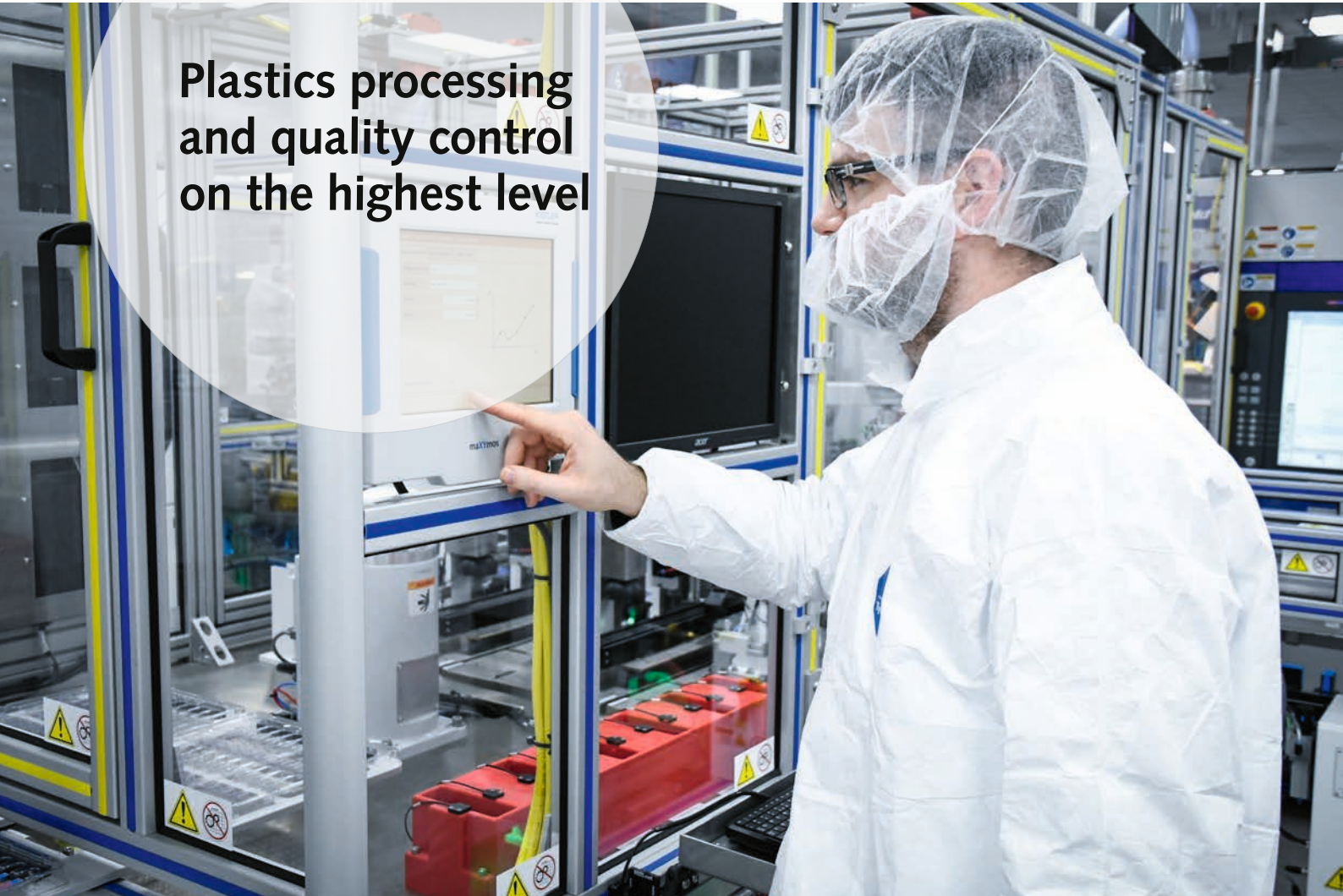


**Plastics processing
and quality control
on the highest level**



Pushing you ahead of the competition

Two-stage process monitoring for excellent plastics from Tessy

Zero-defect production with 100 % quality assurance is the ultimate goal of every plastics processing operation. Reliable process control is the key to achieving this goal. The solution? Piezoelectric sensors and systems from Kistler. They measure and analyze the cavity pressure during the injection molding process while monitoring the process directly in the cavity mold and separating rejects.

Tessy Plastics, founded in 1973 with several facilities located in Central New York, is one of the largest custom medical device and consumer component contract manufacturing suppliers in the Northeast (U.S.). They engineer, manufacture, assemble and distribute a very wide range of products. Intensely committed to quality, Tessy embraces Scientific Injection Molding (SIM) to allow them to define and optimize their molding process from start to finish.

Ben Passetti, Research & Development Engineer with 15 years of experience at Tessy Plastics, takes the quality of their molding parts very seriously. Eliminating defects in the assembly monitoring process easily with guaranteed results is key. This means that reliable, efficient measurement equipment is an absolute, essential factor in order to provide their customers who take delivery of millions of their products, with excellent quality assurance. Passetti says, "Our product portfolio is split 50/50 medical/consumer. We focus primarily on value-added, high dollar items with very complex manufacturing tight tolerances – everything from 720 tons down to micro molding so our molding portfolio is pretty large from a versatility standpoint. We have a focus on micro molding in the medical sector because it is challenging and difficult – we can accomplish tight tolerances with the tooling partners we have put in place."

Overcoming the complexities of injection molding with Kistler

Continuous process monitoring and control of the entire production measuring chain is essential to meeting today's demanding industry requirements. By combining Kistler process monitoring systems and sensors, one can not only achieve optimized process efficiency and quality assurance, but also gain a competitive edge that raises the bar. This has proven true for Tessy. Passetti points out, "There has been a visible shift in the plastic molding market within the past five years. Customers are more educated and understand a lot more about the injection molding process than in the past and they are actively searching for more technological savvy solutions.

After reviewing Kistler's extensive product portfolio, Tessy decided to implement and combine several Kistler products in

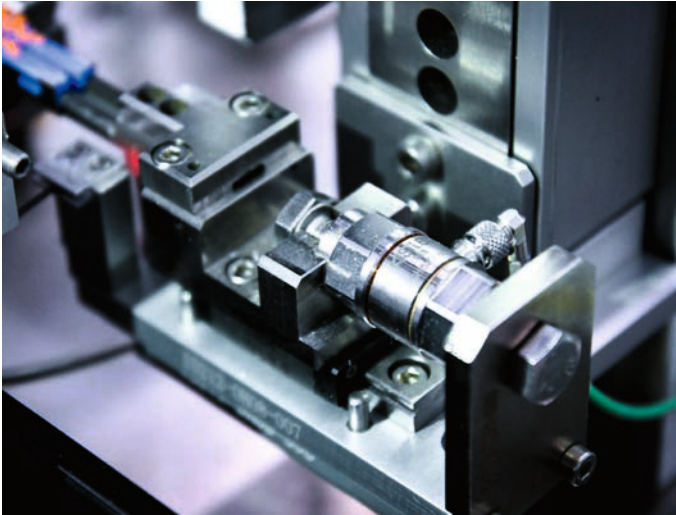


Medical components being inserted into the assembly stream.

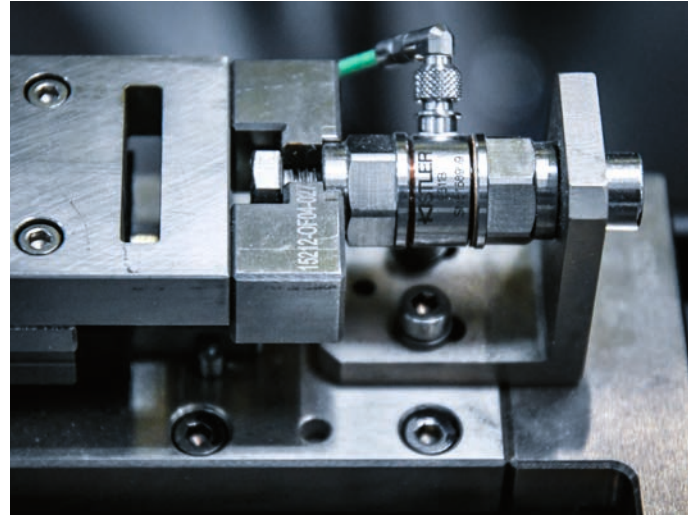
order to achieve a competitive edge. Jay Sklenka, Field Sales Engineer at Kistler, explains "Tessy has been using several Kistler products over the past five years; not just for injection molding but for assembly as well. This includes the Kistler ComoNeo, maXYmos, load cells, and pressure sensors. They are also using our amplifiers mounted on the injection molding machines to bring the pressure signals back into the machine controller." "From an assembly standpoint, we liked that Kistler pressure sensors allow us to detect the force that drives the components back and forth so we can make any necessary adjustments with reliable, visible, sustainable results", Passetti continues. "We added ComoNeo from Kistler to give us a better understanding of how the component actually looks like to ensure they are fully formed and are able to move into the production stage with 100 % zero-defect results. We also chose to implement

"I would say, from my experience, that the growing market trend favors smart technology solutions like those offered by Kistler. At Tessy, our plan is to not only integrate more Kistler pressure sensors and systems into future molds but also to retro-fit our existing molds with Kistler sensors as well."

Ben Passetti, Research & Development Engineer at Tessy Plastics



Using the maXYmos integrated sensors to check the final component.



Multiple sensors installed for the several inspection integration locations.

the process monitoring system ComoNeo because prior to its implementation, we were struggling to understand what was happening in the mold itself to achieve accuracy and repeatability." The result: control of the outcome throughout different stages of the value chain.

Quality assurance with reliable, repeatable, controllable results

Passetti describes how Kistler pressure sensors are utilized in their injection molding process: "In one of the first stages of the molding process for our medical components, the parts are inserted with the automation directly into the medical component. Here, we are monitoring the cavity pressure to ensure that parts are fully formed and to ensure that we do not overpack the mold using a visible envelope/reference curve over the injection profile so that we can monitor the fill.

When asked if he feels Kistler solutions have provided Tessy with useful tools to achieve success, Passetti exclaims, "Absolutely!

We are using Kistler process monitoring systems and sensors for our documentation and providing invaluable information to our processes. Without it, we would likely struggle to meet the demands of today's market from a quality, efficiency, and cost-effectiveness standpoint. Kistler is probably the most advanced sensor company."

Shaping the future with process monitoring systems and sensors of Kistler

Working together with Kistler has proven beneficial by drastically reducing scrap and improving Tessy's overall success rate. Looking back at the resulting reduced rate of return and increased ROI over the years, Passetti happily notes, "We are definitely satisfied with Kistler solutions. We at Tessy have been pushing the boundaries of facility size limitations for our machinery. We know that Kistler is continuously working to provide smaller systems and sensors to fit this need, especially on the micro-scale side, and we are happy with how much easier it allows for their integration into our machinery."



Final medical components ready to ship.

Choosing to partner with Kistler in order to achieve continued success has inevitably paved the way for future success and process improvement at Tessy. Passetti concludes, "I would say, from my experience, that the growing market trend favors smart technology solutions like those offered by Kistler. At Tessy, our plan is to not only integrate more Kistler pressure sensors and systems into future molds but also to retro-fit our existing molds with Kistler sensors as well. There are very few companies in the U.S. that are using micro molding in combination with sensor technology. I believe that Tessy remains ahead of the competition in terms of sensor integration on a micro-scale and micro molding machinery thanks to Kistler technology."






Process monitoring and control

Efficient on-site control system for production



Increased cost efficiency with cavity pressure-based systems



Plastics processing

Optimized process design for injection molding

www.kistler.com



For more cost-effective production: manufacturing processes based on cavity pressure



Composites

Process monitoring and quality assurance in the production of fiber-reinforced composites of various shapes

www.kistler.com



Find out more about our applications:
www.kistler.com/applications

Kistler Group
 Eulachstrasse 22
 8408 Winterthur
 Switzerland
 Tel. +41 52 224 11 11

Kistler Group products are protected by various intellectual property rights. For more details, visit www.kistler.com
 The Kistler Group includes Kistler Holding AG and all its subsidiaries in Europe, Asia, the Americas and Australia.

Find your local contact at
www.kistler.com

KISTLER

measure. analyze. innovate.