

MeltFlipper® Case Study

"...by designing MeltFlipper into a mold up front, we don't have to worry about costly imbalances during sampling or production."

- Tony Burden, Operations Manager, King Systems Corp.

Customer: 

Case Study: MeltFlipper® vs. artificial balance to reducing mold commissioning and time-to-market.

Medical molder King Systems Corp. built a 16 cavity mold (Figure 1) to produce a 90-degree medical elbow (Figure 2) that the company uses in its anesthesia-circuit product line. It was designed as a 3-plate mold to allow each part to be gated on the top and to reduce the number of cams in the mold. The part was molded using a low-melt acrylic.

Like most of King's parts, the elbow has crucial ISO diameter fits on the ends. The mating parts must seal to prevent anesthesia leak. In the original mold design, the core pin diameters that molded the ISO fits were within 0.001" of each other on all 16 cavities. After sampling the mold, King noticed that the fits in the eight outer cavities were a different size than the fits within the eight inner cavities. King spent many days trying different processing parameters to get all the parts in spec; however when this didn't work, they tried to artificially compensate for the differences by altering the core pin diameters. This also proved unsuccessful, as the parts did not reflect the proportionate change.

"We went around this circle a couple of times, with no acceptable results," says Tony Burden, operations manager of King's Plastics Technology Division. "We had read about the MeltFlipper technology in a trade magazine and although we were very skeptical, we felt that we had no other choice but to ask for their help. We sent them our mold design and about a week later they sent us back a recommended solution (Figure 3)."

However when King incorporated Beaumont Technologies' MeltFlipper technology, the core pins were never changed back to the original size and therefore the parts now reflected the different pin sizes in the mold. The core pins



Figure 1: 16 Cavity mold



Figure 2: Individual part

that were larger now showed consistently larger dimensions on the parts, and the core pins that were made smaller now showed consistently smaller dimensions on the part.

"This was good and bad," Burden said. "We now had a solution to the problem, but we had to make all new pins for the mold. We know now that this can be avoided by designing the MeltFlipper into a mold upfront so we don't have to worry about costly imbalances during sampling or production. We now have been running this mold for several months without a single quality problem, thus showing the consistency and flexibility of BTI's MeltFlipper technology."

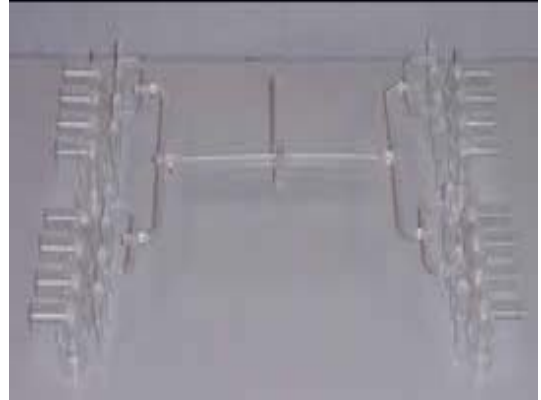


Figure 3: Recommended runner layout

"The MeltFlipper has made the validation of the molding process a breeze. The consistency of the MeltFlipper product has been great. What BTI's organization has been able to come up with is so simple yet so complex that it is truly amazing" says Bret Burrow, VP of Manufacturing.