ESSEMTEC®

PRODUCTION EQUIPMENT FOR ELECTRONICS

SP900

A flexible, accurate and reliable printing machine featuring auto set-up.

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Be more flexible.

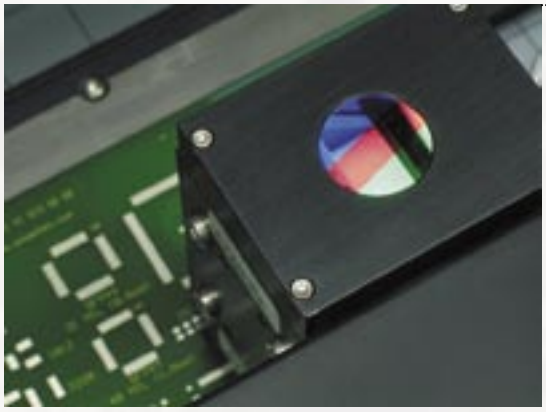
SP900

Flexible In-line Printer

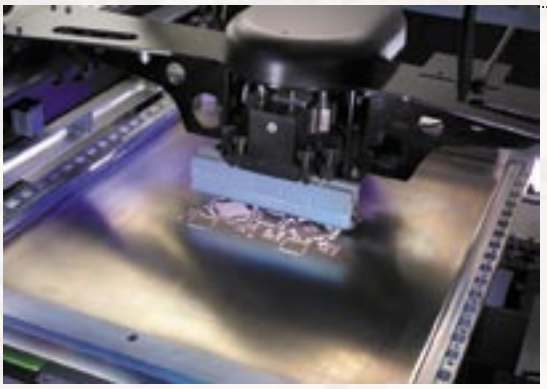
- Intuitive software
- Quick changeover
- Auto setup functionality
- Selectable camera lighting colour (RGB)
- Programmable conveyor system
- Dry, wet and vacuum cleaning
- Reliable and robust design
- Post-print inspection
- Online remote support

The print process defines the quality of the end-product. All following process steps are based on initially printed structures, regardless of whether adhesive, paste, ink and more are supplied. A huge effort is necessary in order to correct defects from the print process later. Therefore, automation and process control are highly important in this step.

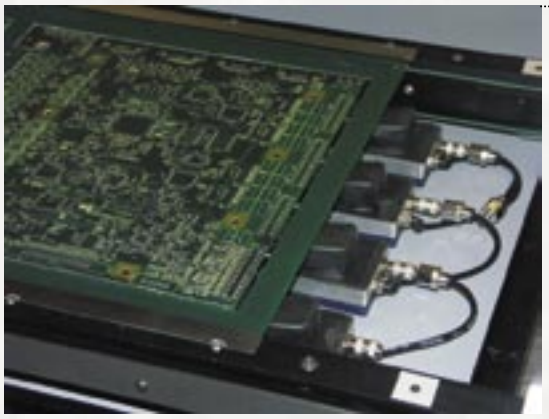
The SP900 printing machine provides a versatile printing system. It optimally combines the requirements on quality and accuracy with speed and reliability. The equipment is affordable, features low cost of ownership, as well as a full range of features which can otherwise be found only in large and expensive machines.



The vision system with its programmable lighting ensures the fast and exact identification of registration marks, pads or apertures. Two separate cameras locate the substrate and stencil. Positional and rotational offsets can then be corrected automatically.



The basic printing machine can handle a variety of features: rubber, metal or flood blade squeegees, stencil frames with small dimensions to larger ones of 29 x 29", as well as substrates from 0.3 to 5 mm in thickness and outer dimensions of 608 x 540 mm. Also, customer-specific solutions can be provided within a very short time scale.



The inline transport system features a SMEMA-compatible interface for easy integration into automated assembly lines. The direction for loading/unloading (from right to left or vice versa) can be changed effortlessly. There are freely positioned tooling pins and an optional "Vacunest" tooling system for the support of the substrates.

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Flexible

The software system of the SP900 is well structured and provides ease-of-use. Different operator levels can be defined. The program generation for new applications is uncomplicated and automated.

Reliable

A very solid machine frame and a robust design guarantee a long life cycle. The costs for maintenance and operation are low.

Time Saving

The changeover procedure to another product is easy and fast thanks to the auto set-up functions: the stencil is automatically drawn into the machine, positioned and then clamped. The transport system then adjusts automatically to the right width.

Small Footprint

The SP900 offers a large printing area (608 x 540 mm) on a very small footprint of only 1.3 sqm.

Stencil Cleaning

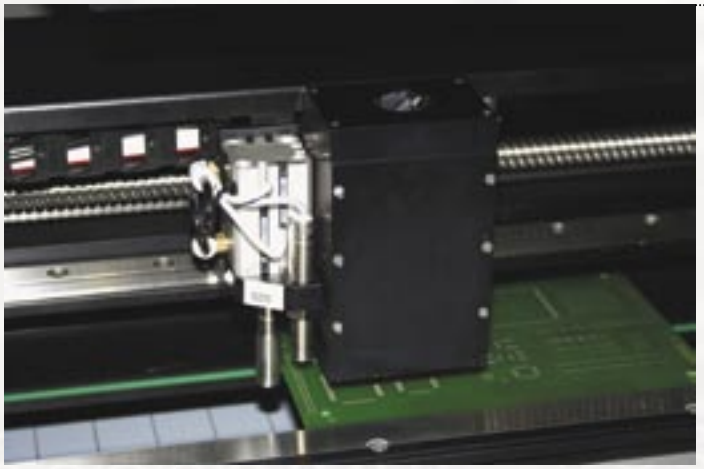
An automated stencil cleaning system ensures the cleanness of the stencil, which helps to provide a high and constant print quality. Cleaning methods availabl are: wet, dry and vacuum according to the requirements.

Free of Any License

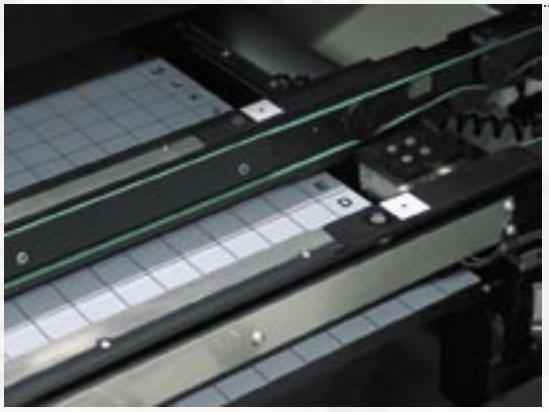
There is no license fee for the stencil frame system of the SP900.

Fast And Secure Changeover

Whether integrated into a line or operating in stand-alone mode, the automated setup function of the SP900 guarantees very short changeover procedures. The time-consuming search and input of data for the precise positions of PCB and stencil are no longer an issue, since the printer itself takes over this task. This not only reduces the set-up time, but also ensures high precision right from the very first print.

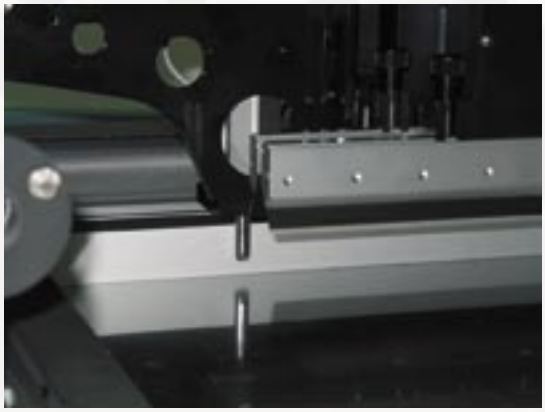


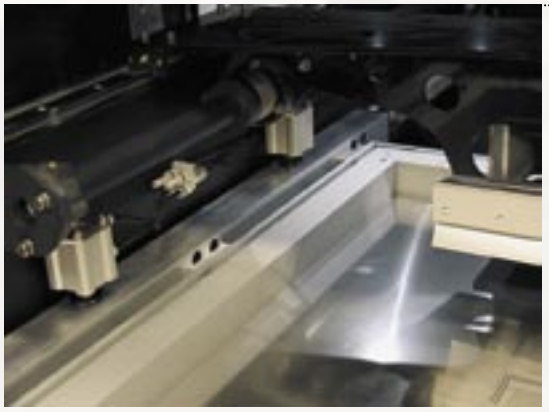
The PCB stop can be freely positioned. The appropriate position is automatically calculated from the dimensions and form of the PCB.



The thickness of the PCB or the substrate does not interfere with the function of the clamping system. The design of the clamping system ensures full stencil contact with the PCB.

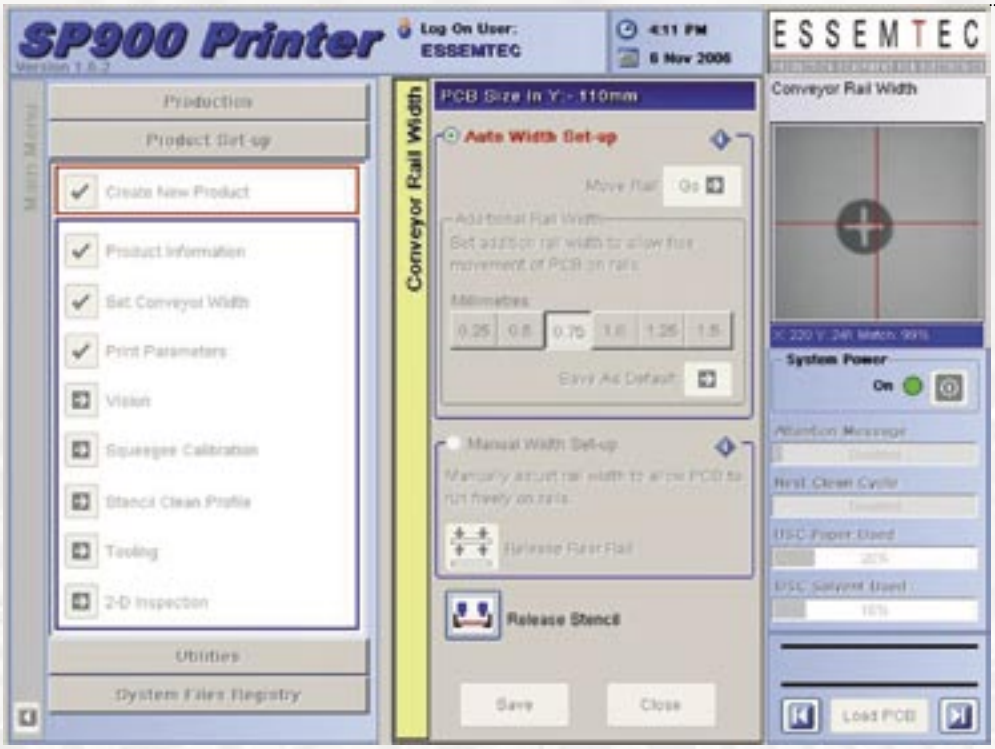
The width of the conveyor system is automatically adjusted to accommodate different PCB or substrate dimensions .





The stencil tension frame and mesh frames (29 x 29“) are drawn automatically into the machine and positioned. The clamping system operates pneumatically.

Changeover Without Downtime

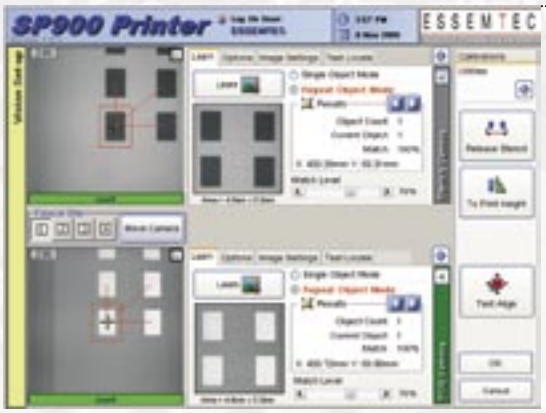


The software guides the user through the set-up procedure step-by-step and provides users with help and advice. The set-up of a new product typically takes a maximum of ten minutes.

The access rights to change process parameters can be assigned individually, each user logs in with their own password.

The implemented information distribution system transmits essential reports between the individual users, for example at the change of shifts.

The SP900 software is recognised as having one of the best printer control systems available. With its clear display of information, the context-based user instructions and helpful explanations, there is no extensive operator training necessary – and it is even cool working with it! The machine software is available in different languages and is even able to reproduce symbols from Asian languages.

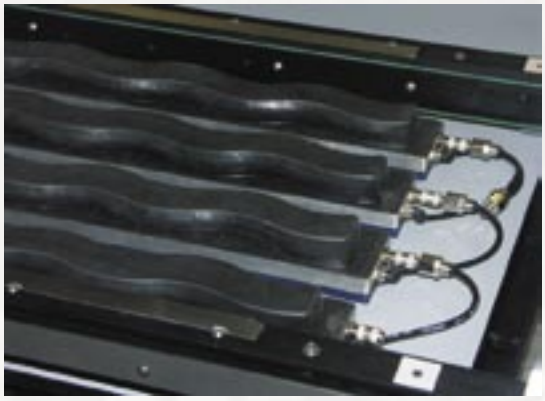


For the programming of the registration mark positions, the user simply points and clicks on the necessary board structure displayed – what could be easier?

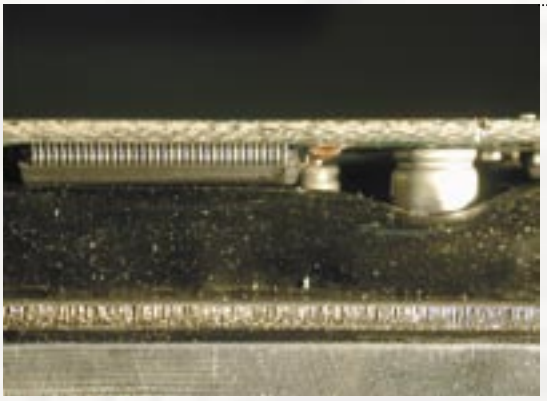
The clear presentation of product data makes it easier to select the appropriate program for the respective job (left).

All print parameters can easily be optimized due to the clear display of information, provided the users has access rights to do so (right).

The Flexible Solution

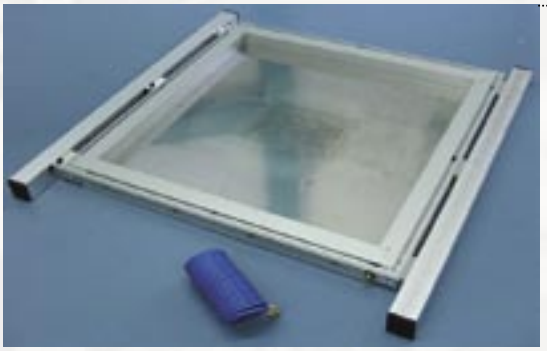


An even distribution of print pressure and the fully flat rest of the stencil on the substrate are of utmost importance for a high-quality print process. The essential characteristics of a printer are the perfect support of the substrate, the well-balanced stencil tension, and the precision-controlled squeegee pressure. The SP900 can be adapted perfectly to virtually every print task due to its flexibility. Also, customer-specific solutions can be realized within a short period of time.

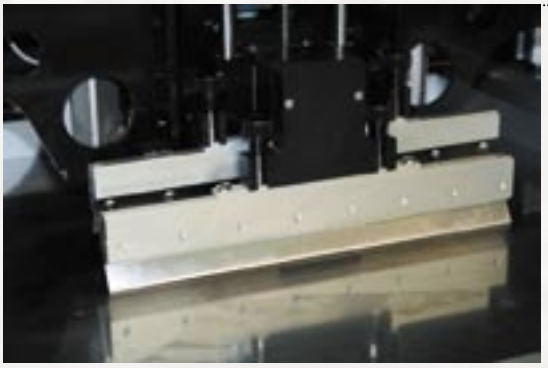


The modular "Vacunest" system is the optimum support device for double-sided populated board assemblies. It adapts automatically to any board surface structure and therefore consistently distributes the pressure over the entire area.

The magnetic support pins provide a simple and cost-efficient solution for flat substrates. The pins are also available as vacuum suction heads or as centre pins.



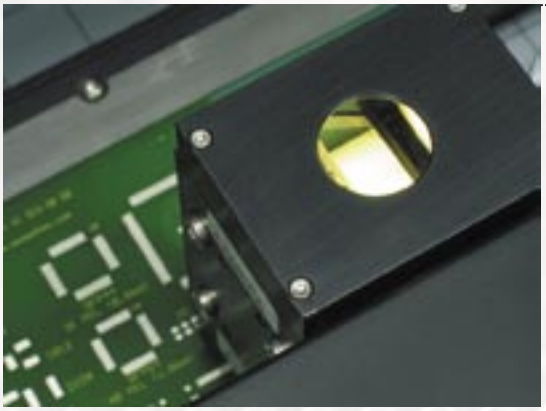
The SP900 tension system stretches the stencils evenly from all four sides. There is no license fee necessary for the stencil layout. The standard frame size is 29 x 29"; adapters for smaller formats are available.



The print head uses two independently controlled floating head squeegees. Printing speeds and pressures can be individually programmed for each forward and reverse printing directions. Squeegees made from metal and rubber or flood blades can be used for widths of up to 608 mm. Squeegees with different angles (60° or 45°) can be delivered.

Fast Optical Measurement And Inspection

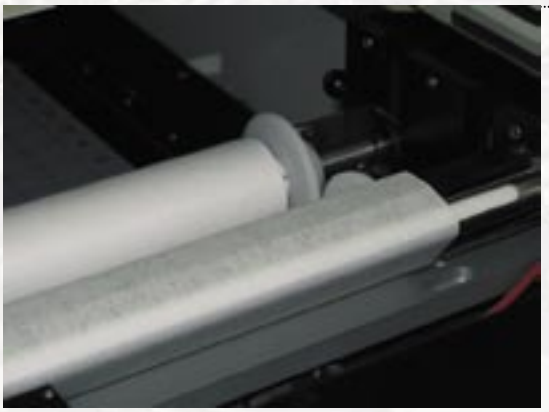
The vision system features two separate cameras, one for the stencil and one for the PCB. Post print inspection of the PCB and stencil ensures early detection of potential printing ambiguities.



This is unique: the colour of the lighting system is programmable. The image-processing system of the market-leader Cognex is implemented for post-print inspection, guaranteeing fast and reliable image processing.

Continuous Operation

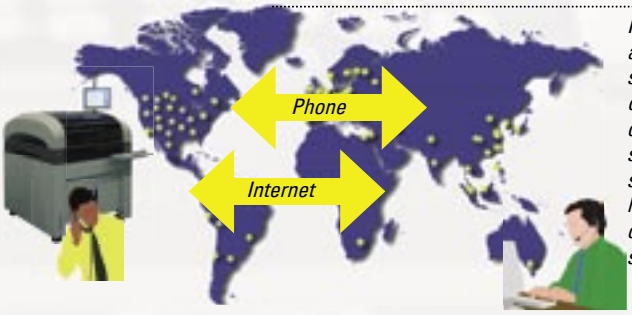
The performance stability of each single module is decisive for the entire system's productivity, especially in the case of in-line operation. The cleanness of the stencil is important for the quality of the print results.



Stencil cleaning is applied wet, dry and with vacuum, in order to keep the smallest of apertures free from paste residues during the print process.

On-Line Remote Support

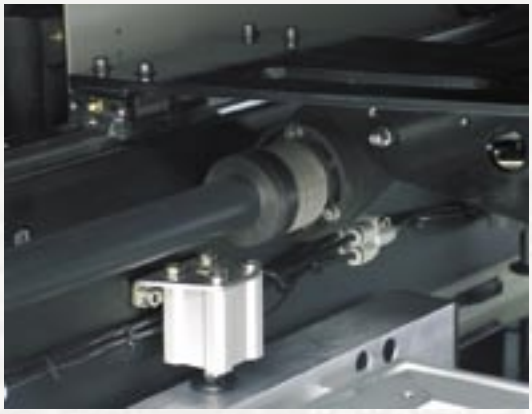
The internet-based remote support system allows problem solving within a very short time, and saves significant travel expenses for product specialists. A license for this service is included with all new machines free of charge.



If the machine is online, an experienced product specialist sees the same computer screen as the operator. By the use of the special remote support software and the phone, he can guide the operator quickly to the problem's solution.

Low Maintenance Costs

The SP900 printer is designed for continuous three-shift operation. The equipment is very robust, and does not need any further maintenance except for the regular cleaning and service measures.



Designed for easy accessibility from the front: replenishment of cleaning liquid, exchange of paper rolls or other regular maintenance work (right).

The closed ball-screw spindles mechanism of the print head cannot be contaminated. They are maintenance-free and ensure fast and precise movements, even in harsh industrial environments (left).

The Compete Manufacturing Line From One Single Supplier

ESSEMTEC delivers complete SMT production lines from one source together with the necessary process knowledge. The global support and the high level of innovation are the basis for a strong and future-oriented partnership with our customers.

- Printer
- Dispenser
- Placement machines
- Soldering equipment
- Software for production planning and control
- Customized solutions

Flexible manufacturing lines from one source, complete with process expertise and user training.

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