expert.

MANUAL AND SEMIAUTOMATIC SMD ASSEMBLY SYSTEMS

essemtec
swiss made

SMD placement systems for prototyping and low volumes

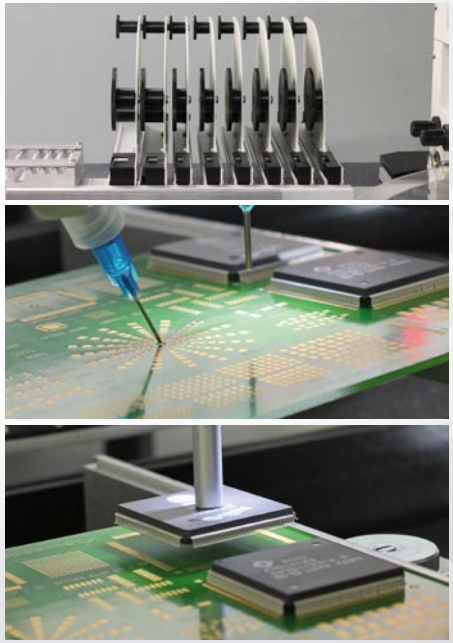
- Manual and semiautomatic models
- Smooth gliding arm system
- Air suspended pick-and-place head
- Integrated placement illumination
- x/y/t fine-adjustment
- Automatic component lowering to PCB
- Microprocessor control with LCD
- Glue and solder paste dispensing system
- Placement system for BGA, CSP and Flip Chip

Highly flexible SMT production

Today's SMT boards production for prototyping or small batches requires tools to ensure highest quality standards. Over 2000 Expert systems are in daily use worldwide.

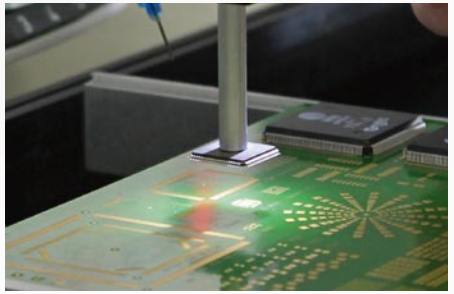
The Expert-M manual pick-and-place systems are widely used in prototyping laboratories all over the world. Single and multiple boards with delicate components can be assembled quickly and accurately. The Expert-SA semiautomatic placement systems are ideal for complex prototypes as well as for efficient production of small batches. The software control and linear scales guarantee placements of the correct component on the correct pads while enabling a higher working speed.

All Expert systems are equipped with the patented pick-and-place head with air suspension supporting the operater to place all kinds of components such as simple resistor chips, QFP with fine pitch leads or BGA.



Air suspended pick-and-place head supporting all operators activities

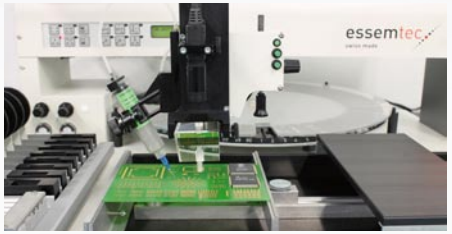
» Being able to adjust the placement force and avoid operator fatigue, this unique feature allows precise placements even after long working periods.

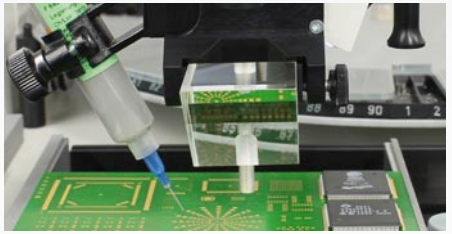


Supported operation

All Expert systems are equipped with the patented pick-and-place head with air suspension. Weights of solder paste cartridges can additionally be balanced. On Expert-FP systems, an automatic lowering function is integrated, using the air suspension to carefully lower the component. An adjustable down stop mechanism prevents unintentional contact of the component with the solder paste before alignment. After fine-alignment the component is lowered automatically onto the board without the danger of misalignment by the operator. Systems with the optional motorized turntable include directly forward/backward control buttons within the head, providing direct and fast control.

For a flexible and reliable production





Modular
The Expert system can be equipped according to the actual requirements. Later upgrade of additional modules or feeders is possible at any time.

Flexible
All Expert models come with a fast clamping holder for double sided PCB which can be resized quick and easy.

Fine pitch
Fine pitch components are locked in a hovering position, exactly aligned and then automatically lowered to the PCB.

Fatigue free operation
The lightweight pantograph arm and the air suspended placement head allow a fast and precise operation with almost no force.

Virtual component view
Boards can be taught in and are shown in a virtual display on the screen to make the recognition and orientation easy.

CAD data converter
Using a universal converter with an open architecture makes it possible to work with different CAD sources, which is especially useful for contract manufacturers.

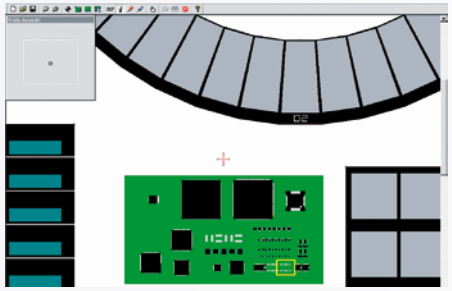
The Expert software is a landmark in user-friendly pick-and-place operation

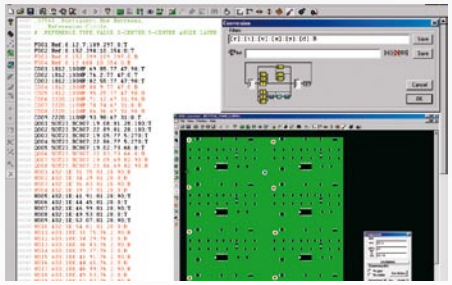
The Expert-SA system includes a semiautomatic enhancement in which the placement process is fully controlled and higher placement speeds can be achieved. High resolution optical linear encoders on the x/y-axis guarantee a closed loop system where all positions on the machine can be controlled. The software guides the operator to the correct pick-up and placement location. Placement rotation is clearly displayed by a virtual component on the screen, indicating also pin1 or polarity. Placement plans are not needed since the system indicates the process steps clearly. Higher placement speeds can be achieved while assuring that the correct components are placed onto the correct locations. Unlike light point systems, the process is fully controlled, eliminating the possibility to pick from the wrong feeder and place in the wrong location.

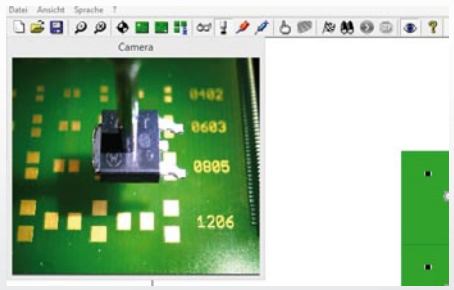
» *Swiss Made precision machinery, high flexibility, highest quality. In combination with user-friendly operation and programming.*

Compact format, easy upgradeable

On all systems, an integrated microprocessor controls all operations. Due to the modularity of the system, all functions are included within the electronics, making future upgrades possible.





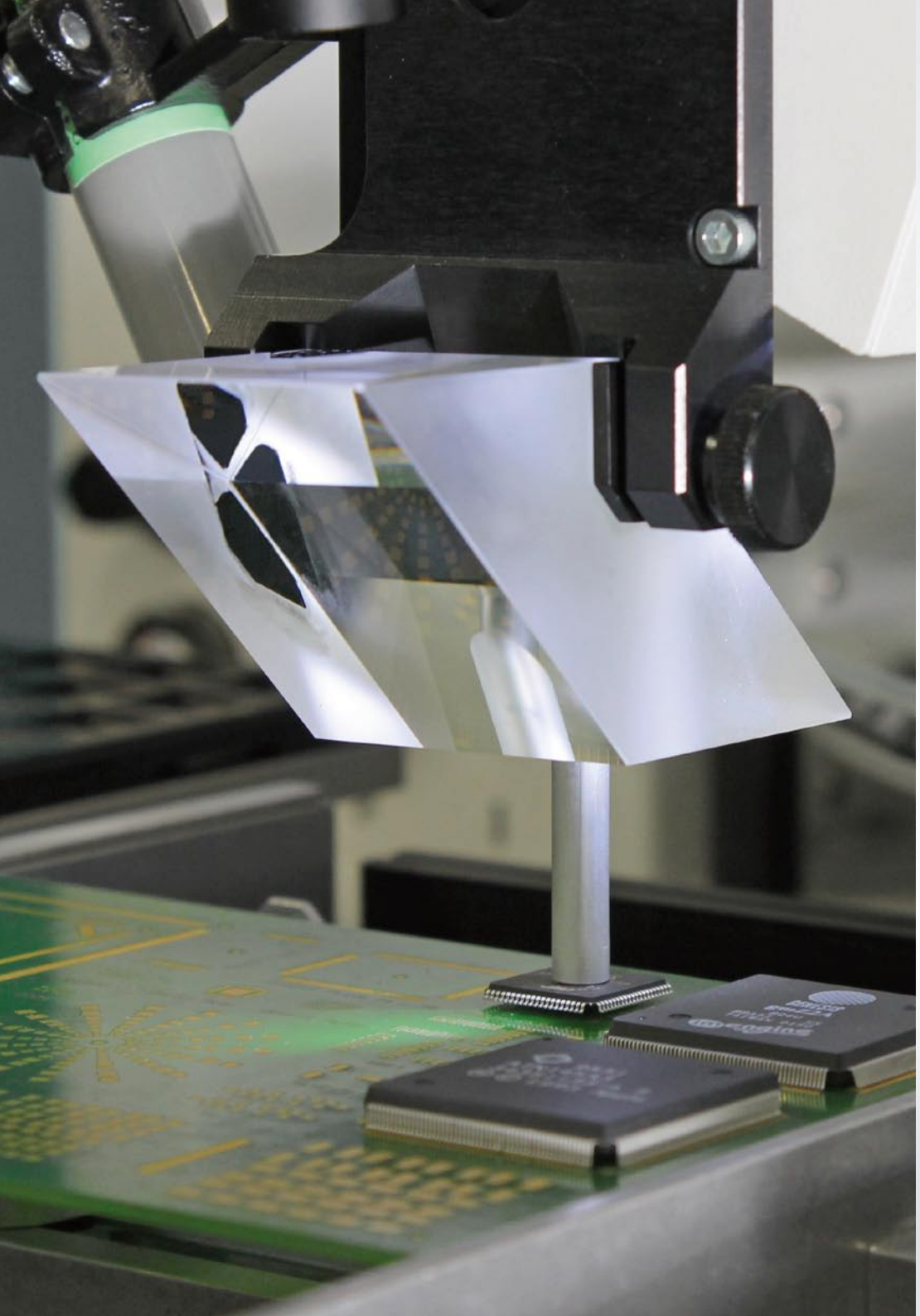


User-friendly operation

Boards can be taught in and are shown in a virtual display on the screen to make the recognition and orientation easy.

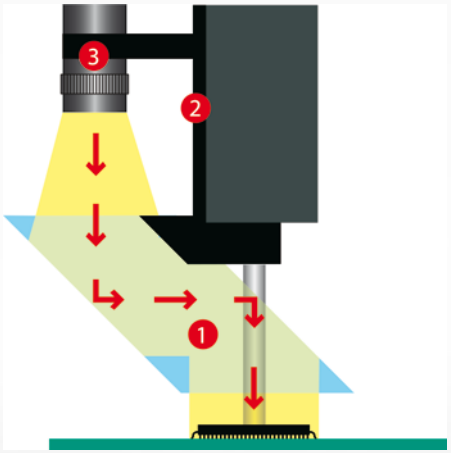
An optional CAD conversion software can read coordinate files from any CAD software (ASCII). Using an universal converter with an open architecture makes it possible to work with different CAD sources, which is especially useful for contract manufacturers. Integrated mirroring and origin settings, as well as recalculation possiblity makes this package the ideal choice for fast programming. Data set transfer or backups can be handled by a standard network or via the regular disk drive. There are no limitations given regarding the number of stored program sets.

Customers using a fully automatic pick-and-place system from Essemtec can directly download placement files to the Expert-SA system for prototyping.



Dedicated optical centering systems

Placing fine-pitch components with side mounted camera systems or a microscope is nearly impossible due to the parallax error effect. The glass prism option on the Expert eliminates this effect completely. All four sides of the component can be viewed directly from above. The prism combined with the axial locking feature, the fine alignment system and the integrated automatic component lowering function provides the operator with the means to place fine pitch devices.



Prism corrects parallax errors

The prism is available as an optical aid with no magnification or in combination with a black/white or color camera system. With the camera system, the component is displayed on a monitor with up to 10x to 20x magnification. Placing BGA's, CSP or Flip Chip components for prototyping and small scale production also requires precise optical alignment. An integrated UP3100 microplacer system makes the Expert a complete prototyping station for all type of components. The integrated up/down vision system with an optional split vision for smaller components allows the operator to precisely align the component by overlaying the image from the board with the actual component bottom before placing it onto the board.

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