

Press Release

Kistler Provides Mechanical Parts with Custom Strain Gage Instrumentation for Material, Load and Crash Tests

The Kistler Group's acquisition of MSC Automotive GmbH has substantially enhanced its expertise in the area of sensors and applications based on strain gages. The amalgamation of MSC Automotive with Kistler-IGeL GmbH on the Schönaich site has now given Kistler more than a dozen members of staff with strain gage technology experience including calibration of strain gage sensors.

With this expertise, many years of product and application experience, precision manufacturing, timely execution and in-situ instrumentation as required, Kistler offers a wealth of know-how revolving around strain gage applications. Core competencies include:

- Strain gage (single- to 6-axis) load cells for in-dummy applications
- Custom strain gage applications for durability, vehicle safety, material and operating tests
- Calibration of custom applications

Precision installation of strain gages on different components requires deep familiarity and practical skills. Choosing and instrumenting the most appropriate gages correctly positioned in structures often demands a sound theoretical foundation. Calibration of the structures also calls for specific test equipment. The strain gage is attached using cold or hot bonding to suit the particular application and component. The cover of the gage reflects the requirements imposed by the operating environment, such as mechanical protection, splash-proof or oil-resistant applications. Thermal compensation may be necessary for loading of the test structure in extended temperature ranges.

Kistler has formulated tailored specifications for preparation of custom strain gage instrumentation. The company's strain gage specialists discuss the design of this instrumentation with the customer. Suitable sample gages, correct cabling, positioning on the test structures, formulated specifications and objectives are all considered on the basis of a diagram for the tender specifications. As a special service Kistler offers complete installation, cabling, operating tests and scaling/calibration of custom test structures it has provided with strain gages.

Custom Strain Gages for Material, Durability and Crash Tests

The main custom strain gage applications are material tests on structural elements and vehicle components, strength tests to determine the service life of components, complete vehicle and component crash tests, and various operating tests.

On test rigs and in actual load tests important vehicle components are instrumented with strain gages to determine their service life using realistic loads. To achieve reliable results, strain gages are generally applied to specially selected points on test structures.

Strain gages applied for crash testing of vehicles and their components allow deduction of the forces acting in the course of impacts with structural elements.

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Application of strain gages for testing durability of a trunk lid top tether hook.
Two strain gages (X and Y types) offset 180° are applied to its shank and wired as a full bridge (compensated for bending)

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Kistler's core competence is the development, production and use of sensors for measuring pressure, force, torque and acceleration. Kistler's know-how and electronic systems can be used to prepare measuring signals for use in analyzing physical processes, controlling and optimizing industrial processes, improving product quality in manufacturing and improving performance in sports and rehabilitation.

Kistler offers a comprehensive range of sensors and systems for engine development, automotive engineering, plastics and metal processing, installation technology and biomechanics.

A worldwide sales presence in the form of 25 group companies and 30 distributors ensures customer proximity, application support on an individual level and short lead times.

With a staff of about 1 000, the Kistler Group is one of the world's leading providers of dynamic measuring instrumentation. The Kistler Group achieved turnover of 166 million Swiss Francs in the 2009 financial year.

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