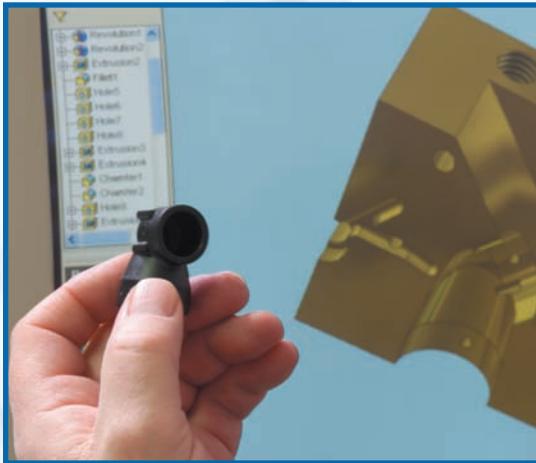


Engineering & Quality Planning



Engineering Experience

Customers often provide us with rough concepts for their products. With the assistance of our Engineering and Quality Planning Group, who offer design modifications and suggestions, we work to develop these concepts into functional components. These modified designs are then incorporated into detailed tool designs. Our experience and knowledge affords us the ability to offer these design modifications to achieve production economies while maintaining the highest level of quality.

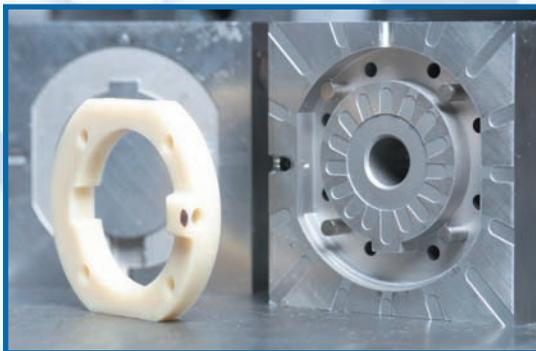
Based on our experience in processing virtually every type of thermoplastic material, ranging from high temperature resins such as Amodel® to commodity resins such as nylons and polypropylenes, we are able to recommend materials that will achieve the optimum results for the application, at the most cost effective price. In some situations, we can prototype various materials to determine feasibility.



Mold Detail

During the development of the engineering phase, JACO utilizes a cross-functional philosophy to plan and develop the molds, manufacture the parts and ensure consistent quality and repeatability.

®Amodel is a registered tradename of Amoco Oil Company Corporation



Cavity Detail

Part Production & Quality Control



Press Sizes Range from 50 to 150 Ton



JACO 50 Ton Press



Engel 150 Ton Press

Once the Tooling Group has developed a customer mold, the Part Production & Quality Control Groups take over to produce sample parts for customer review. After final customer approvals are received, full-scale production is launched.

Our emphasis on quality begins in a modern production environment where cleanliness is a JACO hallmark. During production, meticulous care in setup and frequent monitoring of the process parameters ensures consistent products.

Working with JACO's own injection molding machines and larger Engel machines, our Part Production Group manufactures thousands of parts each day for a wide range of customer needs. Our focus is to maintain close tolerances with unfailing repeatability. That means each part – whether molding hundreds or millions – meets a high quality standard. JACO uses a Computer Integrated Manufacturing (CIM) system to electronically monitor the molding process, to ensure the highest quality levels.

JACO offers a versatile range of molding capabilities for close tolerance parts, including threaded parts and parts with metal inserts. Our manufacturing capacities accommodate part sizes up to 10 ounce. We stock a sizeable in-house inventory of common resins to meet just-in-time orders and to obtain volume buying discounts. JACO also provides a complete range of engineered resins such as Ultem® and Ryton® and other high performance polymers for specific needs.

The Quality Control Group works closely with the Part Production Group, obtaining Real Time feedback from each press, fine tuning adjustments to assure that high quality, repeatable standards are achieved.

To ensure consistency, JACO's Quality Control Group continually checks part quality. SPC programs aid in monitoring the close tolerance requirements for JACO customers. Our manufacturing facility has been QS9000 certified since 1997.

® Ultem is a registered trademark of GE Plastics

® Ryton is a registered trademark of Chevron Phillips Chemical Company

Tooling Construction



Thread Capabilities

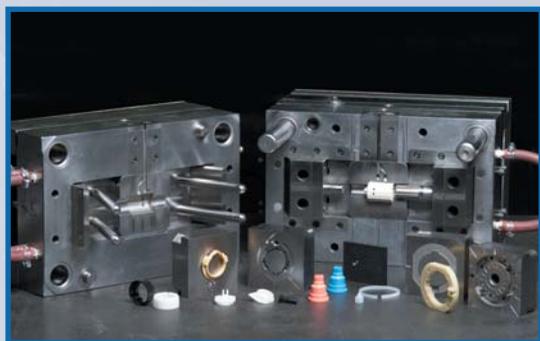
Under the direction of the Engineering and Quality Planning Group, JACO's in-house tooling personnel construct complex and high quality molds, able to reproduce highly detailed part designs. Typical designs would include internal and external threads, undercuts, multiple shut-offs, and complex parting lines. Our design and construction methods focus on tool repeatability and ease of maintenance, using inserts or laminations wherever possible, to reduce or eliminate down time while achieving very complex designs.



Multiple Cavity Mold

Recognizing a market need, we have developed a series of tools designed to target low-volume, high quality production parts as well as conceptual or prototype parts. These JMUD (JACO Master Unit Dies) utilize high quality bases, equipped with all of the hardware necessary for efficient interchanging with individual/dedicated inserts to produce more complex parts than would normally be achievable in a family mold situation. The end result is a high quality part, with a lower overall cost as well as a reduced lead-time.

Our highly skilled Tooling Group is one of JACO's most vital resources for customers. Through relationships with other domestic and off-shore tool manufacturers, JACO can provide multiple options for tool construction. High quality levels are maintained throughout the process to ensure comprehensive designs are developed into workable solutions.



JMUD Mold Base with Multiple Inserts

When production runs are completed, customer molds are properly stored and maintained, ready for later reuse.



Hot Runner Mold



Laminations