

Case Study 109



Solution / Results:

Currier Plastics embraced the challenge and coordinated strong internal R&D efforts with TRICOR BRAUN and Prestone to address final engineering, immediate contact and interaction with tool vendors along with the set up and qualifications of machines and specific peripheral equipment. Other Key Elements:

- Modifications to ISBM computer program
- Physical modification to machine for shut off nozzle
- Drop test set up criteria & modification
- Currier Plastics developed new end of arm device to take part off of tool core
- LDPE material lid did not have enough retention so another material PP was engineered
- Extended skirt of Wagon Wheel to have more interference with ID of the bottle

The goal of 139,000 required was exceeded and 150,000 sets were made within the timeframe requested!

1. Opportunity:

The Prestone program was presented to Currier Plastics through an International Distributor, TRICOR BRAUN as a timing and engineering challenge. The program involved (3) different materials and (4) separate components from two different technologies: Injection Molding (IM) and Injection Stretch Blow Molding (ISBM). The (3) IM molds were to be launched with prototype tools and with (1) ISBM production mold. Timing was critical as the product was required to launch within (3) months from start to finish as required by a national automotive product retailer. The required quantity for launch was approximately 139,000 units fully assembled, filled, and shrink sleeved (eventual production volumes are in the millions of units).

2. Evaluation:

Working with TRICOR BRAUN and utilizing preliminary models and drawings Currier Plastics incorporated DFM (Design for Manufacturing) input to finalize. Tool vendors were selected at the beginning but tools were not designed or started at this point. Only one ISBM tool vendor would even commit to the timeframe and all others indicated that the timeframe was not possible.

3. Process:

The first step was to start the engineering review to assure proper fit and function of all (4) parts. All components were interconnected including the following pieces: 1 – 1.5 oz. Bottle PET; 2 – “Fitment” (PP material) which was a test tube type unit that held a secondary solution with a “Wagon wheel” interface with the ID of the bottle; 3 – An overcap (PP Material) with a Child Resistant feature that screwed on the bottle but had a vessel in the top to hold solid media; 4 – A Lid (LDPE) that would hold the solid media in the top of the overcap. The interface between the components was not engineered fully for interference fits. Many reviews were conducted between Currier Plastics, TRICOR BRAUN and tool vendors to determine tolerances and changes to mating dimensions before any work could begin. Many changes were made during this process from thread dimensions, snap fits, and feature locations. When agreement was reached by all parties, Currier Plastics assigned Project Management, tool work was immediately started and timelines were distributed. This product is currently in production.

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CUSTOM DESIGN / INJECTION MOLDING / BLOW MOLDING



$V^2 = \text{VALUE} \times \text{VELOCITY}$

Currier Plastics is driven to provide two elements of outstanding capabilities to our customers; speed or true velocity in everything we do multiplied by superior value that incorporates total quality, operational efficiency and established organizational core values.