Press release

Digitalized quality assurance in injection molding: Kistler optimizes hot runner control with ComoNeo and the AkvisIO process data management software

Winterthur, February 2025

Kistler has optimized its proven solutions for hot runner control and statistical process control (SPC) in plastic injection molding: The firmware update for the ComoNeo 7.0 process monitoring system includes new software features that entail improved control of individual hot runner nozzles in multi-cavity molds. The AkvisIO process data management software has also been upgraded. The user-friendly software now comes with an integrated OPC-UA connection for injection-molding machines. ComoNeo ensures 100 percent control. AkvisIO complements the system and facilitates traceability for every molded part produced. It also makes it easy to integrate quality data into the user's IT landscape.

As part of the revised ComoNeo 7.0 process monitoring system, Multiflow 2.0 ensures a consistently high level of quality over a large number of cycles. A newly developed, self-learning algorithm automatically balances the individual filling times for multi-cavity molds during the injection process. This shortens the filling-time difference so that the individual pressure curves are more precisely aligned, leading to a homogeneous and uniform injection result despite possible fluctuations in the flow rate. "The new algorithm works faster and is more robust", says Martial Willimann, Product Manager at Kistler. "Users of the old system can easily convert to the new one – all they need to do is create a new control file."

More user-friendly and with extended display options

Other new features of ComoNeo 7.0 include additional monitoring options with improved user-friendliness. The new "PREDICT calibration" function lets users adapt the previously trained model to new pressure curves without the need for an extensive new test plan. ComoNeo 7.0 now also records the pulse and the falling edge of the digital signals in addition to the rising edge. This captures machine sequences better and can also be relevant for statistical evaluations. A new monitoring function allows the recording of minimum values in measurement curves while extended display options simplify using the system. For the first time, all trend values can be displayed on one page for comparison, which helps users to gain a quick overview and evaluate the current process progression. When setting the evaluation objects, the solution offers the option to display the reference curve for simplified adjustment.

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Process data management as the basis for digitalized quality assurance in injection molding

Kistler has also updated the AkvisIO 7.0 process data management software for injection molding processes. The software consolidates, saves and documents injection molding data from various sources – including ComoNeo. The solution's new features already take effect when importing data from old backup files. The new software is more user-friendly thanks to its new progress display and detailed import documentation. When evaluating data, AkvisIO 7.0 displays multicomponent processes for the first time using a cycle and step display so that users can easily monitor and compare them. "In response to feedback from users, we have also adapted the full-screen feature," reports Pascal Bibow, who is responsible for developing the software at Kistler. "The software now allows users to zoom in on the cycle display to view details more closely while retaining basic navigation functions. They maintain control of injection molding processes with many overlapping curves or if viewed on smaller screens." A histogram function makes process trends visible over a longer period of time and provides clarity about the reproducibility of the production process.

The future of statistical process control

As the latest beta feature, the AkvisIO 7.0 process data management software allows users to integrate injection molding machines as additional data sources via a new Euromap-77 interface for more accurate monitoring. "We have already had very good experiences with data from some machine models and would like to encourage our users to try out the feature at this early stage. We want it to be compatible with machines from as many manufacturers as possible to offer our customers a standardized comparison of sensor and machine data." The goal is to uncover long-term trends of correlations between machine data and process parameters and to use those insights to better evaluate optimization potential. "For the first time, AkvisIO will be able to process different pieces of information at the same time and to correlate them for statistical process control during injection molding," concludes Bibow.

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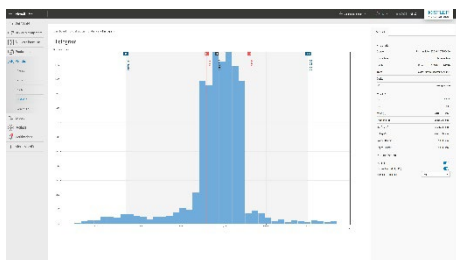

The histogram function supports statistical process control for evaluating production batches in injection molding regarding process capability within the desired intervention limits.
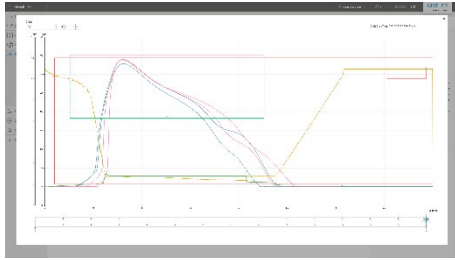
The full-screen function of the AkvisIO process data management software for injection molding allows users to zoom in on the cycle display while retaining navigation functions for comparing cycles.
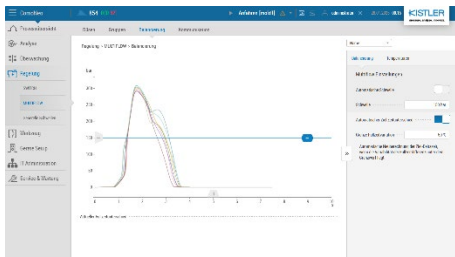
The Multiflow feature of the ComoNeo 7.0 process monitoring system uses a newly developed algorithm to ensure even more precise hot runner control in multi-cavity molds.
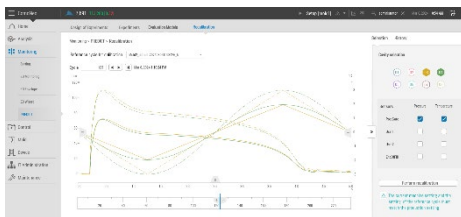
The new "PREDICT calibration" function of the ComoNeo 7.0 process monitoring system makes it easier to adapt an existing model to new pressure curves for digitalized quality assurance during injection molding.

Media contact

Angelica Zeolla
Marketing Campaign Manager
Phone: +41 52 2241 606
Email: angelica.zeolla@kistler.com

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Kistler Group
Eulachstrasse 22
8408 Winterthur   Tel. +41 52 224 11 11
Switzerland   info@kistler.com

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