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Press release

An economical entry into monitored electromechanical joining

Kistler introduces compact, standardized joining systems in six force ranges from 2 to 80 kN

Winterthur, November 2026

With a focus on an attractive price-performance ratio, the new NCFx joining system from Kistler offers an economical entry into force-displacement-monitored electromechanical joining. It suits a broad range of industrial applications. The electromechanical joining system is designed for confined installation spaces and for applications with forces of up to 80 kN. The integrated strain gauge force sensor and complete process monitoring with the maXYmos NC enable precise joining operations. Thanks to plug-and-play functionality, the NCFx servo press is quick and easy to commission.

The NCFx joining system was developed as an economical entry into electromechanical joining. With it, Kistler responds to industry's growing demand for automated manufacturing processes, greater process reliability, and lower operating costs. The NCFx servo press covers the requirements of a wide range of typical assembly and joining applications. It lets companies switch easily from hydraulic or (hydro-)pneumatic systems to electromechanical, force-displacement-monitored joining technology.

Compact system design simplifies integration of the joining module

The development of the NCFx joining system focused on a space-saving design, simple integration, and high operational reliability. The electromechanical joining module comes standard in an angled design with an integrated strain gauge force sensor. It is driven by a compact servo amplifier that communicates digitally with the maXYmos NC process monitoring system via EtherCAT at 4 kHz. The NCFx servo press is available in standardized versions for force ranges from 2 to 80 kN. The 2 and 5 kN sizes offer a stroke length of 200 mm; the 10 to 80 kN variants have a 400 mm stroke. The system achieves a position repeatability of 0.01 mm. The single-cable motor connection reduces wiring and installation effort, saves space, and minimizes potential sources of error. The compact system design makes it possible to modernize existing joining applications efficiently. Users benefit from simplified system integration and commissioning.

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Kistler Group
Eulachstrasse 22
8408 Winterthur
Switzerland

Tel. +41 52 224 11 11
info@kistler.com

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Thanks to an absolute encoder, the reference position is retained even after a restart. Referencing is therefore required only during initial commissioning or after a component is replaced. It can be done conveniently at the push of a button via the maXYmos NC process monitoring system.

Kistler also paid special attention to integrated safety technology. The NCFx joining system comes standard with the STO safety function. Additional safety functions such as SMES, SMST2, SBC, and safely limited speed are available as options. All safety functions are integrated directly into the servo amplifier. This reduces the need for additional hardware and simplifies the implementation of safety-oriented machine concepts.

User-friendly operation and digitalization simplify integration of the joining system

Thanks to the plug-and-play concept, the NCFx joining system can be commissioned quickly and without complex parameterization. The integrated maXYmos NC process monitoring system automatically detects the joining module, takes over the sensor and calibration data, and configures the servo amplifier. This avoids typical sources of error and significantly speeds up commissioning.

The maXYmos NC process monitoring system enables easy integration into a wide variety of automation environments. The flexibly configurable fieldbus interface supports industry standards such as PROFINET, EtherNet/IP, and EtherCAT, allowing seamless connection to existing control architectures. With intuitive operation and a variety of evaluation functions, joining processes can be monitored and assessed with ease. Data export interfaces such as OPC UA also make process and quality data available for complete documentation and traceability, as well as for further digitalization applications.

NCFx joining system: a cost-optimized complement to the NCFx Pro

With the NCFx electromechanical joining module, Kistler complements the high-performance NCFx Pro series for demanding joining and assembly tasks. The NCFx Pro offers additional power reserves and more flexibility for applications with short cycle times, high variant diversity, and a wide force spectrum. The NCFx Pro 2164A joining modules are available in straight and angled designs, with different stroke lengths and sensor technologies. One option is a piezoelectric force sensor with an especially wide, flexible measuring range from 0.05 to 120 kN. The other is a strain gauge force sensor for measuring ranges from 2 to 120 kN. The sensors are integrated directly into the tool holder of the servo press, measure forces right at the point of action in the process, and transmit the measurement data contactlessly via telemetry. The complete joining module portfolio from Kistler covers a force range from 0.05 to 700 kN, making it suitable for a broad spectrum of joining applications.

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Services for joining applications: from concept to implementation

The experts at the Assembly Competence Center (ACC) support customers worldwide in selecting, designing, and optimizing joining applications. Modern simulation tools make it possible to evaluate the optimal sizing, the expected service life of the system, and achievable cycle times early in a project. Joining applications can also be tested and validated directly at Kistler.

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



The new NCFx joining module is the economical entry into force-displacement-monitored electromechanical joining technology. The standardized joining systems cover applications from 2 to 80 kN in six force ranges. Their compact system design and additional safety functions make them easy to integrate.



The maXYmos NC 5847C process monitoring system controls the joining process and provides process and quality data in real time, for complete documentation and traceability of joining quality.



Application experts from Kistler support customers worldwide with trials, selection of the optimal joining system, and successful implementation of their joining applications.

Media contact

Elisabeth Iancu
Marketing Campaign Manager
+49 7172 184 147
E-Mail: elisabeth.iancu@kistler.com

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

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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 2025, it posted sales of 424 million Swiss francs. 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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