

[Proposals to address issues]

Automation and Manpower Saving

Panasonic Connect Corporation
Circuit Formation Process Division



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Agenda

Automation and Manpower Saving

Solutions by Panasonic (Solution List)

Automation and Manpower Saving < Changeover · Parts Supply >

Automatic Line Changeover iLNB

DGS Automation

Offline Camera Unit

Printing Machine Automation

Auto Setting Feeder (ASF)

Auto Load Feeder (ALF)

Tray Stocker

Automation and Manpower Saving < Maintenance and Error Handling>

Maintenance Unit

Head Diagnostics

Automatic Recovery

Remote Operation

Related Content

Related Products and Services

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Automation and Manpower Saving

Manufacturing sites face a serious labor shortage, and there is a need to improve efficiency while improving quality and production volume. To address these challenges, Panasonic offers automation solutions for printing and mounting machines. This helps to reduce labor, improve stability, and improve productivity at production sites, thereby helping to solve problems at the production sites.



Solutions by Panasonic

Automation and Manpower Saving < Changeover • Parts Supply >

Need to reduce the loss of changeover and work errors in variable-mix variable-volume production

Automatic Line Changeover
iLNB

Need to automate routine tasks at generating placement data · production data creation

DGS Automation

Need to create production data and components data without skills

Offline Camera Unit

Need to reduce the loss of printer changeover and work errors

Printing Machine Automation

Need to reduce losses at supplying tape components

Auto Setting Feeder (ASF)

Need to reduce splicing by conventional feeders

Autoload Feeder (ALF)

Need to supply tray components automatically

Tray Stocker

Automation and Manpower Saving < Maintenance • Error Handling >

Need to execute maintenance work skilllessly

Maintenance Unit

Need to avoid failure of placement head and to reduce analysis time when failure occurs

Head Diagnosis

Need to reduce loss when error occurs

Automatic Recovery

Need to reduce time for site restoration

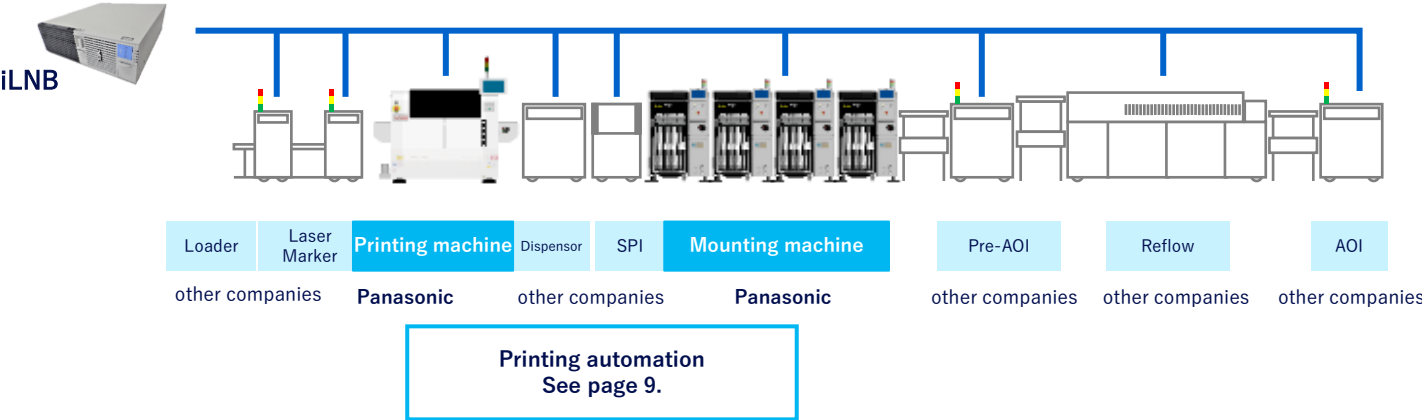
Remote Operation

Need to reduce the loss of changeover and work errors in variable-mix variable-volume production

Automatic line changeover iLNB

By using the integrated line management system iLNB, changeover can be achieved in a line, including at other companies' facilities. The changeover can be performed sequentially by grasping the status of the front and rear machines. The changeover can be performed without variations among workers, improving productivity.

Line control using the integrated line management system iLNB



[iLNB Web page](#)

Merit

Allows unmanned changeover in integrated line including equipment from other companies

Reduces human-dependent work to ensure work quality

Shortening the changeover time required to improve the operation rate

※ Please contact our company for details on products that support each function.

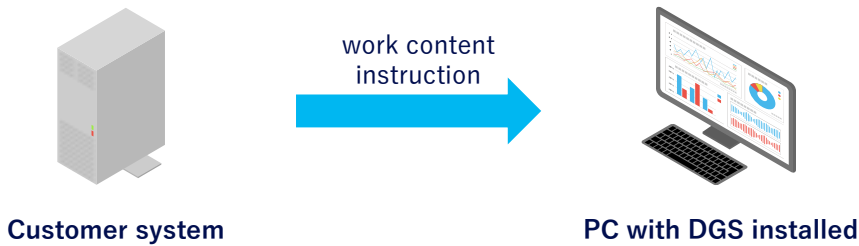
Need to automate routine tasks at generating placement data • production data creation

DGS Automation

DGS is software that enables you to easily generate and optimize placement data using a personal computer. By using the optional DGS Automation, routine tasks that were manually performed can be automatically executed.

DGS Automation

- By automating routine tasks, it eliminates the need for screen operations and reduces work errors. It also reduces data creation time.
- By linking with the customer system, DGS works automatically. This greatly reduces production preparation time.
- Automate a series of operations such as CAD capture, automatic correction of placement point coordinates and angles, job generation, optimization, output of production data and download to equipment.



Merit

- Reduce man-hours by automating manual processes
- Dramatically reduce production preparation time
- Reduce work errors by reducing screen operations

※ Please contact our company for details on products that support each function.

Need to create production data and components data without skills

Offline camera unit

This device can create new components data accurately and in a short time without skills. Data can be generated without the need to stop the equipment for offline work.

Offline camera unit V2



[Offline camera Web page](#)

- All components compatible with Panasonic's current equipment can be created offline.
(Part Size 0201~□135, Height 65 mm)
- It uses the same camera system as the NPM-GH , so it is possible to obtain the same images and check functions as the equipment.
- Automation by AI engine enables skill-less data creation of odd-form components.

Merit

No need to re-teach the equipment
Reduces man-hours

Skillless data creation

Data generation for new components
Achieved with zero equipment downtime

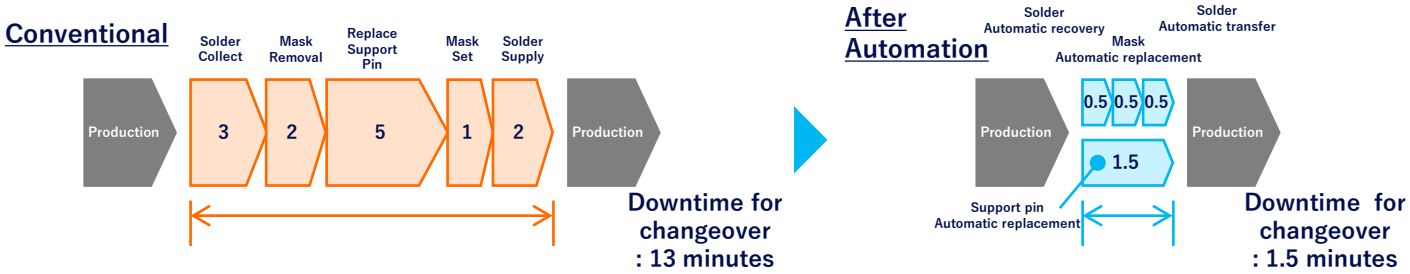
※ Please contact our company for details on products that support each function.

Need to reduce the loss of printer changeover and work errors

Printing machine automation

Merit

Reduce the changeover time by using our automation features. Increase operating rate.



Increased productivities to automate changeover from manual one

Reduced changeover time and reduced manpower
Allows changeover in a fixed amount of time

Reduce changeover downtime from 13 minutes to 1.5 minutes to automate the printing process

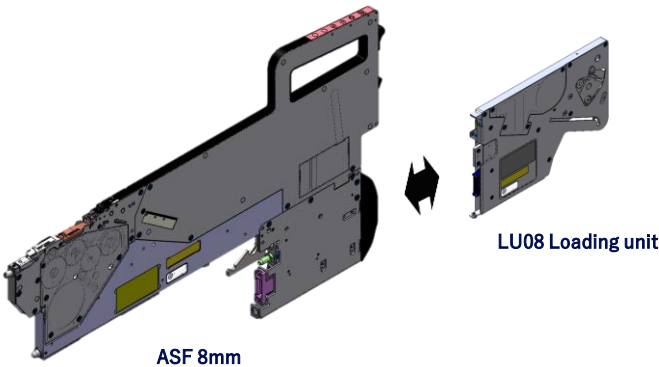
※ Please contact our company for details on products that support each function.

Need to reduce losses at supplying tape components

Auto Setting Feeder (ASF)

Merit

This newly developed feeder realizes automatic setting of tape components. Automates setting of new tape components and greatly reduces work time.



- Tape components 8~104 mm wide (paper, embossing)
- Loading unit (optional) enables the following components to be automatically loaded (No splicing, reduced work time)

Tape Set Time Comparison

Conventional feeder (ITF)

90 seconds

Auto-setting feeder (ASF)

30 seconds

Reduces tape setting work time per time by approximately 60 seconds compared to conventional products

The new mechanism greatly eliminates the short time breakdown due to cover tape running out, etc.

Automatic loading of the next tape without splicing is possible by connecting optional LU (Loading Unit)

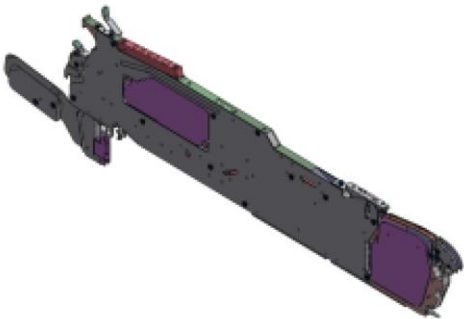
※ Please contact our company for details on products that support each function.

ASF Web page

Need to reduce splicing by conventional feeders

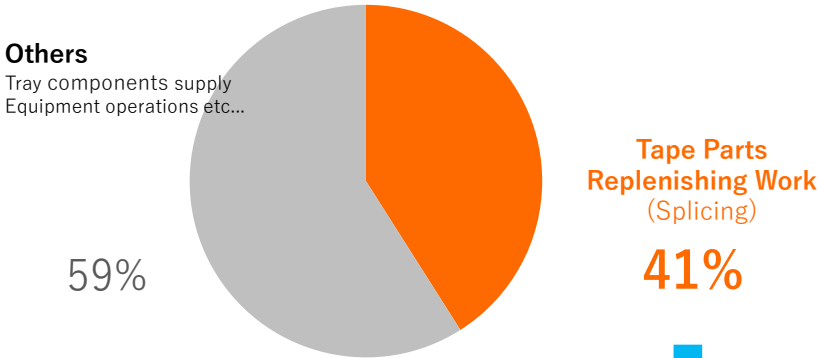
Auto Load Feeder (ALF)

Automatic setting of tape components is realized in conventional feeders. When the next component is inserted during production, the tape termination of the preceding component is detected and the next components is automatically supplied. It eliminates the need for tape splicing, saving manpower, skillless operation, and improving machine utilization.



8mm Thin Auto Load Feeder

Operator Work during Automatic Operation (Example)



Tape Parts Replenishing Work (Splicing)

41%



Reducible

Merit

Improves machine operating rate to reduce operation time

Reduces manpower to reduce splicing

Achieving Skillless Work

ALF-Compatible Tape: Width 8mm (Paper)
*ALF cannot be used with the NPM-G Series.

※ Please contact our company for details on products that support each function.

Need to supply tray components automatically

tray stocker

As the enlargement of tray supply components, it is necessary to increase the number of pallets installed. The tray stocker improves the supply capacity of large parts and enables the supply of a large amount of tray components without stopping the machine, greatly increasing the efficiency of supply work.

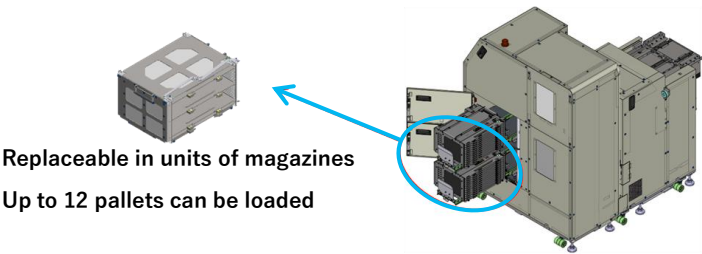
tray stocker (NPM-WX)



Number of tray pallet stocks
Front + Rear: 144

Enables non-disruptive magazine replacement during production

Magazine door can be opened and closed without stopping production



Automation of model switching

Pre-loading and automatic replacement of components used for the next model

Merit

Automatic changeover by pre-loading components for the next production
Reduce changover time and man-hours

Reduce the frequency of refilling tray components by increasing stock of tray components

Magazines can be replaced without stopping production, the downtime for supplying tray parts are reduced

※ Please contact our company for details on products that support each function.

Need to execute maintenance work skilllessly

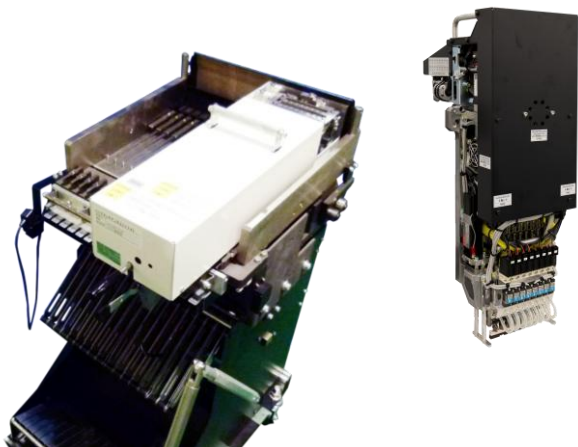
Maintenance unit

Merit

Automate maintenance work that were previously performed manually.
Not only can this reduce man-hours, but it also suppresses variations caused by operator judgment and maintains constant mounting quality.

Head Maintenance Unit

Attaching and removing nozzle holders and cleaning and inspecting splicing shafts are performed



Feeder Maintenance Unit

Automatically inspect the feeder and calibrate the pickup position.



Automate a series of maintenance work to reduce man-hours

Reduce variations in work and equipment conditions

Maintain mounting quality due to effect confirmation and track management easily before and after maintenance

※ Please contact our company for details on products that support each function.

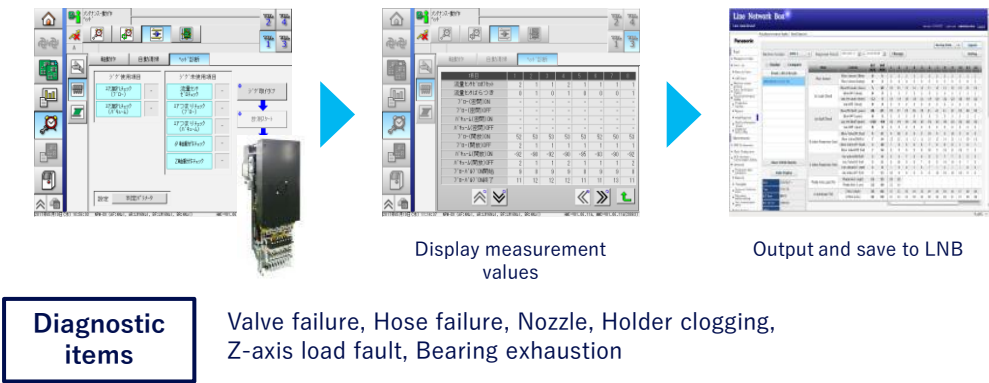
Need to avoid failure of placement head and to reduce analysis time when failure occurs

Head diagnosis

Merit

Detection of defective items by automatic head diagnosis. Analysis of the cause of failure and advance maintenance are possible. In addition, head diagnosis is automatically performed before operation by setting the next head diagnosis time.

Cause of failure analysis, pre-maintenance possible



Automatic diagnostic scheduling and history storage

There is no omission of head diagnostic work, and maintenance timing can be predicted by acquiring periodic information. The diagnostic results are recorded in the history, and deterioration over time can be confirmed and analyzed.

Avoidance of head failure by daily maintenance

Scheduling function
Elimination of diagnostic work omission

Reduction of time to analyze the cause of head failure

Need to reduce loss when error occurs

Automatic recovery

Merit

Automatic recovery is performed in the event of an pickup error, recognition error, or PCB transfer error, saving manpower and improving operation rate.

Automatic recovery of pickup error/ recognition error

Error occurrence



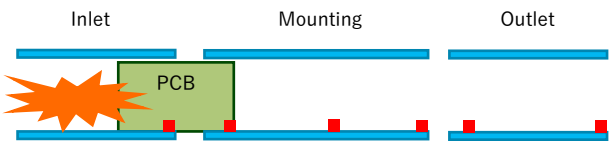
Pickup position
Automatic teach



Automatic restart of operation

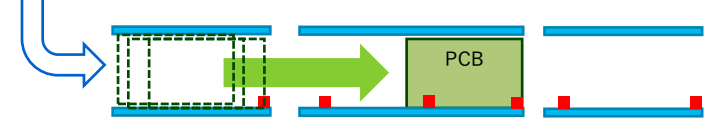
When an pickup error or recognition error occurs,
Automatically teach/recover the pickup position to improve the operating rate

Automatic recovery PCB transfer error



Transfer error

Transfer belt is rotated back and forth and reloaded at low speed



When PCB transfer error or stop position deviation occurs,
Automatically move/correct the position to improve operation rate

Drastic reduction in man-hours by automatically performing error recovery operations that had been performed by humans

Allows operators to concentrate on material supply
Stabilizes and improves throughput and quality

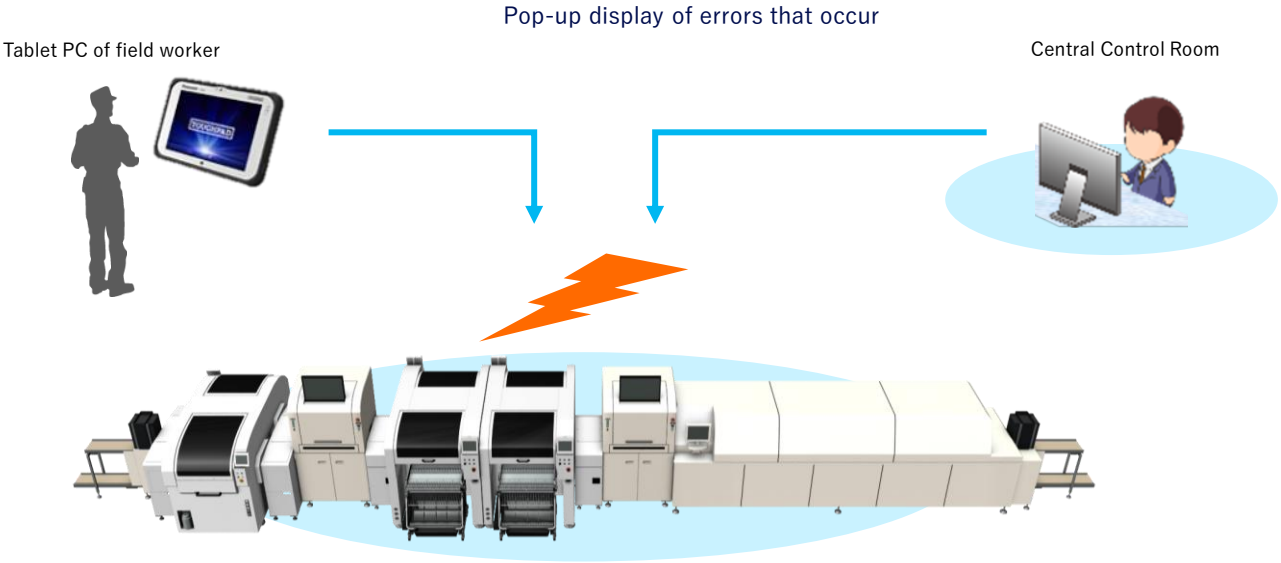
Need to reduce time for site restoration

Remote operation

Merit

Enable to check errors from a remote location and recover equipment outages remotely. Reduces time to notice errors and transfer time, greatly reducing equipment downtime.

Constantly monitor all lines from the Central Control Room



Efficiently perform error recovery work remotely.
Manpower saving for field operators

Field workers can focus on parts supply
Increased productivity

Allows centralized floor monitoring
Reduces worker awareness and loss of transfer time
Reduces downtime and improves utilization

※ Please contact our company for details on products that support each function.

Related Contents

Our Vision

Our Vision

[Our Vision - Factory Automation - Panasonic Connect](#)

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Case Study

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Operation & Maintenance

Electronic Materials

Products and services page

Mounting Software

Operation & Maintenance

Electronic Materials

Please feel free to contact Panasonic.

Contact form

Please also refer to our website for product information.

Product website

The background of the slide is a dark blue field filled with a pattern of lighter blue geometric shapes, including squares and semi-circles, some of which are partially overlapping. The shapes are distributed across the entire area, creating a textured, modern look.

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