

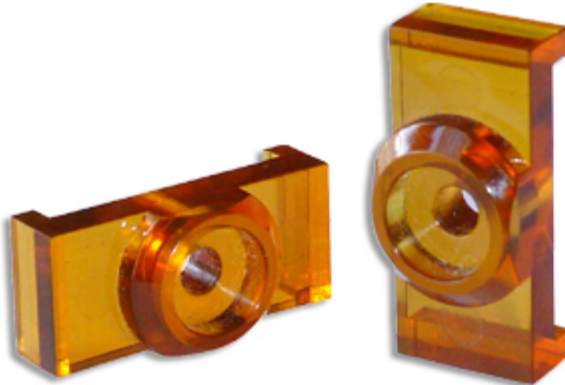


Plastics Engineering In Action

### *Process Comparison Machining vs. Injection Molding.*

This technical bulletin illustrates a comparison of machining versus injection molding of an Ultem button. This article identifies different steps that can be taken to lower the cost of plastic components by evaluating multiple processes.

### *Achieving The Lowest Possible Cost.*



**Application**

Jaco was required to select a process, machining versus plastic injection molding, to produce 8,700 pieces of an Ultem carrier button.

#### **Required Specifications:**

- ▶ Material specified as Ultem
- ▶ Achieve the lowest piece part price

Jaco's customer needed to produce 8,700 pieces of carrier button manufactured from Ultem. Although Jaco's customer viewed injection molding as the best process to produce the Ultem button, the customer assumed that the tooling charge would be unaffordable. Jaco was requested to identify the best process for this application, machining versus injection molding.

#### **Machining**

Jaco's solution was to machine 100 prototypes which allowed Jaco to work out the fastest feeds and speed to machine the Ultem design. Ten different operations were required including, sawing, vertical & horizontal milling, drilling and counterboring.

Advantages that machining offered:

- Quick turnaround using Ultem sheet stock
- No tooling cost
- Price \$5.50 each.

#### **Solutions Through Design**

Jaco Products specializes in the molding, machining and stamping of plastic production components.

This technical bulletin highlights application case studies that resulted in superior products and lower part prices. In each of the cases presented, the customer utilized Jaco's knowledge of plastics processes, materials and product design to achieve the stated objectives and specifications.

Jaco can help you build into your product the design and functionality you require at the lowest possible cost.

#### **Injection Molding**

To achieve the lowest tooling cost, Jaco presented an **insert concept**. The customer was charged for a core and cavity which mounted into a Jaco quick change **MUD** frame. The price for 8,700 injection molded pieces was \$1.50 each which included the Mold Insert amortized into the selling price. Savings of \$4.00 per piece over machining.

Conventional machining is a good choice for plastics but injection molding was the best and lowest cost solution for this Ultem project.