Chapter 3

DIECUTTING . . . THE INVISIBLE PROCESS YESTERDAY, TODAY & TOMORROW

Diecutting as we know it today spans a history in the 20th century of less than 150 years going back to the mid 1800's.

Today, diecutting is performed all over the world, in every country, in many industries and in numerable companies producing products that touch every aspect of our lives. How will the diecutting process evolve beyond the year 2009? That is a good question. It most likely will become more automated. New methods will be devised to cut and trim soft to semi-rigid materials. To look to the future, I thought it would be interesting to look to the past first and then to the present day.

Ask almost anyone unfamiliar with the diecutting process "What is diecutting?" and they will probably look at you with a puzzled face and shrug their shoulders. In most cases they have little idea or interest of what diecutting is all about. Go to a library and ask for books on diecutting. Most likely you will not find a single book on the subject. I like to think of diecutting as an invisible process. It exists inside many converting manufacturing operations. It is indeed a vital part of many converting and manufacturing processes. Whether people know it or not, diecutting affects almost everyone in their day-to-day lives.

To the common person, the most visible reference to diecutting probably is an obscure listing in the Yellow Pages of your phone book or in most Business-to-Business phone books entitled "Diecutting." People who consider themselves experts in one of the many segments of the diecutting process, are often unfamiliar with how someone in another area of diecutting accomplishes their diecutting on different materials or products. The total diecutting process is immense but is also very segmented. A company diecutting individual component parts of leather wallets on a swing arm clicker press probably has no idea of how a folding carton manufacturer diecuts and creases folding cartons on high volume automatic platen presses or how an electronics company cuts out flexible printed circuit boards.

SOME HISTORY

Diecutting, as a process in manufacturing, developed as a result of the Industrial Revolution. Manufacturers needed to economically produce standardized component parts of their products. Take the manufacturing of shoes, for example. Leather shoes are manufactured from a number of component parts to include vamps, quarters, outer soles, inner soles etc. Before the Industrial Revolution, a cobbler or shoemaker would make a tracing of a customer's foot and hand cut or hand craft a pair of shoes or boots to fit the customers feet. No two pairs of shoes were exactly the same. The fit of the shoes depended upon the skill of the craftsman making the footwear. Eventually, made to order shoes were made available to customers. A shoe design or shoe pattern maker would create a set of patterns in different size ranges for each style or model of shoes. In the early to mid 1800's, craftsmen started to cut out the parts using a pattern with a hand held knife.

The next evolution was to create cutting dies to cut out the different parts of a shoe. In the mid 1800's, several new developments took place. Shoe manufacturers started to use a cutting die called a mallet handle die. This hand held die, usually in the shape of a sole of a shoe, was used to cut the sole design out of heavy leather. Imagine a person holding the handle and a die with one hand. With his other hand holding a heavy rawhide mallet, he would strike the end of the handle while the die was pressed down on the top of a hide of leather. The leather would be placed on top of an end grained maple wood block and the die would cut through the leather slightly penetrating the surface of the wood block. With a swift whomp or strike of the mallet, the sharp edge of the die would cut through the leather and produce a perfectly diecut part of a shoe. Mallet handle dies were the beginning of the diecutting process, at least in the footwear industry.

"Dieing" machines, as they were called, or basic belt driven die presses were used to cut out shoe parts in the late 1800's. A later development was that of the swing arm clicker press around the turn of the century. It was then possible to make heat-treated 9/16" and 3/4" single and double edge clicker dies to cut out the various right and left upper component parts of shoes. The mechanical "Dinker" press was later used to cut out heavy sole leather for shoes using 3-1/2" high "Walker" dies.