

(Title) The Brunner PCP Regulating Strategy and its
Consequence for the Printer on the Offset Press

(Author) Arthur Rettberg

(Abstract)

With PCP, Brunner has introduced the first classification system for picture originals.

In the future, discussions between printer and customer about color divergencies will consequently be more objective and more subject-related. In addition, Brunner shows a way of optimizing printing-quality through grey-stabilization.

The logical consequence will be the application of these new developments for new ink-regulation and control systems for printing presses. In the past, ink regulation has been based on individual colors measured on solid density or screen density patches. According to the Brunner regulation strategy, the new priority will be on "color balance". Additional information and decision factors will be supplied by the "average picture graduation", as well as the "solid ink densities". The one-dimensional basis for regulation has become multi-dimensional.

For the press manufacturing industry, this revolutionary regulation strategy opens up new ways to make ink control and ink regulation considerably more reliable and accurate. This is especially valid for critical picture originals.

The next step will be to combine the "stand-alone-measuring system", which was also developed by Brunner, with our ink control system RCI. As a further step, the integration of the PCP regulation strategy into the complete regulation cycle of the CCI appears to be feasible.

(Body)

In offset printing, high printing quality is attainable only with the aid of standardization. Graphic Institutes like GATF, Fogra, Ugra, Pira and others have advanced the standardization. In the areas of reproduction, film-manufacture, proofing, printing-plate and, finally, in printing on the press noticeable results were attained.

MAN Roland Druckmaschinen AG

However, a standardization or analysis of the picture originals was hitherto not available.

In the past, the printer on an offset press only noticed that there are picture originals, which he could print "easily and without any problems" and that on the other hand there are picture originals, for example greys, hair tints or flesh-tones, which he finds "difficult" to print.

With this latter type of job he frequently encounters problems and customer complaints result. Felix Brunner has closed this gap in the standardization concept with his picture analysis PCP. Thanks to this classification system, the discussions between printer and customer in the future will be more objective and more subject-related. Customer complaints can be avoided.

The logical consequence will be the application of these new developments for new ink-regulation-systems and ink-control-systems on printing presses.

The stand-alone device, developed by System Brunner, is a good support for the printer. It helps him to attain better ink correction, should ink deviations occur during the run.

As example we have here a so-called "difficult" printing sheet, which belongs - according to the Brunner picture analysis - to class 1. In this picture original, even minute deviations from the color-balance result in clearly visible changes in the tints of the face. The picture zones 1, 2, and 4 of this sheet are o.k. In the picture-zone 3, however, an increase of magenta is noticeable, the tints of the face appear as too red.

In practical work, the printer would now reduce the magenta ink. The measurement, using a PCP densitometer, also shows a shift in the color-balance towards magenta.

The second information, however, the measurement of solid density areas, shows that the solid density of magenta is already near the lower limit and that a further reduction would be a mistake. The solid density of magenta would then be outside the allowable tolerance limits.

Consequently the computer recommends that the printer should increase the complementary inks cyan and yellow to

offset the predominance of magenta in the color-balance. After this correction, the color-balance is attained and the solid area density of magenta is still within the tolerance limits. The printing result now is visually acceptable.

Compared to the conventional method of reducing the magenta, it is of course much more difficult for the printer to neutralize the exaggerated red of the face in the picture zone 3 by increasing the two complementary inks cyan and yellow. Consequently he needs a device which not only makes the deviations visible for him, but which also provides him with suggestions for regulation.

Out of the close cooperation of System Brunner and MAN Roland grew the first measuring device, providing the printer - on the VDU - with accurate recommendations, using easy-to-read symbols.

These computed corrections are no longer based only on the measurement of individual inks in solid density areas or screen areas, but rather on three measuring data.

1. The color balance in three halftone density areas of C, M, and Y printed on top of each other;
2. Average picture gradation C, M, and Y;
3. Ink density of the solids, resulting from three solid density areas C, M, and Y, printed on top of each other.

The one-dimensional basis for regulation has become multi-dimensional.

In the future, the printer will of course ask for a concentration of these informations. Instead of 4 measurements and the respective recommendations per printed sheet, the printer would prefer a separately computed correction of the amount of ink for each ink zone - executed fully automatically. This, however, is only imaginable with the aid of an automatic densitometer and a closed loop control.

Such a device will open up entirely new possibilities of ink regulation and it will decisively extend the prevailing limitations of ink regulating techniques.