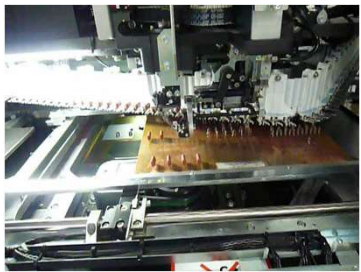


(5) Auto-Recovery

Panasonic: SEQUENCING METHOD



Camera check to ensure PCB is clear for re-insert



RL132 (40 Stn) : 13 seconds

RL132 (80 Stn) : 16 seconds

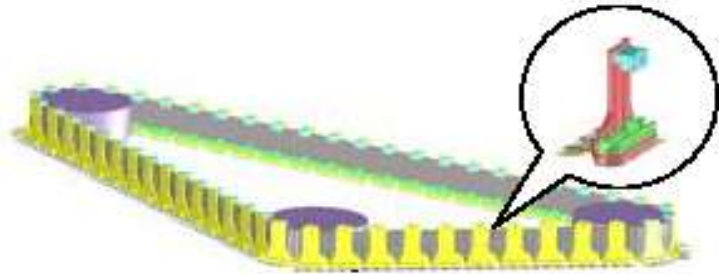
Correct component re-insertion is guaranteed

(Eliminate human insertion – Quality Consistency)

Belt rotate to pick-up error component & reinsert

(6) Non Stop Operation

➤ Component carrier

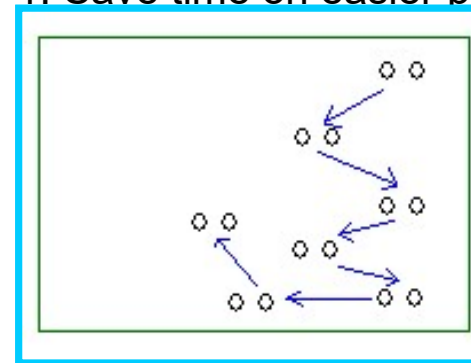


➤ Independent Delivery System



Sequencer System eliminates the need for moving feeder Carriage.

1. Save time on easier programming !



• Concentrate on insertion order on X-Y table only !

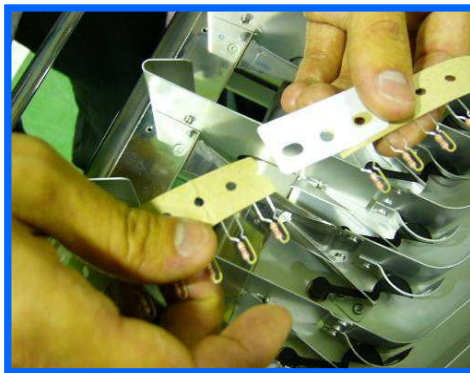
2. Component can be replenished while in production (Fixed Feeder)
Light component carrier and independent delivery system enable high speed operation

(7) Part Splicing & Replenishment



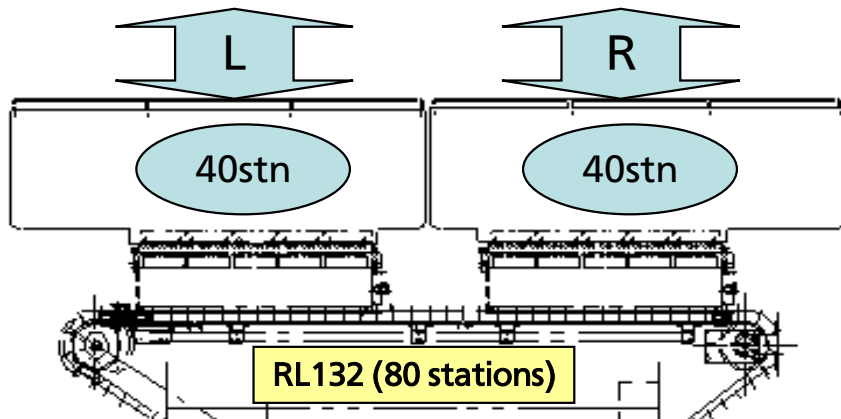
➤ Part Exhaust Detection Sensor

Part Exhaust Detection system with tape splicing enable unmanned production & non-stop operation



(8) Flexible Production

RL132(80 stations)



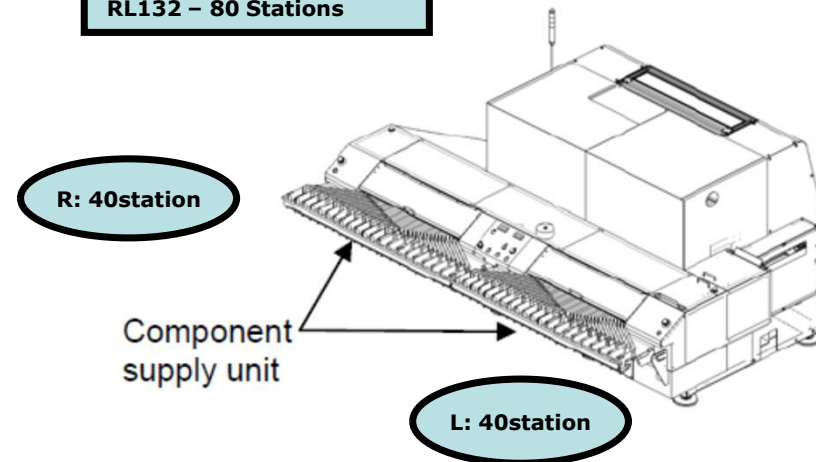
Possible to supply component during machine running.
Advance setting is possible.

-MAX 16 station input for U-type (Large size)
component for both L & R

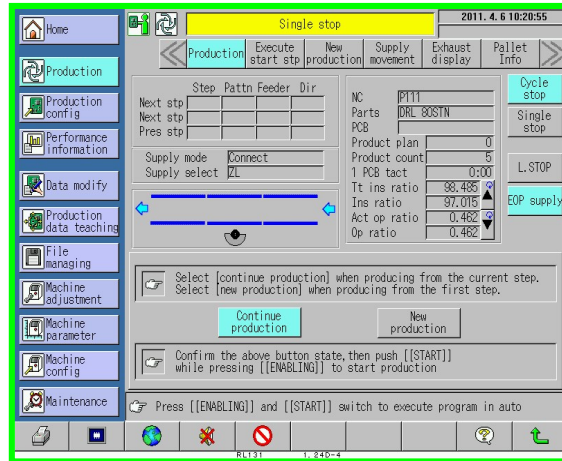
Separate Feeder Carriage (40 +40 Carriage)

- Exchange Mode enable components to be exchanged and replenished during production
- Preparation Mode for fast model change over

RL132 – 80 Stations

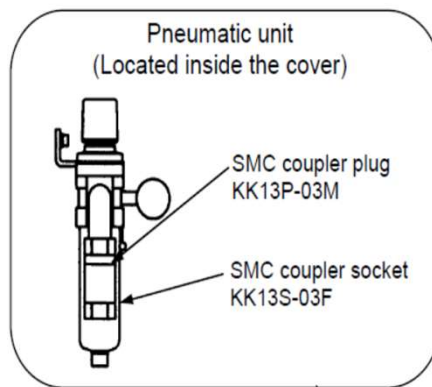
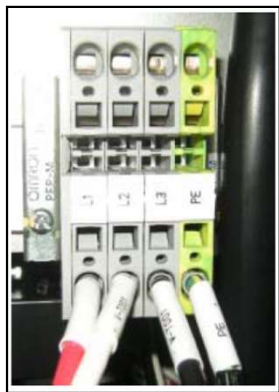


(9) User Friendly Control Panel



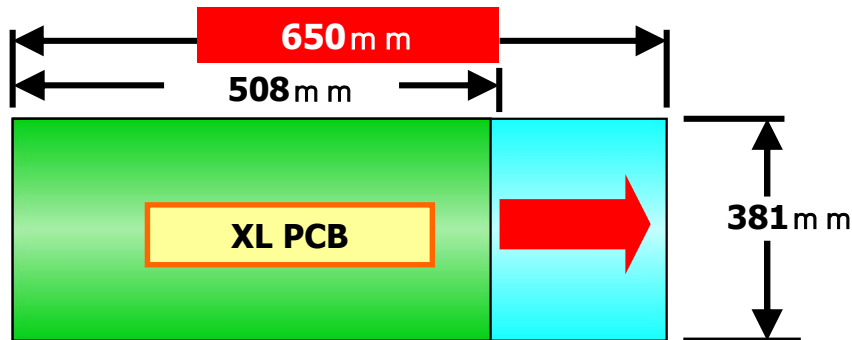
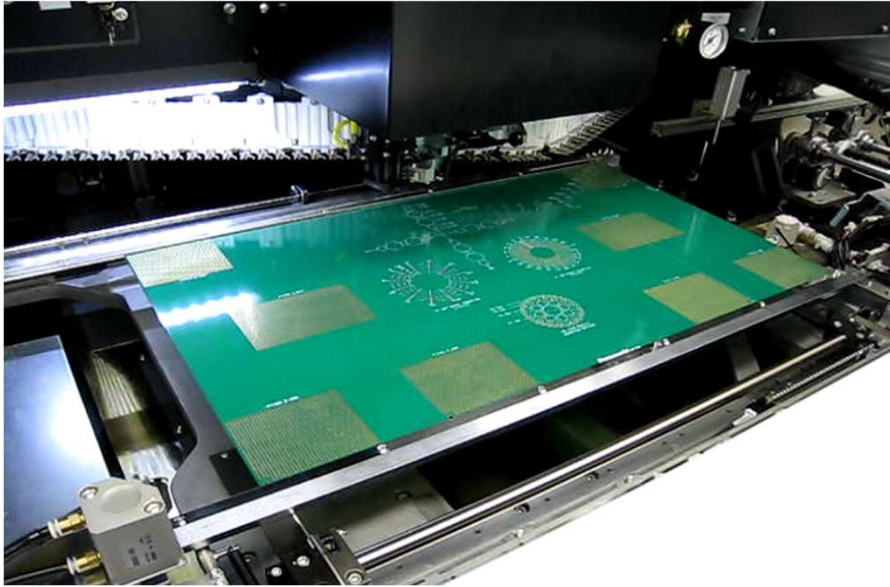
- **SD Memory Card**
 - Data Storage & Program Up/Download
- **Enhanced GUI (Touch Screen & Graphic User Interface)**

(10) Eco-Friendly



- **Power and Air Consumption reduction**
Reduction of electricity & air per insertion by 18% as compared to previous model.

(11) Wide Range of PCB Transfer Capability : 650 x 381



XL PCB Production Capability.

- Capable of production max PCB size of **650mm (L) x 381mm (W).**
- Full Board Camera Recognition

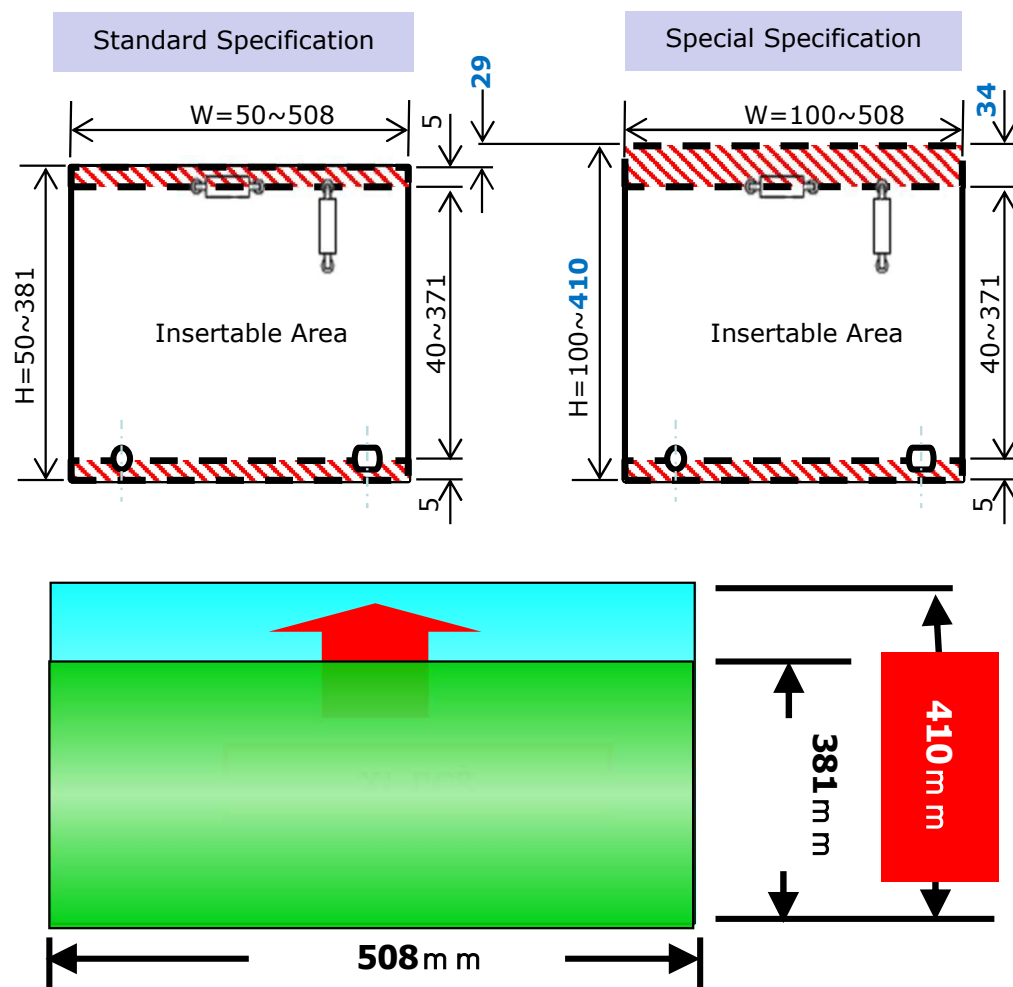
Description	Classification	PCB Size (W x H)		PCB Size (W x H)
Transferable board size	Min	50 x 50	→	300 x 50
	Max	508 x 381	→	650 x 381
Insertable board size	Min	50 x 40	→	300 x 40
	Max	508 x 371	→	650 x 371

By changing to PCB transfer adaptor and positioning pin lever supplied, standard PCB size (Min. 50 mm x 50 mm to Max. 508 mm x 381 mm) can be supported.

Customer Product:

LCD TV

(12) Wide Range of PCB Transfer Capability : 508 x 410



Enlargement of transferable PCB size

- Expand the transfer PCB dimensions.

Description	Classification	PCB Size (W x H)		PCB Size (W x H)
Transferable board size	Min	50 x 50	→	100 x 100
	Max	508 x 381	→	508 x 410
Insertable board size	Min	50 x 40	→	100 x 90
	Max	508 x 371	→	508 x 371

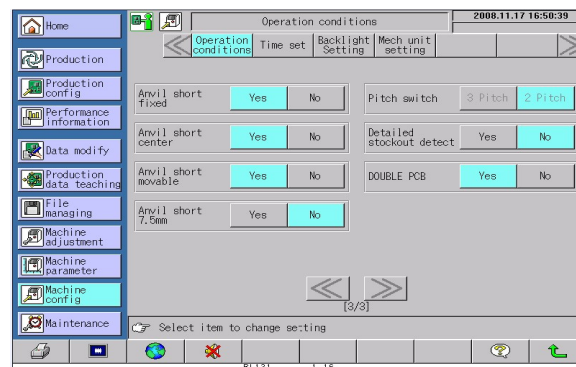
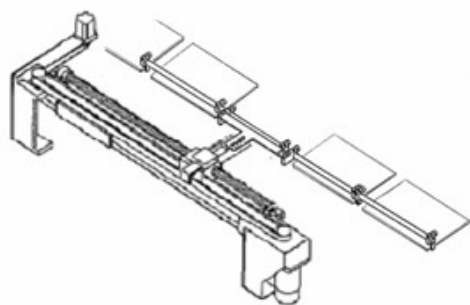
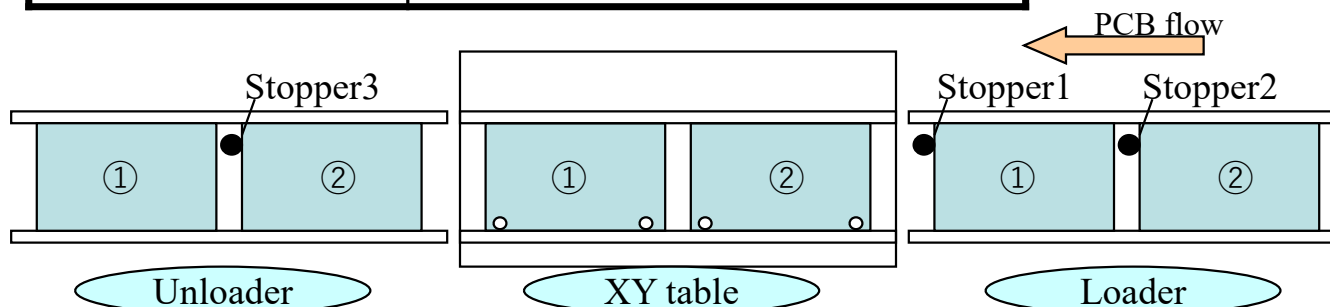
Customer Product:

LCD TV

Photovoltaic Inverter

(13) 2 PCB Production

PCB spec	Min 50x50mm – Max 250x250mm
PCB transfer mode	1 PCB / 2 PCB switchable
Different point from standard machine	PCB stopper, PCB carrier PCB positioner, Software



Insertion Time / PCB
10sec

1 PCB Carrier

PCB Production Tact (incl. loading time)

12sec

2 PCB Carrier

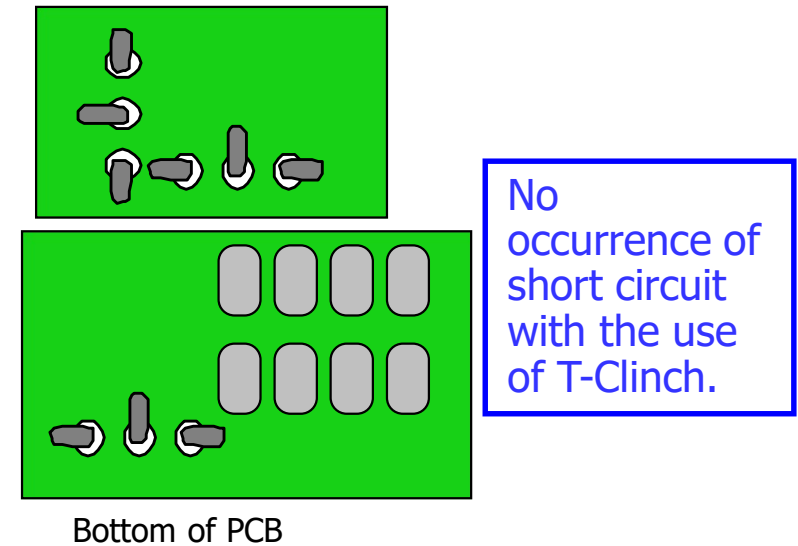
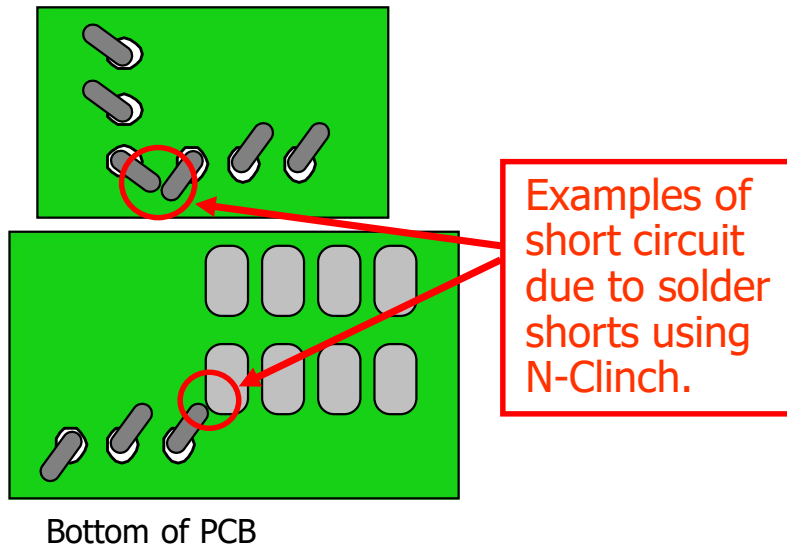
PCB Production Tact (incl. loading time)

11sec

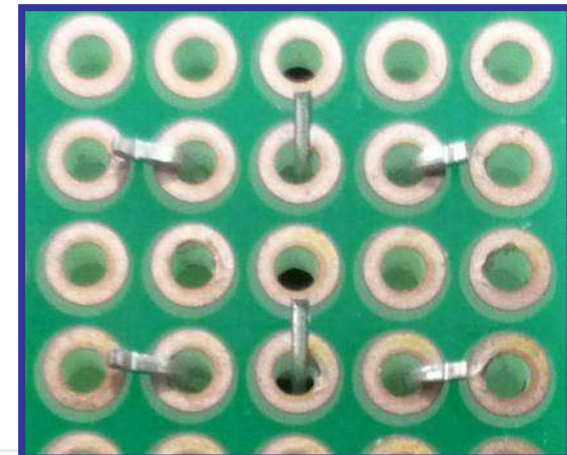
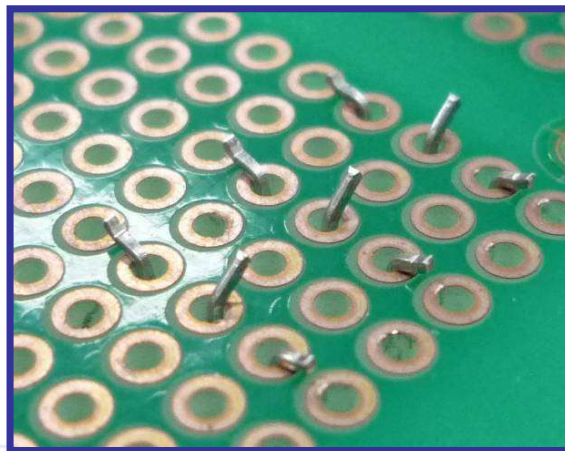
Throughput Improvement

9% UP

(14) T – Clinch Capability



- **RL132** → T-Clinch capability
- Eliminates the occurrence of short circuit

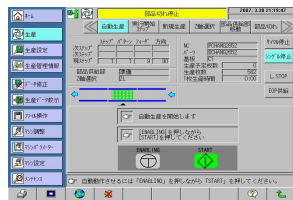




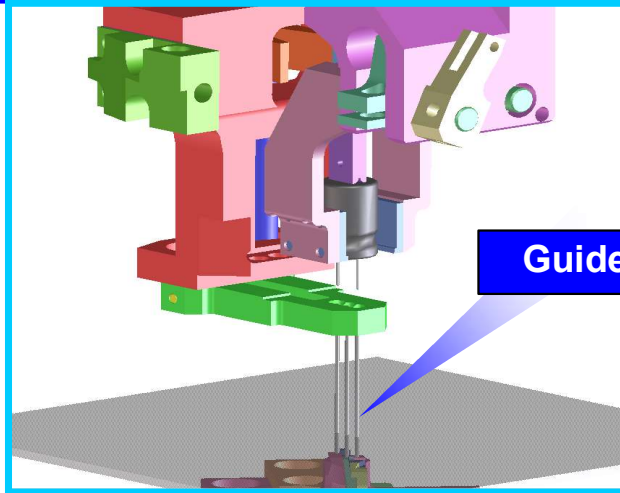
	RL132 80Stn	RL132 40Stn
Area / m ²	7.73 m ²	4.59m²
Footprint Comparison	100%	59% ✓
CPH (ideal)	25,714	25,714
Area Productivity (CPH/m ²)	3326	5602
Area Productivity Ratio	100%	168% ✓

Reduction of Footprint

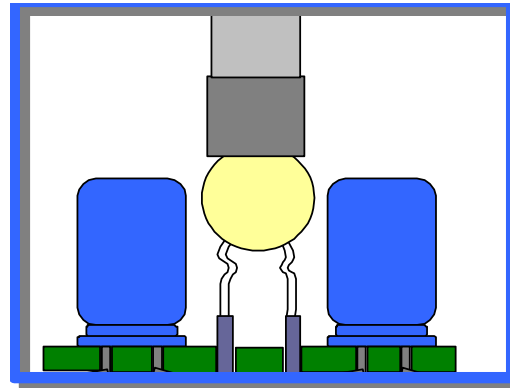
Increase in Area of Productivity

	S/N	Item	RL132 40Stn & RL132 80Stn	
Electrical	1	Driver		A4N21 series (Enhanced Model) Same as AV132, Common Parts
	2	Controller & CPU Card		P9 Controller CPU Card similar as NPM Same as AV132, Common Parts
Software	3	Main Software		100% Compatibility Same as AV132, Common Parts
	4	Communications		LAN (TCP/IP Communication) Same as AV132, Common Parts

RG131/S: Guide Pin Technology



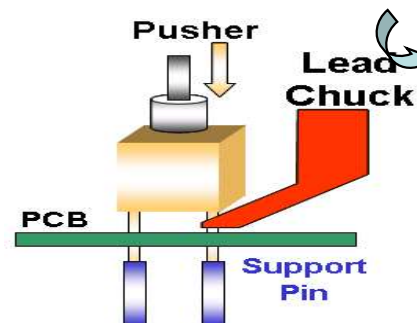
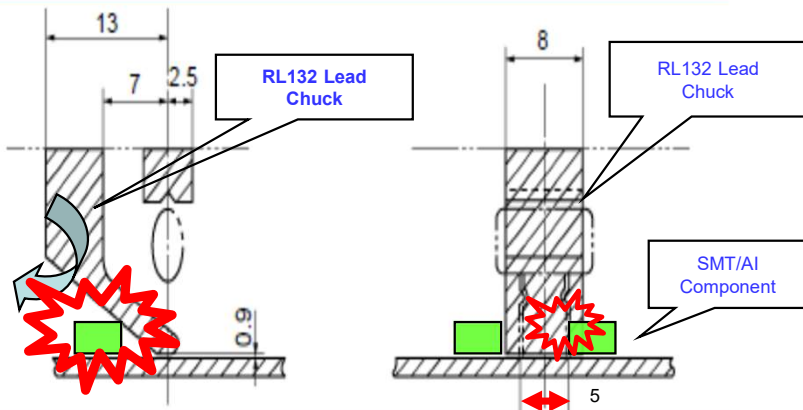
Guide Pins



Guide Pin Technology

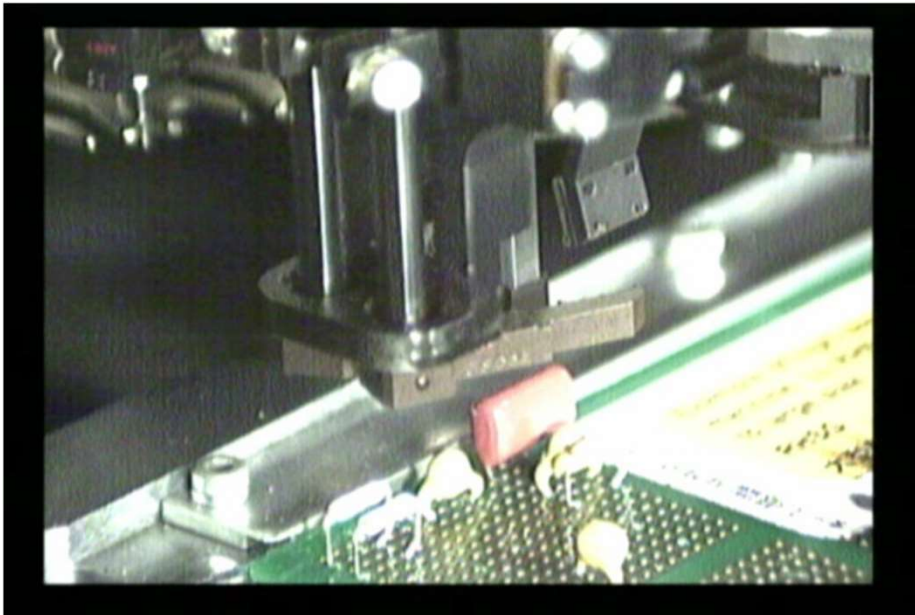
- Leaves no dead space ~ High Density
- No restrictions on insertion sequence (recommended from low to high height)
- Easy programming ~ random access

RL132:Lead Chuck Technology



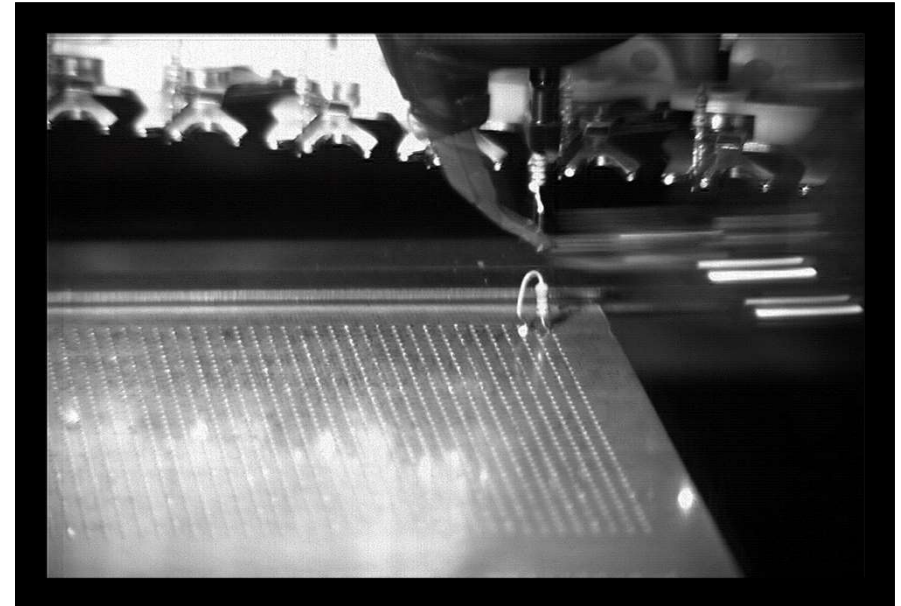
Lead Chuck Technology

- Insertion Chuck dead space during insert and escape
- Restrictions on insertion sequence



RG131 High Density Radial Inserter

- 0.5mm space between adjacent component
- Random access Panasonic unique design Lead guide pin. Easy NC programming
- Recommendation for High Density PCB & SMT process before AI insertion



RL132 High Speed Radial Inserter

- Compete with competitor
- Lead Chuck system & insertion sequence is requirement
- Recommendation for high volume & Low density PCB



Model ID	RL132 80Stn	RL132 40Stn
Model No.	NM-EJR5A	NM-EJR6A
Transferable PCB dimensions (mm)	L 50 x W 50 to L 508 x W 381	L 50 x W 50 to L 508 x W 381
Insertable PCB dimensions (mm)	L 50 x W 50 to L 508 x W 381	
Max. speed	0.14 s/component to 0.3 s/component	
No.of component inputs	80 Station	40 Station
Applicable components	Pitch 2.5 mm, 3.5mm, 5.0 mm, 7.5 mm, 10.0 mm Height Hn=Max. 23mm / 26 mm, Diameter D=Max. 13 mm	
PCB exchange time	about 2 s to about 4 s (Room temperature 20°C)	
Insertion direction	Multi angle 0° to 360°, 1° increment	
Electric source	3-phase AC 200 V, 3.5 kVA	
Pneumatic source	0.5 MPa	
Dimensions (mm)	W 3 200 x D 2 417 x H 1 620	W 2 104 x D 2 183 x H 1 620
Mass	2 350 kg	1 750 kg

