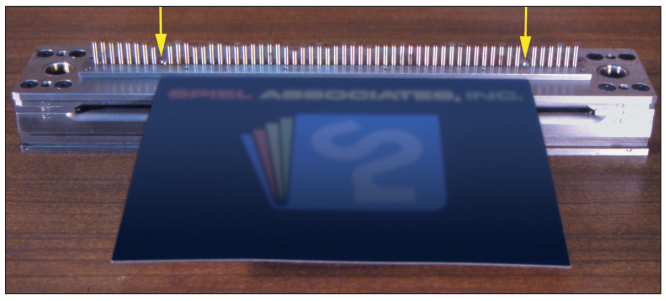
Punching for Plastic Coil

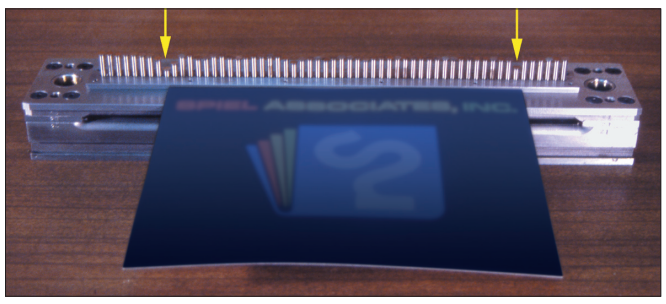
BY DAVID SPIEL

PUNCHING FOR spiral binding of any kind is a tricky matter—and even trickier for plastic coil. Punching for double-loop wire has always been a snap: Merely open your die, place your sheet against the pins and pull the pins nearest the edges of the sheet. This way there is no chance of punching a partial hole. You have the luxury of centering your sheet and producing a generous, attractive margin (the distance between the first or last hole and the head or foot of the book).

Punching for spiral is not always so easy. If you have a plastic coil machine that can manipulate the spiral prior to insertion, consider yourself lucky; most cannot. Therefore you are stuck with whatever pitch the spiral may be. Let's use the industry standard of the 4:1 pitch.

In days gone by metal spiral binding used a 4:1 (or in Europe a 6mm center-to-center) pitch. But back in those halcyon days, the holes were small, ¾″ (3.5mm). They only needed to accommodate a very thin gauge of wire. Plastic coil gauges are much thicker, some as thick as ⅛″ (3mm) and ¾″ holes just won't do. Standard plastic coil gauges range from .063″ to .085″ (1.5-2mm).





Above, pulled pins are used to ensure a proper margin. Below, unpulled pins result in a questionable margin.

Some had turned to oval holes. Oval holes were, for many years, the accepted way to battle thicker books with spiral wire and, even for a time, plastic coil. The old standard was a double "D" die. Why is it called double "D"? Imagine two Ds mirrored against each other and turned counter-clockwise 90 degrees. It is actually a round hole with its sides sliced off. A double "D" die used to be ¾″ (3.5mm) wide and 1¹⁄₆₄″ (4.365mm) tall.

This, obviously, helped with insertion of spiral wire and hand-held plastic coil books. However, oval dies are much more expensive than round hole dies since they have to be EDM'd (laser burned). They can cost up to $2,500 more than a round hole die.

These holes proved too tight when automatic plastic coil machines came into the fore. While the holes are tall enough, automatic machines, which drive the coil horizontally, need more "wiggle" room from side to side. Hence, a new standard was born: The 1¹⁄₆₄″ (4.365mm) round hole. This is now the standard round hole for plastic coil within the industry.

However, this wider hole led to a problem: If you attempt to fit 43 1¹⁄₆₄″ round holes on a sheet there is no problem. Simply pull your outside pins like

(Continued on page 38)

Coil Binders

(Continued from page)

double loop wire and center your sheet prior to punching. If you have a machine that can spread the coil during insertion to jump the wider margin, this is no problem. Once again, most machines cannot.

Therefore the margin cannot exceed the bridge (the distance between two holes). The coil spinning in may not spread. The distance between the leading edge of the book and the first hole cannot be longer than the distance between the pitch or any two holes. It is impossible to pull pins and center the sheet prior to punching. It is then necessary to punch a full 44 holes on an 11˝ (279mm) sheet.

This led to another problem: 44 round 11⁄64˝ holes will not fit attractively on an 11˝ (or A4) sheet. It will leave you with a razor thin margin, totally unacceptable to the customer.

What many manufacturers did was devise a new die pattern—the .2475˝ pitch die. This means one hole for each .2475˝. But the problem was that the hole was still too small to accommodate many automated coil binders. If the hole was made any bigger, it would punch a partial hole off the edge of the sheet.

The solution was to make the die an oval die. Not your grandfather's oval die, but a new, oversized oval die 11⁄64˝ (4.365mm) wide and 7⁄32˝ (5.5mm) high. This allowed for a bigger hole without causing to punch too close to the edge of the sheet. It also forced customers to purchase brand new dies for their punching machines with this pitch.

If you ask your coil equipment dealer why you would need an oval die and he says it is because the coil spins in more easily, you should question as to why coil would spin in more easily than a round hole of equal overall size. The answer is that it wouldn't. The true reason for using oval holes is that it leaves a wider margin than round holes.

Some coil binders can only use this new .2475˝ pitch with all books. Some can use a 3:1 pitch, but that will look unattractive on thin books. Some coil binders can use any pitch. It is recommended that you move to a bigger pitch when binding books thicker than 22mm in diameter. Popular sizes are: 3:1, .312˝ and 2.5:1. What are the reasons?

Thick books bind more easily with less coil running through them. They also need a thicker gauge coil to handle the weight of a heavier book. A 30mm book looks better with a 3:1 pitch than with a 4:1 pitch. If binding thick books, you would want to use a bigger round or oval hole. If you use a bigger hole, they will be too close together on a 4:1 pitch.

Bigger holes will allow bigger pitch diameter and heavier gauge coil to spin through more freely. Coil costs for 3:1 coil is 25 percent less than on 4:1 coil. Need I say more?

To save money, time and aggravation, find out the following before purchasing a coil binder:

- Will I need to purchase new dies to use this coil binder?
- What size hole will I need to punch?
- Will the machine bind books with round or oval dies?
- What pitch can I use when punching for this binder?
- Can I change pitch sizes?
- Can I pull pins prior to punching and center the sheet like I do for double loop wire?

You''ll be very glad that you asked these questions. ■■

About the Author

David Spiel is co-owner of Spiel Associates, a leading U.S. source for bindery equipment based in Long Island City, NY.