

DIAGNOSTIC CONSUMABLE DEVELOPMENT

Opportunity

Currier Plastics was asked to partner on a design for a bottle for the medical diagnostic market. The client needed a custom plastics molder that had experience with blow molding and injection molding so they could co-develop a working model of the bottles and the filling tube alongside the client's new diagnostic instrument.

Evaluation

The client brought the Currier team in at the early conceptual stage, even before their instrument was designed. The Currier New Product Development (NPD) team created the breadboard design that was used for the baseline requirements, quality control plan and molding platform that needed to be defined in the early stages. The engineers from both teams worked on the design of the bottle for installation into the instrument, which required locking tabs for the unique base.

Process

The Currier NPD team comprised of quality, process and design engineers did their evaluation on the key performance features of the components and the intended use of the bottle and tube in the client's diagnostic instrument. A dual neck solution helped to frame the reagent in to a more traditional rotary carousel. There were multiple iterations that were 3D printed and tested. Ultimately the required features were added to the prototype molds to help evaluate the fit of the geometry plus transfer features for post molding robotics.

Solution / Results:

Currier Plastics addressed all Key Elements with the client and identified a new effective design:

- Several iterations of designs were explored which ultimately yielded the final design of the tube because it only exposed small portions of reagent to the atmosphere.
- Use of Currier's all electric extrusion blow molding and injection molding machines outfitted with ISO Class 8 cleanrooms for molding and post molding assembly
- Test fixtures for dimensional measurements were created using the Currier 3D printer and later manufactured in aluminum
- Vision, leak test and weight measuring equipment were developed to use during the molding process to prevent abnormal products from going into the production stream
- Currier produced parts from prototype molds enabling the client to complete the approval testing of their new diagnostic instrument and move into the compliance stage on time

Get in touch



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CUSTOM DESIGN / INJECTION MOLDING / BLOW MOLDING

