



Panasonic

Modularity

For your efficiency
today and tomorrow

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Modularity

For your efficiency today and tomorrow



Flexibility for the tasks of today and tomorrow

Manufacturers of electronic products need a high degree of flexibility to enable them to respond to the current and future demands of the market and of the customer.

With our modular designs of placement/insertion machines, SMT printers and laser markers and their inherent expansion options, these requirements for a modern electronics production facility are at the heart of our product philosophy.

It does not matter if our customers' requirements change; we offer a wide range of options for getting the most from the upstream and downstream processes with placement heads, feeder systems, vacuum nozzles and other hardware components. Furthermore, our placement heads, vacuum nozzles, feeders, feeder carts, software packages and much more can be used compatibly with different machine generations and types. This provides security of investment for the customer, as his machines continue to be ideally suited to the tasks in hand, well into the future. It is immaterial whether our customers want to place LEDs, standard or special components, such as heavy components or plugs and sockets. Component verification using an integral LCR checker is also possible. This holistic flexibility is a necessary and important safeguard for the future.

Based on distinct task profiles and the ability to use our Smart Factory Solutions, we have been supporting our customers since 1961 with our international experience in optimising their manufacturing facilities. Together with our customers, we choose suitable tools from our Modularity Concept, and put together an individually tailored concept which covers the full scope of current and future requirements for reliable electronics production.



Modular machine configuration

We can offer our customers maximum possible flexibility right at the configuration stage of our placement/insertion systems.

Primarily, this relates to the placement performance the customer requires, but also to the necessary number of feeder places and the size of the assemblies which are to be processed. When it comes to high-end production, we are able to offer the most feeder places per machine by far.

The setting up concept, the number of production changes, the different support options, the insertion speed, the type of components and other parameters determine not only which type of machine is suitable for the customer, but also the placement head, feeders and vacuum nozzles with which the system is to be equipped and whether a single or dual-lane conveyor is required. However, the size of components to be processed can also play a part, as we offer the greatest placement force for inserting high components.

Some of these configurations must be taken into account from the very beginning. This applies to the conveyor system as well as the number of feeder places. Other options, such as the possible use of integral inspection and dispenser solutions or different software options, can easily be retrofitted by our Panasonic service teams or even the customer himself. This applies to more powerful placement heads and camera systems, including lighting, as well as to further feeder systems or other supporting processes such as a cleaning station for vacuum nozzles, a feeder calibration unit or splicing options.



Placement heads and vacuum nozzles for all forms of component and speed profiles

With placement heads designed to hold between 3 to 16 components, we offer a reliable solution for all speed and capacity ranges.

In doing so, the placement of different forms of component and the placement capacity of up to 46,200 components/hour can be covered by using several machines in a gantry combination. The gantry combination enables placement capacities for high-volume/low-mix applications of up to 184,800 components/hour to be implemented. The placement accuracy ranges from $\pm 30 \mu\text{m}$ for QFPs to $\pm 25 \mu\text{m}$ for square chips. The portfolio of components that can be processed includes all usual forms of component from 03015 (009005) to complete edge connectors.

This means that our customers can select a placement head which accurately matches the currently required placement parameters. If these should change in the future, the customer can replace the placement head within three minutes in order to even better fulfil the performance parameters.

The situation is similar in the event of service and maintenance. If a placement head is sent for maintenance, our customers can be provided with a replacement head to keep production running.

However, we also offer a maintenance unit for placement heads. It is mounted on a feeder cart and can be controlled directly from the head. As a head approaches the maintenance unit, the vacuum nozzle mountings are checked and cleaned and the vacuum nozzles themselves are checked.

We offer a wide range of vacuum nozzles and chucks for different components. We also design special tools for our customers for mounting special components, a unit for feeder calibration, and splicing options.



Highly flexible thanks to intelligent feeder systems

Panasonic's placement systems can accommodate up to 160 feeders depending on machine type, production order and the tape widths used. Thanks to their robust construction, they are designed for use over long periods. Feeders can be mounted at different positions on the machine. Feeder Setup Navigation and an off-line setup tool help the user to position feeders efficiently on the placement machine.

Feeders can be mounted on a feeder cart or a multi-feeder transfer unit which can be pushed in at the front and rear of the machines. While the machine is running, it is possible to change feeders individually or to replace the whole feeder cart. Feeders can also be repositioned during operation. All feeder systems are intelligent and are immediately detected automatically by the machines. We offer standard feeders with tape widths from 4 to 104 mm. The machines can also be equipped with sticks and trays. As well as a single-stick feeder, a 3-way stick feeder can also be used. If this is not sufficient, our range also includes a stackable stick feeder in which more than three sticks can be stacked. Along with tray supply systems and a single tray feeder containing 20 trays, a double tray feeder with 40 trays is also available. The tray feeders, including the trays stacked in them, are likewise pushed into the machines as a cart system. Other special features, such as spiral conveyors for bulk material, are also available.

In order to avoid changing feeders, we offer a splicing carriage which is placed on the feeder carts in the machine, and by means of which two tapes can be automatically spliced with one another.

The Panasonic feeder maintenance unit can be used for maintaining and calibrating standard feeders. Here, feeders are automatically calibrated, thus guaranteeing high placement capacity. During calibration, the motor power is checked, and the feeder accuracy in X and Y as well as the pick-up position are measured. A maximum of ten 8mm double feeders can be used simultaneously with the maintenance unit.



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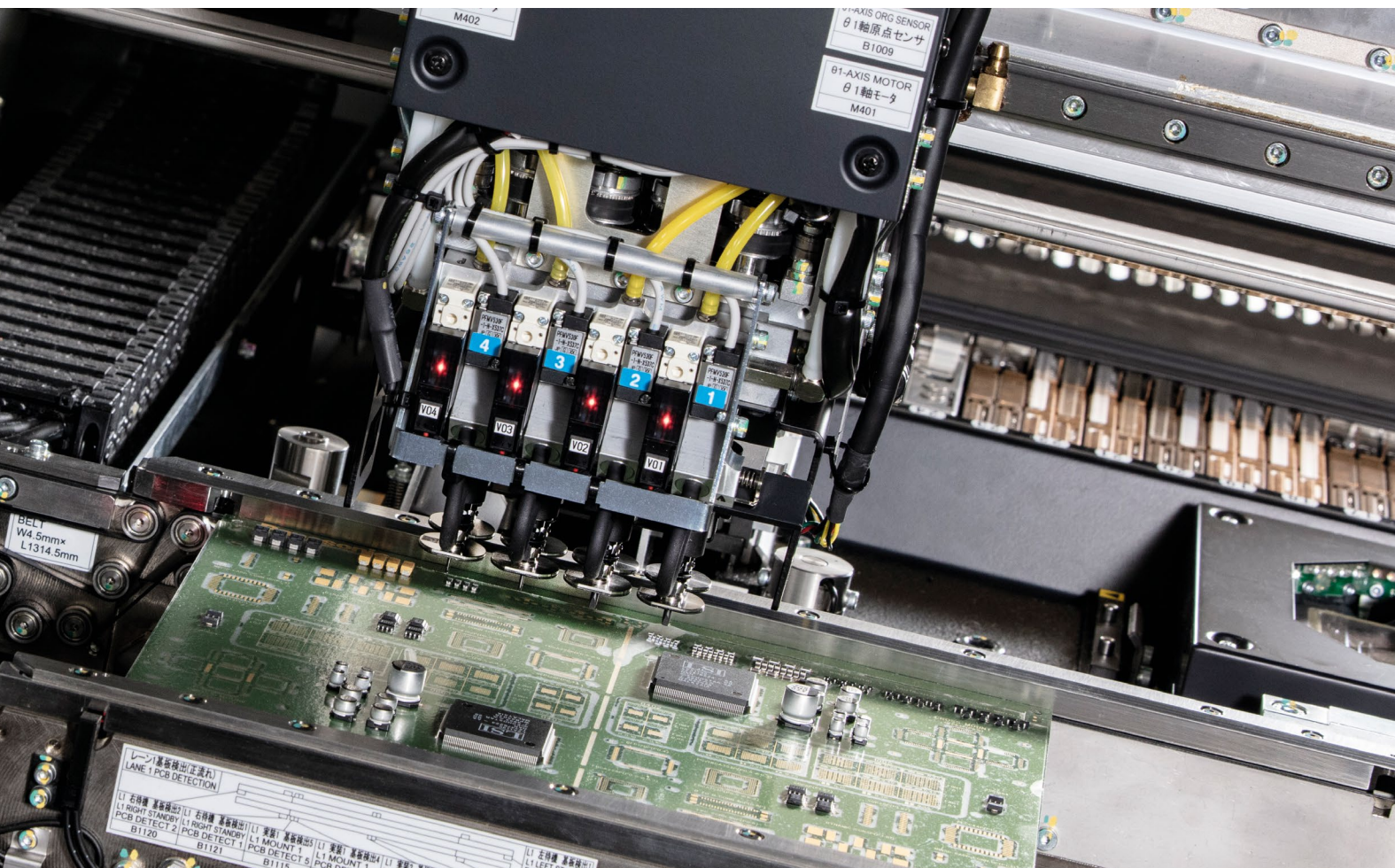
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Quality assurance

Integrated inspection and dispensing processes

As well as the placement process, individual placement machines can also undertake the inspection of assemblies and the dispensing of adhesive. Further quality assurance measures can thus be employed before and during the placement process.

For this purpose, an inspection head, which undertakes solder paste inspection (SPI) as well as component inspection (automated optical inspection – AOI), can be incorporated. In this way, it is possible to check that the necessary amount of solder paste is present at the right place before the actual insertion process. After placement, it is also possible to check that all components have been fitted and are correctly positioned. With an additional, integral screw dispenser, adhesive can be precisely applied before the insertion process to ensure that the subsequently inserted components are locked in position. In addition, it is possible to assist downstream soldering processes with the application of fluxes when using preforms.



If you want to know more about our placement/insertion systems

NPM-WX



Find out more
about the
NPM-WX ▶



NPM-DX



Find out more
about the
NPM-DX ▶



NPM-W2



Find out more
about the
NPM-W2 ▶



AM100

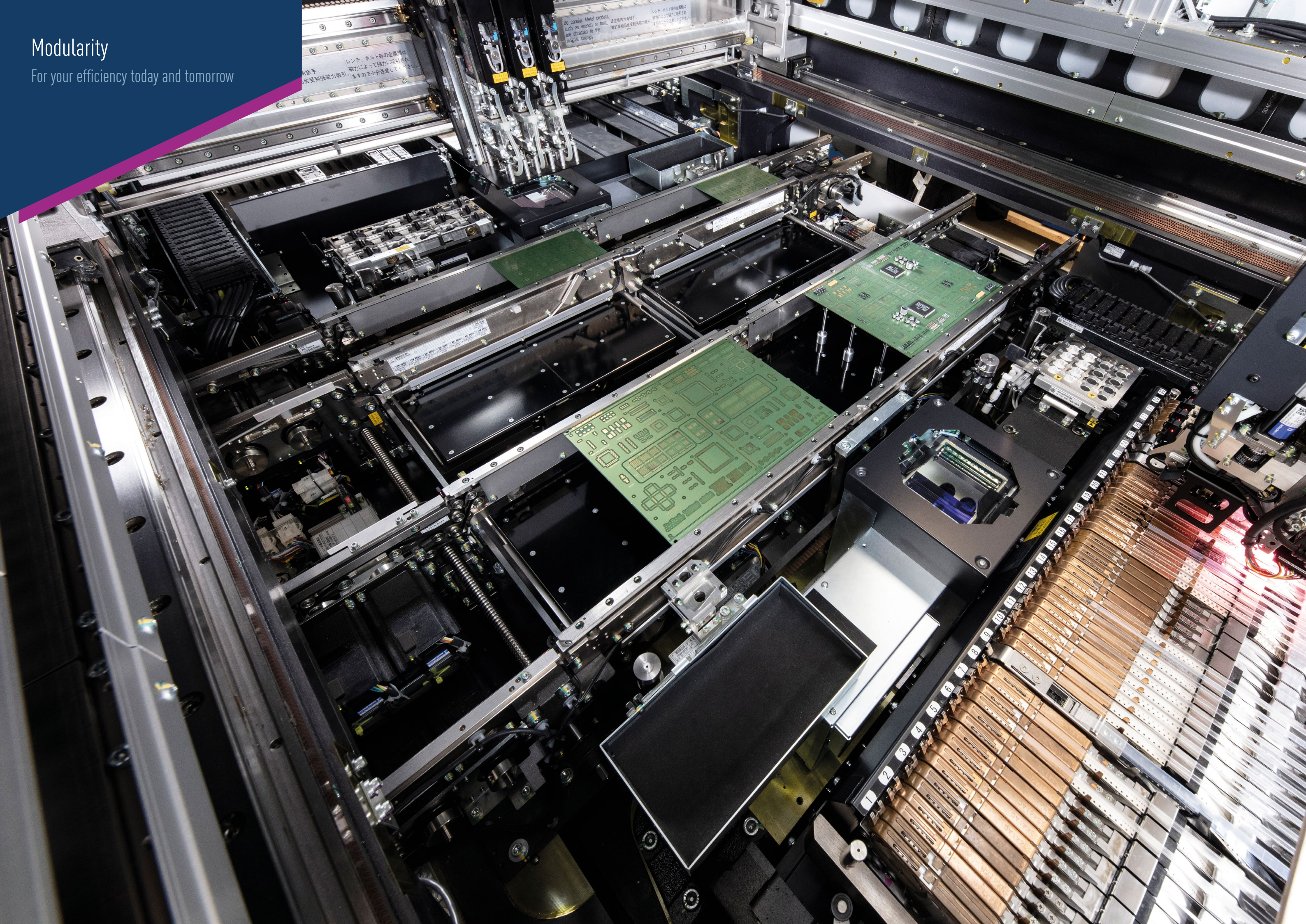


Find out more
about the
AM100 ▶



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Combined SMT and THT placement

The demand for reliable THT insertion solutions is again rising due to the increased use of power electronics, for example in e-Mobility and Green Energy solutions. Particularly designed for the flexible placement of SMT and THT components with a high degree of automation and an associated reduction in costs, our portfolio includes various placement machines, for example the NPM-VF.

The NPM-VF is equipped with a double gantry, wherein SMT and THT components are mounted/inserted by a placement head associated with each gantry. A wide range of feeders, vacuum nozzles, placement heads, chucks and software options are also available. The automatic placement machine can be operated with one or two lanes. The machine is capable of inserting a maximum of 4,500 components per hour while processing component sizes from 5 mm x 5 mm to 130 mm x 35 mm and 60 mm in height. Active cutting and clinching tools are incorporated. The cutting tool cuts the radial and axial components from the tape of the feeder. After inserting, the cutting and clinching tool cuts and bends the component leads below the PCB. Clinch directions and lead lengths per THT component can be defined individually via the assembly program.

As well as radial and axial feeders, the NPM-VF can be equipped with all common standard feeder systems for SMD components. The flexible NPM-VF is therefore the ideal machine for cycle-optimised production, especially for companies which, due to increasing demand, need to process SMT, THT and special components. This efficient placement solution contributes to reducing manpower requirements and achieving consistent production with high productivity, flexibility and high-quality placement results.

If you want to know more about our THT insertion systems



NPM-VF

Find out more about the NPM-VF ►



AV132

Find out more about the AV132 ►



RG131

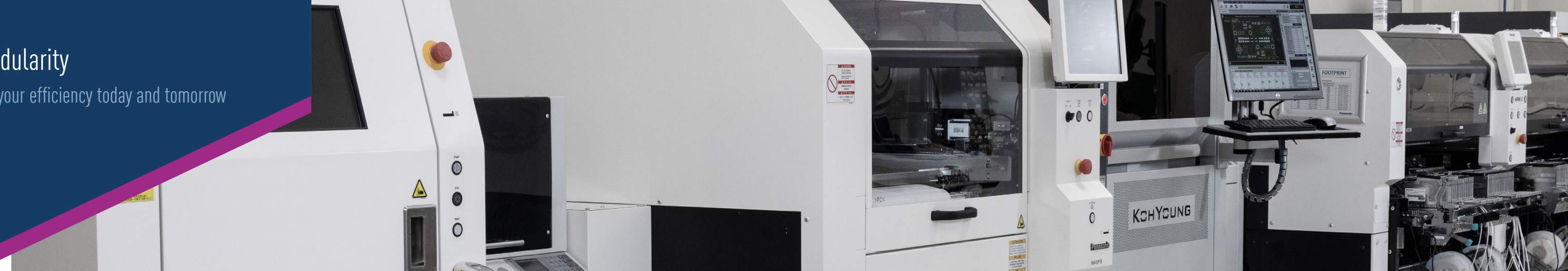
Find out more about the RG131 ►



RL132

Find out more about the RL132 ►





Stencil printer for high-precision and flexible SMT solder paste printing

Our SMT printer range not only includes systems for large-batch production, but also for flexible high-mix/low-volume applications. The stencil printers combine short cycle times, high flexibility, a wide range of options and outstandingly reproducible printing results with an excellent price-performance ratio.

This unique package enables our customers to reduce process costs, respond quickly and flexibly to assembly changes and thus keep down the cycle time in a production line from the very first process step. Paper-free, rapid stencil cleaning guarantees a clean, cost-reduced and ecologically sustainable printing process. The operator's daily tasks are made easier and are supported by the use of further options such as the automatic solder paste feed system.

Automatic correction in X and Y for each individual solder pad can be achieved in combination with solder paste inspection (SPI), thus guaranteeing reliable printing results. This is implemented by the APC system (Adaptive Process Control) by means of outstanding feedback communications technology. In doing so, the position offset of the solder paste print is measured by the SPI and the position correction passed to the screen printer.

If you want to know more about our stencil printer



SPG2

Find out more about the SPG2 ►



SPV

Find out more about the SPV ►



SPV-DC

Find out more about the SPV-DC ►



LPS-C for high-precision PCB marking

Laser marking directly on the surface is a reliable alternative for avoiding the removal of barcode stickers and the smudging of printed markings.

For this purpose, we offer the LPS-C, a high-precision marking system which automatically detects PCB markings and corrects the X-Y coordinates before the laser process. At the same time, we call upon our many years of experience in the production of laser heads, which save energy thanks to the CO2 laser technology.

The LPS-C is able to laser reliable marks with a minimum cell size of 0.1 mm x 0.1 mm onto the PCB surface. Furthermore, the system can set marks at a high speed of 0.3 s/mark which, along with letters and figures, can also include barcodes and 2D codes. In order to prevent problems with incorrect or duplicated serial numbers, the system offers an automatic serialisation feature. The automated laser marking system reduces material costs, as no inks or labels are required. The LPS-C can be integrated into any production line to achieve a fully automatic, cycle-optimised production process. The off-line editor enables marking coordinates and conditions to be edited. Marking data and verification information can be saved and exported via LAN and SD card.

Panasonic manufactures its own laser marking heads and, as a result, has in-house expertise in laser marking systems.

If you want to know more about our laser marking systems



LPS-C

Find out more about the LPS-C ►



Find out more about the laser head developed specifically for this application ►



Find out more about laser inscription ►



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Smart Factory Solution

Every production expansion or capacity adjustment should be based on data. For this purpose, it is not only necessary to gather data, but also to process it.

To this end, we offer appropriate software solutions, regardless of whether our customers are medium-sized EMS service providers or internationally active concerns. The data evaluated by our software form the basis of all decisions, the order in which production orders are processed, which machines are used in which configuration, and which personnel and which material need to be available in the manufacturing facility. We have therefore developed different solutions for our customers, which enable intelligent partial planning of electronics production right up to the complete control of all manufacturing processes, including the preceding and subsequent steps.



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Smart Service and Maintenance

We offer a comprehensive package of maintenance options, from primary maintenance to options based on the customer's individual requirements. Added to these are flexible warranty extensions, price-cap options and even machine option packages.

With an annual on-site service, we ensure that the customer's chosen solutions are deployed as effectively as possible. This includes a 24/7 service hotline, inspections, and the calibration of Smart Factory solutions. Our customers can choose individual warranty extensions and even upper price limits as part of our additional maintenance options. For full cost control over the life cycle, the TCO maintenance plan covers a period of ten years with annual service, including calibration, head-checker analysis and reconditioning service.

The advantages of maintenance for software products include remote system health checks, the reduction of software service charges and the prioritisation of developments. A licence transfer service and free upgrade licences also form part of our maintenance service.



Central Europe

Panasonic Connect Europe GmbH
Caroline-Herschel-Straße 100
85521 Ottobrunn

Phone: +49 (0) 89 45 354-1000
E-Mail: pfse.info@eu.panasonic.com

pfse.panasonic.eu

