SEHO to Highlight Cutting-Edge Inspection and Soldering Technology at IPC APEX Expo 2024

SEHO, a worldwide leading manufacturer of complete solutions for soldering processes and automated production lines, is thrilled to present a wide range of THT inspection solutions and soldering systems at the IPC APEX Expo 2024 in Anaheim. The machines are designed to increase productivity in electronics production and take users a further step towards zero-defect manufacturing. SEHO looks forward to welcoming visitors to booth #1034.

With the PowerVision, SEHO focusses on two key points in the manufacturing of THT assemblies: Continuous quality assurance and cost-efficient production processes.
SEHO PowerVision stands for fast, automated, optical inspection, and it is particularly designed for THT processes. It reliably detects typical soldering defects such as incomplete solder joints, solder bridges or solder balls. Additionally, the system is capable of reading and processing product ID's.

SEHO AssemblyCheck and SEHO PowerVision – THT Inspection Solutions

The stand-alone variant of SEHO PowerVision can be flexibly integrated into each fully automated production line. Moreover, the AOI system can be directly integrated in many of SEHO's selective soldering systems, thus providing additional benefits, particularly in terms of floor space and board handling costs.

Generation of test plans is performed easily and conveniently at any PC using an offline teach program. An easy-to-use assistant guides the operator through the programming process. The comprehensive and individually expandable component library, as well as an automatic inspection search simplify programming. Even optimization of a test plan, which usually requires temporary interruption of the production to adjust parameters, can be made offline. Thus, the AOI system is permanently available for production.
The database supported PowerVision software provides analyzing tools that enable fast and efficient optimization of the entire manufacturing process. These tools include a heatmap that visualizes error frequencies based on their geometrical location on the PCB and a trend analysis that effectively supports optimization of the test program.

Detected defects can easily and quickly be classified using the intuitive interface of the SEHOverify software. Based on this classification of the test results, different statistical key figures such as first pass yield, false call rates or defect rates can be calculated and graphically displayed.

Maximum ROI is achieved by combining SEHO PowerVision with SEHO AssemblyCheck, a component placement control system optimized specifically for THT assemblies.
Both systems can be integrated in just one module that is installed in front of the soldering system. At the assembling transport level, AssemblyCheck checks for correct component placement. After the soldering process, SEHO PowerVision carries out the solder joint inspection at the return conveyor level of the module.

The benefits are obvious: Early identification of defects allows a fast increase of the overall manufacturing quality. Simultaneously, production costs can be sustainably reduced.

Take a sneak-peak in further highlights at the SEHO booth:

SEHO AssemblyCheck, the latest addition to SEHO's range of inspection systems, integrated as component placement control system in a typical workstation. THT components are often assembled manually or semi-automatically, so the risk of errors is correspondingly high. AssemblyCheck provides immediate feedback whether the components are assembled correctly. Only then can the circuit board be released for further processing in a wave or selective soldering system. This eliminates possible errors, which leads to a significant increase in quality and yield.
Typical inspection tasks include the presence of the correct components, correct orientation or polarity, component colours are recognized and compared, text verification (OCV) and code reading. Circuit boards with a bad mark marking are automatically recognized and not checked.
Short cycle times and an assembly size of up to 24" x 20" [610 x 510 mm] guarantee high system efficiency.

SelectLine-C, SEHO's modular and expandable inline selective soldering system, has been supplemented with additional modules that significantly increase the flexibility of the system and ensure higher productivity. A highlight of this machine is the award-winning SmartSplit function, which turns an already efficient system into a highly flexible and highly productive selective soldering system for high-mix-high-volume production. SmartSplit controls and coordinates the process flow for different assemblies in mixed operation. The soldering process for an assembly is automatically divided among the process stations available in the respective system. Up to 6 soldering units can be integrated in one system. As a result, SmartSplit enables cycle times to be halved in mixed operation, without major investments and without restricting the maximum available working area of the system.

The **PowerWave** wave soldering system offers a remarkable performance at simultaneously low investment costs. The system has been designed for medium to large production series. Complex mixed boards are just as reliably soldered as conventional through-hole assemblies – due to modern solder nozzle geometries, a flexible preheat area, and an open-ended control unit ensuring easy operation, and many functions for automated process control.
The modular construction of SEHO PowerWave offers the ideal concept for all production requirements and allows the machine to be integrated into any fully automated manufacturing line.