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Proper use of pull bands

Scope

How to control the movement of corrugated board through the use of pull bands mounted on the print cylinders of corrugated finishing machines such as Flexo Folder Gluers and Rotary Die Cutters. This paper applies to conventional pull roll machines. Machines with vacuum transfer may have different criteria for pull bands or may not require the use of pull bands at all.

Safety precautions

Safety considerations in installing pull bands are the same as those to be observed when mounting printing plates. Whenever an operator is working between the sections of a machine he should utilize whatever lockout mechanism is provided to prevent the machine from being closed or started while he is between the sections. When mounting pull bands, the operator is necessarily working in close proximity to the rotating ink rolls or rolls and should be conscious of the fact that the pull band could be caught up in these rolls. If that should happen, the operator should release the pull band and stand clear. He should then stop the rolls before trying to retrieve the pull band.

Content

Introduction

Many operators assume that, as long as the print cylinders have plates mounted on them, there is no need to add pull bands to keep the sheet under control. This is true *if* the sheet width is greater than the distance between two sets of centers (twice the minimum sheet size for the particular press), as shown in Fig. 1.

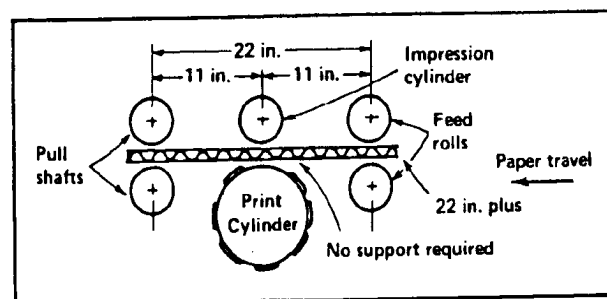


Fig. 1. Diagram of print cylinder which *does not* require pull bands.

NOTE 1: mm = 25.4 x in.

However, this would not hold true if the sheet were 17 in. wide and almost completely covered with lines of printing. When the tail end of such a sheet is about to leave the nip of the feed rolls, the front end still has 5 in. to go to reach the nip of the pull shafts. At this point, the center of the sheet needs at least 5 in. of solid printing to control the sheet the rest of the way. If this 5 in. of center printing is made up of lines with spaces, pull bands must be added, as shown in Fig. 2.

For all sizes of machines, the formula is: Sheet width subtracted from the distance between two roll centers equals size of solid printing required.

Because few layouts have solid printing exactly where required, pull bands should always be used on all sheet widths below two times the minimum blank size for the machine.

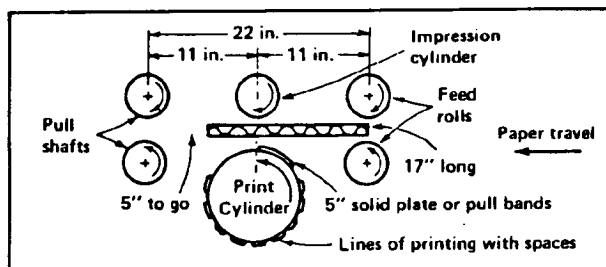


Fig. 2. Diagram of print cylinder which does require pull bands.

As an example, if a typical 50-in. flexo folder gluer/rotary diecutter (FFG/RDC) has an 11-in. minimum blank size, pull bands should be used for all blanks of less than 22 in. Further, for a 38-in. FFG/RDC and a minimum 9-in. blank size, pull bands should be used for all blanks of less than 18 in.

These pull bands should be used on *all* print cylinders, whether or not they are printing. Figure 3 illustrates the use of pull bands.

The use of pull bands eliminates skewing, shallow slots, and floating, resulting in squarer and better closing boxes and better print registration. This is illustrated in Fig. 4.

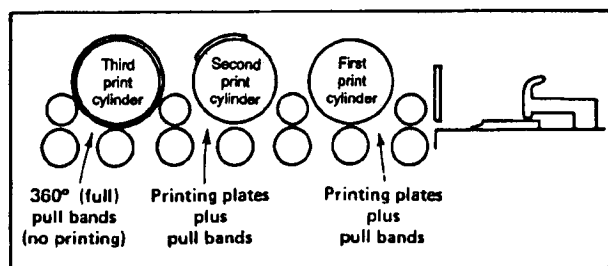


Fig. 3. Diagram of pull bands on printing and nonprinting cylinders.

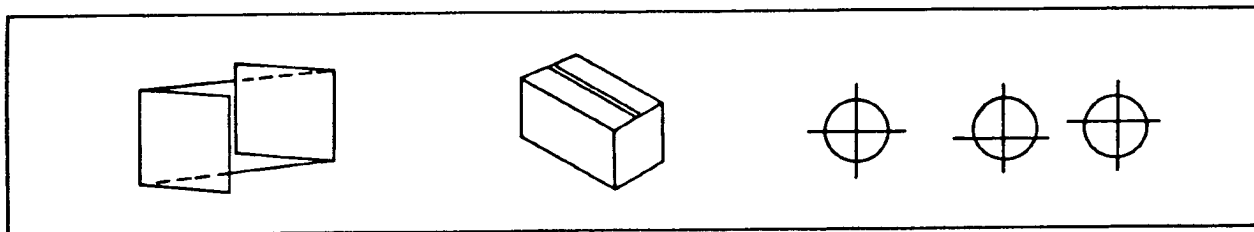


Fig. 4. Pull bands permit squarer and better closing boxes and better print registration.