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drupa 2020: Unlocking OEE potential by focusing on the “yellow bar”

- **Next-level Push to Stop addresses systematically operator-dependent and process-dependent time losses**
- **The Heidelberg User Experience (UX) makes the Speedmaster a modern and attractive workplace**
- **Intellirun organizes entire print production on the Speedmaster using an integrated approach**
- **Further intelligent assistants support the operator and control processes autonomously**
- **Machine operation on the go with the Press Center Mobile app**

This year’s appearance by Heidelberger Druckmaschinen AG (Heidelberg) at drupa will focus on the challenges confronting printing companies worldwide. Under the slogan “Unfold your Potential”, the company will show how state-of-the-art technologies, innovative solutions, and new business models can leverage significant potential in an intelligently organized digital environment. In a global survey of over 1,000 customers, Heidelberg identified four key areas that sum up the challenges in the print industry: increasing complexity, skills shortages, competitive pressure, and the expansion of the value chain to include digital platforms. Heidelberg has comprehensive responses for all of these areas. In the area of printing presses, Heidelberg will be presenting the most intelligent and most highly automated Speedmaster yet with the Speedmaster drupa 2020 generation. With the new Heidelberg User Experience (UX) on the Speedmaster, it offers a modern and attractive workstation. In addition, other intelligent assistants ensure that the machine’s productivity potential is unlocked. All models in the drupa 2020 generation also include Push to Stop functionalities and an interface to the Prinect Cloud as standard. This enables more comprehensive navigated and autonomous printing, which increases productivity, process reliability, and profitability.

Next-level Push to Stop addresses the "yellow bar" in a systematic way

Overall Equipment Effectiveness is an established metric of a machine's productivity. A data-based analysis by Heidelberg shows that the average OEE of current Speedmaster XL 106 presses across all configurations and customer segments is around 27 percent. By implication this means that theoretically there is still productivity of 73 percent waiting to be unlocked. Drilling down into the data shows that around half of this potential is down to mechanical and technical aspects, and the other half operator-related and process-related aspects – Heidelberg calls this the "yellow" bar. "Any improvement that counts towards the yellow bar has a direct influence on the OEE," explains Rainer Wolf, Head of Sheetfed Product Management at Heidelberg. "In the past we've focused very strongly on technical improvements, and have made huge progress there. However, a technical improvement only has an indirect influence, in other words it can only have an influence if the overall process is also adjusted accordingly." Sheetfed offset has undergone substantial change in the last fifteen years. For example, Heidelberg has reduced the required makeready time from a purely technical point of view by up to 90 percent. However, similar reductions have not really been seen in practice, and the OEE has not increased by anywhere near the same extent. "This means that the operator-dependent and process-dependent time losses must have increased accordingly. We are addressing this with the Heidelberg UX and Push to Stop on the Speedmaster. We want to make the potential offered by the yellow bar accessible to our customers in a systematic way, and in this way enhance their competitiveness," explains Rainer Wolf.

Intellirun organizes entire print production on the Speedmaster using an integrated approach

With Intellistart 3, the third generation of the patented makeready assistant on the Prinect Press Center machine control station is available to all Speedmaster presses. A new feature on the 24-inch multi-touchscreen is the extended job queue, which displays all job data from the Prinect print shop workflow in a clear format. The job queue makes it possible to prepare for job changes using the automatically generated process view while production is still underway. During the job change, Intelliguide simulates the time-optimized sequence live and, if necessary, also includes the steps to be executed manually.

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However, the new Intellirun function on the Wallscreen XL now goes a step further. While Intellistart focuses on the makeready process, Intellirun ensures continuous navigation during printing and automatically provides the operator with important, context-specific indications and pointers about what activities and information are required to avoid time losses.
“Everyone is familiar with the navigation system in their car. When you leave the freeway, the traffic situation is automatically visualized. Thirty minutes earlier, this information would have been of no use to you,” explains Jürgen Mittmann, the project manager responsible for machine operation. “Intellirun works in a similar way. For example, Intellirun shows the mask for preparing the next job in good time before the current run is completed. The operator can see at a glance whether anything is missing and can intervene if necessary in good time. A lot of time losses can be eliminated or at least minimized through timely preparation.” With the new Press Center Mobile app, the operator can call up all key control station information, such as the current job status, the job queue with the change overview as well as the status of the consumables, from all connected machines on a tablet or smartphone. This optimizes the processes to do with the printing press, reduces downtimes and manual interventions, and ensures that consumables, paper, and plates are always available in the right place at the right time.
As another highlight, Intelliline also brings navigation to the individual printing and coating units. Color-controlled LED elements make it possible to see the machine status from afar. The LEDs light up blue when the press is printing good sheets, and light up green when the press is carrying out automatic makeready processes. The color on the printing and coating unit changes to yellow whenever manual interventions are required.

Intelligent assistants leverage additional potential

With the new Speedmaster drupa 2020 generation, elements of artificial intelligence are also finding their way into the pressroom and providing support above all where operators reach their limits. For example, Prinect optimizes the job order based on various parameters such as delivery date, substrate, or area coverage using the Scheduler. “Unimagined productivity potential can be leveraged with an optimized job sequence that changes as little as possible from job to job – we call this “incremental makeready”. Customers who are already practicing this today are achieving reproducible makeready times in the range of just two minutes from the last good sheet to the first good sheet with 40 to 80 sheets of waste – in real-life production,” confirms Jürgen Mittmann.

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Another example of intelligent assistants is the new Wash Assistant. Evaluations show that operators tends to use washup programs that are too long as a way of ensuring good washing results. The Wash Assistant selects the right washup program based on relevant job and machine parameters. Apart from saving time, this also saves washing fluid and washup cloths. When washing ink rollers, the Wash Assistant can, for example, identify when switching from a dark color to a light one, and initiate a deep clean automatically.

Settings that are too high are often also used in the powder area for safety's sake. Excessive powder soiling in the delivery will result in increased downtimes for cleaning, and too much powder is also a problem in postpress. The new Powder Assistant gives its recommendation for the necessary powder setting based on the substrate and area coverage. Initial tests at customers have already brought about significant improvements.

The Quality Assist launched in 2016, which starts the production of good sheets automatically when the inking quality is achieved with Prinect Inpress Control 3, has been extended and can now also display the results of the sheet inspection and the PDF comparison performed by Inspection Control 3. As a result, Prinect Inspection Control 3 is also optimally integrated into the Push to Stop workflow. The learning function of Color Assistant Pro for optimizing ink presetting has been automated, and enables fully automatic learning of the ink presetting in combination with a Prinect color measurement system. With the self-learning Color Assistant Pro, the Speedmaster automatically optimizes ink presetting and in this way saves time and above all paper waste during setup. All Prinect color measurement systems are now integrated into the Prinect workflow via a central color database and also support the importing and exporting of CxF data. This offers greater flexibility in production, since reference values can be swapped between the printing presses without any problems.

New Press Center offers a modern, attractive workstation

Skills shortages are becoming an increasingly pressing problem for printing companies. In particular there is a lack of young talent. With the new Prinect Press Center 3 / XL 3, the new Speedmaster Operating System, and the LED daylight lamp, the Speedmaster delivers a modern, attractive workstation that creates the perfect conditions for the operator to deliver continuously high productivity at a level that is sustainable. For trained operators, areas of expertise can be restricted to various machine functions. Heidelberg offers suitable training modules that will enable operators to build up their level of expertise step by step. The Heidelberg User Experience (UX) can thus be experienced on all Speedmaster presses.

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“Minimizing the yellow bar in the long term requires intelligently networked, coordinated processes that help the operator go beyond their physical limits. This is less about a sprint, in other words for a top productivity hour or top shift, and more about a marathon with continuous top productivity over a month, a year, the life of a machine. This is the added value we want to offer our customers with digital integration, outstanding machine technology, modern service concepts, and new, output-oriented business models. We want to do this with a partnership-based approach that pursues common goals, and from which everyone benefits,” summarizes Rainer Wolf.

Read all about Heidelberg at drupa 2020 here

Image 1: The “yellow bar” shows the time losses due to operator-related and process-related causes. Any improvement that counts towards the yellow bar has a direct influence on the OEE and increases it.

Image 2: With the new Prinect Press Center, the new Speedmaster Operating System, and the LED daylight lamp, the Heidelberg Speedmaster delivers a modern, attractive workstation.

Image 3: The new Intellirun function on the Wallscreen XL ensures continuous navigation during printing and automatically provides the operator with important, context-specific indications and pointers about what activities and information are required to avoid time losses.

Image 4: A new feature on the 24-inch multi-touchscreen is the extended job queue, which displays all job data from the Prinect print shop workflow in a clear format. The job queue makes it possible to prepare for job changes using the automatically generated process view while production is still underway.

Image 5: Intelliline brings navigation to the individual printing and coating units. Color-controlled LED elements make it possible to see the machine status. The LEDs light up green when the press is carrying out automatic makeready processes and yellow whenever manual interventions are required.

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Image 6: With the new Press Center Mobile app, the operator can call up all key control station information, such as the current job status, the job queue with the change overview as well as the status of the consumables, from all connected machines on a tablet or smartphone.

Image material as well as further information about the company can be found in the Heidelberger Druckmaschinen AG press portal at www.heidelberg.com or in the Media Library.

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