Low Entry Cost for Significant Savings

Process Technology, located in Mentor, Ohio is a leading supplier of heaters for process fluids utilized in the semiconductor, pharmaceutical and medical device manufacturing marketplaces. Their products are capable of safely heating process fluids such as ultrapure water and corrosive chemicals without imparting contamination to the process fluid stream. Process Technology's equipment design incorporates several proprietary fittings for fluid transfer. Due to the need for chemical compatibility, heat resistance and purity, engineers at Process Technology selected PFA (perfluoroalkoxy) as the material of choice for these fittings. Initially these fittings were manufactured by machining them from extruded PFA rod stock. As the popularity of Process Technology's products grew so did the required quantities of PFA fittings. The cost of continuing to machine the fittings from rod stock became prohibitive. Engineers at Process Technology contacted Savillex to investigate the feasibility of injection molding these PFA fittings.

Engineers at Savillex learned that there were eight different fittings. The fitting designs were quite complex and required several tight tolerance features. Due to the relatively low volume requirements of the fittings, the customer was looking for innovative ideas on how the tooling costs could be minimized. Savillex came up with a tooling concept that included a single Master Unit Die set and several interchangeable inserts and cores. The tooling was further simplified to produce only near net shape parts that greatly reduced PFA material costs as compared to the previous rod stock, but required secondary operations to produce the tight tolerance features. Savillex utilized its secondary operations capabilities to machine these features into the molded fitting blanks. By using the combination of molded PFA fitting blanks and CNC machining for critical features, the customer was able to realize a significant reduction in tooling costs and still benefit from the efficiencies of molded parts.

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