

Model ID		NPM-DX					
PCB dimensions <small>*When the long spec. conveyor is selected</small>		Single-lane mode	L 50 mm × W 50 mm to L 510 mm × W 590 mm				
		Dual-lane mode	L 50 mm × W 50 mm to L 510 mm × W 300 mm				
PCB exchange time <small>*When the short spec. conveyor is selected</small>		2.1 s ( L 275 mm or less ) 4.8 s ( L 275 mm or over to L 460 mm or less )      *May differ depending on PCB specifications.					
Electric source		3-phase AC 200 , 220 , 380 , 400 , 420 , 480 V 5.0 kVA					
Pneumatic source <sup>*1</sup>		Min.0.5 MPa , 200 L / min ( A.N.R. )					
Dimensions <sup>*2</sup>		W 1 665 mm × D 2 570 mm × H 1 444 mm <sup>*3</sup> / W 1 665 mm × D 2 294 mm × H 1 444 mm <sup>*4</sup>					
Mass		4 040 kg <sup>*3</sup> / 3 980 kg <sup>*4</sup>					
Placement head		Lightweight 16-nozzle head V3A ( Per head )	Lightweight 8-nozzle head ( Per head )		4-nozzle head ( Per head )		
		High-accuracy mode 「 OFF 」	High-accuracy mode 「 ON 」	High-accuracy mode 「 OFF 」	High-accuracy mode 「 ON 」	High-accuracy mode 「 OFF 」	High-accuracy mode 「 ON 」
Placement speed <small>* at optimum conditions</small>		49 000 cph ( 0.073 s / chip )	35 000 cph ( 0.103 s / chip )	24 000 cph ( 0.150 s / chip )	18 000 cph ( 0.200 s / chip )	8 500 cph ( 0.424 s / chip ) 8 000 cph ( 0.450 s / QFP )	6 500 cph ( 0.554 s / chip )
Placement accuracy ( Cpk ≥ 1 ) <small>* at optimum conditions</small>		± 25 μ m / chip	± 15 μ m / chip <sup>*5</sup>	± 25 μ m / chip ± 25 μ m / QFP <sup>*6</sup>	± 15 μ m / chip <sup>*5</sup>	± 25 μ m / chip ± 20 μ m / QFP	± 15 μ m / chip <sup>*5</sup>
Component dimensions ( mm )		0201 chip <sup>*7</sup> <sup>*8</sup> / 03015 chip <sup>*7</sup> 0402 chip <sup>*7</sup> to L 8.5 × W 8.5 × T 3 / T 6 <sup>*9</sup>			0402 chip <sup>*7</sup> to L 45 × W 45 or L 100 × W 40 × T 12		0603 chip to L 120 × W 90 or L 150 × W 25 × T 30
Component supply	Taping	Tape : 4 / 8 / 12 / 16 / 24 / 32 / 44 / 56 mm Max.136 ( 4.8 mm tape )				Tape : 4 to 56 / 72 / 88 / 104 mm	
	Stick	—————			Max.32 ( Single stick feeder )		

Please refer to the specification booklet for details.

\*1 : Only for main body

\*2 : Excluding the monitor , signal tower and ceiling fan cover

\*3 : Machine dimensions and mass for standard configuration ( NPM-DX and ITF <sup>\*10</sup> cart ( 17-slot ) × 4 ). They differ depending on the optional configuration.

\*4 : Dimensions and mass of the machine and four ASF <sup>\*11</sup> carts ( 34-slot ). They differ depending on the optional configuration.

\*5 : Accuracy valid for components 6 mm square or smaller.

\*6 : The placement angle recognition setting needs to be enabled.

\*7 : 0201 / 03015 / 0402 component requires a specific nozzle / tape feeder.

\*8 : 0201 component placement is optional. ( Under conditions specified by Panasonic )

\*9 : T 6 needs dedicated short nozzles and is □6.5 mm or less.

\*10 : Intelligent Tape Feeder

\*11 : Auto Setting Feeder

Model ID

NPM-DX

Model No.

NM-EJM8D



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.

Panasonic Group products are built with the environment in mind.

For details here

Panasonic GREEN IMPACT

Inquiries...

Panasonic Connect Co., Ltd.

Circuit Formation Process Business Division

3-1-1 Inazu-cho, Toyonaka City, Osaka  
561-0854, Japan

All data as of January 16, 2025

Ver.January 16, 2025

© Panasonic Connect Co., Ltd. 2025

●Changes in specifications and appearance may be made without notice for product improvement.

●Please contact us via our website at <https://industrial.panasonic.com/ww/r/fw>

NPM X

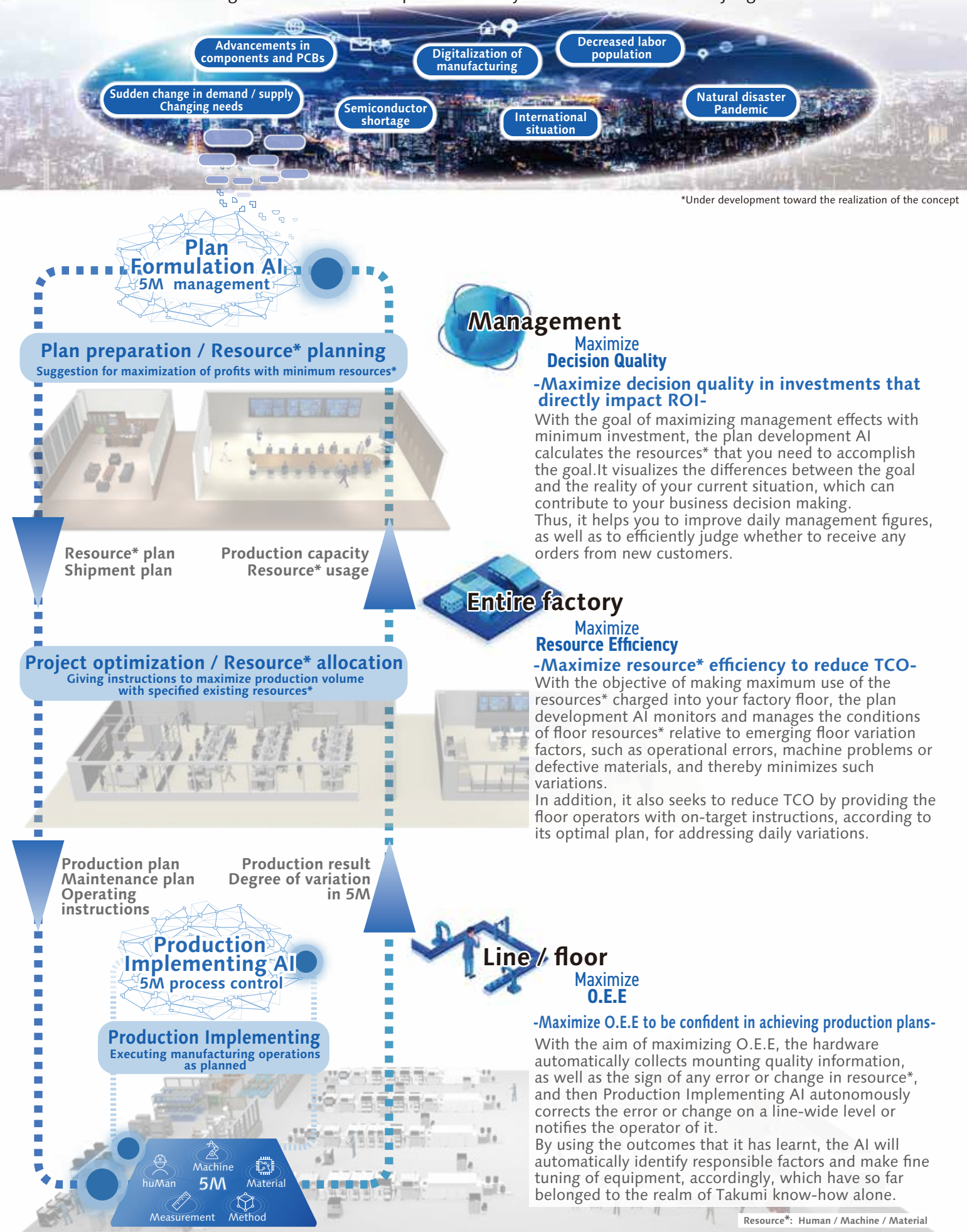
CE

\*It may not conform to Machinery Directive and EMC Directive in case of optional configuration and custom-made specification.

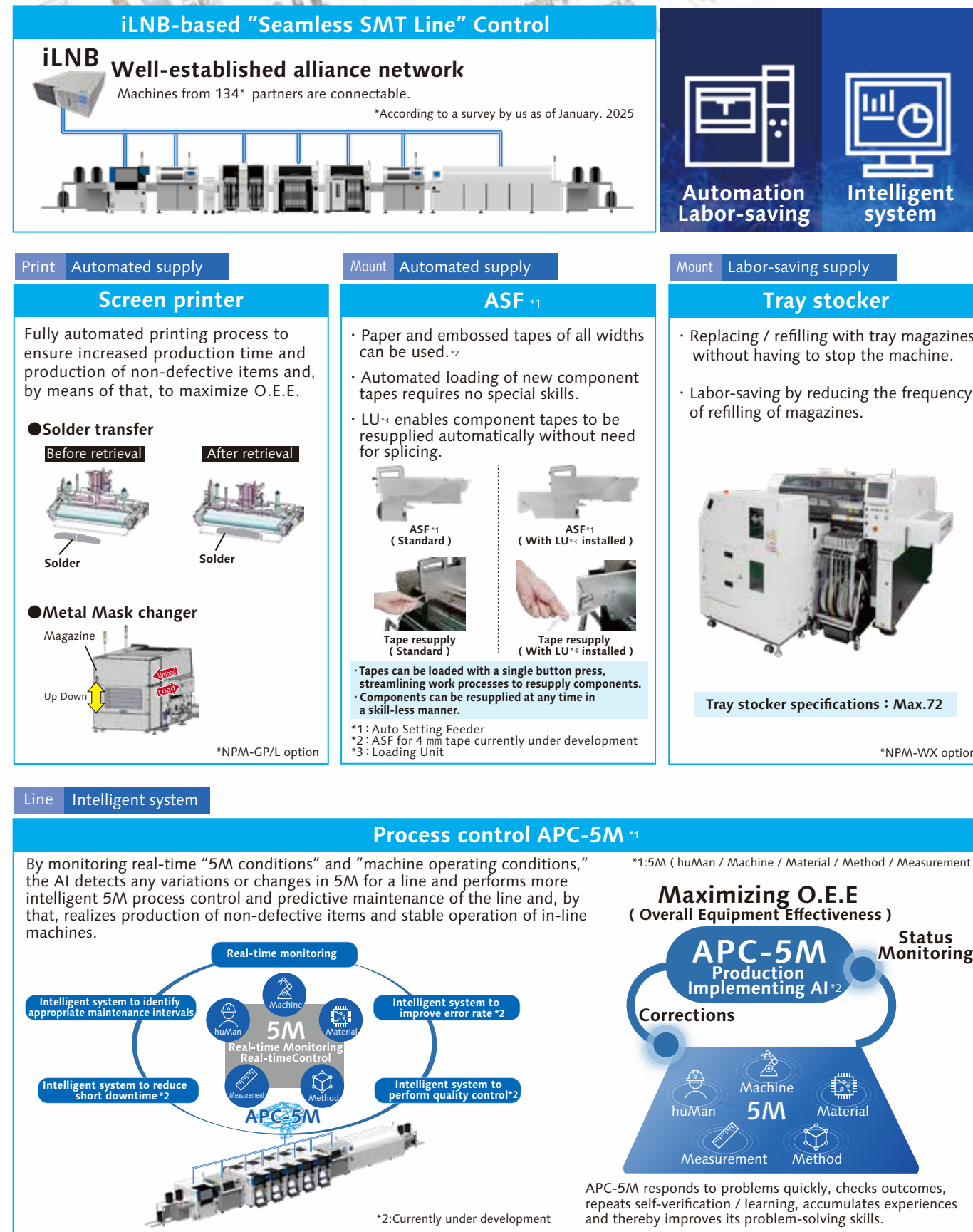


# "Autonomous Factory" Concept \*

A factory that immediately responds to every situation and continues to evolve autonomously  
Ensuring the production of non-defective items through the integrated control of autonomous uninterrupted mounting lines and floors independent of any human intervention and judgment



## Automation / Labor-saving Solution + Intelligent system Solution to Achieve Manufacturing That Is Further in Line with Production Plan



## Realization of Autonomous Mounting Line



## NPM-DX's features

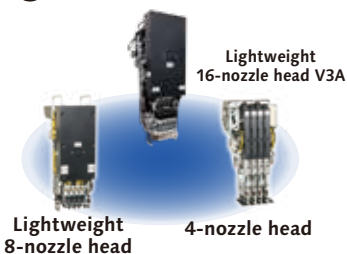
### New platform to realize Smart Manufacturing



1 Evolved basic performance

2 Maximized actual throughput

3 Minimization of human-dependent work



1 Evolved basic performance

#### Increased productivity / quality

[ High-accuracy mode OFF ]

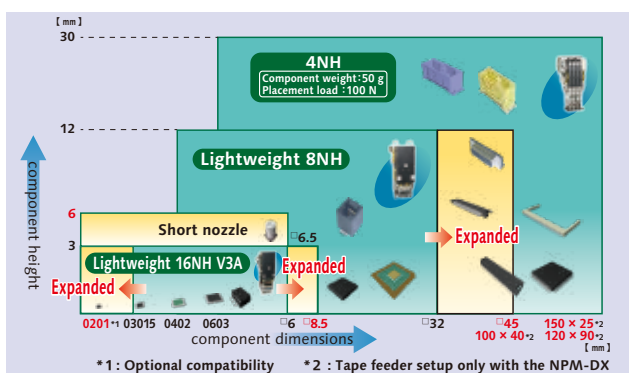
Max.speed : 196 000 cph \*  
IPC9850 ( 1608 ) : 140 000 cph \*  
Placement accuracy :  $\pm 25 \mu\text{m}$

[ High-accuracy mode ON ]

Max.speed : 140 000 cph \*  
IPC9850 ( 1608 ) : 96 000 cph \*  
Placement accuracy :  $\pm 15 \mu\text{m}$

\*Tact for 16NH V3A  $\times$  4 head

#### Improved ability to support components



#### Standard installation of new functions for better workability ( reduced labor needs )

Changeover	<ul style="list-style-type: none"> <li>Short-cut screen for changeover operation</li> <li>Instruction of non-teaching components before starting operation</li> </ul>
Component supply	<ul style="list-style-type: none"> <li>Pitch misalignment automatic correction</li> <li>Warning of component exhaust rush occurrence</li> </ul>
Error recovery	<ul style="list-style-type: none"> <li>Standardization of recovery operation for feeder related error</li> <li>Modification of non-stop data</li> </ul>

#### Inclusion of more functions useful to reduce operator's workload as standard.

Instruction of teaching component before starting operation

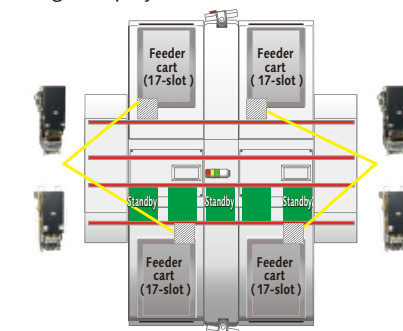
Extracts components on which automatic teach cannot perform though self-diagnosis at the start of production and displays the start-up support screen after changeover.

Warning of component exhaust rush occurrence

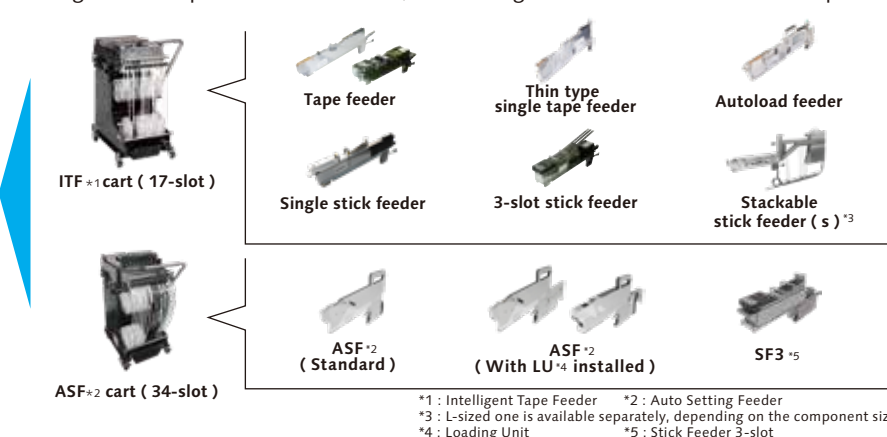
Predicts simultaneous exhaustion of different components (rush) and notifies the operator of such rush (warning: support request). Normally, displays the length of time before the next component exhaustion takes place on the screen.

#### Taking the concept and compatibility of NPM series

Dual lane and multi-production  
Plug and play function 4-head location free



Data creation, IFT <sup>\*1</sup> cart ( 17-slot ), ASF <sup>\*2</sup> cart ( 34-slot ) and nozzle are compatible with NPM series.  
Taking the concept of NPM series line, connecting with NPM-D and NPM-TT is possible.

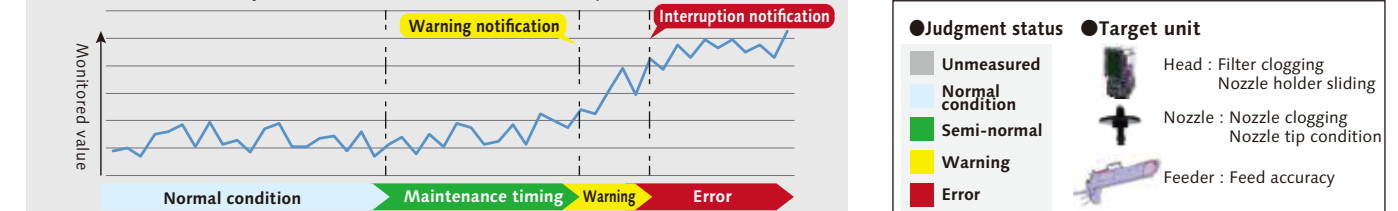


2 Maximized actual throughput

#### APC system

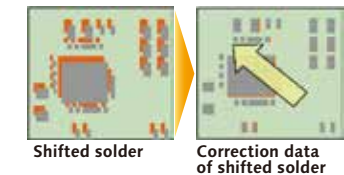
##### APC-5M: Real-time unit monitoring

APC-5M monitors the conditions of target units in real time and provides notification of the timing of maintenance of each unit or any error condition that could interrupt production, depending on variations in monitored unit values. This function enables you to conduct maintenance at optimal times.



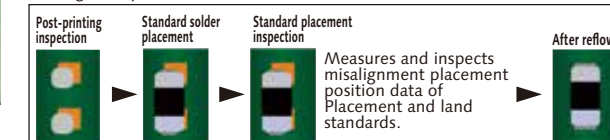
##### APC-FB <sup>\*1</sup> Feedback to the printing machine

Based on the analyzed measurement data from solder inspections, it corrects printing positions. ( X, Y,  $\theta$  )



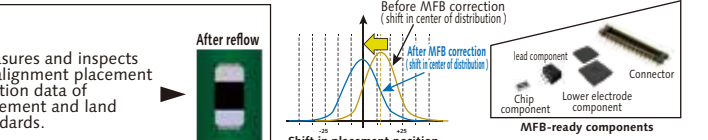
##### APC-FF <sup>\*1</sup> Feedforward to the placement machine

It analyzes solder position measurement data, and corrects component placement positions ( X, Y,  $\theta$  ) accordingly.  
Chip components ( 0402C / R ~ )  
Package component ( QFP, BGA, CSP )



##### APC-MFB2 Feedforward to AOI / Feedback to the placement machine

Inspects part location based on APC offset correction position.  
The system analyzes AOI component position measurement data, corrects placement position ( X, Y,  $\theta$  ), and thereby maintains placement accuracy.  
Compatible with chip components, lower electrode components and lead components <sup>\*2</sup>



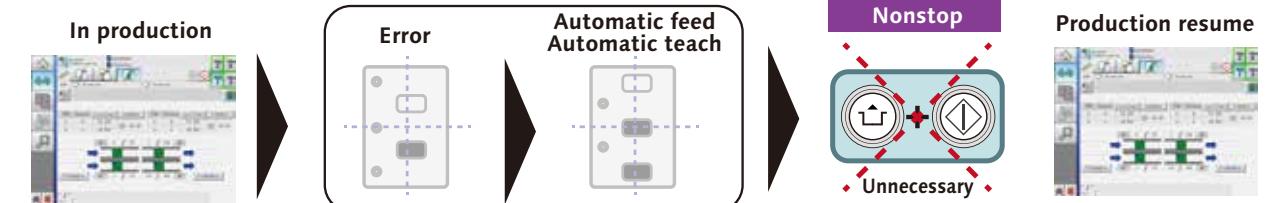
\*1: APC-FB ( feedback ) / FF ( feedforward ) : 3D inspection machine of another company can be also connected. ( Please ask your local sales representative for details. )  
\*2: APC-MFB2 ( mounter feedback2 ) : Applicable component types vary from one AOI vendor to another. ( Please ask your local sales representative for details. )

#### Automatic recovery option

#### Pickup position automatic teach in case of an error

When pickup / recognition error occurred, the machine automatically corrects the pickup position without stopping, and resumes production. That improves machine operation rate.  
( Components: 4 mm embossed ( black ) / 8 mm paper / embossed ( black ) tape component. \*Embossed tape ( transparency ) is not supported. )

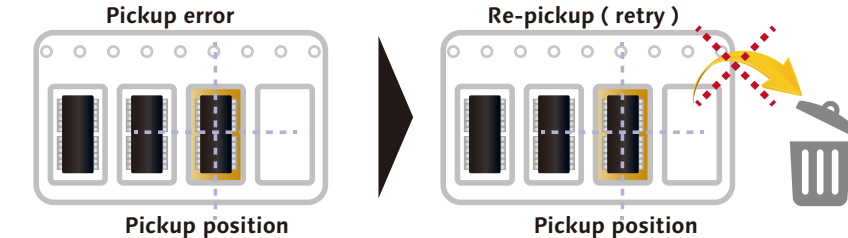
##### [ Automatically resume production after pickup position teach ]



#### Re-pickup of error component ( retry )

In case of a pickup error, retry pickup without feeding tape. It reduces discard components.

##### [ In case of an error: re-pickup ( retry ) at the current position ]

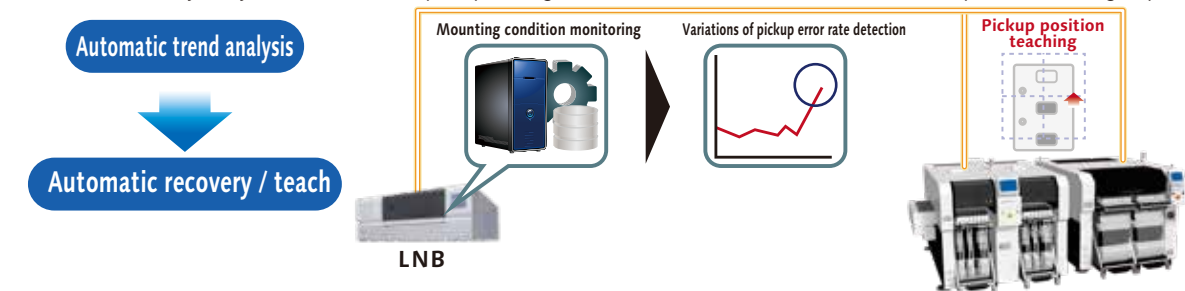


\*No tape feed  
No discard component because tape is not fed.\*

- ☐ When re-pickup ( retry ) is succeeded, the error is not counted.
  - ☐ The number of re-pick ( retry ) counts can be set.
- \* : When re-pickup ( retry ) is succeeded.

#### Evolved automatic recovery ( predicted control )

LNB automatically analyzes the variation of pickup / recognition error rate and instructs the machine to perform teaching to prevent machine error stop.

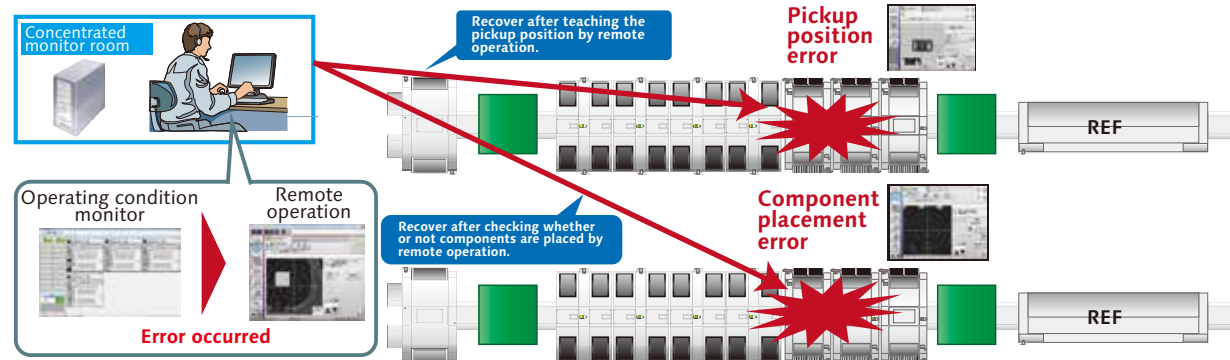




### 3 Minimization of human-dependent work

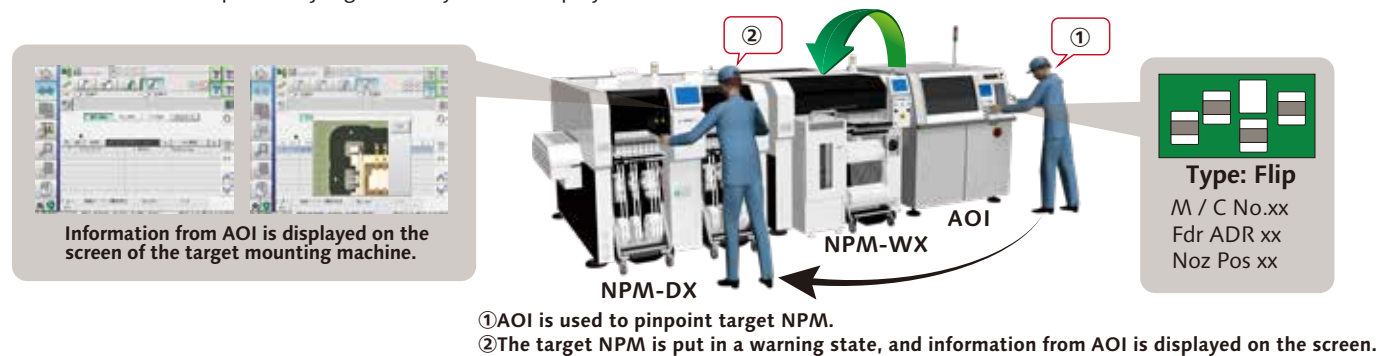
#### Remote operation option

Recovery by remote operation is available for the error of which recovery can be made based on human judgment alone. This enables concentrated on-the-floor monitoring, eliminating the time lost for the operator to detect error and take appropriate action, reducing the error recovery time, and thus achieving labor saving and improved operating rate.



#### AOI Info Display option

Information on components judged NG by AOI is displayed both on AOI and NPM.



#### Feeder setup navigator option

It is a support tool to navigate efficient setup procedure. The tool factors in the amount of time it takes to perform and complete setup operations when estimating the time required for production and providing the operator with setup instructions. This will visualize and streamline setup operations during setup for a production line.

#### Placement head maintenance

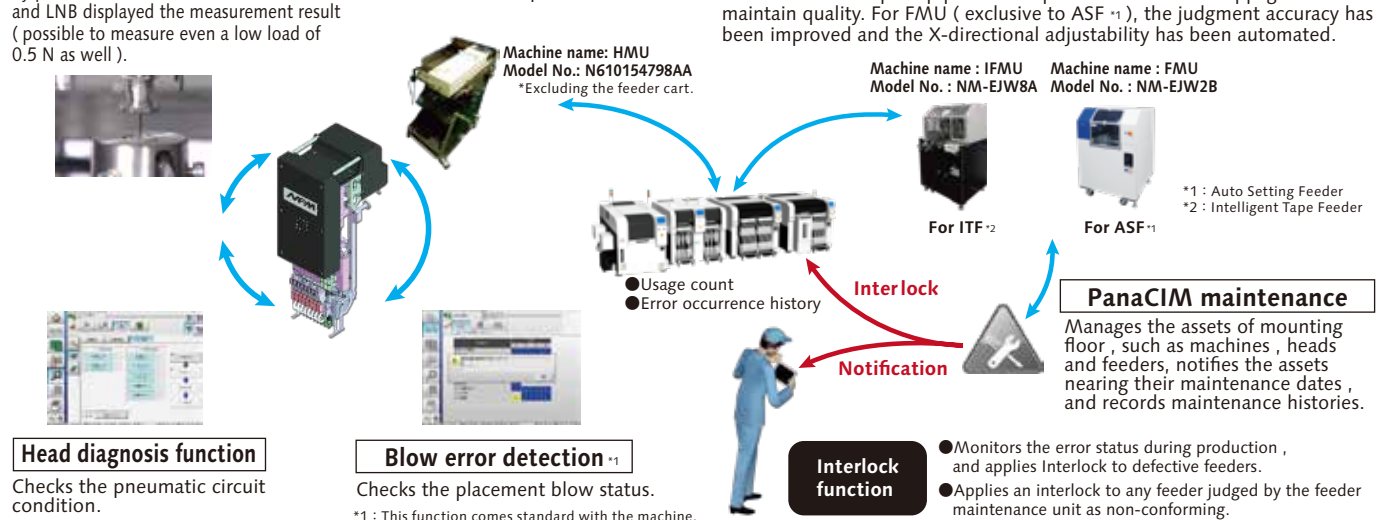
Good use is made of the machine's self-diagnosis function to automatically detect the maintenance timing of the placement head. In addition, the maintenance unit can be used to keep the placement head in working condition without requiring skills.

##### Load checker V2

Measures the "indentation load" imposed by placemen head and has the machine and LNB displayed the measurement result (possible to measure even a low load of 0.5 N as well).

##### Head mentenance unit

To automate the inspection and maintenance of the placement head.



#### Parts supply navigator option

It is a parts supply support tool to present an efficient sequence of parts supply. Taking into account the length of time before parts shortage occurs and the least time-wasting moving path possible, the tool provides the operator with instructions for parts supply. This makes parts supply more efficient.

#### Feeder maintenance

Independent of operator skill, the feeder maintenance unit automatically performs feeder performance inspections and calibrations. Its combined use with the PanaCIM maintenance module can automatically prevent the inclusion of non-conforming feeders into production.

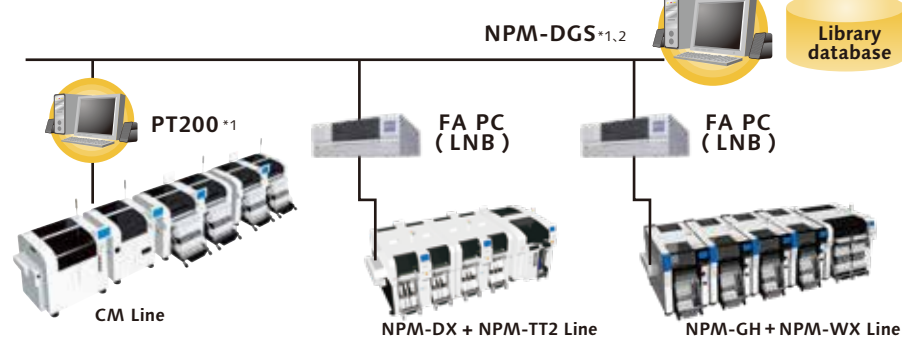
##### Feeder maintenance unit

It automates an inspection of major parts affecting the feeder's performance and calibrates the pickup position to prevent short-time stoppages and maintain quality. For FMU (exclusive to ASF<sup>\*1</sup>), the judgment accuracy has been improved and the X-directional adjustability has been automated.

#### Data Creation System

#### NPM-DGS (Model No.NM-EJS9A)

This is a software package that provides integrated management of component library and PCB data, as well as production data that maximizes mounting lines with high-performance and optimization algorithms.



\*1: A computer must be purchased separately.

\*2: NPM-DGS has two management functions of floor and line level.

##### CAD import



Allows you to import CAD data and check polarity, etc., on the screen.

##### Optimization



Realizes high productivity and also allows you to create common arrays.

##### PPD editor



Update production data on PC during production to reduce the loss of time.

##### Component library



Allows unified management of the component library including mounting, inspection and dispensing.

#### Offline Camera unit V2

New component data can be created offline without relying on an individual operator's skill and proficiency, thus contributing to quality improvement and O.E.E maximization.

Thanks to adoption of a new component recognition camera and a wider variety of dedicated software functions, it now enables you to create component data more efficiently.

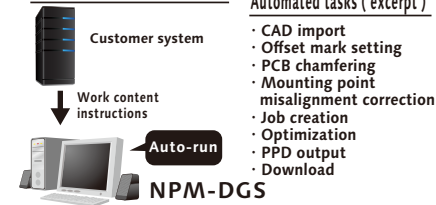


Offline Camera unit V2

#### DGS Automation option

**Automated manual routine tasks reduce operation errors and data creation time.** Manual routine tasks can be automated. By collaborating with the customer system, the routine tasks for creating data can be reduced, so it contributes to a significant reduction in production preparation time. It also includes the function to automatically correct the coordinates and angle of the mounting point (Virtual AOI).

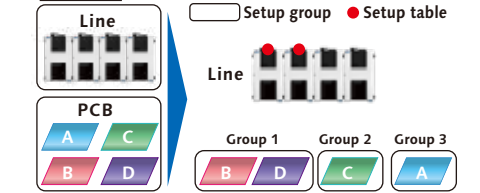
Example of entire system image:



#### Optimization of setup option

**In production involving multiple models, setup workloads are taken into account and optimized.** For more than one PCB sharing common component placement, multiple setups may be required due to a shortage of supply units. In order to reduce the required setup workloads in such a case, this option divides PCBs into similar component placement groups, selects a table (s) for setup and thus automates component placement operation. It contributes to improving setup performance and reducing production preparation time for customer manufacturing various kinds of products in small quantities.

Example:



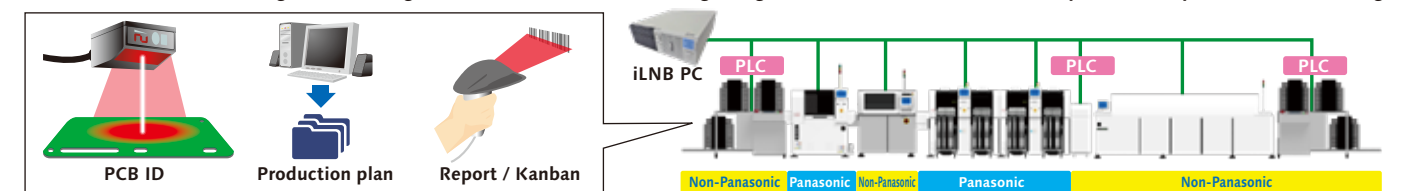
#### Changeover ability

#### Automatic changeover option

All machines, including NPM, in SMT line are connected via iLNB, which allows automatic changeovers to be performed sequentially, starting from the first machine in the line.

● Trigger for changeover

You can select from among the following three methods: PCB ID reading using an external scanner, Production plan, and Report / Kanban reading.



#### Open interface

Able to standardize the interfacing with your systems currently used. Provides data communication with our standard interfaces.



#### Host communication option

- **Events**  
Outputs a real-time event of equipment.
- **Other company's component verification**  
Communicates with your component verification systems.
- **Component management data**
  - Component remaining quantity data: Outputs component remaining quantity data.
  - Trace data: Outputs data linked with component information\* and PCB information.

\*Entry of component information with PanaCIM material verification or other company's component verification (this option) is required.