

The underlying idea was that “We have studied the topic of energy saving intensively. The Monolith nozzles are very lightweight due to their design and the integrated hollow spaces. In addition, the heater and thermocouple are very close together in the tip. This means the nozzles respond very rapidly to a heating pulse. For this, corresponding control algorithms are required, namely a good PID controller, and we have therefore developed this series of devices together with Feller Engineering,” explains Glittenberg. The nozzles can generally be operated with commercially available control units, though if you want to achieve an optimum it is advisable to use a velocity adapted control technology.

And what are the next steps on the way to the K 2022 show in October? “We



The new hot runner controllers are each available in various stages of development. © Witosa

have all kinds of plans this year. In the development of the Monolith nozzle, we had other ideas about what can be done with 3D printing,” says Glittenberg. “We are sure that is the future: there will be

fewer off-the-peg products and far more individual solutions. 3D printing is ideal for this because of the huge freedom it allows.” ■

*Dr. Clemens Doriat, editor*

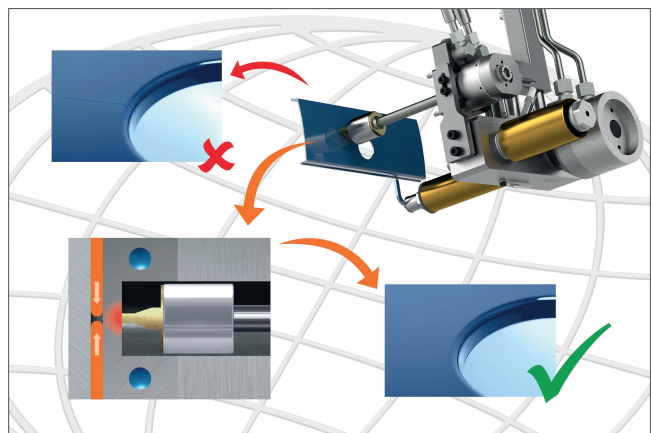
## Part and Process Optimization

### Targeted Heat Pulses in the Cavity

The new “Heat-Inject” product from Incoe International Europe stands out in that it uses the hot runner system as a carrier platform, but instead of melt, it brings heat into the cavity. The question following this concept “But why additional heat directly into the cavity?” is answered by Christian Striegel, Head of Development and Technical General Manager at Incoe: “This is not an additional heater, but a movable tempering stamp, whose heated tip introduces a heat pulse there by briefly pressing against the rear wall of the cavity.”

According to Striegel, this short local impulse can contribute in many ways to optimizing the quality of the molded part and the process: weld lines and flow lines are still there, but no longer visibly appear on the surface, matt points no longer appear in the area of the gate, areas with low wall thickness the cavity, such as in film hinges or thin-wall injection molding, can be flowed through more easily, and delicate geometries and microstructures are easier to manufacture. “This innovative temperature control technology, based on the patent-pending Z-system from our partner Hotset, works extremely quickly with very low energy consumption. In doing so, it offers a technically relatively simple and robust solution for molded parts with visually demanding surfaces, such as panels for household appliances, consumer electronics, or instrument panels in vehicles,” adds Frank Daniel, Commercial General Manager at Incoe.

The idea of assembling “Heat-Inject” on hot runner systems has its origins in the concept of pre-assembled modules. The idea here is to offer customers components for their injection molds that are already assembled into ready-to-use and ready-to-plug-in modules, thus saving effort and time during tuning and installation. “Of course, the tempering stamp



The heat pulse from heat-inject ensures good surface quality where a weld line may otherwise be visible due to the part geometry and gating. © Incoe

needs to be spotted in order to create a suitable contact surface for optimum heat transfer,” explains Frank Daniel. “But the fact that all Heat-Inject connections are combined on the central connection plate of the hot runner system, for example, eliminates the need for time-consuming installing and connecting of individual cables or hoses in the mold – everything is already mounted in a module and can be inserted in the sense of “plug and produce” after all adjustment actions have taken place.”

An essential part of using Heat-Inject, continues Frank Daniel, is clarifying in advance whether and how Heat-Inject can be used. Incoe offers a multi-stage process for this, consisting of a feasibility study, a quotation, and support with coordination, installation and sampling. “A big advantage for us with this new product is that we can build on Hotset’s many years of experience and thus offer our customers additional benefits that have already proven themselves in practice.” Christian Striegel adds.

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