



MeltFlipper® fixes non-fill, weld-line, & gas trap in part



Benefits

- Solves filling imbalances
- Faster time-to-market
- Wider process window
- Increased productivity
- Faster cycle time
- Lower mold maintenance costs
- Eliminates customer returns
- Higher part quality
- Larger profit margins

Many injection molded parts, such as electrical connectors, experience non-desirable backfilling that leads to production and quality problems.

When a customer came to Beaumont Technologies with a part (shown in Figure 1) that was produced within a single-cavity mold, Beaumont understood the problem to be influenced by two main factors: 1) part geometry,

and 2) shear effect on the viscosity of the plastic as it flows through the runner and into the part.

When you factor the two together, they can create a host of processing and part quality issues on these types of parts. Those issues include sporadic non-fills, gas traps, and weak weld-lines — exactly the problems the customer was experiencing.

PROJECT DESCRIPTION:

- Single-cavity mold
- Connector component

PROBLEMS:

- High scrap rates
- Processing issues
- Expensive mold modifications
- Poor part strength resulting from weak weld-lines

SOLUTION:

- MeltFlipper® Multi-Axis installed

BENEFITS/SAVINGS:

- Decreased Processing Issues
- Reduced Scrap
- Improved part strength



Figure 1: Backfilling condition due to conventional filling pattern

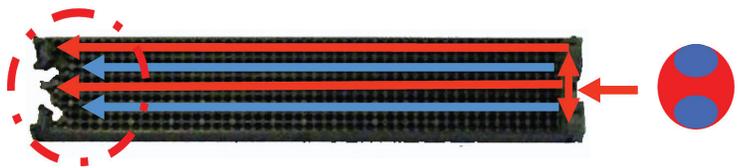


Figure 2: Improved flow characteristics due to enhanced filling pattern using Multi-Axis MeltFlipper® Technology

Beaumont designed a Multi-Axis MeltFlipper® solution to ensure that the high-sheared laminates from the outside of the runner's cross section would be located in the center of the melt stream as the plastic entered the cavity. The idea was to make the plastic in the center of the cavity flow easier, which in turn would help fill and pack out the center area of the part; thus, reducing the amount of backfilling.

Figure 2 shows the same part after the Multi-Axis MeltFlipper® was installed into the runner system. This resulted in a center-enhanced filling pattern, which made the part easier to fill, while also reducing the problems of weld-line failures, gas traps and non-fills. All of this was achieved without changing gate locations or the part's geometry.