PRESTO ΔE : Efficiency, Economy, and delta E converge in a new measurement solution

FAG will launch the new Spectrodensitometer PRESTO ΔE at DRUPA2012. The PRESTO ΔE offers unprecedented ease of use in a press-side ink and color control system. The high cost and complexity of laboratory spectrophotometers make them a poor choice for color control on the production floor. Their bewildering array of functions and settings requires more training than many shops can afford and most operators can tolerate. Without a suitable alternative, "eyeball" control takes over with unpredictable results. The PRESTO ΔE offers all the necessary measurement functions in a quick, cost-effective, and easy-to-use instrument.

PRESTO ΔE is a non-polarizing Spectrodensitometer with Status E filter set. Because plastic film substrates have a natural polarizing effect, the use of a polarization filter would be counter-productive. The PRESTO ΔE measures Density, Dot Gain, Dot Area, Balance, and finally Delta E 2000. (Figure 1.)

One of the most important quality parameters in flexo printing is ink transfer. Obtaining optimal ink transfer is a prerequisite to achieving the desired color strength in the print. Ink viscosity, anilox volume, plate material and substrate also affect ink transfer, as does press speed and environmental conditions. Because of the excellent correlation of optical density to the human visual response, densitometers have been successfully used for many years with excellent results in press control of the ink transfer. Both process and spot colors lend themselves to density control, and the PRESTO ΔE automatically selects and displays the correct color channel for the operator.

Impression and rolling conditions have to be optimized to avoid doubling and slur effects and to avoid excessive or premature plate wear. Impression hexagons are widely used to subjectively evaluate the impression settings on a press. An alternative visual control can be done using the DFTA AKE 1.0 control element described in „DFTA Leitfaden für die Flexodruckvorstufe v1.0". More precise control is easily implemented by using a target consisting of vertical lines (machine direction) and horizontal lines (cross direction) to optimize the pressure between anilox and plate, as well as between plate and substrate. The pressure between plate and substrate has a higher impact on horizontal lines than it has on vertical lines. Therefore the dot area measured in the horizontal line patch is typically higher than the dot area measured in the vertical line patch. The optimal pressure is achieved when the two dot area values match. Once the plate-to-substrate pressure is optimized, the anilox-to-plate pressure can be reduced as long as the minimum dot patch is still printed. The PRESTO ΔE can be used to measure the dot area quickly and easily during press setup and to detect small changes of the rolling conditions during the run of the press (see figure 2: line elements).

The smaller the printed minimum dot, the closer the flexo printing quality is to competing print methods. During setup and characterization of the printing process the FLEX³PRO from PERET is of great help, as it delivers high resolution images of the print. Dot size and geometry can be measured while dot void and mottling can be evaluated. During normal production, the PRESTO

ΔE can be used to check if the minimum is still printed correctly or if there are printing problems (see figure 2: minimum dot)

Special (spot) colors are widely used in FLEXO and packaging. The color is prepared in the ink department using color formulation systems and Spectrophotometers. Ideally, once the ink is at the press, no further ink mixing (toning) should take place. Nevertheless it is sometimes necessary to make adjustments. These changes should be measured in terms of delta E. The PRESTO ΔE device can be used for a quick check of the accuracy of the color match in terms of Delta E2000.

FAG offer a wide range of control instruments for Flexo and Packaging. The new PRESTO ΔE makes the portfolio even more complete and cost-effective.

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