

Press release

Real-time insights and scalable automation for cutting-edge medical device production

ATS Life Sciences Systems and Kistler redefine high-speed assembly with digital intelligence and precise motion control

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Kistler Group, a global leader in dynamic measurement technology, and **ATS Life Sciences Systems** (LSS), an industry-leading automation solutions provider, have joined forces for a state-of-the-art medical device assembly line. Combining advanced sensor technology from Kistler with a patented digital motion system from ATS LSS, Symphoni™ platform delivers real-time in-line quality assurance for medical devices, up to 320 parts per minute with 90 percent less tooling and full traceability. The platform sets a new benchmark for scalable, data-driven automation in medical device manufacturing, supporting regulatory-compliant production, audit-ready data, and flexible handling of multiple product types on a single line.

For medical device manufacturers, scaling production is not just about building a functional production line but also about making sure that millions of devices are produced flawlessly. Yet, many conventional assembly processes remain a “black box”, with quality assurance limited to pre- and post-assembly inspections. These legacy methods create significant challenges: they consume valuable floor space and require numerous specialized tools. Beyond operational inefficiencies, they affect regulatory compliance, yield, and scalability. To meet stringent standards such as FDA 21 CFR Part 11 and EU MDR, manufacturers must demonstrate consistent product quality by providing fully traceable and audit-ready process data. Optimized layouts and minimal downtime are also key factors.

Collaboration drives innovation in high-speed medical device assembly

To address these challenges, ATS LSS and Kistler Group collaborated for an automated assembly line that makes previously invisible aspects of production measurable and controllable. The system integrates ATS LSS' expertise in digitally synchronous motion and modular automation with real-time force and displacement sensing from Kistler, enabling assembly and in-line verification of medical devices at speeds exceeding 300 parts per minute and the flexibility to handle multiple product types on a single line. These improvements reduce overall cycle time from 3,750 ms to 750 ms, delivering rapid, precise, and traceable in-line process monitoring.

From assumptions to assurance through real-time data

At the same time, the real-time force and displacement monitoring from Kistler allows Symphoni™ to measure and verify critical steps of medical device assembly as it happens. In-line waveform analysis detects potential failure modes, while a patent-pending inertia compensation system neutralizes the effects of high-speed motion on force measurements. These capabilities enable precise evaluation of force and distance, reducing false positives and negatives and eliminating the need for separate inspection stations. All collected real-time data can be stored across multiple databases, supporting process optimization, regulatory compliance, and rapid ramp-up of new production lines.

Image material (please name the Kistler Group as picture source)



Symphoni™ reduces tooling, minimizes footprint, boosts throughput and yield, and handles multiple product types on a single line. By embedding in-line process monitoring directly into assembly, it removes blind spots and delivers fully traceable, audit-ready, and actionable production data.



Kistler provides real-time force and displacement monitoring, inertia compensation, and waveform analysis, enabling in-line process monitoring at every step of the medical device assembly process. It is FDA 21 CFR Part 11 compliant and equipped with an audit trail.



Symphoni™ is a high-performance, modular automation platform with novel electronic cam software that optimizes motion of Rapid Speed Matching™ (RSM) technologies to achieve faster throughput without compromising on quality. For details on patents covering Symphonii™, visit <https://symphonitech.com/patents/>.

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About the Kistler Group

Kistler is the global market leader for dynamic pressure, force, torque and acceleration measurement technology. Cutting-edge technologies provide the basis for Kistler's modular solutions. Customers in industry and scientific research benefit from Kistler's experience as a development partner, enabling them to optimize their products and processes so as to secure sustainable competitive edge. Unique sensor technology from this Swiss corporation helps to shape future innovations not only in automotive development and industrial automation but also in many newly emerging sectors. Drawing on our extensive application expertise, and always with an absolute commitment to quality, Kistler plays a key part in the ongoing development of the latest megatrends. The focus is on issues such as electrified drive technology, autonomous driving, emission reduction and Industry 4.0. Some 2,000 employees at more than 60 facilities across the globe are dedicated to the development of new solutions, and they offer application-specific services at the local level. Ever since it was founded in 1959, the Kistler Group has grown hand-in-hand with its customers and in 2024, it posted sales of mCHF 448. About 9 percent of this figure is reinvested in research and technology – with the aim of delivering innovative solutions for every customer.

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About ATS Life Sciences Systems

ATS Life Sciences Systems (ATS LSS) is a trusted automation partner to lead MedTech and pharmaceutical manufacturers, providing custom automated manufacturing solutions from concept through delivery and lifecycle support. With deep expertise in assembly, material handling, conveyance, vision inspection, testing, and IIoT-enabled software, ATS LSS helps customers solve complex manufacturing challenges, especially in highly regulated environments. ATS LSS is part of ATS Corporation and a proud member of the ATS Life Sciences Group, with eight manufacturing facilities across four countries, over 1 million square feet of production space, and a team of 1,300+ employees dedicated to delivering reliable, compliant automated manufacturing solutions at scale. For more information about ATS Life Sciences Systems please visit atslifesciences.com or contact lifesciences@atsautomation.com.