

Folding Cover Stocks on a Buckle Folding Machine – 3 Tips for Better Productivity

Once upon a time folding cover stocks on a buckle folder wasn't ever a problem...because almost no one ever did it!

With modern folders and a little technique, running cover stocks should be part of your bindery routine.

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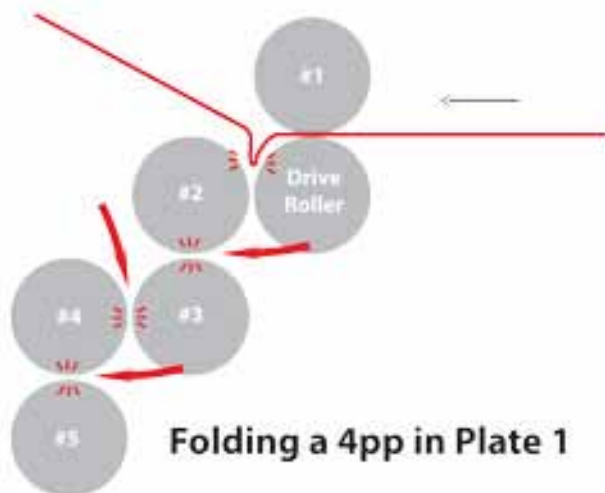
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**by the staff of Tech-ni-fold
Global Leaders in
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A Tip for Folding Cover Stocks on Your Folding Machine



Here's a question we hear frequently, especially from folder operators new to running cover stocks on folding machines.... ***"Even though I've scored it, the cover stock I'm running still cracks when I run it through the folder; what can I do?"***

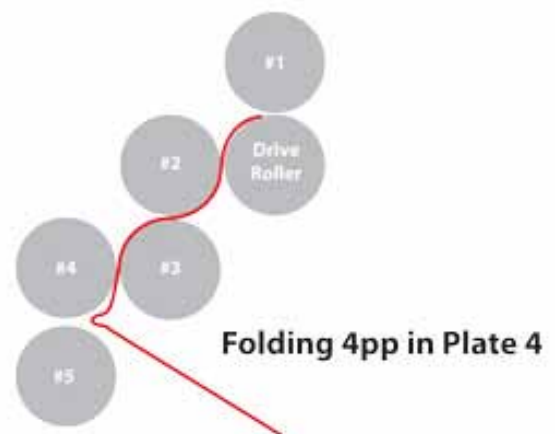
First, check the score. When using a **Tri-Creaser** try different settings until satisfied with the hand fold. If it was scored offline or with another tool, this tip still helps! If you can fold it by hand and it looks good, I believe you can get it through the folding

machine without making it look worse. Yes, many digital or heat-set web jobs, and certain paper stocks will crack if you just look at them. In some cases even the best die score doesn't eliminate fiber cracking. Even so, this technique will minimize the damage and can turn a reject-quality job into an acceptable one.

We'll use a 4pp, 1-fold piece as an example. The common way to fold this is in fold plate #1; that's how we were all trained. Fold roller caliper 1 has one sheet of stock, 2 through 5 have 2 sheets. All well and good for text stock. As shown in the fold roller diagram above, the sheet is driven into plate 1, it buckles (folds) then travels through the remaining rollers with fold plates closed off. **This means you have 4 pinch points where pressure and bending forces are applied to the folded spine after it is folded.** That's 4 opportunities to make it crack.

A Solution: use fold plate #4 to make the fold as shown in the drawing to the right. Then reset the calipers like this...1 sheet in calipers 1-4 and 3 sheets in caliper 5 instead of the normal 2. Remember that folding machine rollers drive the sheet, so we don't really need any pressure on fold roller #5.

The end result is we've reduced the 4 pinch points from 4 to 0, and you now stand a much better chance of getting that delicate cover stock folded without any cracking. You can use this same principle when folding a 6pp on cover stock. Use the "bottom" fold plates 2 and 4 or 3 and 4 to make your 2 folds. Then remove all pressure from fold roller 5 with an extra sheet and use minimum pressure on all other fold rollers.



How to Fold Cover Stocks 2-Up For Better Folding Machine Yield

The beautiful thing about folding machines is that it's possible to do many things to the sheet as it passes through the machine. Creasing, perforating, cutting, gluing and punching are a few folder functions that can be combined for high productivity.

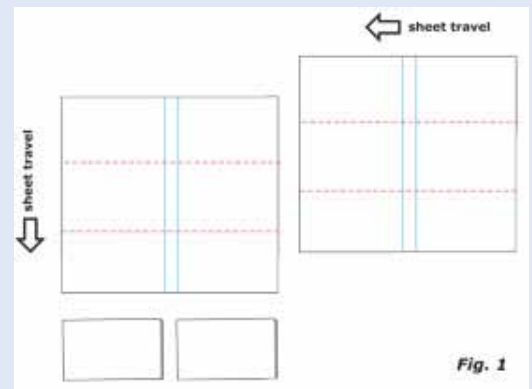
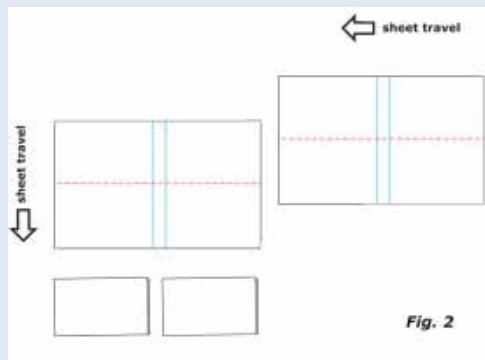
For years however, some things, though possible, were simply not done. For instance, trimming cover stock on the folder was discouraged, so covers were always run 1-up. My early training was that if the cover needed scoring, it was done anywhere **except** the folder, typically on press, letterpress or diecutter.

With the advent of new creasing and cutting tools, it now pays to re-visit some of these 'possibilities' that may have been removed from your arsenal of post-press production techniques. In working with printers and binderies daily, we see lots of creativity. However there are a few techniques that are very simple to execute and for the longer runs will give you **huge boosts in productivity, in some cases doubling the yield or better.**

The technique here is one of the most popular we see for **three reasons**:

- It provides an enormous increase in folder production
- It's easy to set up
- The print layout usually doesn't need to change

A typical 4 page or letterfold-type piece (6 panel) is laid out 2 up so it can be creased (scored) in the main, parallel section. It then folds in the right angle section where the trim is taken. Figure 1 shows the two-fold layout and Figure 2 illustrates a one-fold. A 6-panel requires 2 Tri-Creasers in the first section and one Multi Tool for cutting in the right angle while a 4 pager requires only 1 Tri-Creaser and 1 Multi Tool.



The **folder can be run at high speeds with either layout** and if you are using an automatic stacker, you can probably push the folder to its limits. The tradeoff in extra setup time is small, perhaps an extra 15-30 minutes, so even moderate quantities merit a review for this type of folder run.

Tip for Scoring Covers on Thin Perfect Bound Books



Creasing perfect bound book covers is difficult when the spine thickness approaches 1/8" and under. It's not hard to see why when you look at the components involved. There are simply physical limitations to how closely 2 creasing rules can be placed, even using thinner 1 pt creasing rule along with special double-crease female matrix. Rotary creasing also faces similar limitations.

Although historically perfect binding was meant for thicker books, bindery machines evolve and we all know that once a designer or customer discovers they can do something, they will! And so it was for thin perfect bound books. **If you find yourself needing two closely**

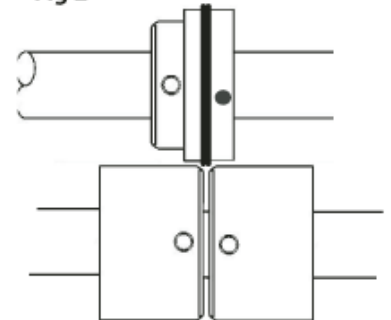
spaced creases, whether for book covers or other types of folded pieces, try this common workaround: substitute one wide score. And if possible, use a thinner caliper stock.

Looking at the mechanics of a crease we can see why this works. According to die-making and die cutting consultant Kevin Carey of [DieInfo](#), ***"A crease is effectively a paperboard hinge...and is not a single fold but is a double fold."*** A creased piece of cover stock appears to be one fold but a close-up reveals two smaller hinge points, on either side of the creased bead, as shown in Figure 1. The method here takes advantage of that fact.

How do you produce this extra-wide score?

- On die cutters and letterpresses this is a fairly simple matter of using different rule widths and female channel widths. It's an offline solution, but it has the most flexibility.
- On a perfect binder cover feeder you will be limited to the tools on your machine. Or if your Muller binder happens to be equipped with our adjustable Spine & Hinge Creaser, you have the flexibility of adjusting the female channel width as needed in conjunction with the widest creasing rib.
- Another offline solution with rotary tools on your folding or scoring machine is to try the widest crease available with your creasing device (for instance the yellow creasing rib in the wide channel with the EZ-Fit or Fast Fit Tri-Creaser.) You can also use a conventional OEM scoring tool and combine two or more metal scoring blades which are often available in different widths. (Figure 2) Then combine this improvised male component with your choice of scoring collars, pull-out wheels or the smooth, rounded side of some old counter knives. If you've had your folding machine for any length of time you probably have a drawer full of folder accessories that can be recycled. Experiment with the distance between female collars and number of score blades until you get the right combination for the job...**continued on next pg**

Fig 2



...continued Tip for Scoring Covers on Thin Perfect Bound Books

This **wide-score technique** may not produce a true crease, but in this type of application it can be sufficient. Remember that we are focusing now on those two 'hinge points' I mentioned. Since each "fold" is wrapping at a 90 degree angle around a book block, the stresses on the sheet are less than what you'd encounter by folding at a sharp 180 degree angle as in a regular fold produced on a folding machine. Lighter forces at work means less susceptibility to cracking and splitting, so the actual crease/score quality should not be as critical. **Our goal is to produce a clearly defined score line to aid the fold without any cosmetic defects.** If this technique gets us there, we're in good shape! It probably won't work in every instance, but it's a bindery tip that's fast and simple to try.

One final alternative: produce a double score in two passes on your folding or scoring machine. Go with a thinner crease than you might normally use, run one pass, adjust the folder's side guide to position the second score and run the second pass. It's more run time on your bindery equipment but it might do the trick.

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