Heidelberg Introduces Extensive Additions For Its Colour Management Solutions

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Colour control based on measured spectral values is the most promising method for achieving the desired colours as quickly as possible in commercial, label and packaging printing. Heidelberg is introducing extensive additions for its colour measurement and control systems and for the Prinect colour workflow.

'The Power of Colour' is the slogan with which Heidelberg has chosen to mark the start of its new financial year as it introduces these solutions. The move is a response to the growing demands for efficient and dependable quality control in commercial, packaging, and label printing. In Prinect Easy Control, Prinect Axis Control, Prinect Image Control, and Prinect Inpress Control, Heidelberg offers the market four spectral measurement systems for print shops of all sizes and sheetfed offset presses of all performance classes.

End-to-end spectral measurement, patented colour control and a further enhanced Prinect colour workflow facilitate rapid, low-waste job changes as well as quality monitoring and logging for production runs on all Speedmaster presses.

'The consistent development of the entire Heidelberg spectral colour measurement portfolio gives commercial and packaging print shops of all sizes the opportunity to optimise their colour workflow, moving it closer to the smart print shop model – even as far as autonomous printing,' explained Jürgen Mittmann, Senior Manager Product Management Sheetfed at Heidelberg.
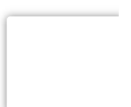
Since it was first rolled out in 2010, Prinect Easy Control has been installed on more than 800 Speedmaster sheetfed offset presses. Now, Heidelberg has launched the next model of this successful measurement system onto the market. At its heart is a high-quality spectral measurement device that can simply be taken out of its mount and used for other purposes, such as calibrations in prepress. This gives users a great deal of flexibility. It is also easy to use and produces precise results. The system can take measurements at a speed of up to 135mm per second, measuring an A3 sheet in less than four seconds.

An integrated video camera supports manual adjustment in line with the position of the quality control strip (lead edge, centre and rear edge of sheet). One new feature is that Prinect Easy Control can now also measure the small Dipco Micro print control strip (3.25 x 4mm measurement field). The measuring device is charged via induction when in its park position. Another new feature is the Netprofiler option for colourimetric calibration. The measuring device is integrated into the Prinect Press Center 3/XL 3 control station technology and connected to the central colour database in Prinect Production Manager. Prinect Easy Control can take measurements under the standardised measuring conditions M1, M2 and M3.

Prinect Axis Control has had a similar overhaul. Working at a speed of 200mm per second, it is the fastest measuring system in its class and is equally suitable for applications in commercial and packaging printing. An autofocus function automatically compensates for different substrate thicknesses during the contactless measurement process. One new development is that Axis Control now supports measuring condition M1 (taking into account optical brighteners in the paper). The device automatically detects the quality control strip on the print sheet and the paper white. Thanks to its tracking feature, Prinect Axis Control supports a precise measurement process even when the print sheet is not straight.

The new-generation Prinect Image Control 4 measures both the quality control strip and the entire print image. This measurement system is particularly suitable for label and packaging printing, when colour management needs to be absolutely identical for numerous repeats spread over the sheet. Solid areas, screened images and Mini Spots are all measured just the same for colour control and quality evaluation purposes.

Prinect Image Control is available with the options of image error recognition and PDF inspection, which are carried out during a one-time scan of the sheet. The patented opaque white control system from Heidelberg is integrated as standard. The single measurement head now also supports measuring condition M1. Another standard feature enables users to transfer data to the Prinect Color Toolbox in Prinect Production Manager or to third-party software solutions. Up to four presses can be connected to Prinect Image Control. Prinect Image Control 4 is operated centrally, from a 60.9cm (24 inch) multi-touchscreen.

The successful spectral inline colour measurement system Prinect Inpress Control for Speedmaster presses in the Peak Performance Class ensures that set-up processes can be completed fast with minimal waste and consistent, stable colour management. Inpress Control adjusts colour management and register on-the-fly and in the space of just a few print

sheets. Once the tolerance values stored in Quality Assist have been met, the production run itself starts automatically.

Prinect Inpress Control 3 is now able to measure and control opaque white on dark, metallic and transparent substrates. This expands the range of applications in packaging and label printing enormously. 'Measuring and controlling colours on opaque white is state of the art. However, there has not previously been a solution for controlling opaque white itself, until Heidelberg made that possible for the first time with Prinect Image Control. In the future, we will be able to offer this patented control algorithm for inline control with Prinect Inpress Control 3, too,' explained Mittmann. The new function is to be integrated as standard into the measurement and control system by the end of 2022 and will be unveiled for the first time at the end of April 2022, during Label Days at the Print Media Centre in Wiesloch.

Another new function designed for label and packaging printers working with expensive substrates is automated waste detection when setting up with Prinect Inpress Control 3. Thanks to this new waste detection feature, waste sheets can be used to set up the inking units. A sensor in the feeder detects printed waste sheets and automatically activates Inpress Control so that measurements are only taken on freshly printed sheets. The system has been installed in a Speedmaster XL 106 for label printing for the first time and its performance to date indicates the customer will be able to reduce set-up-related paper costs by approximately R1.2 million (80,000 Euro) per year.

Moreover, the new version of Prinect Inpress Control 3 allows users to save paper white values for the substrates stored in the paper database. If substrates are transferred to the Speedmaster along with their paper white values, set-up takes less time because the current substrate won't need to be measured with the hand-held measuring device at the start of the job. It is another step that supports the Push to Stop philosophy.

A central colour database in Prinect Production Manager takes colour values that have been saved on one press and makes them immediately available to all other presses in the same network. This eliminates the need for multiple measurements and ensures all press operators and presses are working to the same specifications. A single interface is available as standard for importing and exporting CxF data (colour exchange format – the spectral data for spot colours). This means that ink settings can be read from, or transferred to, third-party systems.

The values of Pantone, HKS, Fogra 51 and Fogra 52 are also stored in the database. In addition, the stored colour values factor in potential shifts in the colour coordinates during the drying process. On that basis, the corresponding wet values for an ink on a specific paper are stored in the database. Furthermore, Heidelberg has expanded the API interface of the Prinect Production Manager so that spectral measured values from Prinect colour measurement systems can also be transferred to third-party software products for the purpose of quality analyses.

When an order is started on a Speedmaster press, the optimum colour presettings and preinking are set in line with the ink name. This helps to prevent considerable overinking at the start of printing, which saves paper and ensures the production run can get underway faster. Colour Assistant Pro adapts the substrate-specific characteristic curves with the aim of achieving a stable process. To do that, an algorithm controlled by artificial intelligence runs in the background to monitor colour management and the setting of the ink zones.

It checks the extent to which the settings can be improved. This culminates in a continuous process of optimisation and adaptation to new printing conditions. Colour Assistant Pro is supported by Prinect Easy Control and Axis Control. In particular, it realises its full potential when combined with Prinect Inpress Control 3, which continuously measures inking during the printing process. Thanks to a self-learning process, operator error caused by a lack of adequate training can be avoided and the colour presettings are optimised automatically.

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