

Kistler View

Kistler measurement technology reduces emission of pollutants in an increasingly mobile world.

Get Better. With Kistler.

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in Use for Over Ten Years Now.**

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Being Number One in Dynamic Measurement Technology Is Both our Driving Force and Commitment.



The automotive industry is developing dynamically. Quantitative growth is above average, and the latest technological developments in the areas of safety and engine efficiency are impressive. Behind technology advancements you will often find Kistler.

In 2012, the Kistler Group again achieved a large growth spurt and made progress on all continents and in all business areas. This allowed us to invest in equipment and facilities and create a total of 125 new jobs worldwide.



Crucial for the success was that we, as a global company, were able to bring technology closer to our customers. With the newly created Tech Centers in Stuttgart, Detroit and Shanghai – all hot spots in the automotive industry – we have kept our promise to customers regarding local availability. For a long time Kistler has not only been selling products, but, together with the automotive industry, is creating complex, customized solutions delivered directly to the customer's door.

As a company we keep up with global megatrends in our markets: combustion pressure sensors reduce emissions, crash systems improve road safety, production monitoring systems measure product quality. In the years to come, these current global trends will require major technological advances in measurement technology. We accept the challenge. **Get Better. With Kistler.**

A handwritten signature in black ink, appearing to read 'R. Sonderegger'. The signature is fluid and cursive, written over a white background.

Rolf Sonderegger
CEO Kistler Gruppe

Reliable Pressure Sensors: in Use for Over Ten Years Now.

Kistler measurement technology in engine development and the monitoring of continuous operation

Kistler's piezoelectric pressure sensors make a significant contribution to understanding the combustion process in engines. The development departments of all major automobile manufacturers make use of this experience to optimize engine performance. Kistler sensors are also used in continuous operation for closed-loop combustion control in internal combustion engines. They enable the performance of engines to be checked constantly – including via remote monitoring – and deliver a crucial reduction in fuel consumption. In the case of large ship engines, the savings amount to millions of liters of fuel, with massive reductions in emissions.

Sensors with a service life of over 100,000 hours

Kistler sensors not only provide excellent measurement accuracy but are also extremely robust and suitable for demanding environments. For example, Kistler sensors recently passed the magic figure of 100,000 hours of operation in large engines in the US gas and pipeline industry. For more than 10 years, these pressure sensors have been monitoring and controlling engines in the pumping stations and thereby making a vital contribution to securing nationwide gas supplies in the USA.



With its transition from a sensor producer to a system supplier, Kistler is making an even greater contribution to progress in the development of efficient, low-emission engines. When you consider how much fuel can be saved by using Kistler measurement technology, you will immediately see that every sensor is a good investment. It's a win-win situation for the automotive industry and for the natural environment.

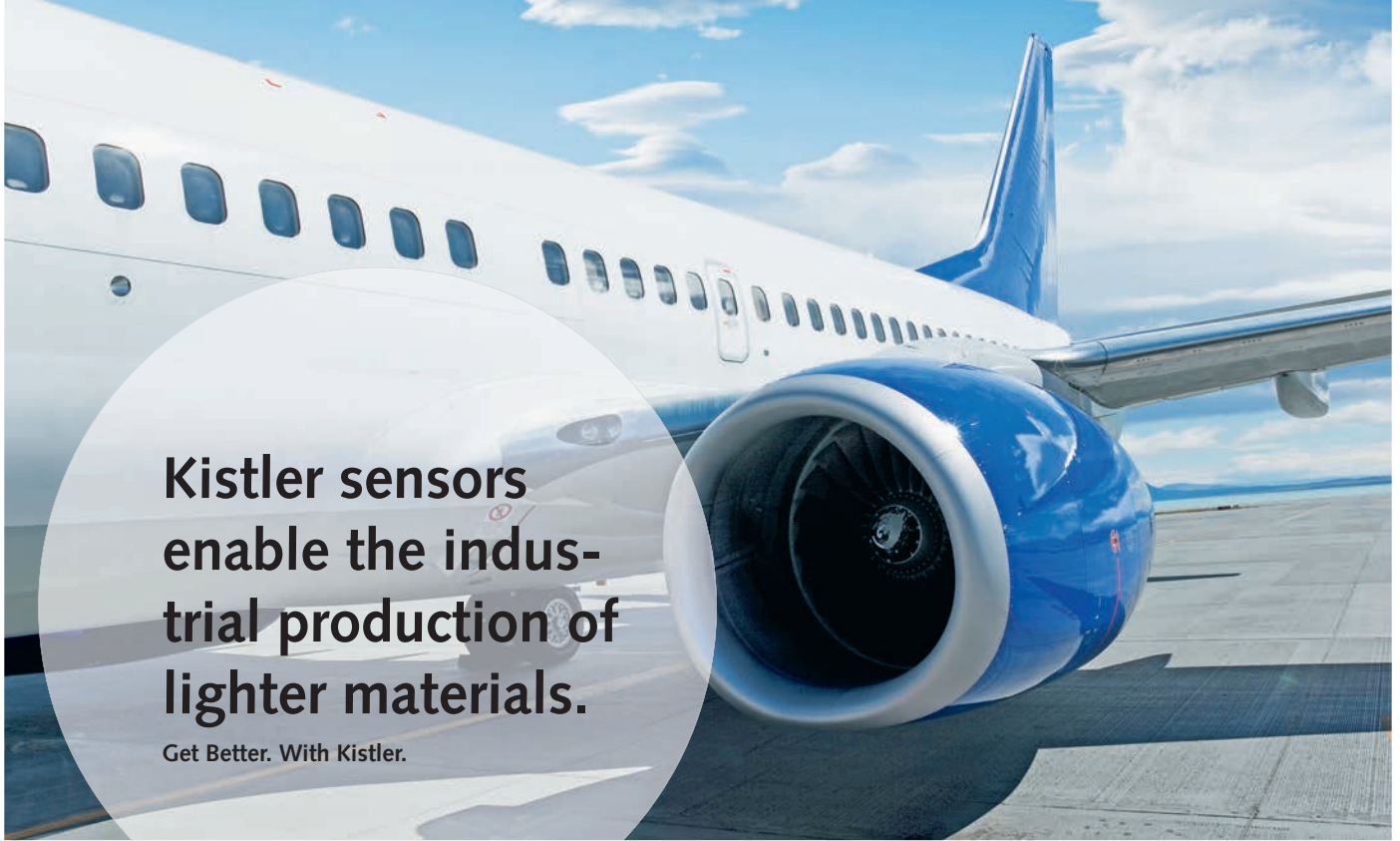
Dr. Thomas Wagner

Head of the Automotive Research & Test Division



Kistler sensors are used when safety and reliability are paramount.

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**Kistler sensors
enable the industrial
production of
lighter materials.**

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"Going Green" Revolutionizes Industrial Production.

Kistler spindles cut energy consumption by over 70%

In addition to the dramatic reduction of energy consumption in the operation of new vehicles, automobile manufacturers are also pursuing high ecological objectives in series production. VW, for example, wants to cut the energy consumed in the manufacture of its products by 25%. This objective can be achieved with Kistler sensors and systems: electric joining modules have lower energy consumption than pneumatic and hydraulic systems. The University of Kassel has shown that electric spindles consume 90% less energy than pneumatic spindles and 70% less than hydraulic spindles.

Lightweight automobile construction requires sensor-monitored production processes

The trend towards lighter vehicles with increased energy efficiency is opening up new opportunities for Kistler. The new highly complex production processes involved in lightweight automobile construction and metal and plastics processing, as well as the combination of the materials used, demand a high degree of process transparency and reproducibility. These ambitious objectives can be achieved with Kistler's reliable sensors and monitoring systems.



Going green – the global megatrend – is making its mark on today's and tomorrow's industrial production. Kistler optimizes industrial production processes with its customer-specific measurement systems, thereby making a valuable contribution to the reduction of global energy consumption.

Dr. Oliver Schnerr

Head of Sales in the Industrial Process Control Division



**Kistler sensors
stop trains
automatically
in the event
of a derailment.**

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Greater Safety on Rail and Road.



Despite the rising volume of traffic, the number of injuries in the Western world is falling steadily. Kistler's product portfolio makes a vital contribution to this – on both rail and road – but also in automotive industry development laboratories.

Petr Starustka

General Manager, Kistler Eastern Europe s.r.o.

Monitoring rail vehicles with acceleration sensors

Kistler came up with the idea of developing a derailment sensor more than 10 years ago. The breakthrough came when the specialist engineers combined an acceleration and a speed sensor in a single unit. This sensor, which was developed for a Swiss supplier to the railway industry, is fitted in a robust housing on each train bogie and connected to a signal evaluation device. In the event of a derailment, the train will stop immediately, as was recently seen in Brazil.

Protection against overloaded vehicles – thanks to Kistler sensor technology

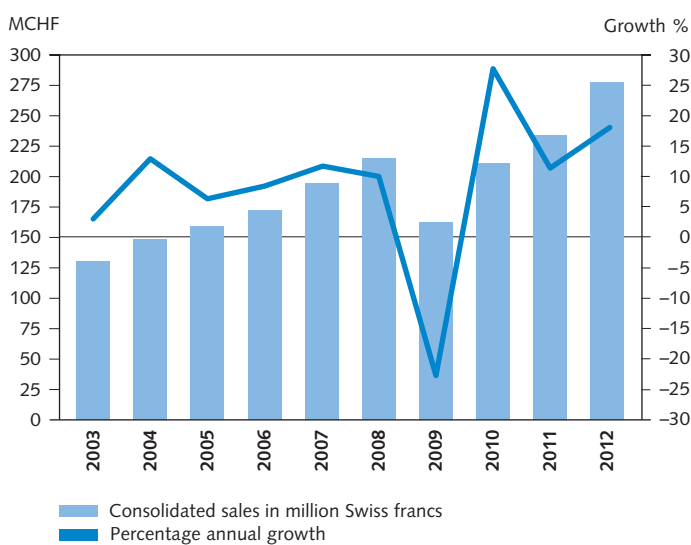
An automatic measurement station for the weighing of entire vehicles has been deployed for the first time on the motorway in Prague (Czech Republic). The local system integrator had certified the Kistler Lineas sensors and the evaluation system to an accuracy of $\pm 5\%$. This automatic weight measurement system makes it possible to detect overweight vehicles. That means the roads will be safer thanks to Kistler technology and certified measurement.

Kistler Group Continues to Grow.

With revenues of CHF 279 million, the Kistler Group posted another record result in the 2012 financial year. All three divisions contributed to the 19% growth. Kistler invested huge sums in the development of its personnel and infrastructure in 2012, enabling it to maintain its high level of business growth. A new plant was built at Lorch to expand the production capacity for electromechanical spindles. A lean production program was introduced for the entire production network, reducing turn-around times and raising output and quality. At the Winterthur site alone, this involved an investment of over CHF 10 million in 2012.



Sales and growth 2003–2012



Outlook

The Kistler Group will from now on be even closer to its customers thanks to new sales companies in Turkey and Vietnam and additional sales offices in various countries. The continental Tech Centers enable customer-specific solutions to be developed and implemented rapidly to meet specific needs. Further appreciable improvements in delivery times and quality are being achieved through the targeted development of the production network. **Get Better. With Kistler.**

The Kistler Group comprises 29 group companies. These operate worldwide in 27 countries at a total of 49 sites. Kistler products and solutions are also marketed by carefully selected agents in around 30 other countries. Workforce as at January 2013: 1,200, including 500 in Switzerland.

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measure. analyze. innovate.