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Cycletime Tips - Automotive

Volume 21: Cold Runner Issues

Cold runner molds are a very effective means to deliver molten material to the cavities that one is trying to replicate. In our past technical tips, we've reviewed melt management techniques to insure reliable part quality while producing minimal scrap. The design of cold runners is an area that requires some review to insure the effective design.

Venting
The vast majority of runner systems do not have a vented runner system. All tooling standards should incorporate a statement relating to the need to vent to atmosphere at the primary-to-secondary and/or secondary-to-tertiary runner segments. This will help to minimize the amount of air displaced from the runner system and forced into the cavity.

Three-plate molds
The tendency when locating sucker pins in the system for a three-plate mold is to place them in the center of the melt stream. This not only produces excessive shear, but it promotes premature sucker pin flash. Those of you running these types of molds know that sucker pin flash creates a primary runner hang-up issue. These can be great molds for pinpoint direct gating, but placing the sucker pins in an offset position can relieve many headaches.

Runner balancing
The tendency in multi-cavity non-family molds is to attempt to enhance flow to lagging cavities by increasing gate or runner sizes (usually gates). While this might have been effective for that particular machine or lot of material problems will be compounded by doing so. New technology has been discussed in the past to completely resolve this issue, but many have discarded it as being too expensive. For those of you running many molds yielding many parts per cycle, please review your list of customer rejects and ask yourselves how you are going to effectively provide corrective action for short shots. One hundred percent inspection for all non-labor jobs? I think we will all agree that this is a more costly avenue.

Please feel free to contact Jim Cardinal or myself if you should have any questions on new or existing molds.

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