

Press release

Control 2023: quality control for all process steps in production

Kistler showcases solutions from individual sensors to smart automatic testing systems

Winterthur, March 2023

High-precision quality control for every step of the value chain: at this year's Control trade fair in Stuttgart (9 to 12 May 2023), Kistler will present modular inspection, test and measurement solutions for quality control throughout the production process. The portfolio on show at booth 7507 in hall 7 will range from sensors to complete solutions for production, assembly and data management. Kistler is showcasing innovations such as the mobile handheld testing devices in the 5811 family and the new cerTEST 3 test system for torque tools – along with the latest version of the KVC 821 automatic optical testing system that leverages artificial intelligence to minimize scrap.

From development to assembly: complex industrial production processes must include rigorous and efficient quality controls if they are to meet the market's demands for product quality and transparency. Right from the start of the process chain, therefore, manufacturers need precise measurement data so they can optimize individual process steps and minimize scrap – with the help of artificial intelligence, for example. To meet these needs, Kistler's presentation at this year's Control will feature test, measurement and inspection solutions for the entire process chain. Individual force and optical sensors will be on show along with complete, easy-to-operate solutions that deliver precise data: a portfolio that enables manufacturers in many different industries to meet quality requirements and ensure efficiency across all steps in their processes.

Artificial intelligence can even detect previously unknown defects

Kistler is unveiling the latest version of its KVC 821 automatic optical testing system at the fair in Stuttgart. This automatic testing system is ideal as a quality assurance solution in many diverse sectors, ranging from punching and fastening technology to the medtech industry. The KVC 821 makes use of cutting-edge optical measurement technology to capture precise data about dimensional stability as well as the geometric attributes and surface characteristics of the units under test. Image processing is handled by the KiVision software, while artificial intelligence is utilized to assess the parts. The image processing software, based on deep neural networks, uses anomaly detection to identify the very smallest defects on the surfaces of the tested parts – even those that were previously unknown.

Quality assurance from production to assembly

To guarantee standard-compliant assembly of bolted joints, Kistler has equipped its new cerTEST 3 torque tool test system not only with high-performance technology but also with state-of-the-art software. The web-based CEUS 10 program guides users step-by-step through the measurements and offers the possibility of storing individual parameters for torque tools. This software stores the test records in a database so they are available at any time. cerTEST 3 is powered by a rechargeable battery to ensure fast, mobile testing of rotating tools such as nutrunners, cordless screwdrivers and impulse drivers in the assembly line.

Also on show: the caliTEST Basic calibration device – the key to straightforward, standard-compliant inspection of indicating and setting torque tools. The CEUS 10 software also handles parameterization of measurement tasks as well as data management and certificate issuance.

Precise product quality testing during production

Kistler's booth at the Control fair also features an example of precise quality assurance based on measurement data that is integrated directly into the production process: a measuring chain comprising the maXYmos NC process monitoring system, force sensors and a compensation element. A piezoelectric sensor measures the insertion and withdrawal forces for punched contacts. At the same time, a special compensation element ensures that the recorded measurement values are not falsified by potential lateral forces. The resultant measurement data is transmitted to the process monitoring system for analysis and evaluation so users can guarantee the quality of individual process steps – as well as product quality – while production is in progress; any defective parts can also be identified and separated at the earliest possible point in time. Another plus: the maXYmos NC can handle control of the drive or the electromechanical axis. This test solution can be assembled to meet individual requirements – either as a measuring chain or a complete system, including advisory support and services from Kistler.

Function tests – directly on the machine and sensor

Plant operators can now make sure that all the sensors used for quality control are functioning correctly. To achieve this, they can use the new mobile handheld testing devices in Kistler's 5811 family to check the relevant sensors directly – so the huge effort of dismantling the sensor is eliminated. The device's touchscreen makes it possible to display and check up to three input signals (such as piezoelectric charge, voltage and IO-Link). The benefits: users can compare, examine and verify sensor data directly in situ – and they can optimize their production parameters on the basis of the measurement data.

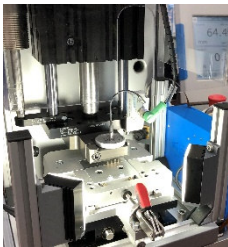
Image material (please name the Kistler Group as picture source)



Thanks to artificial intelligence and anomaly detection, the KVC 821 automatic optical testing system can identify the very smallest defects – even those that were previously unknown.



The new cerTEST 3 test system is the key to fast, straightforward testing of rotating tools.



With features such as connector insertion force measurement and a special compensation element, Kistler is showcasing individual components in combination as well as complete individual solutions.

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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 owner-managed 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 2022, it posted sales of CHF 434 million. About 8% of this figure is reinvested in research and technology – with the aim of delivering better results for every customer.