



drupa edition

NEWSLETTER

Training Information & News in Printing and Paper Converting Technology



drupa fully booked

“One world – one drupa”. drupa 2012 again reflects the complete global market supply for the print and media industry. With over 1800 exhibitors and an occupied area measuring around 170,000 m², once again drupa 2012 (3 to 16 May) will be a packed event. All 19 halls on the exhibition grounds are fully-booked. Global players (Heidelberger Druckmaschinen, KBA, manroland) and other innovative companies or operators

from emerging countries will be represented at drupa 2012. That is drupa’s decisive unique selling proposition: Where else – other than at the drupa trade fair – can you gain such a detailed overview of what the industry has to offer. drupa is not only a source of stimulus and a growth motor in the industry. drupa is right at the heart of the global print and media industry. Detailed information about drupa 2012, i.e., exhibitors and their products, visitor services; special shows and events, etc., can be found at the drupa website at www.drupa.com.

PrintPromotion at drupa 2012

PrintPromotion can be found at the drupa in **Hall 15 / B09**, i.e. the stand of the German Engineering Federation VDMA, together with the AZP (Ausbildungszentrum für Polygrafie e.V.) training centre for print & media of Chemnitz. PrintPromotion and AZP will give a joint presentation of their activities highlighting basic as well as further training for the print media industry. The cooperation between PrintPromotion and AZP as organizers of training events has a rather long tradition now. Trainers

of AZP have been involved in PrintPromotion courses and seminars held in Germany and many other countries all around the globe. In addition, visitors will have the chance to see and test the learn4print.com e-learning platform which comprises 16 prepress and print related modules (also see page 3, Updated: learn4print). The presentation is completed with information about the German manufacturers of systems and technology for printing, paper and print finishing.

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Visitors to drupa 2012 are heartily invited to come to the PrintPromotion stand!

Topic tours at drupa 2012

Guided tours to German machinery manufacturers with a focus on special topics!

As a special service, PrintPromotion and the Printing and Paper Technology Association within the VDMA - German Engineering Federation – are offering the following four guided “Topic Tours” at drupa 2012 in cooperation with German exhibitors:

Topic Tour 1 – Developments in printing technology

Further developments in technology; combinations of digital technologies and conventional printing methods: Digital printing, online media and print, hybrid printing systems, RFID

The participants of this tour will visit:

- **Leonhard Kurz Stiftung** (Digital metal: combination of digital printing and application of Kurz’s newly developed Digital Metal® DT-H Silver foil)

- **bielomatik Leuze / bielomaik jagenberg** (RFID technology)
- **IST METZ** (Application of LED systems in the graphic arts industry; use of suitable UV systems in digital inkjet printing).

Topic Tour 2 – Green printing

Technologies, applications, services: Solutions for energy efficient and environmentally friendly production in printing and print finishing as well as environmentally friendly products

This tour comprises visits to:

- **Kugler-Womako** (Demonstration of the EcoBinder machine: semi-automatic binding machine for paper-bound prod-

ucts as an environmentally friendly alternative to plastic and metal binding)

- **Leonhard Kurz Stiftung** (Hot stamping solutions for “food packaging”; “carbon footprint” of stamping foil production; recycling of film/foil finished packages)
- **Koenig & Bauer** (Energy-efficient printing press – green printing processes; climate neutral printing, explanations by means of presentations and samples)
- **IST METZ** (Energy-efficiency in the graphic arts industry)

- **technotrans** (Energy-efficient and eco-friendly systems and solutions)
- **Kalfass Verpackungsmaschinen** (Demonstration at the stand: Film wrapping with biodegradable compostable PLA films of renewable resources)
- **D. W. Renzmann Apparatebau** (Efficient systems for the cleaning of all components found in printing companies, units for solvent distillation and process water treatment).

Topic Tour 3 – Automation and integrated production

Improved cost effectiveness through automation and integrated production

The companies visited during that tour:

- **Planatol System** (High-performance systems for longitudinal gluing and cross-web gluing in rotary printing; new generation of cross-web gluing systems; adhesives for bookbinding, fold gluing and foil laminating; innovations as regards dispersions and hot melts – EVA, PUR and PSA)
- **Polar-Mohr** (Automated jogging in 75 format and manless cutting; highly-automated label systems for cut and die-cut labels; workflow integration with connection to prepress and MIS)

- **MBO Binder** (Demonstrations of fully automated folding machines for sheetfed and webfed print finishing)
- **Baumann Maschinenbau Solms** (Automation of cutting systems; automated jogging systems; automated jogging and cutting; integrated production – connection to MIS systems)
- **IKS Klingelberg** (Print finishing with cutting machines: production of spare parts)
- **IST METZ** (Live demonstrations of sheetfed offset and digital printing)
- **Kugler-Womako** (Demonstration of the PremiumBind automated binding machine – from web to hardcover book with layflat binding)

- **Kolbus** (Demonstration of industrial book production with digital printing)
- **Aristo Graphic Systems** (Automation + print product finishing; cutting tables, LargeFormaCutter series; presentation of an absolutely new machine series)
- **bielomatik Leuze** (New, extremely compact folio sheeter for “web to sheet” suited for different grammages and materials, also films/foils)
- **Koenig & Bauer** (Press demonstrations for commercial and packaging printing, print finishing as well as combinations of offset and digital printing)
- **Perfecta Schneidemaschinenwerk** (Automated cutting processes; workflow integration; integration of prepress and MIS).

Topic Tour 4 – Packaging

The focus during this tour is on print finishing, anti-counterfeiting security and quality assurance. The exhibitors visited:

- **eltromat** (100 % print inspection systems for wide and narrow web printing

machines and rewinders; workflow solutions for efficient defect detection and rejection; spectral inline colour measurement)

- **Leonhard Kurz Stiftung** (2D barcode system; decoration solutions for hot foil stamping and cold foil transfer)

- **ISRA Surface Vision** (100% optical inspection in printing and print finishing; complete quality assurance for packaging printing incl. PDF comparison; print inspection for all levels of folding box production, incl. LAB colour control).

PLEASE NOTE: Participation without prior registration is not possible!

To register, please contact: Uta Dettling / Angela Schiffner:

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PrintPromotion drupa 2012 Contest

In the run-up to drupa 2012 as the world-wide biggest printing fair PrintPromotion again organised a competition. Entries were accepted from former PrintPromo-

tion courses participants who had been asked to send in a short report or photo story on the subject **“My experiences with PrintPromotion”**.

The task was to describe which impressions they got during their course in Germany, which contacts they could establish through PrintPromotion and how the course has helped them since their return to their home country.

PrintPromotion received some wonderful stories, and a great thank-you goes to all who submitted a report. The decision was not easy to make, but finally the jury announced:

And the winner is Kiran P. Prayagi from Graphic Arts Technology & Education in Mumbai, India.

Mr Prayagi attended the specialist teacher training course in Germany from 9 May to 1 July 2005. He will be honoured for his outstanding contribution at the awards ceremony and PrintPromotion reception in conjunction with drupa 2012 on 11 May in Düsseldorf.

The first prize of the PrintPromotion Contest in the run-up to drupa 2012 went to Kiran P. Prayagi from India.



Excellent reports were also received from Cyril Obiorah Nwankwo from Nigeria, Dr. Ahmed Mahmoud Yosri from Egypt and other contestants.

“My experiences with PrintPromotion”

by
Cyril Obiorah Nwankwo
Department of Printing Technology
Yaba College of Technology,
Lagos, Nigeria



In Germany..... Great experiences I gained



PrintPromotion reception at drupa 2012

On Friday, 11 May 2012, from 2 to 4 pm, PrintPromotion will welcome former course participants and invited guests at the drupa cube on the Düsseldorf fairgrounds to the traditional PrintPromotion Reception. With this event, PrintPromo-

tion makes use of the drupa as a centre of communication in order to enable its guests to strengthen existing ties and to make new contacts. They will have the opportunity to meet colleagues and fellow students of their PrintPromotion training, representatives of German machinery manufacturers, universities and other training institutions of the print media industry. Recipients of invitations who wish to attend are asked to return the reply form which was enclosed to the invitation by 13 April 2012. PrintPromotion would be delighted to welcome a large number of guests!



Updated! learn4print

The knowledge base of the learn4print e-learning platform for pre-press and print has been improved with several updates taking account of the latest developments in the print and media industry. In addition, it has gained in attractiveness thanks to new features which include, to name just a few, films from machine manufacturers, animated hints about the use of software, new topical information and up-to-date graphics and sketches. Just come to the PrintPromotion booth at **drupa, Hall 15 / B09**, and give it a try!

PrintPromotion Print Media Conferences 2012 in Lebanon and Maghreb countries

With the opening of **drupa** 2012 drawing closer and closer, representatives of German manufacturers of printing and paper technology were pleased to give a foretaste of the innovations and developments to be presented at this flagship trade fair of the printing industry during one-day Print Media Conferences in Lebanon, Algeria, Morocco and Tunisia under

the motto **“Innovative applications and developments in the printing industry”**.

In Beirut where the PrintPromotion Print Media Conference held on 13 January 2012 brought together approximately 60 participants, mostly from printing companies, but also representatives of the press and the advertising industry, the following topics were covered:

New perspectives for the printing industry – The future of the print media industry – Trends: Ecology, productivity, differentiation	by Dr. Ali Makarie, Heidelberg Druckmaschinen, Heidelberg
Industrial print finishing and digital printing	by Markus Dammann, Kolbus, Rhaden
Productivity increase by the use of UV technology in the graphic arts industry	by Jean Fournier, IST Metz, Nürtingen
Added value printing – Added value in sheet-fed offset in the future	by Michael Nitsche, manroland, Offenbach
KBA sheetfed offset – innovations for economic commercial and packaging printing	by Michael Grieger, Koenig & Bauer, Radebeul



In January 2012, PrintPromotion carried out Print Media Management Conferences in four Arab countries – Lebanon, Algeria, Morocco and Tunisia.



On the panel: Representatives of leading German manufacturers of print media technology and exhibitors at drupa 2012. They were happy to share their expertise and to discuss the situation of the print media with the attendants.



The audience consisted of print media professionals coming from printing companies and the advertising industry, but also representatives of the press.

Shortly afterwards, three PrintPromotion Print Media Conferences were carried out in Northern Africa, i.e. the Maghreb. The first one was held in Alger on 15 January, followed by a Conference in Casablanca on 17 January, and, last, but not least, a Conference in Tunis on 19 January 2012. There, the presentations listed below were given:

Industrial print finishing and digital printing	by Henning Meyer, Kolbus, Rhaden
High-speed cutters: Options, systems & connectivity	by Klaus Roban, Polar-Mohr, Hofheim/Taunus
New perspectives for the printing industry – The future of the print media industry – Trends: Ecology, productivity, differentiation	by Christopher Herbst, Heidelberg Druckmaschinen, Heidelberg
First-class quality in short-run gravure printing	by Achim Kurreck, H.C. Moog, Rüdeshheim am Rhein
KBA sheetfed offset – innovations for economic commercial and packaging printing	by Sascha Fischer, Koenig & Bauer, Radebeul
Added value printing – Added value in sheet-fed offset in the future	by Michael Nitsche, manroland, Offenbach
Productivity increase by the use of UV technology in the graphic arts industry	by Jean Fournier, IST Metz, Nürtingen

In detail, the numbers of participants of the three PrintPromotion Print Media Conferences in the Maghreb countries were:

The presentations are available on the PrintPromotion website at www.printpromotion.de

Number of participants:

Alger/Algeria	Casablanca/Morocco	Tunis/Tunesia
156	77	158

COMPANY NEWS

Baumann Maschinenbau Solms

Hall 06 / A59

Quality need not be expensive

At drupa 2012, Baumann-Wohlenberg will present three different systems for specific target groups. For all users who want to have precise and solid technology at an excellent price, the latest Economy line of cutting systems was reduced to its essen-

tial features with a focus on motor drives, sensors and pneumatic systems. The operator, on the other hand, carries out all movements where this is reasonable. The physical effort is so low that the fatigue factor can be neglected.

The No 2 cutting system of Baumann-Wohlenberg offers high productivity combined with excellent ergonomics. All central functional modules can be operated automatically or manually. The system is designed for operation by one operator.

The No 3 cutting system of Baumann-Wohlenberg is slated for industrial production. The system combines different automation modules for maximum productivity, and at the same time, reduces the workload to be performed by the operators.

In cooperation with GTS GmbH, Baumann has developed a pile turner which is able to determine the amount of sheets by counting. A tab inserter for order picking is also available as an option.



The Economy line comprises, among others, a pile lift ...



the BAB jogging machine, and



an unloading station



From Wohlenberg, a high-speed cutter will be shown.

bielomatik

Hall 11 / A06

New flexibility in paper converting

bielomatik, the manufacturer of special machines based in the German region of Swabia, will show in live demonstrations how its present machine generation meets the growing need for flexibility in paper converting through short change-over times.

The robust and compact CutMaster CFS 105 folio sheeter which comes up to the standard in papermaking is able to process any kind of reel material (carton/board,

paper, film/foil and, of course, uncoated paper) without any marking thanks to an optimised overlapping and stacking system. Preprinted reels, e.g. from the packaging sector, are processed in perfect register. Thanks to the electronic cutting length adjustment, the change-over times are extremely short. The fully-automatic cutting, gathering and stacking process requires a minimum of staff.

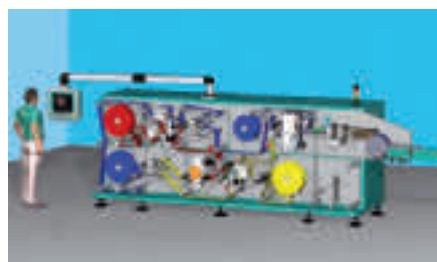
More diversity in smart products with multi-layer lamination including functional testing and bad-inlay removal with an output of up to 90,000 RFID products per hour, that is what is provided by the particularly compact SpeedLiner T-165 transponder laminating machine whose per-

formance is only surpassed by its flexibility. Besides a new ticket delivery, it features controlled hot melt lamination and manufactures labels, tickets and hang tags as required. Thanks to its modular design, it can be perfectly matched with any existing business segment.

For maximum efficiency with decreasing lot sizes in the fully automated production of spiral and wire comb products, not only maximum production performance, but also shorter change-over times are of crucial importance. The latter is achieved by the P 35-49 Plus fully-automatic spiral and wire comb binding machine, the flagship of bielomatik in this segment, with electronic setting of cutting length and num-



Product innovation at the bielomatik drupa booth: The high-speed CutMaster CFS 105 which offers highest flexibility in folio sheeting within a minimum of space.



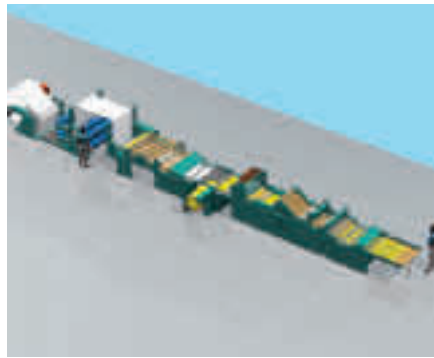
The modular and compact SpeedLiner T-165 RFID manufacturing machine for the different production requirements of smart labels, tickets and tags.



The P 35-49 Plus fully automatic spiral and wire comb binding machine meets the increasing requirements for performance and fast change-over.

bielomatik

ber of sheets as well as rapid resetting for format changes using a new cassette system for the die-cutting and cutting station. Offering high flexibility, this reliable and low-maintenance machine opens up a wide product spectrum and is well prepared for future market requirements. With the modern fully-automatic exercise book machine P 24-90 C, bielomatik, being the market leader in this product seg-



ment, is now also offering an efficient entry-level solution with a particularly attractive price/performance ratio. The system excels with high and consistent performance at a compelling product quality level; it is easy to operate and maintain and is future-proof thanks to its modular design.

By investing in the exercise book machine P 24-90, novices in exercise book production will receive a reliable and expandable system on attractive terms.

Goebel

Web-fed printing presses and special high-security printing machines

Throughout its 150-year history, Goebel has continually focused on trend-setting technologies for web-fed printing presses and paper, film and foil processing markets. Today Goebel is one of Europe's most

innovative manufacturers of web-fed printing machines for the printing and converting industry. Goebel has, above all, specialised in integrated solutions with web-fed machines for high-security print-

ing such as bank notes, stamps or tax labels and for packaging products. Goebel machines can be found in companies of all sizes, from small/medium enterprises to blue chip companies all over the world.

**H.C. Moog
Hall 03 / A35**

Sheetfed gravure presses

At its information booth, Moog will highlight sheet-fed gravure presses and show printing samples which are proof of the impressive capabilities of sheetfed gravure. They include premium class print finishing with applications on cardboard, paper and plastic materials, ie, pressure effects of metallic pigments in all sizes of bronze, gold, silver, varnishing in UV or water based. Other features include printed tactile effects and blind embossing (3D, micro, security).

Visitors of the Moog booth who are interested in the sheetfed gravure technology of this company will also have the possibility to get comprehensive information about the newest 1TBR Compact 740/1040mm sheetfed gravure press. With a high-pile feeder every sheet is

precisely aligned to the front and side register marks. The impression cylinder holds the sheet in its grip systems and presses it against the inked up form cylinder which carries the nyloprint® printing plate (from Flint). Effective drying ensures blockfree non-stop delivery and the printed sheets can be immediately converted. Further options are offered by the use of a combined infrared radiator with high-speed hot air

dryers, enabling optimal drying results with water-based ink systems. Also with UV-based inks excellent printing and drying results can be achieved.

The Technology Centre of Moog Miehlen invites interested parties to use the daily shuttle service from Düsseldorf to Miehlen. Pre-registration would be appreciated via hcmoog@hcmoog or via the company's website at www.hcmoog.de.



The 1TBR Compact press is the latest addition to the product range of H.C. Moog. This all-in-one machine is particularly cost-efficient even for short runs and finishing operations.



One example for the outstanding results that can be achieved with sheetfed gravure printing. Compared with screen printing, much finer screen rulings can be printed in gravure and therefore image details can be reproduced in a 'photorealistic' way even on porcelain.

**IST METZ
Hall 02/B20
UV printing live**

IST Metz will give live demonstrations on a sheetfed offset press and an inkjet press in order to give visitors comprehensive information about different application possibilities using UV, which also include, e.g., film and foil printing or security printing. In other conventional methods, solvent-

containing or water-based printing inks are used which are dried by hot air. In the UV technology, solvent-free and, as a result, printing inks of higher quality are used which are dried and cured by means of a UV lamp. This is more energy-intensive than the traditional process. IST Metz is, however, quite successful in increasing the energy efficiency of its UV aggregates. With some products, a reduction of the energy consumption by up to 40 per cent has been achieved

For the inkjet segment which is still small at the moment, but is expected to change pretty quickly, IST Metz has joined forces with a UK-based company which has specialised in UV applications in digital printing. As the product ranges of this company, Integration Technology, and of IST Metz complement each other perfectly in UV, the company's customers now have available a complete spectrum of UV solutions for the printing industry and other industrial applications.

Heidelberg

Hall 1

New series of sheetfed offset presses and other innovations



Heidelberg is showcasing around 60 innovations under the banner "Discover HEI" in Hall 1 at drupa, linking it with key megatrends, which are:

- Lean production (HEI Productivity)
- Green printing (HEI Eco)
- Web-to-print (HEI Integration)
- Short-run-printing (HEI Flexibility)
- Differentiation through coatings and special effects (HEI Emotions)

- Future in packaging printing (HEI End)
- Gaining an edge through the latest know-how (HEI School)

The company is exhibiting solutions that enable print shops and postpress businesses to meet the latest market requirements in full.

The main focus is on the launch of a completely new series of sheetfed offset presses under the name Speedmaster SX. This series brings together the cutting-edge technology of existing product series in a new performance class that is tailored first and foremost to the requirements of commercial printing in order to meet the changed market requirements. The Speedmaster SX series from Heidelberg is primarily targeted at print shops in emerging markets that are looking to take productivity to a new level but also at customers in industrialized countries who



From drupa 2012, Heidelberg will be selling the digital printing system for short runs from Ricoh under the name Heidelberg Linoprint C.



Heidelberg is presenting its solutions portfolio at drupa 2012 in Hall 1 in the form of complete print shop workflows for the commercial and packaging printing sectors.



Combining the Speedmaster XL series with the successful platform of the Speedmaster SM 102, the Speedmaster SX 102 (picture) takes the world's most successful perfecting press with XL technology to a whole new performance level. This results in high productivity, shorter makeready and throughput times, and a consistently high print speed of up to 14,000 sheets an hour.

find themselves under heightened pricing pressure. Launched in 2010, the Speedmaster CX 102 sheetfed offset press for packaging printing was based on the same concept.

The company is also expanding its digital print portfolio, bundling all solutions under the name Heidelberg Linoprint. For this purpose, the cooperation with Ricoh has been expanded as planned. Heidelberg now offers Ricoh digital printing systems under its own name and equipped with Heidelberg software. The current solution portfolio of Heidelberg is rounded off with additional innovations for pre-press and postpress.

Another focal point is the comprehensive presentation in the Services segment. Therefore Heidelberg has extended the range of consulting services, for example to focus on improved energy efficiency in print shops. New workflow solutions and extended consumables offerings will be shown as well. New Service contracts also ensure that customers with a range of business models can achieve highest productivity and machine availability.

In addition, Heidelberg will be using its portfolio of solutions and services to showcase futureproof business models for the print media industry. The growth segments of packaging and digital printing take center stage in this regard. Heidelberg has already introduced the first highlight for commercial printing in the form of the Speedmaster XL 105 perfecting press with increased productivity.

Heidelberg's technological innovations and new services are geared first and foremost to driving forward solutions for green printing, for instance, by offering the option of carbon-offset presses ex works. Heidelberg is also underpinning its green credentials by ensuring that its entire drupa presentation is climate-neutral."

Koenig & Bauer

Hall 16 / C47-1 + C47-2

Innovation fireworks in Düsseldorf

This year's banner, "sprinting ahead", underscores KBA's conviction that even 200 years after the invention of the cylinder printing press by Friedrich Koenig there are still plenty of opportunities for print in today's multi-media environment, and that KBA, as a press innovator, will actively shape the future of print. As can be seen at this year's show, KBA is moving into digital inkjet and also demonstrating hybrid digital and offset capabilities in a KBA Rapida. With a 3,500m² (37,675ft²) stand and a waterless sheetfed press on Toray's 150m² (1,600ft²) stand next door, KBA will once again be among the six biggest exhibitors.

KBA's array of new products starts with the launch of a high-volume web-fed inkjet press for full-colour books, commercials and magazines. Manufactured and built by KBA, the press uses Kyocera printing heads and water-soluble inks to print small or personalised runs in four-backing-four at a web speed of 150m (500fpm). The print length is variable, maximum web width 762mm (30in), minimum 203mm (8in).

An eight-colour perfecting version of the B1 (41in) Rapida 106, the world makeready champion, will be demonstrating new automation modules and options including inline perfect coating. Other new features include a coater with simultaneous forme change and automatic anilox roller change, plus a new module for inline quality monitoring and control.

Another first for KBA at drupa will be hybrid offset and digital printing on a KBA Rapida 105 B1 press with integrated inkjet system. A new sheet-guiding system allows inkjet systems to be installed at a distance of just 1mm (0.04in) from the sheet. The applications range from sheet marking for quality monitoring to coding for brand protection (bar, QR and/or numerical codes). Available only from KBA, this new sheet-guiding system offers huge potential for creating some interesting new applications for quality monitoring and inline finishing.

One of the absolute high spots for packaging and other large-format printers is sure to be KBA's new generation of large-format Rapida presses which will make their debut in Düsseldorf. They include a 1060 x 1450mm (41.75 x 57in) six-colour coater version with automated pile logistics, dedicated plate-cylinder drives for simultaneous plate changes, no-sidelay infeed, simultaneous washing of rollers, blankets and impression cylinders, and a string of new features for enhancing productivity,



Model of KBA's 3500m² stand at drupa 2012, which will be showing a raft of new products including digital processes embedded in conventional offset systems.



With its new inkjet web KBA RotaJet 76 KBA is entering the digital market - 200 years after the first cylinder press was unveiled by company founders Friedrich Koenig and Andreas Bauer in London.



Direct plate cylinder drives enable automatic plate changing (ten units in one minute) and washing processes to run parallel to each other. That takes a significant slice off job changeover times.

stabilising quality and reducing the operator's workload. The simultaneous makeready processes will soon include the

coater. A lot of printers will also be interested to hear that the anilox roller in the coater can also be changed automatically.

Kolbus
Hall 16 / D22-1 + D22-2
New and proven bookbinding solutions

In addition to solutions based on high-performance machinery for conventional bookbinding and finishing, Kolbus will exhibit new systems and new engineering in live production on the biggest drupa stand in the company's history. Kolbus offers a portfolio of products, with specific solutions for a wide spectrum of requirements. "Simply press ›Book‹" is the Kolbus answer for new and profitable business in the growth area of digital book production. Photobooks are already a success story and other digital printing applications are opening up.

From ›Book‹ and ›Inkjet‹ to the Bookjet® – this is a key concept in digital post-print processing from Kolbus as a business model with enormous potential for publishing houses, the book trade and digital printers. The Bookjet® concept changes the old approach to post-print processing in every way. A Bookjet® is capable of producing books with different content and different number of pages, not in batches, but one after the other. The number of pages can vary widely – the Bookjet® can produce books of twenty, two hundred, or a thousand or more pages – one book after the other from web-based, inkjet digital printing. 1000 titles a day, millions of books a year – each book in a matter of seconds and with zero make-ready effort. Bookjet® is the concept for perfect, cost-competitive and profitable finishing of digital print products.

Visitors to the drupa can expect impressive demonstrations of the world's fastest digital printing press heading up a complete production line for digital print products – where the starting point is the paper roll and the end product a finished book. The large-format, inkjet digital printing press is a Timsons ›T-Press‹ shipped from the UK. In a fully automated, non-stop production line, the folded signatures from the press



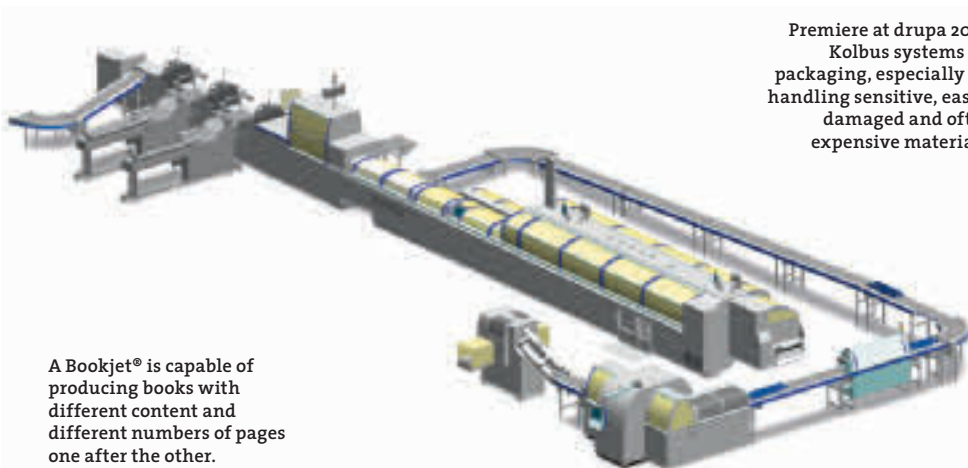
The KM 600.C perfect binder for conventional post-press jobs, targeted at the fast, cost-competitive production of brochures, magazines, catalogues and book blocks.

are transported in a shingled stream and processed sequentially by a Kolbus SF 832 sequential feeder. Simultaneous separation of single sheets via a number of feeders and magazines or sequential sheet-fed book block production from separate batch production will function equally smoothly. The Kolbus KM 200 perfect binder with its highly dynamic, servo-motor driven thickness adjustment processes book blocks with thicknesses varying from two to sixty millimetres. Continuous automatic adjustment to the changing book thicknesses makes non-stop production possible. The fully automatic HD 143.P three-knife trimmer trims three sides of the book blocks also in a continuous process with no make-ready effort. The line can be transformed into a photobook machine by adding an XHB 500 feed unit upstream of the KM 200 perfect binder to allow sequential single-sheet feed.

A lot of space on the Kolbus drupa stand is given over to conventional post-press machines. Highlights here include the KM 600.C, an improved version of Kolbus's successful perfect binder, targeted especially at fast, cost-competitive production of brochures, magazines, catalogues and book blocks in the performance range up to 9000 cycles/h and it's being offered at an extraordinarily attractive price. Visitors to the drupa will be able to watch the new Kolbus inline perfect binder line consisting of a ZU 822.C gathering machine, a KM 600.C perfect binder and an HD 153.M three-knife trimmer.

The BF 530 operates at faster than a book a second (70 cycles/min), making it currently the world's fastest book finishing line. With this technology, Kolbus is helping to keep the printed book competitive in the Internet era. With a number of new and improved features, the headbanding station is particularly operator-friendly. Fully automated servo axes result in significantly shorter make-ready times. Kolbus will demonstrate a number of applications with highlights such as sectional make-ready in production of digitally printed hardcover products and flexible casemaking with varying spine widths. The new 70 cycle/min book finishing line comprises: LE 660 bookmark machine, BF 530 book finishing line, DS 392 compensating stacker and SU 652 jacketing machine. The offline DA 270 casemaker operates under the Copilot® control system and centre strip cross-cut unit. This is engineering with the maximum attention to detail and it's obvious from start to finish, for example in the casemaker's integrated edge cutter.

Premiere at the drupa for the new business area Packaging Production: Know-how transfer from casemaking has enabled Kolbus to open up new markets with clear growth potential – especially for machinery to produce packaging for luxury products such as jewellery and cosmetics. The production line for this segment incorporates a DA 260 automated casemaker linked inline with an SA 260 lining machine and can be operated by one person.



A Bookjet® is capable of producing books with different content and different numbers of pages one after the other.

Premiere at drupa 2012: Kolbus systems for packaging, especially for handling sensitive, easily damaged and often expensive materials.



manroland web systems

Hall 06 / D27-1 + D29-2

Highly productive solutions for industrial web offset production

At drupa 2012 manroland will present itself as a high-performance partner of the printing industry under the new company name manroland web systems GmbH, featuring highly productive solutions for the industrial web offset production of newspapers, magazines, and advertising material as well as many innovative products from the printnet and printservices divisions. Together with manroland sheetfed systems GmbH, the sheetfed offset division of former manroland AG, the latest developments will be shown in Hall 6. They comprehend autoprint components, a new operating concept for newspaper and commercial presses, pressupdate and

tuning concepts as well as novelties from the printnet and printservices divisions. Last but not least the new newspaper press series COLORMAN e:line and the LITHOMAN S for 96 page heatset production will raise attention. Nevertheless the focus will be the dialog with customers from all over the world. The company's customers can profit from a comprehensive performance spectrum of new presses and a holistic consulting, service, and retrofit offer, up to process-relevant consumable components. As it used to be, for newspaper printing the offer spreads from the single-width high-performance CROMOMAN in single circumference over the proven eight-page



manroland web systems: the logo demonstrates self-confidence, continuity, and competence. | © manroland web systems GmbH.

press series UNISET and REGIOMAN as well as the double-width 16-page press series GEOMAN and COLORMAN as e:line or in satellite design up to the 24-page COLORMAN, XXL series. For commercial web offset the 16-page series ROTOMAN in the DirectDrive and HiPrint versions is available, the 24-page ROTOMAN S, the 32- and 48-page EUROMAN, and the LITHOMAN press series in short and long grain format from 32 to 96 pages. Depending on the technical advantage, sleeve technology or the modern blanket technology with small gap for the commercial press series are used.

Planatol

Hall 13 / A07

Innovations for fold-gluing systems, adhesives and binding machines

Planatol Group, since 80 years an established partner of printers, packaging manufacturers, bookbinders and coating companies, will show a number of innovations in the field of fold-gluing systems, adhesives and binding machines. Planatol offers high-performance systems for fold-gluing in web printing. The systems for longitudinal gluing Combijet 9NET and 9DT produce exact glue lines and consume very little adhesive. They distinguish themselves by applicator heads with a service life of hundreds of millions

of switching cycles. The gluing nozzles are made of ceramic and last for more than 400,000 km of contact application. At drupa, Planatol will show the new system cabinet of Combijet 9NET in a modern and compact design. The media compartment inside the cabinet has also been improved: The components are now more conveniently arranged and are therefore better accessible for maintenance purposes. Furthermore, new functions such as web edge scanning and glue line monitoring will be presented at drupa. Web edge

scanning means that a sensor scans the paper web which will stop the glue application when the web is not there. With glue line monitoring a constant glue application can be ensured. Planatol is the only supplier world-wide offering cross-web gluing systems by means of which paper ribbons can be glued together also across the web travel. Products in short-grain size can thus be realized. At drupa, Planatol will show Crossjet, a new product study of a gluing system which is based on a special valve technique allowing non-contact application in cross-web gluing for the first time.

Glue dots are shot onto the paper web with high-end applicator heads which are arranged across the web. Even at maximum speed a glue dot will be positioned in an exact way. With the sophisticated control system the glue can be placed at any position on variable formats, as it is required, for example, in rotogravure printing. First trial runs have already proved to be successful. Crossjet is soon to replace the existing generation of cross-web gluing systems.

In the adhesives sector, Planatol offers high-performance adhesives for bookbinding, fold gluing, forms and mailings, print finishing, packaging as well as for labels and other applications based on 80 years of experience. The whole range of adhesive technologies is covered, from dispersions to PSA, EVA and PUR hot melts. At drupa, Planatol will present a diversity of innovations from the adhesive laboratory: For glossy film lamination, Planatol has developed a new dispersion adhesive which features excellent adhesion properties with a reduced amount of cross linking agent, thus saving costs for customers.



Crossjet, the new generation of cross-web gluing systems

Planatol

The new laminating adhesive can be used both as a 1-component and a 2-component system.

For perfect binding, Planatol HM 2941 will be presented, a new EVA hot melt which excels with its very low processing temperature, reducing energy costs in the production process. This new adhesive offers excellent strength of the perfect binding and can also be used in the two-shot process.

Another highlight at drupa will be Planatol's new PSA adhesive for case-making. The PSA is resistant to temperature variations and ensures absolutely flat book covers in winter and optimum production speeds in summer. It is easy to process and provides excellent adhesion even on difficult cover materials.

Planatol's PUR hot melts offer excellent processing properties and very high strength as well as high temperature resistance. Specifically for the requirements



PUR adhesives from Planatol

of perfect binding, a new PUR adhesive has been developed, which – for the first time – combines the advantages of the

PUR technology with a perfect lay-flat ability. With the versatile Planatol PUR 2880, an additional low-emission variant and other types, Planatol covers all applications in book production.

At drupa, Planatol will also present the successful Planax Copy Binder 5 in a new design. This office binding machine enables to bind single documents or short print runs professionally and in a high quality. It excels with high performance, easy operation and a favourable price.

The newly developed Planax Strips are used as binding spines. These thermo binding strips made of linen have an adhesive coating which ensures excellent durability – even with difficult papers.

In addition, Planatol's presentation will include the Plana Dots from the Plana product line. Plana Dots are glue dots made from pressure sensitive hot melt adhesive for all kinds of professional packaging applications for printed products.

Polar-Mohr

Hall 2 / A01

Presentation of many innovations....

Hosting its own stand of almost 860 m² for the first time, POLAR will showcase a large range of new machines and systems at drupa 2012. The company will present a total of ten systems, eight stand-alone machines and focus on the issue of networking.

Under the motto "POLAR - the PACEmakers" the Hofheim-based company is yet again setting benchmarks in automation, responding to important trends and revealing once more its market and technology leadership.

The main highlight will be the new high-speed cutter generation "N" with its three different models as well as the new POLAR 56 NET, 66 NET and 80 ECO cutting machines. In the generation "N" of high-speed cutters, POLAR has combined productivity, easy handling, top networking capability and a multitude of options in the most innovative way. Other novelties include, among others, the new three-knife trimmer BC 330 as well as the cutting system L-R-92-L with hold-down clamp in front of knife. Cutting System L-R-137-T is equipped with OptiClamp, Cut-Manager and online connection to the new scale (automatic jogger with the new FlexStab to stabilise paper sheets); Cutting System L-R-137-T PACE features Un-

loading Transomat with Optical Pallet Pointer.

The POLAR Jogging Station L-R-P will be shown with the new counting scale which is easy to handle and works very fast. Integrated into the jogging process, it guarantees exceptional counting precision due to its double reference weighing. The scale is operated from a 5.7" colour display. An Ethernet interface allows network connection and input of the counting data and results. The solid aluminum stand is made of three sections and can be converted for different scale positions. Due to a very adjustable fixture the control unit can be positioned in many different ways.

The commercial printing solutions which will be on display will include everything from large size 75 to small formats (26 x 38 cm). Apart from various stand-alone machines, POLAR will also be exhibiting cutting and jogging systems in which some of the processes are fully-automatic. In view of rising labour costs and high competitive pressure automation is certainly a major topic for many markets. Therefore, POLAR will focus on this subject in the presentations taking place several times a day. For label production, various systems as well as a stand-alone machine will be on display. To demonstrate what can be achieved with the new options and develop-

ments of the POLAR LabelSystems, most of the systems will be producing live. LabelSystem DC-11 provides much higher productivity; LabelSystem DCC-10 for counter-pressure die-cutting machines is presented with a new loading concept; LabelSystem SC-10 is shown with the new automatic air-board removal and the new manual multistation banding machine BM-105; LabelSystem SC-25 is demonstrated with log banding.

The new, highly interesting product family for digital printers and print-on-demand is also sure to attract a lot of attention with two completely new machines and many new additions and features.

In Hall 2, at Function Control's booth B19, POLAR will be exhibiting the PickStack restacking station. Furthermore, the new POLAR 80 NET cutting machine can be seen at Heidelberger Druckmaschinen's booth in Hall 1.



The new counting scale from Polar Mohr

E.C.H. Will

Hall 15 / C55-2

Intelligent converting

E.C.H. Will is going to present – together with Pemco and Kugler-Womako – new paths in paper converting. Under the motto “Reinvent your business with intelligent converting”, the booth of the three companies is focused on digital printing. Digitally printed books, digital paper sizes as well as innovative bindings play a central role and are reflected in the exhibits.

With DCbook, E.C.H. Will is showcasing a converting solution for high volume, industrial production of digitally printed books from the paper web to the finished stack of books consisting of individual sheets. DCbook can be run inline with a digital printing system and a binding line. Optimum utilization of working widths, automated size changes with short set-up times and minimum waste paper allow for the greatest possible productivity around the clock. Quite simple – as the industrial

production of digitally printed books should be.

Kugler-Womako is exhibiting the ProBind, a binding machine for wire and plastic bound products. The ProBind, one of Kugler-Womako’s most successful binding machines in the market, features in its latest version a shorter and easier change-over. Thanks to its modular design, the ProBind meets the requirements for a wide variety of end products in the stationery and book-binding industries.

In addition, the semi-automatic EcoBinder binding machine from Kugler-Womako demonstrates that environmentally-friendly binding with paper rings – which can also be individually printed – constitutes an innovative alternative to plastic and metal bindings.

Pemco will present the SHM Digicut, a highly flexible precision sheeter for digital, cut-size and folio-size formats. Digital printing calls for a variety of sizes and materials for even the smallest order volumes. With the SHM Digicut, all types of material from digital printing paper, coated paper

and board up to film can be converted. Flexible working widths as well as fast change-over times allow for the efficient production of small volumes, too.

Another innovative new development awaits the visitor: Kugler-Womako is showing a video presentation of the newly developed PrimeBinder – the first fully automatic binding machine that produces photo books made of genuine photo paper with a laminated lay-flat binding – from the roll to the hardcover bound book.



DCbook for the industrial production of digitally printed books

Windmüller & Hölscher

Hall 15 / A41-1

New 10-colour flexographic printing press and new automation modules

“The easy way” – this is the motto of the presentation of Windmüller & Hölscher (W&H) at this year’s drupa where the company will show the new 10-colour MIRAFLEX CL 10 flexographic printing press as well as HELIOSTAR S gravure printing units – as examples of the globally leading range of flexographic and gravure printing presses of W&H.

In line with this motto W&H will additionally present innovative developments in the range of EASY automation modules for a reduction of make-ready times, elimination of waste and increased efficiency. The W&H presentation is supplemented with the products of its subsidiary Garant Maschinen which will show the TRIUMPH 3MR/SM and the MATADOR NG, two models from its range of bag making machines

at the booth facing the W&H booth (Booth 15 A41-2). Parallel to the fair in Düsseldorf, W&H will carry out an in-house exhibition at its headquarters in Lengerich from 7 to 11 May in the course of which further innovations will be presented.

Since drupa 2008, Windmüller & Hölscher has completed the very successful MIRAFLEX, NOVOFLEX and VISTAFLEX machine model series with new models and now has the most extensive range of central cylinder flexographic printing presses world-wide. The new MIRAFLEX and NOVOFLEX-M models cover more than 90% of the flexible packaging products commonly used in the market as far as printing width and format range are concerned. Numerous optimizations of details and still another increase of the perfor-

mance of the machines ensure substantial productivity improvements. The VISTAFLEX portfolio was supplemented with the VISTAFLEX CL 8 and the VISTAFLEX CX which now also enable to print with printing widths of up to 2200 mm. The VISTAFLEX with the intelligent VISTA-PORT robot system is a solution for large-format, wide flexographic printing machines featuring high performance and extremely short job change-over times.

In the W&H printing press portfolio, HELIOSTAR gravure printing presses hold an important position. As a consequence, W&H will present various new innovative developments of the HELIOSTAR-S model series both in Düsseldorf and in Lengerich. The focus is on innovations with regard to efficient inking and washing systems as well as the dynamic HELIOCONTROL register control with the automatic EASY-SYNC for fast synchronization of both side and longitudinal register which not only ensures increased efficiency, but also satisfies the demand for ink and waste saving



The MIRAFLEX CL/AL 8 and 10 – The globally most successful central cylinder flexographic printing press is now also available for large formats.



The HELIOSTAR SL gravure printing press – one of the highlights at drupa in Düsseldorf and at the in-house EXPO in Lengerich.

solutions and, as a result, is in compliance with the GREENOVATION principle. GREENOVATION (green innovation) stands for the clear commitment to the careful and sustainable use of resources in all W&H machines. The focus of development work also was on the principle of sustainable production, e.g. maximum elimination of

waste or residual ink volumes. Windmüller & Hölscher attaches greatest importance to the improvement of productive machine operating times. At drupa 2012, the company will present the latest versions of the tried and tested automation modules for flexographic and gravure printing presses which are well-known by the

names of EASY-SET, EASY-REG and EASY-COL all over the world. All new developments aim at fast, reliable, reproducible job change-over, with the printed substrates being analysed at the beginning of the printing process and taken as a guide for automated printing pressure, register and printing ink optimisations.

Winkler + Dünnebier

Hall 15 / C 55-1

Solutions for the mailing, hygiene and intralogistics industry

W+D belongs to the Körber group which organizes its international systems solutions providers for the paper and tissue processing industry in the Körber PaperLink Division. Therefore, W+D will be a co-exhibitor of Körber Paperlink at drupa. In the business segment Mail Solutions, W+D is offering system solutions for the manufacturing, printing, inserting and packaging of envelopes, while the Hygiene

Solutions segment encompasses system solutions for the manufacturing and packaging of tissue fold and hygiene personal care products. In the intralogistics segment, W+D Langhammer offers highly efficient transport and palletizing solutions for the tissue, paper and food industry. At drupa 2012, visitors will have the chance to take a look at the W+D 234 d, the world's first 4-color ink-jet press for

envelope overprinting. It features fast job turnaround times and is an extremely cost-efficient solution for static overprint in medium/small batch sizes. Other features are: Excellent technology for personalized direct mail jobs with 1:1 variable imaging in large quantities; high-quality digital printing on a wide variety of paper stocks; true industrial production grade technology; large size range, suitable for envelopes and pockets; proven W+D envelope feeding and processing technology; integrated solutions with W+D inserting technology for higher-volume variable data envelopes with 1:1 marketing content.

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PRINTERS' GUIDE

Training Information & News in Printing and Paper Converting Technology

Control elements of modern quality management in printing

By Juergen Seidel, Ausbildungszentrum Polygrafie, Chemnitz/Germany, juergen.seidel@azp.de



Components of a print control strip

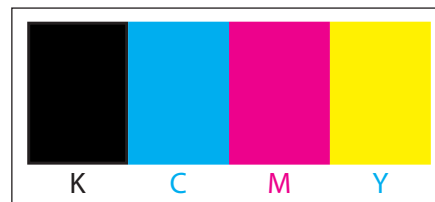
In the last part of this series on control elements in the production process, the focus shall now be on the control of a print product by means of the print control strip. It is a prerequisite for an objective assessment of a print product. The check is made by means of measurements, but sometimes also visually.

For the measurement result it doesn't really matter and doesn't say anything about the quality of a print product whether measurement is performed by means of a hand-held densitometer (e.g.: GRETAG D186; Techkon R 410), a hand-held spectro-densitometer (Techkon Spectro Dens) or automated measuring systems (Heidelberg Axis/Image Control; KBA DensiTronic) or inline systems (Heidelberg Prinect Impress Control; manroland Color Pilot).

The structure of the print control strips may differ as well. For instance, many manufacturers of printing machines and measuring devices offer control strips developed by themselves. They mostly differ only slightly as far as their functions are concerned. The minimum components a suitable print control strip should at least have are optical density as well as the area coverage / tone value increase (dot gain).

1. Optical / solid density

The optical density and the ink film thickness are closely interrelated, because the optical density will in general rise too with increasing ink film thickness. Ink application is above all essential for the saturation of a colour on a substrate.



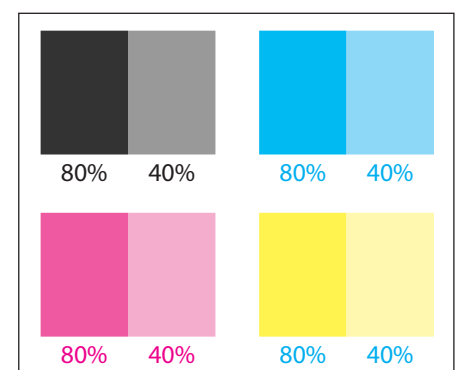
Depending on the substrate and ink used, an ink film thickness of up to 2.5 µm (1 µm = 1/1000 mm) can be produced. The ink film thickness for art paper should be between 0.7 µm and 1 µm in order to achieve the correct colour loci of process inks according to ISO 2846-1 and ISO 12647-2, respectively. It is, however, hardly possible to determine the actual value of the ink film thickness at the printing house. Therefore, the following recommendations about the optical density to be used in conjunction with different grades of paper are given:

	B	C	M	Y
coated	1.85	1.50	1.45	1.3
uncoated	1.45	1.15	1.10	1.0

If production is to be carried out according to ISO 12647-2, these values should not be taken as given; it is better to determine ideal values (see Printers' Guide No. 84)

2. Area coverage / Tone value increase (dot gain)

This type of check gives information about the actual area coverage on the substrate in selected tone values (mostly in the mid tones and shadow tones). This can be used to calculate the tone value increase, i.e. the percentage of dot size increase during printing in comparison with the film or data set ($TVI = TV_{\text{print}} - TV_{\text{film/data set}}$).



The tone value increase is now of greater importance than the solid density. This is due to the fact that the negative effects of different tone value increases in the primary colours on the colour balance (which means a consistent, harmonious print of a colour image with no colour cast, also called grey balance) are significantly stronger.

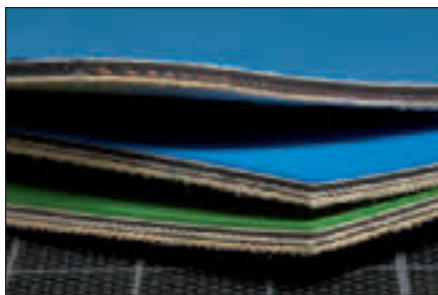
Parameters influencing the tone value increase:

Substrate: Here the absorption quality is of importance, e.g., the amount of sizing agents used for a paper grade during papermaking, because glue reduces the absorbance of paper so that ink does not spread (blotting paper effect). What are the surface properties (smooth, rough)? Is the paper uncoated, glazed, embossed or coated? The screen dot can be produced on a smooth and coated surface much better and neater.

Screen ruling: Screen ruling is the number of lines per centimetre or lines per inch. The screen ruling is also very important in conjunction with the substrate. With uncoated paper, the screen ruling used should rather be 60 L/cm / 150 lpi and not a finer screen ruling.

According to the border zone model, finer screen rulings also produce higher tone value increases. Combined with the higher TVI of the uncoated paper, this would result in a substantially bigger quality problem in prepress and printing since the screen dots will fill in too strongly.

Viscosity of the ink: Also known as tackiness of the ink. The viscosity of printing inks is divided into high-viscosity = tacky ink (offset printing) and low-viscosity ink (gravure printing). Due to the behaviour of the printing ink when squeezed between application roller / plate, plate / blanket and blanket / substrate, it can in general be stated that a printing ink with lower viscosity causes higher tone value increases than a printing ink with higher viscosity.



Different blankets

Therefore, the viscosity of the ink should be kept as stable as possible. Ink viscosity is influenced by the temperature of the ink and the rollers, the room temperature, the share of dampening solution in the printing ink (ink / water balance), the share of printing additives, as e.g. printing oils, printing pastes, drying agents, anti set-off paste.

Ink film thickness (see 1. Solid density): Higher ink film thicknesses also increase the TVI.

Pressure between plate and blanket cylinder: The optimum clearance between plate and blanket cylinder is in the range from 0.10-0.15 mm. When the pressure is too high, the tone value increase will be stronger.

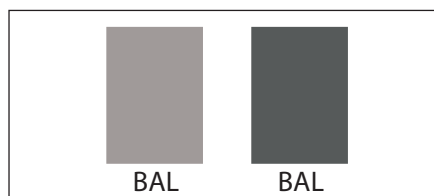
Sort of blanket: In the selection of the blanket it needs to be considered how soft or hard the blanket is (shore hardness). There is now a wide variety of blankets which differ in thickness and hardness depending on the range of applications (e.g. commercial, packaging printing).

Dampening: Tone value increases are also influenced by the dampening agents and dampening solution supply. The pH value of the dampening solution should be between 4.8 and 5.6 (slightly acidic). The alcohol content (IPA) should not be higher than 10 %, and the amount of dampening additive should be between 2 - 4 % (in accordance with the instructions given by the manufacturer). The optimum dampening solution supply is slightly above the level where ink starts to smear. An increase of the amount of dampening solution for a short time (water shock) will decrease the tone value increase. A permanent increase of the dampening solution will, however, result in a lower viscosity of the ink and in the long run cause a stronger tone value increase.

Tone value transfer during platemaking: Indicates the dimensions in which the dot is transferred from the data set or film to the printing plate. Here it should be noted that it is necessary to perform regular checks of the tone value transfer during platemaking in order to recognize deviations and balance them, where necessary (see the last two issues of the Printers' Guide).

3. Grey balance

Represents the combined printing of colours (C, M, Y) in the solid and screen. Now, the grey balance is an important component of standardized printing. A pioneer in this area was Felix Brunner (System Brunner AG) who recognized the importance of the overprint behaviour in the 1970ies already.

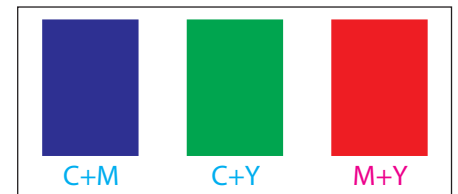


In the colour balance control, the process colours CMY are printed one over the other. In the tone values in the screen, the cyan portion is slightly higher. Overprinting should produce a neutral grey tone, both in solid and screen areas. Any deviation occurring can be visually perceived and measured using a spectrophotometer or densitometer.

A colour cast is caused by the tone value spread, i.e. the difference between the tone value increases of the individual colour inks. The maximum tone value spread of < 5 % according to ISO 12647-2 may already cause huge differences in the colour balance of images with a high grey portion and/or inks with a low saturation. Therefore, this value should not be accepted unchallenged, but should rather be adjusted as required, i.e. be reduced, in order to comply with the demands on the print product and/or of the customer. Uniform changes of the tone value increases and the full tones have an effect only on the lightness of an image, and they do not produce any colour cast.

4. Ink acceptance

Is the overprinting of two primary colours in the full tone. This process produces the so-called secondary colours.



Ink acceptance is influenced by:

- Consistency of the ink
- Ink film thickness
- Print: Wet-in-wet or wet-on-dry
- Colour sequence
- Substrate
- Area coverage

It is not possible to transfer an ink film onto an unprinted spot of the paper with the same thickness as onto an already printed area. This is due to the splitting process of the ink during its transfer from the blanket to the substrate.

Due to the drying behaviour of the ink, the ink acceptance value for, for instance, yellow on cyan (produces green) when printing on a four-colour machine will be lower than when the same ink is used on a two-colour machine. For high-quality printing, the ink acceptance value should be between 65% and 90% independent of all parameters.

If the ink acceptance value is too low, the printable colour scope as well as the grey balance will be affected.

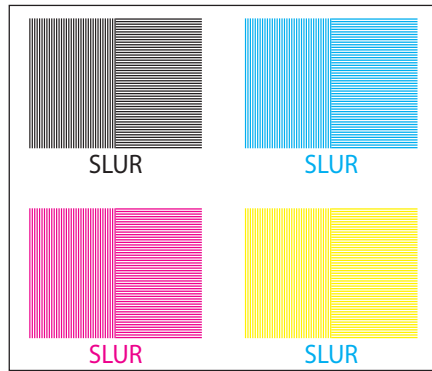
5. Slurring and doubling

Slurring: Deformation of the screen dot during printing

Cause: Differences in the packing thickness of the plate and / or blanket cylinder.

Solution: Measurement of the packing thickness with a packing gauge and adjustment of the packing thickness ("Cylinder packings" will be dealt with in a separate chapter in the Printers' Guide!).

Doubling: Incongruent retransfer of the ink by the subsequent blanket cylinder



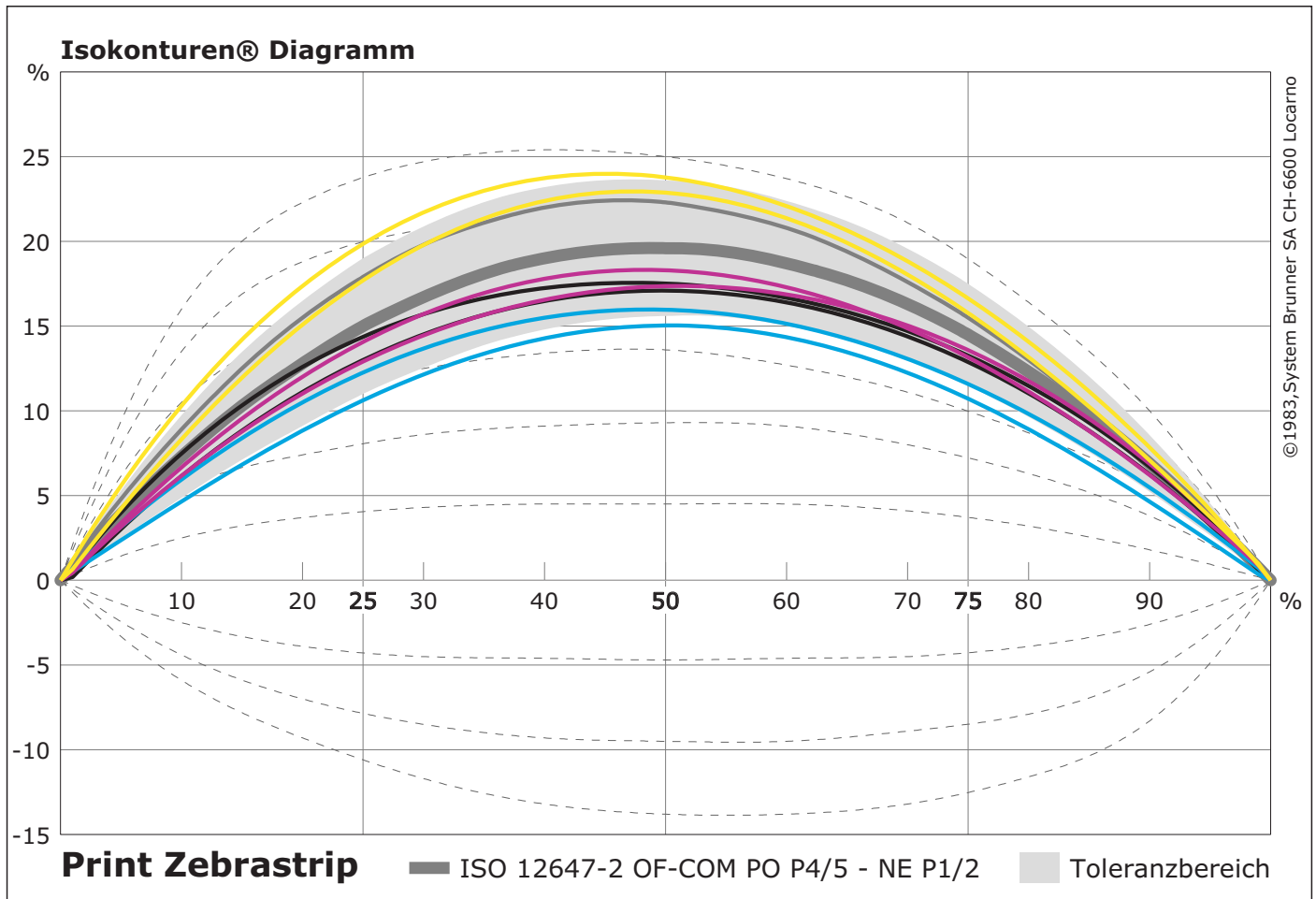
Causes: Mechanical problems at the grippers. The grippers do not perfectly open and/or close. The bearings are damaged or are running dry.

The blanket is not perfectly tightened; as a result the blanket will increasingly "walk"

(the blanket should be fixed with approx. 45-50 Nm).

Paper with wavy edges: Paper takes up humidity from the ambient environment (the fibres will expand), and it is capable of releasing this humidity again (the fibres will shrink). So paper endeavours to obtain an equilibrium condition between its humidity (equilibrium relative humidity) and the humidity of the air.

Remedy: Maintenance of a favourable climate for paper storage at a room temperature of 20 °C and a relative air humidity of 50-55 %. Conditioning of new paper supplies, i.e. adjustment of the stack temperature to the room temperature. With the paper supplied, the paper suppliers often provide a table which shows the required conditioning time.



Grey balance: Tone value spread on uncoated paper determined with System Brunner. The tone value increase for yellow is too high which will result in a slight yellow cast in the image.