PRIAMUS Newsletter

Newsletter No. 6

New: PRIAMUS Fill with extension for Sequential Molding

The PRIAMUS Fill system has been extended for sequential molding applications. Large molded parts are very often injected sequentially. This means that the hotrunner nozzles are not opened at the same time but one after the other. Especially in case of very long flow distances however different viscosities have a very strong effect which often leads to shifting of the weld lines as well as to different fill behaviour in general.

Different closed loop control systems now make sure that also large molded parts can be manufactured with consistent quality. Precondition is the positioning of one cavity temperature sensor before each gate in the cavity and one sensor near the end of fill.

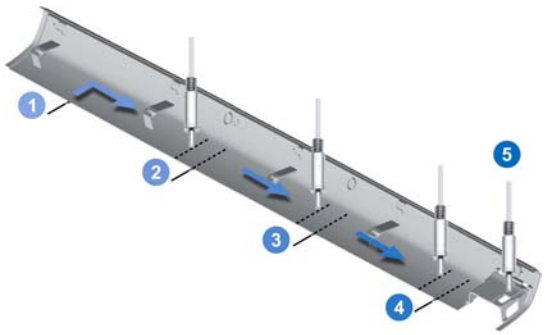
As soon as the melt reaches the according sensor before the gate the system detects the temperature rise and opens the respective nozzle automatically. In contrast to a time or position dependent method the nozzles always open under defined conditions.

In a second step the temperature signals are compared to each other and controlled by the set values of the hotrunner system. So it is ensured that the fill times between the nozzles do not change and for instance cause undesirable surface effects. This method of which a patent is pending especially considers the fact that the fill time differences from the first gate up to the end of fill usually add up.

A cavity temperature sensor near the end of fill finally detects when the molded part is completely filled and automatically switches from fill to holding pressure.

The result is a completely controlled fill and switchover process of large molded parts which are manufactured by sequential molding control.

1. Start injection
2. Melt front detected
   Nozzle automatically opened
3. Melt front detected
   Nozzle automatically opened
4. Melt front detected
   Nozzle automatically opened
5. Melt front detected
   Automatic switchover to holding pressure

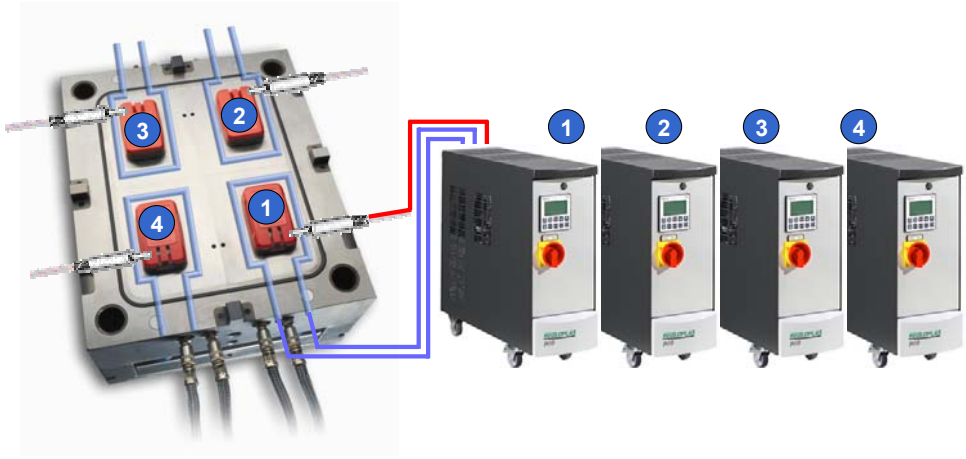


New: PRIAMUS Cool

Besides the filling stage and switchover to holding pressure it is particularly the temperature distribution in the mold which considerably influences the quality of a molded part. In case of a non-uniform temperature distribution in a multi cavity mold the single molded parts shrink under different conditions which results in high variation of the part dimension.
In case of large molded parts warpage has a growing impact with increasing flow length. A different temperature distribution over the cross section inevitably leads to different properties.

PRIAMUS Cool is a closed loop control system (patent pending). Cavity temperatures are measured and analyzed in every temperature controlled zone and automatically adjusted via the set values of the temperature controllers.
The result is a uniform temperature distribution on the surface of the mold cavities which provides optimum conditions for the shrinkage and warpage properties of the molded parts.

PRIAMUS Cool is an integral part of the PRIAMUS Fill system. Additional sensors are therefore usually not necessary. Especially the combination of controlled fill properties, of automatic switchover to holding pressure as well as of controlled temperature distribution provides the optimum conditions to compensate for instabilities and to avoid scrap.



Office hours over Christmas / New Year

Our office remains closed from 24 December until 31 December 2004.

We wish you all a Merry Christmas and a Happy New Year

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