Model ID		NPM-VF						
		Standard conveyor Anvil conveyor (Option)						
PCB dimens	sions	L 50 mm × W 50 mm ~ L 510 mm × W 460 mm	L	L 50 mm × W 50 mm ~ L 460 mm × W 400 mm				
Max. PCB m	ass *1	Up to 3kg		U	p to 1kg			
PCB thickne	ess	0.3 ~ 8 mm						
PCB flow		Left ← Right / Left →	Right (Flow dire	ection is selectabl	e)			
Insertion direction		360° (± 180°) *1 degree unit						
Insertion push force		Up to 100 N		Up to 50 N				
PCB Exchange time		4.5 s or less		8.0 s or less				
Clinch specifications			Clinch Lead b	Clinch angle: 60 degrees outward clinch Clinch pitch: 2.5 to 40 mm Lead bend angle: $10\sim30^\circ$ Lead diameter: ϕ 0.4 mm $\sim\phi$ 0.8 mm (soft copper) ϕ 0.4 mm $\sim\phi$ 0.6 mm (hard copper / CP wire)				
Applicable co	mponents	Max. dimensions: L 130 mm × W 35 mm × H 60 mm · L 150 mm × W 38 mm × H 29 mm / Max. component mass: 200g						
Electric sou	rce	3-phase AC 200, 220, 380, 400, 420, 480 V 2.7 k	<va< td=""><td></td><td></td><td></td></va<>					
Pneumatic s	source	0.5 ~ 0.8 MPa、200 L /min(A.N.R.)						
Dimensions		W 1 866 mm \times D 2 332 mm \times H 1 554 mm(Main body only) W 2 166 mm \times D 2 332 mm \times H 1 554 mm(When downstream extension conveyor is connected)						
Mass		2 590 kg (Only for main body: This differs depending on the option configuration)						
Head Configurations								
		Body chuck + Nozzle + Nozzle						
3-station he	and .	Body chuck + Nozzle + Swing nozzle Tact: Max. 0.8 s / co			´component ∗≥ 3	component *2,3,6		
3-Station ne	au	Body chuck + Nozzle + Lead chuck						
		Body chuck + Swing nozzle + Lead chuck						
2-station he	ead	Body chuck + Body chuck Tact: Max. 1.1 s / component *2,3						
		Component Supply						
Stick	S	Max. component dimension: W 20 × L 80 × H 20 mm / Max. stick width : 24 mm / Max. component mass : 2 kg in total(including stick mass)						
Stick	L	Max. component dimension: W 60 × L 80 × H 45 mm / Max. stick width: 64 mm / Max. component mass: 2 kg in total(including stick mass)						
Radial tape		Max. body dimension: Max. Φ 20 \times H 30 mm / Lead pitch: 2.5 / 5.0 / 7.5 / 10.0 mm						
Tray		Max. tray dimension: L 230 \times W 335 \times D 69 mm / Max. pallets per feeder: 20 / Max. mass: 20 kg (magazine + pallet + tray + components)						
Bulk*4		Customized spec						
		Max. number of products to be loaded	Stick S	Stick L	Radial	Tray		
Machine Configuration	Front	30-slot fixed supply unit *5	15	7	10			
	Rear	30-slot fixed supply unit	15	7	10	_		
		13-slot fixed supply unit + single tray feeder	6	3	4	20		
		Twin tray feeder	_	_		40		
		Single tray feeder + Bowl feeder × 2 *4	_	<u> </u>	_	20		
		Bowl feeder × 4*4	_	_		_		
System								
		NPM-DGS · AM-LNB · LNB Note: Max. 3 NPM-VF can be connected to AM-LNB Up to 15 machines of the NPM series (including NPM-VF) or the SP series can be connected to LNB.						
Optional functions		Component verification, Traceability, Automatic changeover, Host communication						

Programming and Software	NPM-DGS · AM-LNB · LNB	Note: Max. 3 NPM-VF can be connected to AM-LNB Up to 15 machines of the NPM series (including NPM-VF) or the SP series can be connected.
Optional functions	Component verification, Trac	ceability, Automatic changeover, Host communication

								, *
SMT components *7								*
Applicable components Min. dimensions: L 5 mm × W 5 mm or larger (For tape, embossed tape of 12 mm or						m or larger)	*	
Placement specs	Head: Nozzle only Placement accuracy: QFP ±0.05 m (Cpk ≥ 1) Max. tact time: 3000 cph (per head					oh (per head)	*	
	Tape feeder width	12/16 mm	24/32 mm	44/56 mm	72 mm	88 mm	104 mm	*
Supply unit (embossed tape)	30-slot supply unit	30	15	10	7	6	5	
	13-slot supply unit	13	6	4	3	2	2	*

*Placement tact time may differ slightly depending on conditions. *Please refer to the specification booklet for details.

*1: PCB mass after insertion (including carrier mass) *2: Except when anvil is attached

*3: During 2-head operation (configured similar to 2-beam specs) under optimum conditions

*4: Custom specs···Connection via the host feeder

*5: For front side configuration, select between 30 stations fixed supply unit (Std.) or feeder cart (Option)

*6: For Body chuck + Nozzle + Nozzle *7: Standard conveyor specs

↑ Safety Cautions

Please read the User's Manual carefully to familiarize yourself with safe and effective usage procedures.

■To ensure safety when using this equipment all work should be performed according to that as stated in the supplied Operating Instructions. Read your operating instruction manual thoroughly.

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Panasonic Group builds Environmental Management System in the factories of the world and acquires the International Environmental

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Manufacturing Process Innovation



Model Name NPM-VF Model No.NM-EJR9A



*It may not conform to Machinery Directive and EMC Directive in case of optional

NPN-VF Innovating PCB assembly process via automation of odd-form components insertion

Features and aims of NPM-VF

Automation of odd-form components insertion process. In addition, SMT specifications* are also supported. *supports both SMT placement + odd-form insertion (developing)

Versatile and flexible: various configuration of head tools and

machine feeder configuration to adapt to different types of components Contribute to manpower reduction and stable production

with high productivity, flexibility, high quality insertion

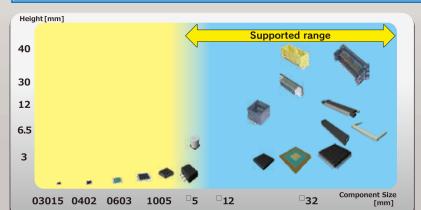
Applicable Components

Tape

Stick, Tray, Bulk



Support for SMT components





The multi-recognition camera is selectable from both types 1 (standard specs) and 3 (3D measurement function-ready). (Option)						
Examples of applicable components	Outline			Minimum lead width / minimum ball diameter		
QFP·SOP	□5 mm ~	1.0 mm ~	0.5 mm	0.2 mm	-	
BGA·CSP	□5 mm ~	0.3 mm ~	0.5 mm	0.3 mm	0.25 mm	

Line Solution

Reduce manual insertion assembly process Prevent human errors, improve quality



Convert manual insertion process to SMT inline process Reduce processes / dip solder investment



High Productivity

High speed insertion

Maximum tact of 0.8s* is achieved by 2-beam 2-head structure. Compared to manual insertion 1 NPM-VF is able to replace 3 to 4 operators. In addition, each head can hold up to 3 tools (chucks, nozzles), enabling effective movement of the insertion heads.

*Note: Under condition specified by PFSC



[Stackable stick feeder]

Sticks can be loaded during machine operation, reducing machine down time due to component exhaust



[Tray feeder]

Tray pallets can be replenished during machine operation

[Variable pitch body chuck]

Motorized body chuck varies chuck opening according to component size, greatly reducing dead space, chuck exchange time and increasing productivity



Chuck width is optimized to suit component width

Flexible feeder configuration



Adapters can be attached gripping of components

Flexibility

Various tools to cater to

Push force up to 100N

Lead chuck

Body chuck Chuck Adapter

Nozzle

Push force up to 100N

Swing nozzle

Tray Feeder

Tape Feeder

Stick Feeder

according to stick size

Various component

30 slots

*1 feeder cart is selectable

*2 bowl feeder is customized spec Can also be placed to the front.

30 slots*1

13 | Single tray

30 slots*1

Non-stop Production













Recovery Operation

Cut & Clinch Function (Option)

Twin tray

Quality Insertion

Recognition correction and component inspection function

NPM-VF is equipped with 2 cameras (head camera and component camera) to scan PCB holes, PCB marks and component leads,





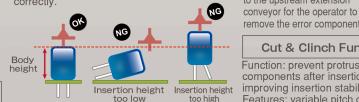
Component camera

Component verification & Traceability (Option)

Prevents setting mistakes when exchanging parts and supports fabrication history management

Insertion error detection system

Component height will be detected via sensor after insertion to determine if it is inserted correctly



Function: prevent protrusion of

In the case of insertion error. PCB will automatically be flow

remove the error components

components after insertion. improving insertion stability Features: variable pitch clinch (2.5~40 mm) with piezoelectric detection system for insertion errors



