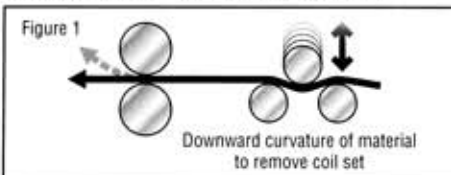


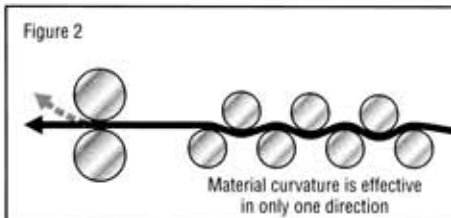
## Adjustable Platen Stock Straighteners vs. Straighteners with Traditional Vertical Roll Adjustment

**CONCEPT:** The concept behind a movable platen containing the upper bank of rolls for straighteners can be somewhat difficult to grasp, but once the principles are understood the superiority of this system becomes obvious. To explain the differences between the adjustable platen system and one that uses traditional single-point vertical roll adjustment, we are describing both types of systems here.

**VERTICALLY ADJUSTABLE UPPER ROLLS:** For centuries the bending of materials has been done by variations of a three-roll arrangement as illustrated in **Figure 1**.

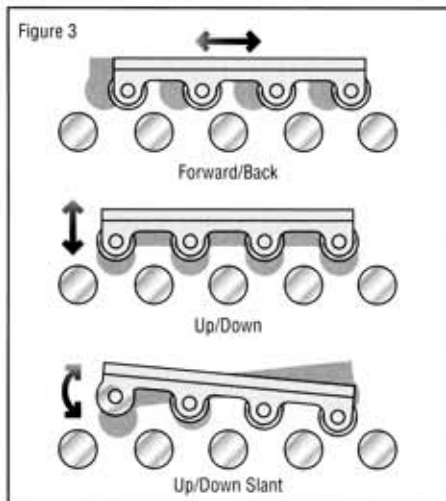


Bending occurs when one roll is forced into the space between the other two rolls for downward curvature of the material to remove coil set. Pressroom straighteners add multiple three-roll combinations in order to level the material in small increments at each stage. This method can provide acceptable results for some materials, but is limited because correction of material curvature is effective in only one direction as illustrated in **Figure 2**.

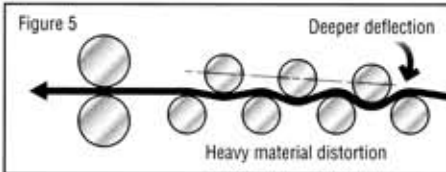
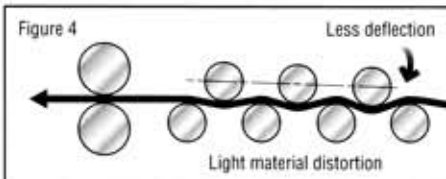


If the straightener is made to correct a clockwise curvature, it is often impossible to correct a counterclockwise curvature. The only available adjustment is the variation of the degree of bend at each station. This is true even for straighteners that have banked upper rolls that pivot for two-point adjustment.

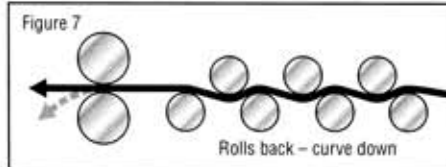
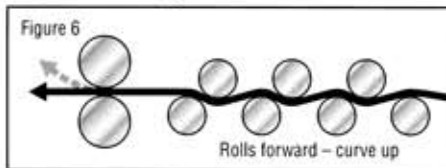
**SIX-WAY UPPER ROLL ADJUSTMENT:** After manufacturing straighteners with vertically adjustable rolls for many years, RapidAir developed and patented the adjustable platen type straightener as illustrated in **Figure 3**.



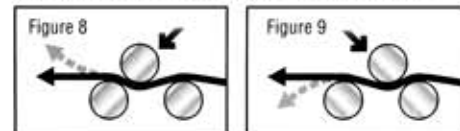
This design mounts the upper rolls in a platen which can be adjusted for *degree of bend* as illustrated in **Figure 4** and **Figure 5**



and for *curvature direction* as shown in **Figure 6** and **Figure 7**.



To more easily explain the concept, **Figure 8** shows a three-roll combination with the upper roll forward and **Figure 9** shows a three-roll combination with the upper roll to the rear.



Notice that the sharpest bend occurs where two rolls are in close proximity. When the upper roll is forward, the curvature will be up and when the forward roll is adjusted to the rear, the bend will be down. The degree of bend can be adjusted by a combination of vertical and horizontal adjustments.

**ADVANTAGES:** The high degree of flexibility afforded by the adjustable platen design provides a predictable straightening method for a wide variety of materials and takes a lot of the "Black Magic" out of pressroom straightener setup. The reduction in the flexing and distortion of the strip of material and the reduction of the straightening power required allows effectiveness with heavy materials. Additionally, the ability to place rolls in a proper close proximity allows effective straightening with very thin materials.

**ROLL DIAMETER:** The smaller the roll diameter in a straightener the better it is able to remove distortions in the strip of material, but this factor is compromised by the requirement of larger rolls in wider models of straighteners in order to prevent deflection of the rolls themselves. RapidAir straighteners are designed to optimize all factors (including number of rolls, diameter and position) within the published material capacities and specifications for each model.

**SWING-OPEN TOP:** RapidAir developed and introduced the swing-open top for straighteners in order to facilitate the cleaning of rolls and the threading of a new strip of material through the straightening rolls. For convenience and safety, each top is counter-balanced and held in the open position until it is clamped for operation. Roll adjustment settings are maintained when the top is closed and locked.

**AVAILABILITY:** All models of RapidAir straighteners are presently available with the adjustable platen design with an expanded range of models being introduced in the coming months.

