Controller-Guided Procedure for Faster Hot-Runner Color Changes

Husky partnered with Chem-Trend to speed hot-runner color changes, pairing a new guided procedure within the Altanium Mold Controller with Chem-Trend's Ultra Purge purging compound.

By Tony Deligio
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Husky Injection Molding Systems Ltd. collaborated with purging-compound supplier Chem-Trend to create step-by-step instructions for Husky's Altanium Mold Controller that outline a simple color-change process explicitly for molds with hot-runner systems. The joint approach is based on the process for using Chem-Trend's Ultra Purge purging compounds, which are designed specifically to reduce color-change time and carbon formation in hot runners.

In trials, Husky and Chem-Trend said they saw up to 85% reduction in scrap and an 80% increase in mold-cleaning efficiency. According to Husky, faster color changes are achieved by ensuring the optimal process is followed and all steps are done in the correct order. This includes automating temperature increases in the hot-runner tips and manifold heaters and counting cycles from the molding machine.

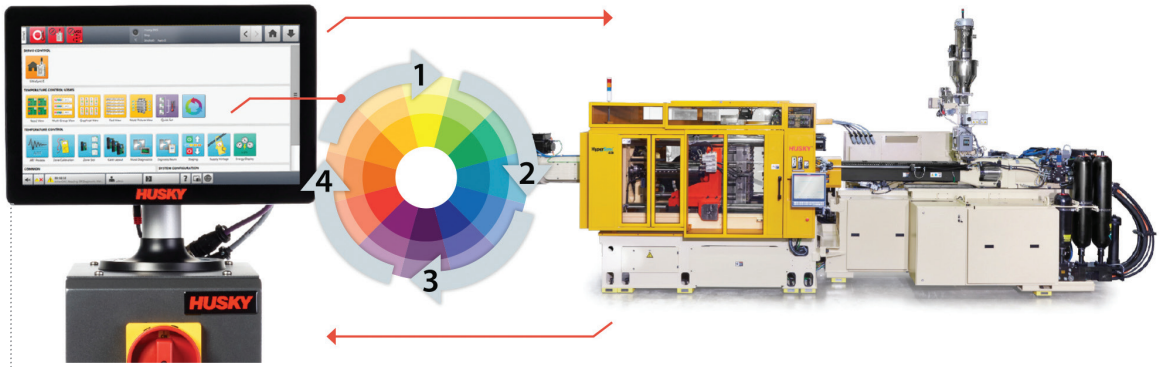
The Ultra-Purge usage amount is calculated by multiplying the shot weight by the Ultra-Purge conversion ratio. Both values are input by the user, but the calculation is executed and stored by the Altanium Mold Controller. The usage amount is what the molder references for measuring and adding the correct quantity of Ultra-Purge compound to the hopper of the injection molding machine.

The cycle-count input determines the correct amount of Ultra-Purge compound by deducting the shot weight from the usage-amount setting after each cycle. These values are calculated and stored by the controller, with the cycle-count input from the machine. The Altanium Mold Controller uses this data to alert the operator when the purge compound usage amount is achieved, allowing the next step to be started.

The system includes a color-change or black-speck-removal mode designed for extracting carbonized resin deposits in the manifold channels, nozzles, and gate bubble area of the hot runner. The system can also save "recipes" for different hot-runner systems and molds. The number of mold setups that can be saved varies according to the amount of storage available in the Altanium operator interface and the size of any associated files. On average, more than 250 mold setups can be stored on an Altanium Delta5 or Matrix5 operator interface, according to Husky.

The Husky spokesperson noted that the Ultra-Purge Color Change feature is exclusive to Altanium Mold Controllers, but added that the Altanium does support VNC screen-sharing technology that allows it to display its screens remotely on the control screen of a compatible injection machine.

Husky says the collaboration with Chem-Trend came in response to an increase in color-change applications. Husky's Michael Ellis, global business manager for hot runners and controllers, says this trend is especially prevalent in consumer-electronics and packaging markets. "As part designs continue to become more and more complex, unique colors have become a key component of plastic part design and crucial to the branding strategies for many of these consumer brands," Ellis said. "Molders are required to make many of the same parts in different colors now to satisfy these consumer demands. Therefore reducing the impact this has on production and optimizing the color change is key for molders."



In collaboration with purging compound supplier Chem-Trend, Husky developed a step-by-step program that walks molders through a hot-runner color change on its Altanium Mold Controller.