Our Solutions - Your Value

![Panasonic Business Logo]

Manufacturing Process Innovation

Model Name
NPM-VF

Model No.NM-EJR9A

Panasonic Corporation
Smart Factory Solutions Business Division
1354 Kudan-cho, Shinjuku-ku, Tama-shi, Tokyo 169-8546, Japan
Tél.: +81-3-3539-9163
FAX: +81-3-3539-9110

All data as of March 1, 2016

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Electronic Assembly System catalog
Production modular

Manufacturing Process Innovation

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Electronic Assembly System catalog
Production modular

<table>
<thead>
<tr>
<th>Model ID</th>
<th>NPM-VF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>Single conveyor</td>
</tr>
<tr>
<td>PCB thickness</td>
<td>0.3 - 0.8 m</td>
</tr>
<tr>
<td>PCB fiinger force</td>
<td>L: 80 m X W: 50 m</td>
</tr>
<tr>
<td>Max. feed weight</td>
<td>8 kg</td>
</tr>
<tr>
<td>insertion direction</td>
<td>90° on both sides</td>
</tr>
<tr>
<td>insertion push force</td>
<td>Up to 100 N</td>
</tr>
<tr>
<td>PCB transfer time</td>
<td>4.5 s or less</td>
</tr>
<tr>
<td>Driveline :</td>
<td>Tact: Up to 0.6 s / component</td>
</tr>
</tbody>
</table>

Head Configurations

- 3rd station head
  - Body chuck + Nozzle + Swinging nozzle
  - Body chuck + Nozzle + Lead chuck

- 2nd station head
  - Body chuck + Body chuck

Components: 3 exchange

- Stock
  - Max. component dimension: W: 20 x L: 10 x H: 65 mm (Max. stock weight: 2 kg in total; 1 kg in each)

- Tray
  - Max. tray dimension: Max. W: 200 x L: 100 x H: 40 mm (Max. tray weight: 2 kg in total)

Machine Configuration

- Front
  - 3-axis feed unit
  - 4-axis feed unit + single tray feeder
  - Twin tray feeder
  - Single tray feeder + bowl feeder x 2

- Rear
  - 4-axis feed unit

Programmable accessories
NPM-412US: AM-4L9B

<table>
<thead>
<tr>
<th>System</th>
<th>Stock</th>
<th>Stck</th>
<th>Radial</th>
<th>Tray</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 axis feed unit</td>
<td>S</td>
<td>L</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>4 axis feed unit</td>
<td>4</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twin tray feeder</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single tray feeder + bowl feeder x 2</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dual tray feeder x 4</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 the method stated in the NPM-VF Operation Instructions. Read your operating instruction manual thoroughly.

Panasonic Group products are built with the environment in mind. http://panasonic.net/eco/

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**Features and aims of NPM-VF**

1. Automation of odd-form components insertion process, followed by integration with SMT specifications
   - Supports both SMT placement + odd-form insertion

2. Versatile and flexible: various configuration of head tools and machine feeder configuration to adapt to different types of components

3. Contribute to manpower reduction and stable production with high productivity, flexibility, high quality insertion

**Applicable Components**

- Tape
- Stick, Tray, Bulk
- 2~3 pins
- 4 pins and more

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**Line Solution**

- Reduce manual insertion assembly process
- Prevent human errors, improve quality

**Discrete Components Assembly**

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

**SMT placement and odd-form components assembly**

- Automatic assembly of SMT and odd-form components
- Machine improves for SMT & components

**High Productivity**

- [Stackable stick feeder]
  - Sticks can be loaded during machine operation, reducing machine down time due to component exhaust

- [Single tray feeder]
  - Tray pallets can be replenished during machine operation

- [Twin tray feeder]
  - Tray magazines can be replenished during machine operation

**Non-stop Production**

- [Variable pitch body chuck]
  - Motorized body chuck varies chuck opening according to component size, greatly reducing dual movement time and increasing productivity

**Flexibility**

- Various tools to cater to different components
- Various component feeding types
- Flexible feeder configuration

**Quality Insertion**

- Recognition component 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, ensuring high quality and stable insertion.

- Insertion error detection system
  - Component height will be detected via pressure sensor after insertion to determine if it is inserted correctly.

**Recovery Operation**

- In the case of insertion error, PCB will automatically be flowed to the upstream external conveyor for the operator to remove the error components.

**Cut & Clinch Function (Option)**

- Function: prevent protrusion of components after insertion, improving insertion stability
  - Features: variable pitch clinch (2.5~40 mm) with piezoelectric detection system for insertion error.