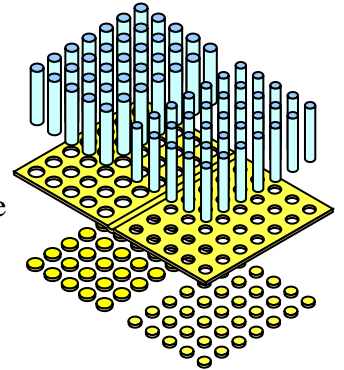
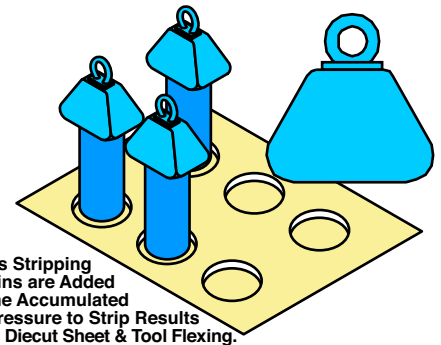


Category: Stripping Problem Title: Concentration of Small Holes!
PROBLEM

When sheet fed stripping on a high speed press, a concentration of small holes can present a very difficult diecutting problem. *See right.* Stripping small shapes is difficult, as the waste is often improperly sheared, and many waste pieces end up on the surface of the stripping tool, or it is carried forward into the delivery of the press. This causes three key problems. The first is premature diecut sheet break-up in the stripping unit of the press. The second, is the operator is forced to slow the speed of the press, to reduce the lateral stress on the sheet. The third is, the flow of air in and out of the female stripping tool holes as the press cycles open and close, causes a suction effect, which will cause any parts not completely punched through the female cavities, to be sucked back up through the cavity in the female board and back onto the surface of the tool.


CAUSE

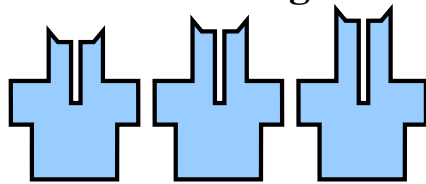
When stripping any part from any material it is important to remember, that every piece of waste requires a degree of force to fully separate the waste from the diecut sheet, and to force it through the cavity in the female board. The force or pressure required to strip any part is a function of the size of the part, the number of parts in a specific area, and the caliper and fiber characteristics of the material. This is an important factor in stripping and it means that every male pin and every cavity, adds pressure, and obviously as more and more pins are added, the degree of overall pressure increases. *See right.*



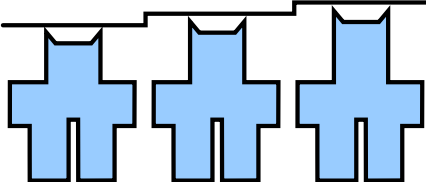
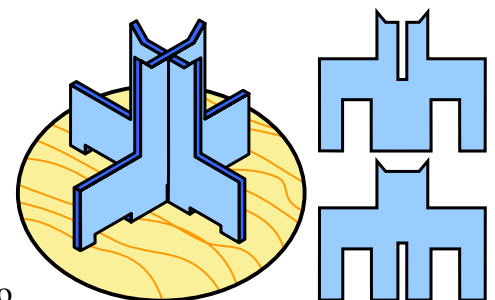
The accumulation of pressure causes the female board to deflect under the pressure, and it results in poor separation of parts, and excess tensile stress or draw on the diecut sheet. Inevitably the sheet breaks apart under the unbalanced stress of stripping.

SOLUTION

There are two primary issues to eliminate in this stripping problem. The first is to cleanly shear each individual part, and ensure it is punched through the female aperture.

Different Heights


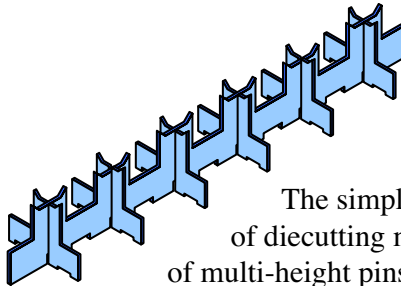
The first part of the solution requires creating a *Multi-Point Male Stripping*, which is made by lasercutting two interlocking shapes from thin and inexpensive sheet metal. When these are interlocked and inserted in the dieboard, they provide a stable, and multi-point stripping tool for each individual cavity. *See above.*


Alternative Bridge Pattern

The second part of the solution, requires integrating multiple heights of stripping pins for each individual cavity. *See left.* Once we have the simple shapes programmed adjusting the height of the different points is relatively simple. In this example 3 different heights of pin were used.

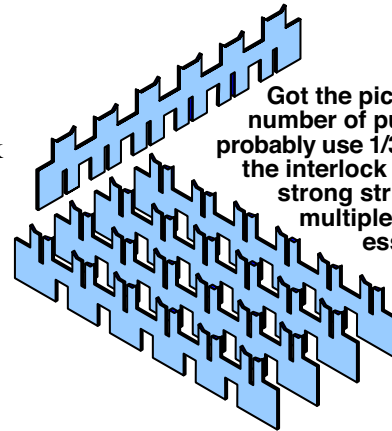
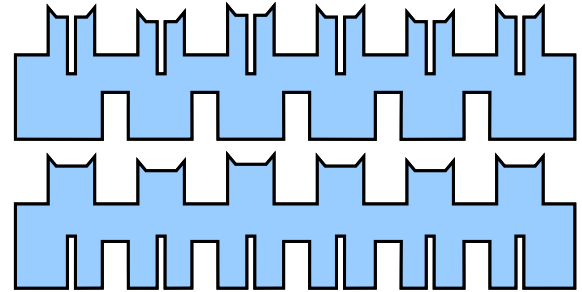
SOLUTION

Programming the interlocking parts, *see right*, incorporating the different heights, is simple, as is the subsequent lasercutting process. These parts can be cut in a number of ways, in an aligned pattern, *see below*, which is designed to strip a line of small holes. The parts are simply inserted into slots cut into the dieboard, with each part fitting over and interlocking with the other part, as it is driven into the male stripping board.



The simplicity of programming, the ease of diecutting made the creation of each block of multi-height pins, required for each die station in the layout, a relatively simple activity. *See right*.

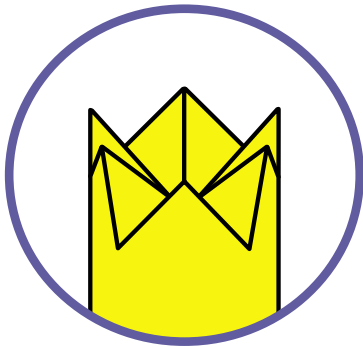
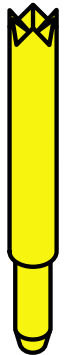
This is a proven technique, it is highly effective, it is relatively simple to program, lasercut and fabricate, it is fast to execute, and most important of all, while looking like a highly engineered and very expensive tool, it is very inexpensive to execute!



Got the picture? Given the number of punches you can probably use 1/32" stainless, as the interlock will make a very strong stripping tool. The multiple height pins are essential with this amount of punches.

INNOVATION

To make this process even simpler, and even more cost effective, the logical option is to use the Wagner Multi-Point Stripping Pins. *See right*. They come in multiple sizes and can be used individually or in gangs, depending upon the shape and the size of the waste to be stripped. They are particularly adept at stripping small, difficult shapes, as the multi-



point tip, *see left*, ensures each waste piece is evenly sheared from the diecut sheet, and driven cleanly through the female cavity. *See below right*.

These pins are easy to use, and they have proven remarkably effective in use. And yes, I know what you are thinking! The Multi-Point Pins are only a single height? That is true, but implementing

a multi-height pattern using these pins is so easy ... but more on that another day!!!

