

Book Review

Selecting Injection Molds

Weighing Cost versus Productivity

By

Herbert Rees and Bruce Catoen

Given the competitive nature of the global economy, manufacturers are constantly challenged to produce the lowest possible cost parts. Also there is mounting pressure to cut cost in all areas including tooling. The fact is that the lowest cost tooling cannot produce lowest cost parts. In *Selecting Injection molds – weighing cost versus productivity*, the authors Herbert Reese and Bruce Catoen emphasize time and again that the ultimate goal is not to produce the lowest cost mold but to produce the lowest cost part. The book presents the information in a new way which will appeal to everyone from novice to experienced, engineers, buyers, planners, designers and managers. The book answers the most frequently asked question “how to get the lowest possible cost tooling” by rephrasing the question to “how I can get the best product at the lowest cost for the expected production”. Mold cost, mold quality and cost of the product are inseparable and this is clearly shown throughout the book.

After a brief introduction about the injection molding machine, injection mold and basic elements of an injection mold, the authors focus on product design and importance of examining the product design and its specifications, unnecessary tight tolerances, and to highlight the significance of some of the features of the product design on the expected productivity. For example, one can redesign the product and eliminate side cores or change the flank angle of the thread to allow the part to be stripped off the core rather than unscrewing. Also discussed are the cost associated with surface finishes, engraving and special features such as holes and counter bores and hinges and snaps for assembly.

If you are looking to justify the cost of the book, look no further than chapter 3 on cost factors affecting the productivity. There are important tips and suggestions with cost justification examples highlighted through out this chapter including cooling efficiency, forecasting cycle time by considering the type of plastic molded, wall thickness reduction, mold materials, venting, shut-off nozzles, ejection methods and timing of ejection. Case in point: round and rectangular products such as containers should be ejected by pushing them off the core rather than pulling them off to save valuable cycle time. Minimum number of cavities required, machine hour cost per unit molded, mold cost per unit molded and determination of preliminary estimate of product cost are also discussed.

Chapter 4 covers the considerations for available alternatives for the mold such as dedicated mold versus universal mold shoe and one product versus family mold. Size and location of the gate for various shapes of products, hot runner molds, stack molds and molds for insert molding along with advantages and disadvantages are discussed in great

detail. Last two chapters provide an in depth look at major costs associated to make a mold, mold pricing, delivery, warranties and guaranties and patents. Appendix section increases the versatility of the book by providing the reader with guidelines, sample forms, characteristics of a good high production mold, and even a valuable advice for the mold designer.

Selecting Injection Molds – weighing cost versus productivity is a very informative and clearly written book that presents a great wealth of information in readily accessible manner. Throughout the book there are useful side bar notes for quick reference and to accentuate the important points along with numerous colorful illustrations and photographs. I recommend it highly to everyone involved in injection molding and tooling to take advantage of authors years of invaluable experience gained from working with a premier company specializing in high volume, high productivity, and fast cycling molds.

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