

## Press release

### Zero-defect strategy for World Health Day

Process monitoring technology from the Kistler Group boosts safety and reliability in medical device production

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**Efficient, high-performance production is a fundamental factor in the quality of medical care – because rapid test kits, insulin pens and other medical devices are only as good as the individual components they contain. Florian Pichl, Head of Business Development Plastics of the Kistler Group, explains how the highest possible quality can be combined with high-speed production.**

#### **Mr. Pichl – why should we think about plastics production on World Health Day?**

**Pichl:** People rarely view the production of medical devices from the perspective of the plastic parts they contain – even though these parts help to determine whether the finished product actually meets the requirements of the market or of healthcare professionals and patients. Today's medtech industry simply could not manage without parts made of plastic: this material is used to manufacture almost one in two of all medical devices used throughout the world. For disposables in particular, plastics are absolutely indispensable, and they are a permanent feature of our everyday lives. When growing demand is coupled with high quality requirements, the conflicting priorities that arise are interesting – and it is no simple matter to reconcile them.

#### **Why is that?**

**Pichl:** To make the production process fast, reliable and safe, it has to be constantly monitored. This is achieved with automated monitoring systems that are integrated directly into the process. In the various phases of production, they measure key physical variables such as force, torque, temperature and – most important of all – pressure. Especially for individual parts manufactured by injection molding, the measured values allow us to determine whether everything is going according to plan. Parts for which this is not the case are separated out reliably before they undergo further processing. This approach increases product safety and quality – and at the end of the day, those are the decisive factors for patients' wellbeing.

#### **How does the monitoring work?**

**Pichl:** The plastic parts we're talking about are mainly produced by injection molding into a prefabricated mold. A crucial factor here is measurement of the pressure directly in the mold – that is

to say, at the precise point where the component is created. The sensors used for this purpose record what is known as the "mold cavity pressure". This is one of the most informative process variables in injection molding because it provides an end-to-end description of all the phases in the creation of the part. We like to say that mold cavity pressure is the fingerprint of the process: it allows us to directly identify all the factors that influence the process and, what's more, we can establish a direct correlation to those characteristics of the molded part that determine quality.

### **What happens next?**

**Pichl:** Our process monitoring devices record the generated pressure and temperature signals in real time, and then the results are immediately evaluated and documented. If the values are not within the required range, the part is separated out straight away. This is very important so that the high requirements for product safety and traceability can be met. And it applies not only to the individual components but also to the downstream production steps until the complete medical device has been manufactured. Monitoring single parts is only one aspect. You can easily imagine that inhalers or insulin pens consist of a number of individual parts – and in most cases, they are also made from different materials. All these parts are assembled and tested, so this step requires additional process monitoring systems.

### **What does World Health Day mean to you, and what role do you see Kistler playing in it?**

**Pichl:** I think that World Health Day is a very important occasion, and it's a good way of actively raising awareness. The motto this year is "Health Equity and Equality", so the focus is on an issue that is attracting very prominent media coverage at present – especially as regards access to healthcare services and their availability. Producers of medical devices can make a decisive contribution here. I was impressed by the way manufacturers adapted their production capacities so quickly last year, while still meeting the obligation to ensure the highest possible product quality. Both my team and I are proud that we can play our part in this effort throughout the world thanks to our tried-and-tested process monitoring equipment.

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



The manufacture of medical devices such as inhaler and insulin pens set the most demanding requirements for product safety and traceability.



Automated monitoring of the production process already ensures that finished medical devices – such as those used for infusions – will function perfectly.



Florian Pichl, Head of Business Development Plastics of the Kistler Group

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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 2,050 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 2020, it posted sales of CHF 361 million. About 9% of this figure is reinvested in research and technology – with the aim of delivering better results for every customer.