

MeltFlipper® Case Study

Customer: **DURA**
Automotive Systems

Case Study: Core deflection in a 4 cavity insert molded part

This application was a parting line inject, 4-cavity mold with multiple gates per part. The mold produces an insert-molded Throttle Body Adjuster out of a 33% Glass Filled Nylon. The flow imbalance was causing the insert to be pushed to the surface of the over-mold (see Figure 1). The molder could not produce a process that would create 4 acceptable parts. The mold was running at about a 50% scrap rate, which obviously increased part costs due to the wasted inserts along with the additional material and press time requirements.

Beaumont Technologies worked with Dura and General Polymers to redesign the runner to include the MeltFlipper technology. BTI needed to use the "arrowhead design" at the first melt rotation since the application was a parting line inject mold. The other rotations were traditional designs with various reductions in rotation amounts to properly balance the flow to each cavity (Figure 2).

Dura is elated with the results of the MeltFlipper technology. The trials showed no signs of the insert being pushed to the surface, thus significantly reducing the scrap rate and improving the process window.

Dura supplies parts to the Big 3. They were feeling the pressure for part approval since production launch was scheduled for 06/02. Their backs were against the wall with little hope of resolving the problem until the MeltFlipper technology was implemented. Dura was now able to meet the requirements of its customer through the balanced mold producing all 4 cavities within specification.



Figure 1: Before photo showing "intra-cavity imbalance" that caused the insert to shift during molding.



Figure 2: After photo showing the MeltFlipper runner system used to balance the material properties to and within the cavities.