



## E-BEAM PIONEER SEC SURPASSES CUSTOMER EXPECTATION WITH ATTENTION TO DETAIL, INNOVATIVE TECHNOLOGY SOLUTIONS

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*Since being established in 1991, SEC has strived to enhance customer productivity and product quality based on precision parts automation technology and electron beam application technology. Specializing in e-beam and leading the industry in nano, SEC has a reputation for being the best inspection system company developing and selling industrial X-ray inspection systems, linear accelerator (LINAC) and Tabletop scanning electron microscope (SEM).*

The company's team members constantly research and are aware of the current economic and technological environment, allowing them to stay one step ahead of competition and expand its technologies and business areas to keep strong its reputation as a global leader. CEO Jonghyun Kim commented that SEC stands for a 'second,' which is a standardized unit of time that represents the company's dedication to exceeding customer satisfaction in a timely way. "We deliver punctual responses to our customers' requests," he said. "This is just a part of who we are as a company."

He also added that the company is an e-beam pioneer. "In our close to 30 years in business, we have used our experience and technical know-how to continuously develop the backbone of e-beam inspection equipment in Korea." SEC is able to outperform its competition against global companies by localizing X-ray generators and developing advanced new technologies.

The company's X-ray inspection system provides the opportunity to further enhance the reliability of customers' products by developing original X-ray generator technology. Tabletop SEM further improves new technology and provides customers and research institutes with the added benefit of developing high-resolution images conveniently.



### X-ray Inspection: Finding Defects, Becoming Perfect

SEC develops and manufactures many kinds of X-ray tubes and inspection systems for inspection in a variety of applications. Depending on the structure, there are open-transmitted, open-reflected, and sealed-reflected X-ray tubes, and more than 10 X-ray tubes are developed and manufactured in the max acceleration voltage range of



100 to 225kV. X-ray inspection systems are divided into in-line automated X-ray inspection (AXI) systems and off-line X-ray inspection systems. This company, which manufactures more than 20 inspection systems, can inspect the following applications:

- Automotive and smart devices: most electronic components, batteries, sensors, camera modules, LED, die-casting and more.
- Semiconductor and SMT: wafer level, substrate, PCB, QFN, QFP, BGA and more.

**Linear Accelerator: Can See Inside of Large Products**

The LINAC is designed for special Non Destructive Testing (NDT) applications and for use in scanning devices for cargo and vehicle inspection at ports and borders. LINAC is NDT equipment that generates high-energy X-rays by accelerating the electron beam from 1 to 15 MeV. 2D/3DCT image acquisition is made possible by the support of the FPXD and LDA detectors. SEC has an underground shielding facility that can be evaluated up to 20MV in the headquarters and a cargo scanner that uses a linear accelerator in Gwangyang Port.

**Tabletop SEM: Nano Scale Viewing and Analyzing**

Tabletop SEM is used for various ingredient analysis and surface structure analysis through several detectors after focusing and detecting secondary electrons emitted from samples by shooting electron beams on the sample in the chamber. The SEC tabletop SEM features the world's best resolution (5nm). Additional features include a variety of easy-to-use interfaces, EDS component analysis, and dual detectors (SE/BSE). SEC can provide customers with a solution tailored to meet individual needs at a competitive price.

SEC's goal is to continue seeking the best in quality, flexibility and problem solving by evolving in stability and convenience while helping customers retain its global competitiveness. "We make a promise to every customer that we are a sincere, reliable partner that will remain by

their side," said Kim. "We will always make an effort to grow as a representative in innovative manufacturing equipment, advanced inspection equipment, security and medical equipment by developing our core technologies through flexible and creative thinking because the stronger we are, the stronger we can make our customers."

Kim concluded, "Since opening our doors for the first time, our vision has been 'superior service and exciting challenges.' We have built our business around this vision as a constant reminder to challenge our spirits as well as to keep the principle of providing excellent products. We cost-effectively and punctually provide our customers with the best service to best fit their needs."

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