

# Laboratory Mixer Product Development

## Background

Advent Design was asked by a local manufacturer of private-labeled laboratory equipment to assist in the product design of a family of laboratory mixers. The firm had recently purchased a line of respected but very antiquated laboratory mixers, and they wanted to modernize the design and operation of the mixers in order to include them with the product lines that they made for laboratory equipment distributors.

## Solution

Advent Design reviewed the existing product line and the plan and pricing for the new product line that had been negotiated with the customer's main distributor. With very specific performance requirements and target material and labor costs, the design became focused on the use of inexpensive off-the-shelf universal and DC motors, which would provide the desired speeds and torques. Control systems were selected to either utilize systems already being used by the client or to one new design of controls which would be used on several products.

The pre-determined pricing structure proved to be especially challenging since normally costs are determined first and then prices are set. However, in this case, the prices had been set and the profit margins determined well before initial designs and costs were developed. However, in the end, target costs were either achieved or approached to within 15% on all six mixers planned for the product family. An initial design that was rejected for one of the six was used for a seventh high-end mixer, which was added to the product family after the fact.



High-End Dual Speed Mixer



Economy Mixer



Low-End Dual Speed Mixer

## Impact

Advent Design created initial designs, bills of material, and alpha prototypes for the seven mixers. The client's in-house product development team then used this initial work to refine the units into beta and pre-production models, which could be used with their customer for marketing and sales purposes. These pre-production units were then used to develop the final production models. The production versions of the mixers were introduced to market in early 2002. The new line of mixers is expected to expand the client's laboratory mixer sales from \$200,000 annually to around \$1.5 million to \$2 million within a few years.



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