

Coined Hinge Thermoforming Solution

Company Background

A medical contract packaging firm worked with Plastic Ingenuity to replace an injection molded part with a thermoformed part. One of the medical contract packaging company's partners created a machine for radiation patients that holds a radioactive pharmaceutical and is self contained with a lead core and top allowing non-patients to be in the same room as the radioactive fluid. The machine utilizes a Geiger counter that reads and dispenses the proper dosages, and the excess fluid runs through tubing to be collected and re-measured to continually administer the proper amount of fluid.



The device requires a sterile lethography plastic part that can safely hold radioactive fluid, and still fit within the small outer casing of the machine itself. Previously, the medical contract packaging firm used an expensive injection molded piece to house this device and was searching for a less expensive, more innovative alternative.

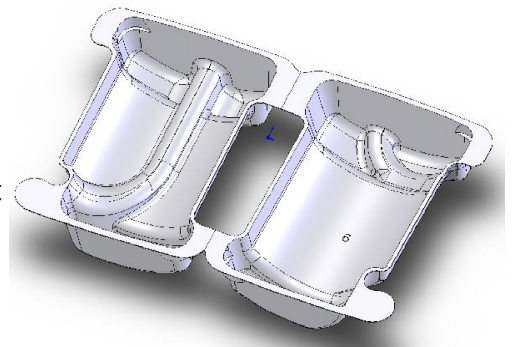
Project Background

The medical contract packaging firm had used injection molded parts for its tube coil support, but contacted Plastic Ingenuity (PI) to create a less expensive thermoformed package to provide the same functionality as its injection molded counterpart. The vertical restrictions of the device itself and the overall size restrictions on the thermoformed part limited and complicated the potential solutions.

Solution

PI's initial solutions identified significant obstacles - including the difficulties inherent in trimming out certain pieces of the thermoformed part and the limitations related to locking the relatively small tabs together.

PI submitted a number of different design versions to the medical contract packaging firm before settling on a solution that satisfied their customer's uncompromising requirements. PI and the medical contract packaging firm determined that the final design would utilize a unique hinge design and actually incorporate the tubing that connects the part to the machine as a closing mechanism. The design expertise of the medical contract packaging and PI teams, the responsiveness of PI to the medical contract packaging firm's feedback, and the many design revisions allowed PI to provide a final product that met and exceeded the medical contract packaging firm's needs; all within a compressed timeframe.



Project Timeline

Most design projects are quickly delivered by PI. On average, a sketch is designed in just over three days, prototype parts delivered in six days, and production molds and trim tooling are built in-house in four weeks. These averages, however, are on common designs. The design challenge by the medical contract packaging was much more complicated than the typical medical tray. Regardless of the complex nature of this design, this project was completed within the parameters of a typical project.

| Project Steps | Dates |
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| • Project Arrives in Engineering | February 22 |
| • First Sketch Out | February 28 |
| • Rapid Prototype Parts Sent | March 6 |
| • Alum. Prototype Samples Out - Testing | April 3 |
| • Spec's Finalized | April 26 |
| • Production Parts Delivered | May 18 |