

Model ID	NPM-D3A	
PCB dimensions*1	Dual-lane mode	L 50 mm × W 50 mm ~ L 510 mm × W 300 mm
	Single-lane mode	L 50 mm × W 50 mm ~ L 510 mm × W 590 mm
PCB exchange time	Dual-lane mode	0 s * *No 0 s when cycle time is 3.6 s or less
	Single-lane mode	3.6 s * *When selecting short conveyors
Electric source	3-phase AC 200 , 220 , 380 , 400 , 420 , 480 V 2.7 kVA	
Pneumatic source*2	0.5 MPa , 100 L / min (A.N.R.)	
Dimensions *2	W 832 mm × D 2 652 mm*3 × H 1 444 mm*4	
Mass	1 680 kg (Only for main body : This differs depending on the option configuration.)	

Placement head	Lightweight 16-nozzle head V3A(Per head) *5		Lightweight 8-nozzle head (Per head)	2-nozzle head (Per head)
	High production mode[ON]	High production mode[OFF]		
Max. speed	46 000 cph (0.078 s / chip)	38 000 cph (0.095 s / chip)	21 500 cph (0.167 s / chip)	5 500 cph (0.655 s / chip) 4 250 cph (0.847 s / QFP)
Placement accuracy (Cpk≥1)	± 37 μm / chip	± 30 μm / chip (± 25 μm / chip *6)	± 30 μm / chip ± 30 μm / QFP*7	± 30 μm / QFP
Component dimensions (mm)	0402 chip *8 ~ L 8.5 × W 8.5 × T 3 / T 6 *10	03015 *8 *9 / 0402 chip *8 ~ L 8.5 × W 8.5 × T 3 / T 6 *10	0402 chip *8 ~ L 45 × W 45 × T 12 or L 100 × W 40 × T 12	0603 chip ~ L 100 × W 90 × T 28
Component supply	Tape: 4 / 8 / 12 / 16 / 24 / 32 / 44 / 56 mm Max.68 (4, 8 mm Tape, Small reel)			Tape: 4 ~ 56 / 72 / 88 / 104 mm
	Taping			
	Stick			Max.16 (Single stick feeder)
Tray			Max.20 (per tray feeder)	

* Placement tact time, inspection time and accuracy values may differ slightly depending on conditions
* Please refer to the specification booklet for details.

*1 : Due to a difference in PCB transfer reference , a direct connection with NPM (NM-EJM9B) / NPM-W (NM-EJM2D) /NPM-W2 (NM-EJM7D) dual lane specs cannot be established.

*2 : Only for main body
*3 : Dimension D including tray feeder : 2 683 mm:
Dimension D including feeder cart : 2 728 mm
*4 : Excluding the monitor , signal tower and ceiling fan cover.

*5 : Lightweight 16 NH V2 is also installable.
*6 : ± 25 μm placement support option. (Under conditions specified by Panasonic)
*7 : The placement angle recognition setting needs to be enabled.
*8 : The 03015 / 0402 mm chip requires a specific nozzle/feeder.
*9 : Support for 03015 mm chip placement is optional.
(Under conditions specified by Panasonic : Placement accuracy ± 30 μm / chip)
*10 : T 6 needs dedicated short nozzles and is □6.5 mm or less.

NPM
NEXT PRODUCTION MODULAR

Manufacturing Process Innovation



Model ID **NPM-D3A**
Model No. NM-EJM6E

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.



Panasonic GREEN IMPACT

Inquiries...

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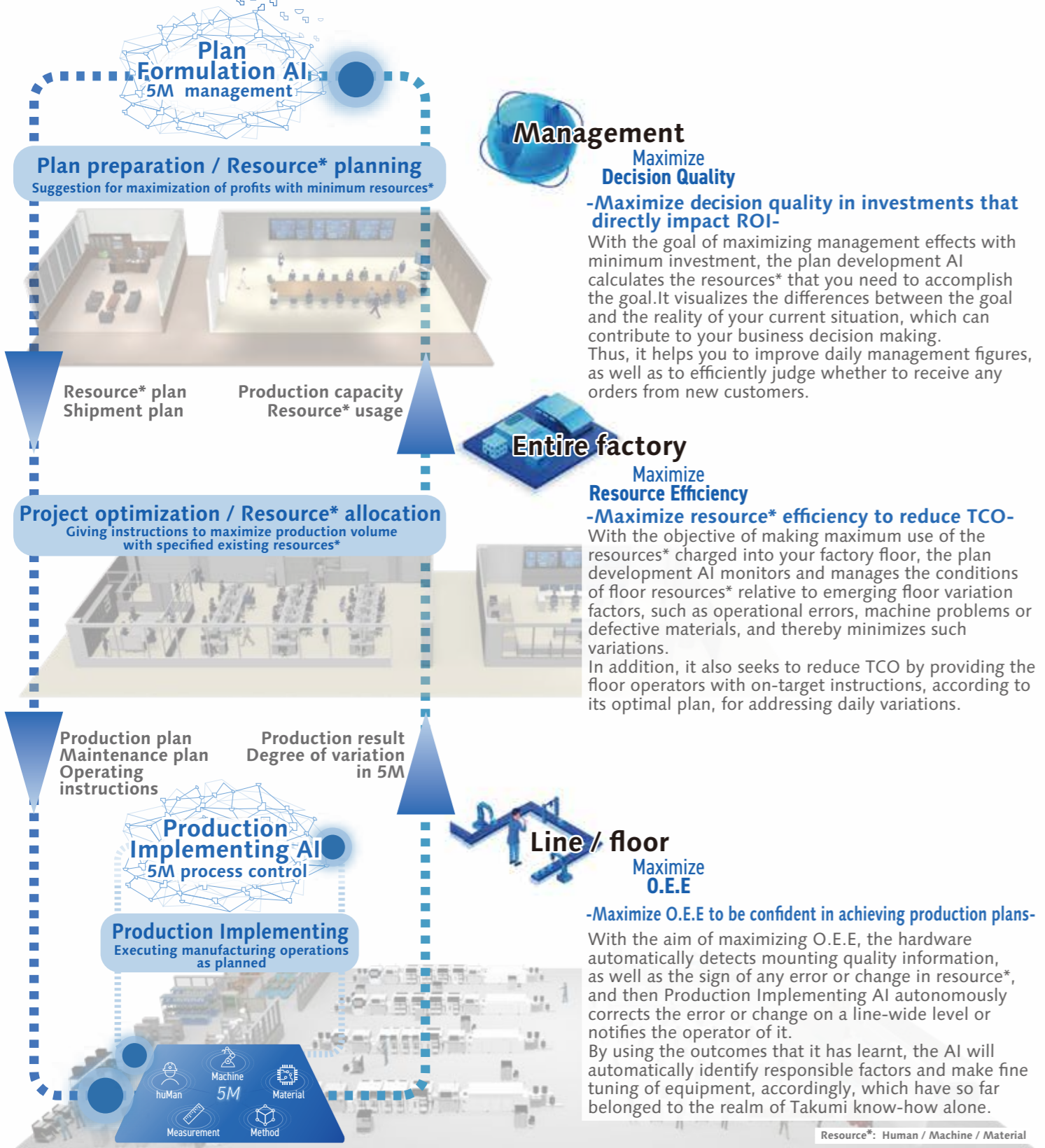
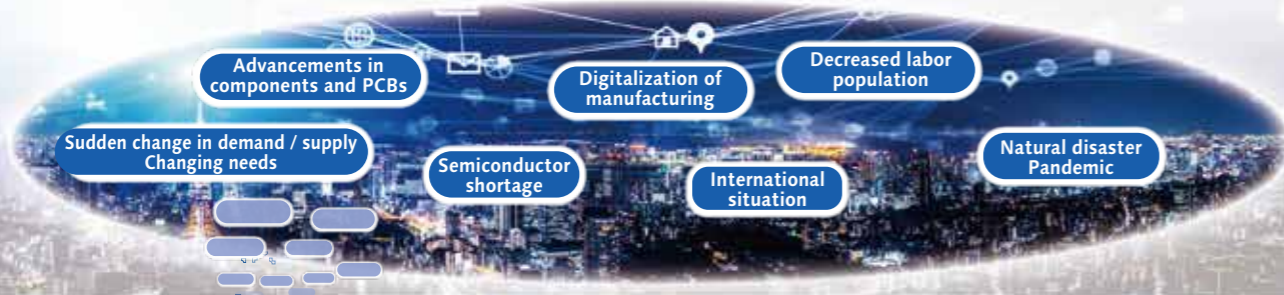
LNB conveyor + 3 production modularity in-line setup



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

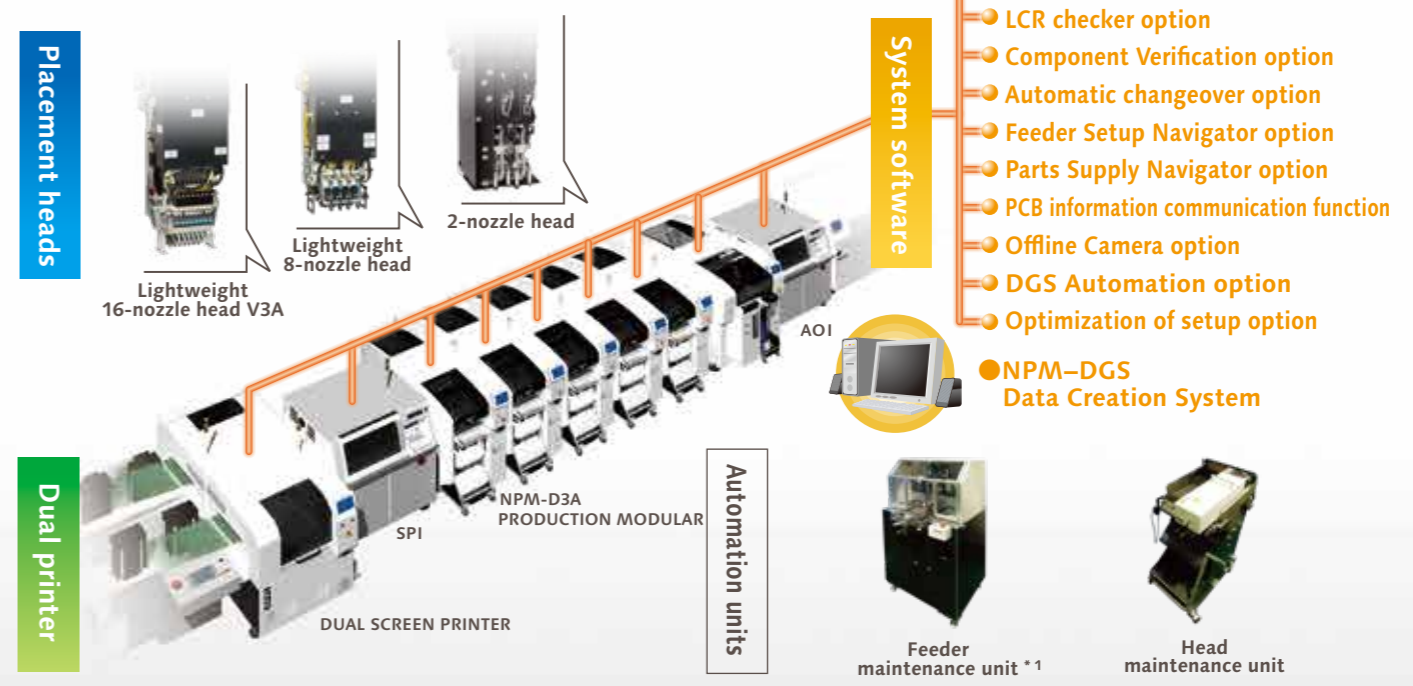
"Autonomous Factory" Concept

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



NPM System evolution according to mounting changes Production Modular

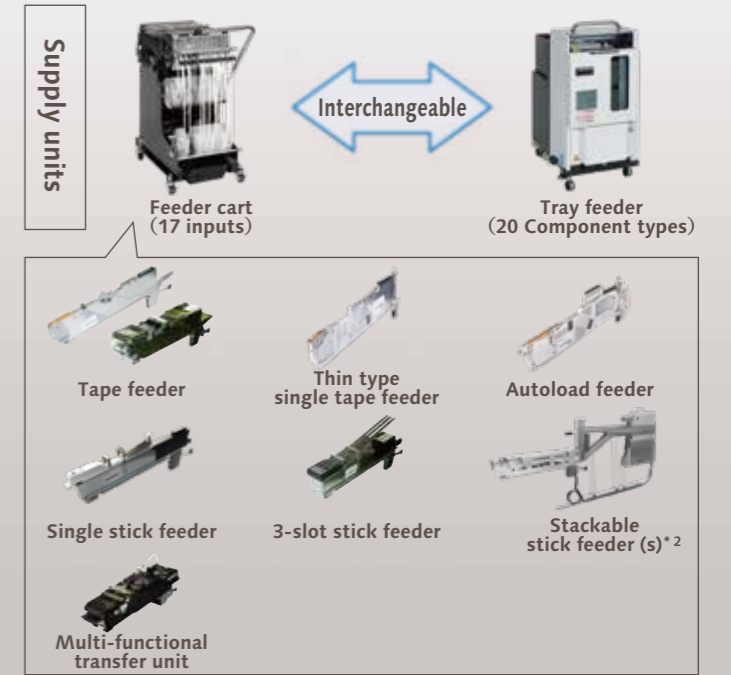
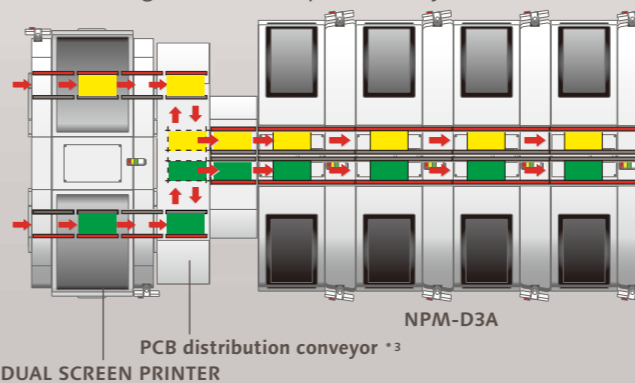
- 1 High area productivity with total mounting lines**
Higher productivity and quality with printing, placement and inspection process integration
- 2 Configurable modules allow flexible line setup**
Head location flexibility with plug-and-play functions
- 3 Comprehensive control of lines, floor and factory with system software**
Production plan support through line operation monitoring



Multi-product line

Full dual-lane mounting

The introduction of dual conveyor enables production of different types of PCBs in the same line, thus leading to increased productivity.



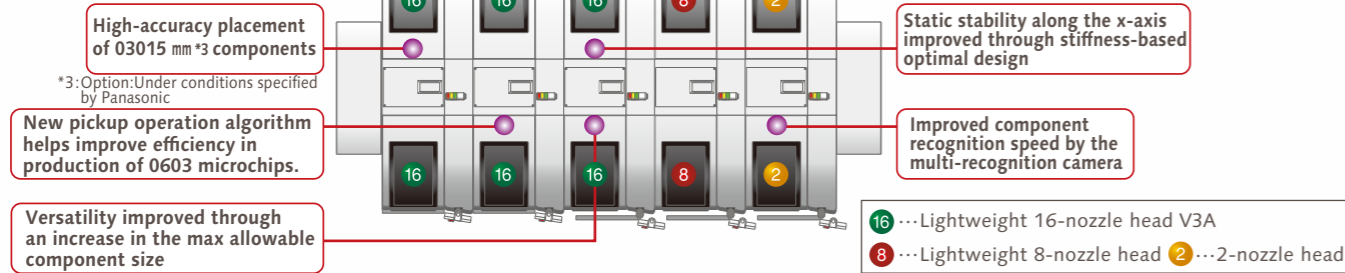
*1:The "Thin type single tape feeder" and "Autoload feeder" require the "Master jig for thin type single feeder" and "Attachment for thin type single feeder".
*2:L-sized one is available separately, depending on the component size.
*3:PCB traverser conveyor to be prepared by customer.

Features

The introduction of light-weight 16NH V3A further advances the performance of the machine.

- ◆ **High production mode** (High production mode: ON)
Max. speed : 92 000 cph^{*1}(IPC9850(1608): 66 200 cph^{*1}) / Placement accuracy : ± 37 μm
- ◆ **High accuracy mode** (High production mode : OFF)
Max. speed : 76 000 cph^{*1} / Placement accuracy : ± 30 μm (Option : ± 25 μm^{*2})

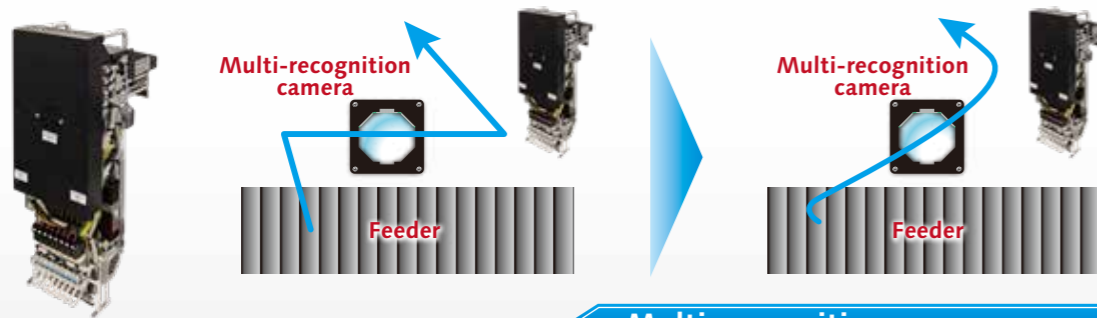
*1:Tact for 16NH V3A × 2 head
*2:Under conditions specified by Panasonic



High productivity

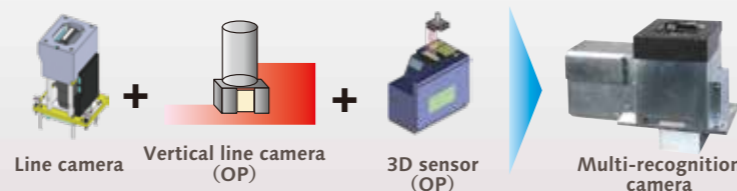
Lightweight 16NH V3A

The introduction of lightweight 16NH V3A allows the X- and Y-axes to be driven simultaneously during parts recognition, thus improving placement tact through optimal routing.



Multi-recognition camera

The three distinct recognition capabilities conventionally included in separate units have been integrated into one device. Now the three different recognition operations, including the one to detect the parts condition along their heights, can be simultaneously performed in a single scan, thus delivering continued high productivity. The device can be upgraded from 2D specs to 3D specs.

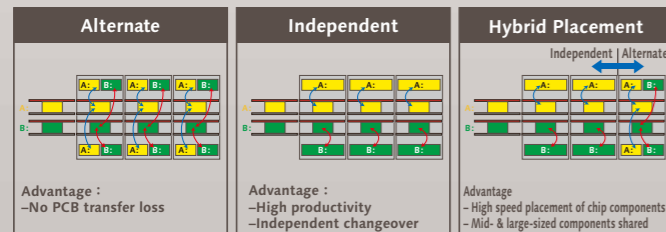


Dual mounting method

Alternate, Independent & Hybrid Placement

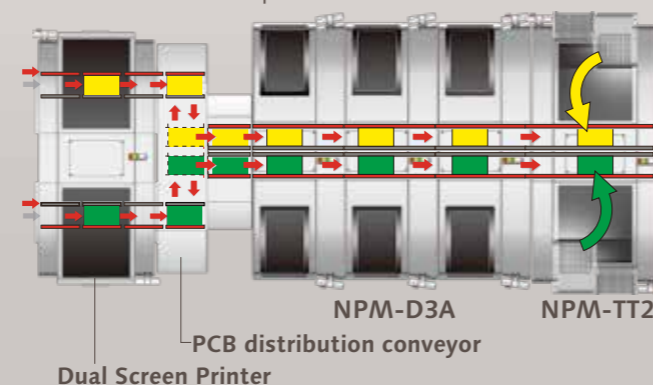
Selectable "Alternate" and "Independent" dual placement method allows you to make good use of each advantage.

- Alternate : Front and rear heads execute placement on PCBs in front and rear lanes alternately.
- Independent : Front head executes placement on PCB in front lane and rear head execute placement on rear lane.



High productivity through fully independent placement

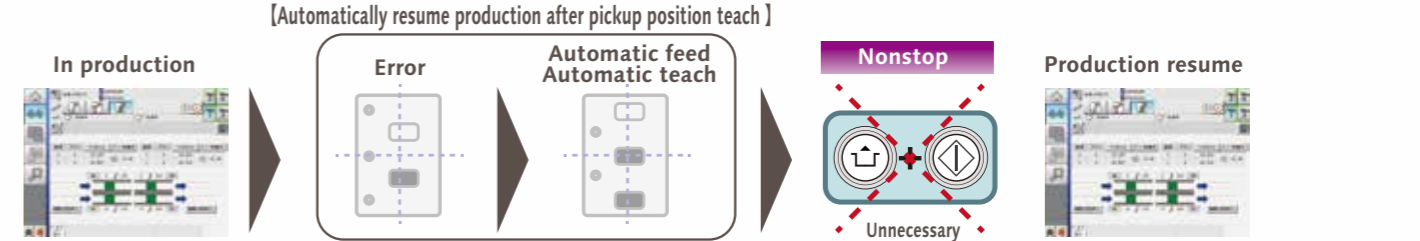
Achieved independent placement of tray components by directly linking with NPM-TT2. Capable of fully independent placement of tray components improving cycle time of mid-, large-size component placement with 3-nozzle head. Output of entire line is enhanced.



Improved availability

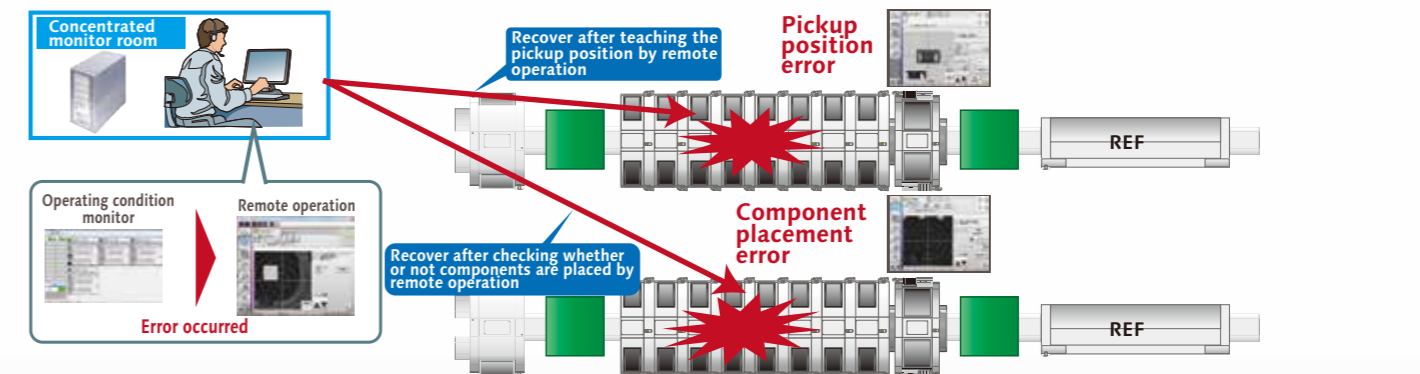
Automatic recovery option

This automatically adjusts the pickup position without interrupting the machine to continue production, thus enhancing machine availability.



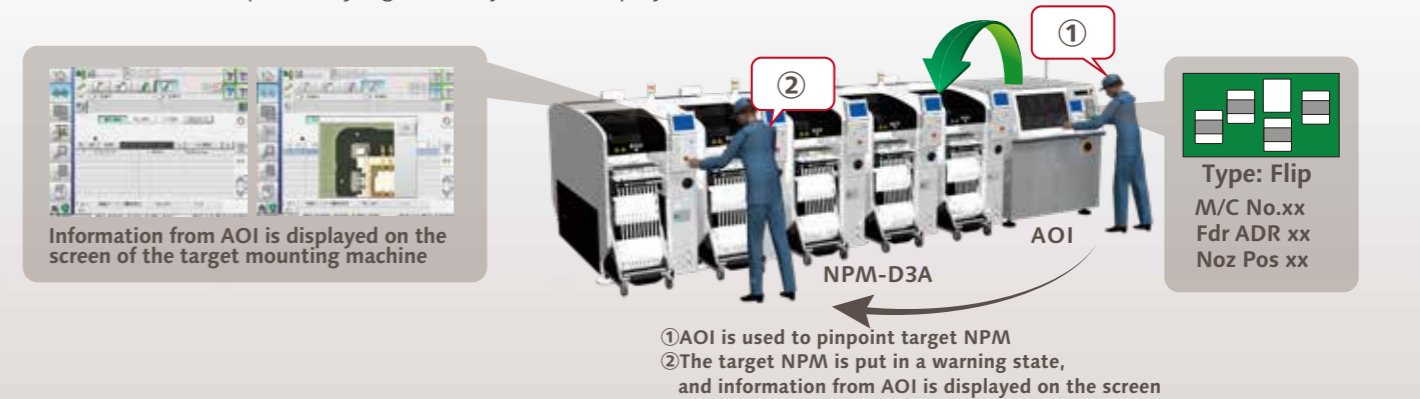
Remote operation option

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.



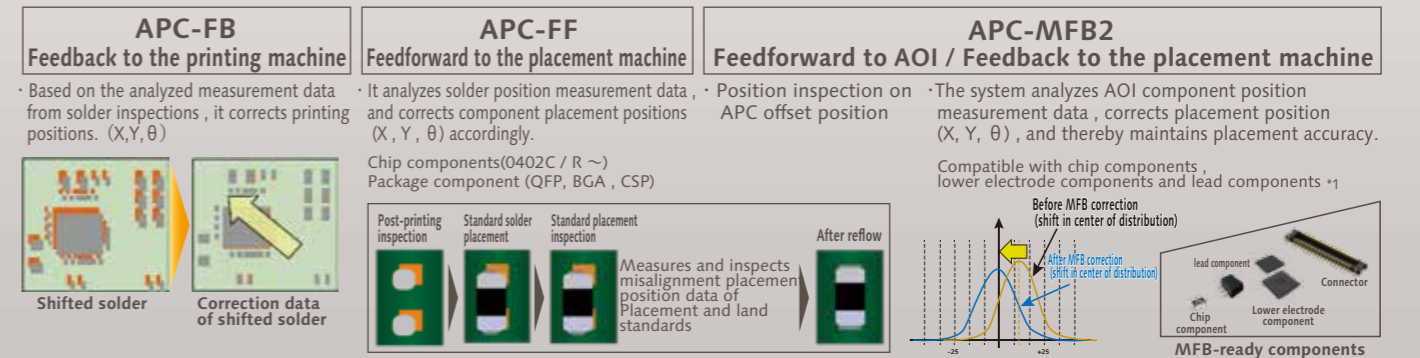
AOI Info Display Option

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



High-quality mounting

APC system



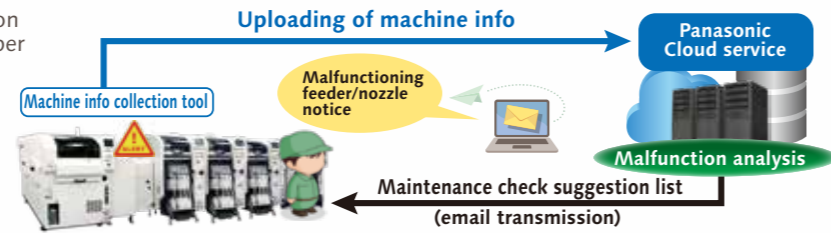
*1:APC-MFB2 (mounter feedback2): Applicable component types vary from one AOI vendor to another. (Please ask your local sales representative for details.)

Maintenance/Preservation

Cloud-based contractual service. It makes malfunction analysis based on machine info uploaded by subscriber to our cloud to find any feeder or nozzle*2 that requires condition check, and then sends a maintenance check suggestion list containing the analysis result to the subscriber.

*1: Maintenance service agreement must be concluded with us. (for details, contact our sales representative.)
*2: Only Panasonic nozzles with 2D code are applicable.

Maintenance notice service**



Head diagnosis option

It automatically self-diagnoses placement heads on a regular basis and stores diagnosis histories. Keeping track of any change in the condition of each head, it performs preventive maintenance of the head, reducing losses resulting from heads and sudden machine shutdowns.



Off-line setup support station

With the support stations, offline feeder cart setup is possible even outside of the manufacturing floor.

●Two types of Support Stations are available.

- ① Component verification station
 - Batch Exchange Cart Setup: Provides power to all feeders in cart.
 - Feeder setup: Provides power to individual feeders.
 - Component verification: Navigator that indicates any location where feeders need exchange.
- ② Power supply station
 - The simpler type of station composed of the batch exchange cart setup and the feeder setup features.

Misplacement prevention

Component Verification option

Prevents setup errors during changeover Provides an increase of production efficiency through easy operation



*Wireless scanners and other accessories to be provided by customer

- Preemptively deters component misplacement
Prevents misplacement by verifying production data with the barcode information on changeover components.
- Automatic setup data synching function
The machine itself does the verification, eliminating the need to select separate setup data.
- Interlock function
Any problems or lapses in verification will stop the machine.
- Navigation function
A navigation function to make the verification process more readily understandable.

LCR checker option

At the start of production or during component supply, it checks mounted component values, thereby preventing misplacement. It contributes to improving machine availability through a reduction in time spent on component checks, as well as manufacturing conforming items.

●Misplacement prevention function
This prevents any misplacement due to components loaded on wrong feeders, defective components, or mislabeled reels.
Since the relevant unit inside the machine automatically checks the conditions of components, the operator can reduce time spent on component checks.

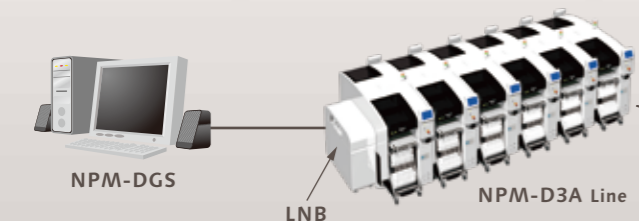
●Interlock function
If any checked value exceeds the maximum permissible retry count, this brings the machine to a stop.

●Trace management function
As checked value data is retained in LNB (FA PC), it can be made available for inspection later. Additionally, it is possible to output such data as a file. Thus, it can also be used to keep track of any changes or histories of mounted components.

Component size	0402 ~ 6 mm
Component	Resistance, Capacitor, Inductor, Diode

Changeover ability

Supporting changeover (production data and rail width adjustment) can minimize time loss



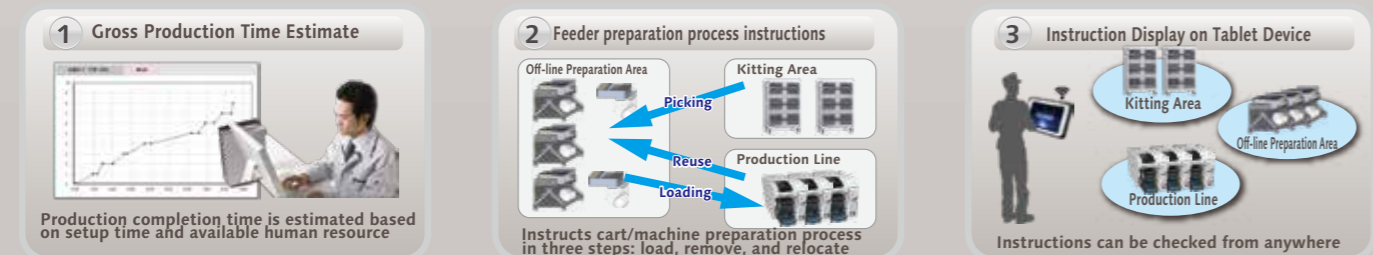
Automatic changeover option

●PCB ID read-in type
PCB ID read-in function is selectable from among 3 types of external scanner, head camera or planning form



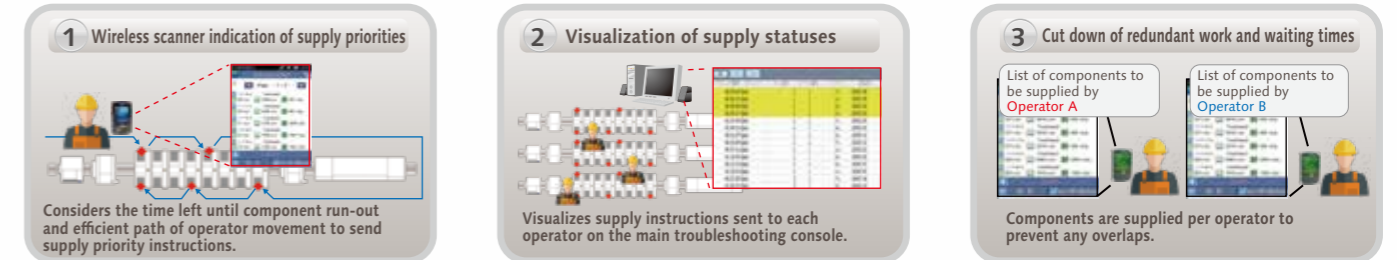
Feeder setup navigator option

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.



Operating rate improvement

A component supply support tool that navigates efficient component supply priorities. It considers the time left until component run-out and efficient path of operator movement to send component supply instructions to each operator. This achieves more efficient component supply.

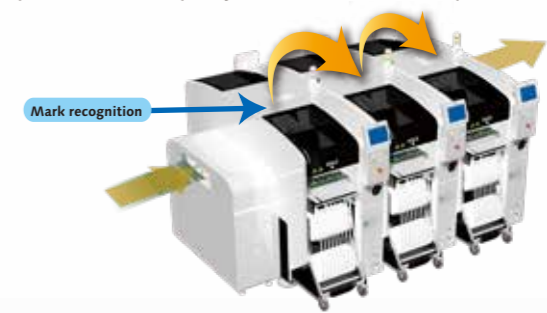
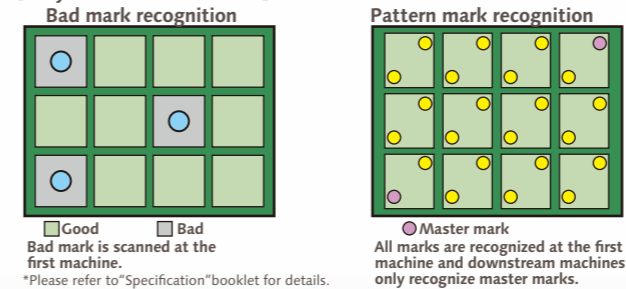


*PanaCIM is required to have operators in charge of supplying components to multiple production lines.

PCB info communication function

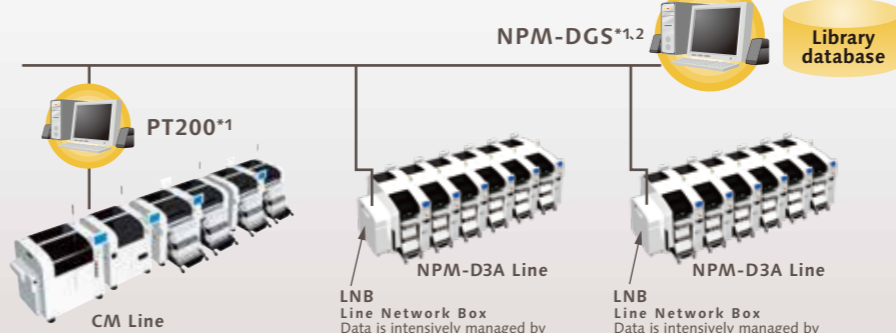
Information of mark recognitions done on first NPM machine in line is passed on to downstream NPM machines. Which can reduce cycle time utilizing the transferred information. The machine can also obtain bad mark information from its upstream third-party machine as well.(option)

[Subject for communication]



Data Creation System

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.

Offline Camera (option)

Component data can be created offline even while the machine is in operation. Use the line camera to create component data. Lighting conditions and recognition speed can be confirmed in advance, so it contributes to the improvement of productivity and quality.



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).



NPM-DGS (Model No.NM-EJS9A)

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.

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.

