

Prinect
Color Workflow

HEIDELBERG

Color and Quality Management
for Any Business Model



“Prinect boosts our productivity and minimizes makeready times. This means we can earn money with short runs, too – sometimes even more than with long ones. Prinect color management is the real key, helping us to become productive – i.e. profitable – more quickly.”

Hauke and Helge Beisner, Beisner Druck GmbH & Co. KG, Germany

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Prinect. The Operating System for Your Print Shop.

What makes Prinect an operating system?

Complex challenges are part and parcel of the daily routine for print shops, so it's good to know that Prinect® has all the answers. Prinect integrates all your print shop's management and production processes into a central operating system, thereby laying the foundation for more efficient production workflows, greater transparency, and a faster job flow.

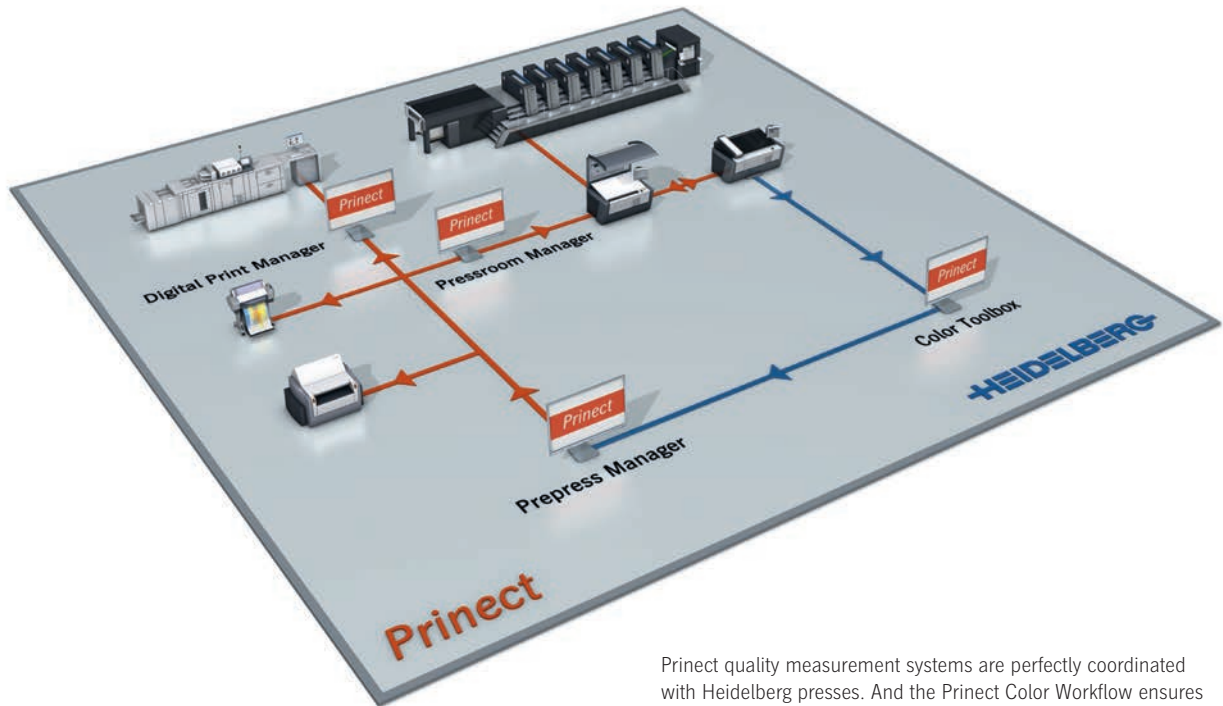
More reliable thanks to smart automation. Smart automation based on predefined control modules now enables numerous operations to run automatically without any active intervention – from job creation to selecting the production process and actual printing on a specific press. Prinect is a modular system comprising various hardware and software modules. It always adapts flexibly to your specific requirements or business model. This versatility also extends to the Color Workflow. Prinect can be adapted to the specific requirements of any print shop – from individual modules for fast color presetting and various color measurement systems to full integration.

The Color Workflow with Prinect. Prinect offers you a unique integrated Color Workflow for consistently high, reproducible quality. Color measurement systems – either integrated into the press or connected online – facilitate setup and uniform inking in the production run. Printing is based on clearly standardized colorimetric values that ensure reliable measurement and control. This results in consistent production run quality and better capacity utilization. Prinect enables jobs to be produced on several presses without any differences in quality.

Speed thanks to multiple use. The big advantage of Prinect is that data and parameters can be used time and again once they have been entered. The software is also intelligent. For example, CIP data from the prepress stage is used not only to preset the ink zone profile, the press's feeder and delivery, and the paper travel, but also to determine the amount of ink required. As one job is finishing, the pre-inking program is already looking ahead to the color assignment for the next job and adjusting the amount of ink in the inking unit accordingly. Inking adapts completely automatically based on the operating steps. This reduces the number of washup processes, saves time, generates less waste, and also helps protect the environment.

Prinect boosts your productivity:

- At least 15 percent shorter makeready times
- At least 25 percent less waste
- At least one to two fewer pulls for each pass



Prinect quality measurement systems are perfectly coordinated with Heidelberg presses. And the Prinect Color Workflow ensures reliable coloring.

Quality. Made by Prinect.

Prinect makes it easier for you to achieve and maintain compliance with standards such as ISO 12647-2, PSO (Process Standard Offset), and G7. With our Systemservice Print Color Management, Heidelberg® helps you implement standards to specific references and tolerances. These specifications – which you can check at any time with color measurement systems – are used to precisely coordinate the proofer, platesetter, and press. If your printing process complies with the ISO 12647-2 standard, we provide confirmation of this with a certificate that is valid for 24 months.

Register control and adjustment. Register accuracy means precise halftones. Prinect monitors register accuracy in the press during setup and production. If necessary, it makes adjustments in a fully automated process that requires no sheet pulls at all.

Continuous process monitoring. The Mini Spot® workflow enables you to identify color fluctuations on the fly. Small measuring elements placed anywhere on the print sheet are measured continuously and compared with the standard’s target values. If deviations are detected, the existing printing characteristics for plate making or the ICC profile being used can be corrected immediately.

Direct printing error inspection. Identify printing errors immediately – and avoid the high costs of paper waste and reworking. Prinect has an automatic early warning system that is the equivalent of a third eye. It ensures seamless production run monitoring, issues warnings in the event of printing errors, and carefully documents all incidents. The inline inspection system compares each individual sheet produced with a digital reference sheet.

The benefits of the Prinect Color Workflow:

- Consistently high quality: Precise and reliable inking throughout the run
- Fast inking-up: Rapid implementation and precise production
- Flexible application of customer specifications: Quicker response to new conditions
- Shorter makeready times: Maximum utilization of press capacity

How does Prinect Improve Quality Management?



Prinect color and process management enables fast inking-up on the press and ensures high-quality results that can be reproduced whenever required.

One key aspect of Prinect is its color and process management. In addition to reliably converting digital RGB images into print-ready CMYK data, it is also responsible for faster inking-up on the press.

Fast inking-up. The data from plate imaging is forwarded to the press's Prinect Press Center® control station as a CIP file¹. Information about the job's color assignment and the color data stored in the system are used to preset the appropriate ink zone profiles. During this process, Prinect takes into account both substrate properties and the ink being used. This ensures that only the amount of ink actually required is applied to the paper.

The CIP data from Prinect does more than this, though. It also tells the color measurement systems the position and type of the print control strip on the sheet along with details such as the required color or the position of other measuring elements, color areas, and images. This significantly reduces the setup time required for the color measurement systems and ensures that nothing is forgotten.

Besides solid color values, dot gain is the most important criterion for successful image reproduction and matching of corporate colors. It is therefore important to calibrate printing plates in such a way as to achieve the best possible image impression with the standard coloring. This makes it possible to produce saturated chromatic colors and challenging skin tones without compromising on gray balance.

¹CIP4 PPF data as specified by the CIP4 Organization

Agencies, buyers, and print shops use proofs to check images prior to printing. However, it is essential to provide a true-color proof of the print result for this purpose. Prinect offers appropriate software that to date represents the global benchmark for generating ICC color profiles.

Color measurement systems for quality assurance. A further important task of Prinect color measurement systems is to monitor all parameters of a high-quality print over a long period and keep these stable. In addition to color measurement on the substrate and the resultant automatic adjustment of the relevant ink zones, these systems also return the measurements taken automatically during production to prepress or quality control staff. This process takes place fully automatically in the background without any additional outlay and is performed on the fly at any print speed.

Documenting quality. The measurements taken by the Prinect color measurement systems enable an objective assessment of print quality. Colorimetric CIE L*a*b* values, color deviations, densities, and tonal values indicate at a glance how close the OK sheet was to the target values and how uniformly the run was printed compared with this sheet. All this information is saved as a PDF and a quality certificate is issued, for example to ISO 12647-2. In addition to providing customers with proof of print quality, this is also a real help for repeat jobs and internal quality management.

Tonal value control and adjustment. The print result is influenced by a whole host of criteria. In addition to substrate and ink properties, surface finishing, coating, blanket properties, dampening solution, etc. also play a role, as do temperature and the humidity in the air and pile. The spectral measuring technology of the Prinect color measurement systems provides important data in this respect. As well as traditional density and tonal values, it also takes into account the substrate's original color, reports any inking deviations,

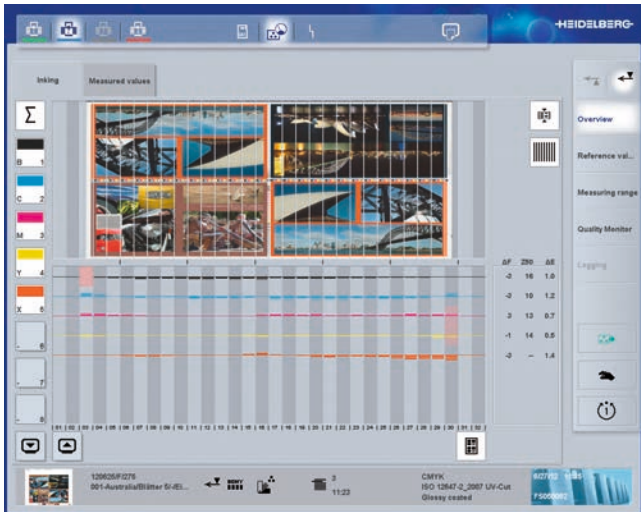
and indicates precisely how to produce a spot color. This information is obtained from the print control strips and, with Prinect Image Control, also from the print image or Mini Spots. If the measured values indicate a change, Prinect helps you with the analysis and automatically provides the appropriate corrections to ensure that data, printing plates, and proofs match again, thereby avoiding manual adjustment at the press.

Spotting printing errors in good time. In many applications, correct coloring alone is not enough. In pharmaceutical, label, and packaging printing in particular, it is essential to avoid errors in the print image. The Prinect sheet inspection systems offer the ideal solution in this respect. In addition to comparison with an error-free reference proof, the PDF data from the prepress stage is used for control purposes. This ensures that not a single comma is missing in the packaging insert and the dot over an i does not look like a hickey. Defective sheets can be marked and ejected. This saves on expensive material and prevents unnecessary waste.

Prinect delivers the optimum combination of fast setup on the press and enhanced quality.

The components of the Prinect Color Workflow optimize print conditions and automate otherwise tedious register and color setting.

Control is Good. Prinect is Better. Prinect Quality Measurement Systems Ensure Outstanding Quality.



Prinect quality measurement systems from Heidelberg deliver a lasting benefit to the productivity of your business by playing to their strengths in the relevant area of application.

Real-time measurement and control. All Prinect color measurement systems, from the standard system to the inline one, have two outstanding features – spectral measuring technology and online ink zone control – for measurement and control on the fly. Sheet inspection systems are also connected directly to the press via the control station. With its Prinect quality measurement systems, Heidelberg offers the ideal solution for every customer – from small print shops to large-scale industrial enterprises.

Prinect Easy Control. The standard color measurement system for reliable production is ideal for commercial printers who have not yet worked with automatic color measurement systems.

Prinect Axis Control. The high-performance color measurement system for effective quality assurance features a high level of automation. It is used in both commercial and packaging printing.

Prinect Image Control. The color measurement system for optimum quality throughout the print image is particularly suitable for packaging printing and challenging commercial jobs such as motifs spread over two pages or printed on different sheets.

Prinect Inpress Control. The inline color measurement system for color and register control integrated into the press ensures maximum productivity through fully automated setup and measurement of every print sheet.

Prinect Inspection Control. The inline sheet inspection systems deliver maximum process reliability through continuous inspection and documentation of the entire print run at full production speed.

Prinect Press Center. The High-Performance Press Control Station.



The Prinect Press Center is the central control station for Speedmaster presses. This is where all the information comes together and all processes are controlled.

The comprehensive operating and control center.

The Prinect Press Center control station for all Speedmaster presses sets new standards of enhanced performance, reliable production, and user-friendly operation. Cutting-edge technology, intelligent automation, and perfect data management provide the ideal conditions for efficient production on a lasting basis.

In addition to perfect control over Heidelberg Speedmaster presses, the Prinect Press Center also enables all other tasks – from job preparation and press setup to print sheet assessment – to be performed quickly and accurately.

Based on Sheetfed Control – the patented, decentralized control platform from Heidelberg – the Prinect Press Center combines the press control system with remote color and register control in one central console. The unique operator guidance system Intellistart saves the printer performing unnecessary steps by

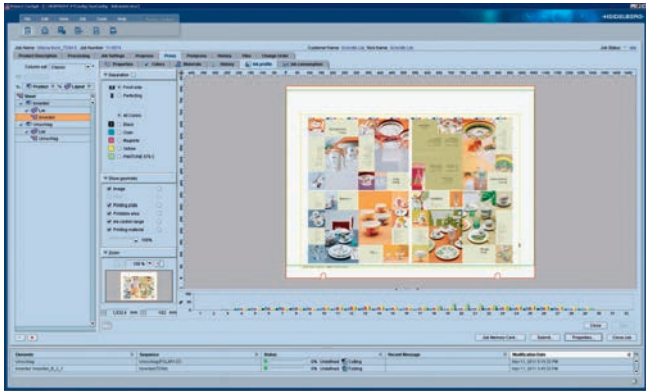
comparing the current job with the next one. Eliminating operations such as washup processes saves a great deal of time, boosts productivity, and reduces the environmental impact. Thanks to its modular design, the Prinect Press Center is available in numerous different configurations.

The control station and measurement systems form a single unit. The control station's interaction with color measurement and sheet inspection systems from Heidelberg ensures seamless workflow integration. Each of these systems is perfectly coordinated with the Prinect Press Center. Setting data is adopted directly and the measured results used immediately for fast inking-up and register setting, and to correct any deviations from reference values.

Functions and benefits at a glance:

- Cutting-edge design for improved functionality and ergonomics
- Highly flexible configuration with various options
- Optimum color matching to ISO 3664
- 19-inch touchscreen for more user-friendly operation
- Innovative, process-oriented operator guidance system Intellistart
- Excellent data management and shop floor data collection
- Integrated Prinect color measurement systems for exacting quality assurance requirements
- Wallscreen information center (optional)

Prinect Pressroom Manager. The Control and Information Center for the Pressroom.



Prinect Pressroom Manager makes it possible to prepare medium- and long-term reports and statistics that identify potential for optimizing work processes.

The comprehensive operating and control center.

Prinect Pressroom Manager® controls all pressroom operations centrally, managing job information and production data. It calculates the color presetting data, which is automatically made available at the control stations of the networked presses and color measurement systems, along with previews and job data. Paper and ink data for automatic profile selection is also forwarded to the control station. This automation significantly boosts productivity and improves transparency in the pressroom. What's more, Prinect Pressroom Manager stores all the setting data of the press. Production can thus take place with exactly the same parameters in the event of a repeat job. Efficient use of presetting data significantly reduces makeready times and paper waste at the presses.

Job and productivity evaluations. Production data for the connected presses and color measurement systems is evaluated in Analyze Point, which continuously displays the current status of all existing print jobs and provides an overview of how specific shifts have gone or how much time was required for particular jobs. It is possible to access data such as print speed, job details, and counter information for paper waste, OK sheets, and how much of the run is left.

Informative reports provide performance and productivity values along with details about jobs and job quality. This makes it easier to identify and make efficient use of the potential that exists for optimization and savings.

The Prinect Mobile application for smartphones and tablet PCs also provides users with access to status displays while on the move. All this makes Prinect Pressroom Manager the central management system for the pressroom, enabling fast, direct, and flexible responses to changing requirements.

Functions and benefits at a glance:

- Central control of the entire pressroom
- Integration of printing presses and color measurement systems
- Maximum availability of up-to-date job information and production data
- Accurate press presetting values
- Job status also displayed in real time on the move
- Medium- and long-term reporting and statistics for process improvement
- Central storage of press setting data ensures efficient production for repeat jobs

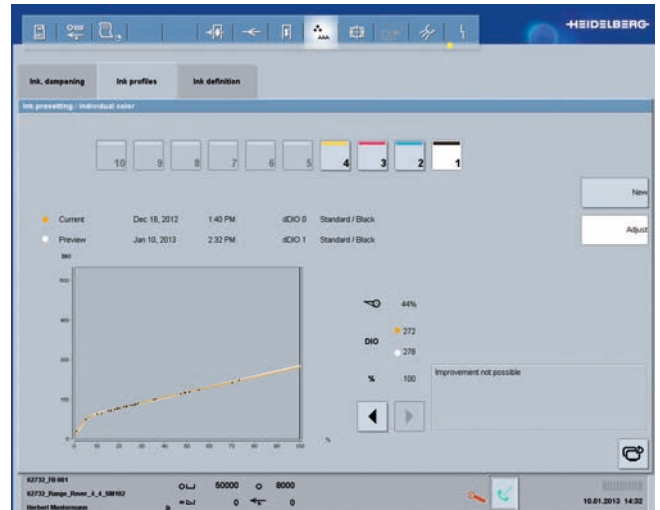
Color Assistant Pro.

Fast Color Presetting at the Touch of a Button.

Fast inking-up with minimal waste thanks to job-specific prepress data. The quicker the press is set up, the sooner production can start. This is primarily the task of CIP data from the prepress stage. Together with the color presetting profiles from the Prinect Press Center, the ink zone profile automatically adjusts according to the color assignment for the job. However, this setting is influenced by parameters that the printer is unable to control directly such as climate, ink batch, moisture in the pile, etc. This is where Color Assistant Pro comes in. Once the required coloring result has been achieved, for example with the help of a Prinect color measurement system, the profile is adapted to the new printing conditions at the touch of a button. Color Assistant Pro also takes into account the condition of the ink fountain liner and indicates when this needs to be changed.

Color Assistant Pro also has an impact on pre-inking and the “Green Light”. This includes:

- Self-learning pre-inking program 1, particularly useful with numerous spot colors and a washed inking unit
- Enhanced color presetting learning function with low coverage values for even more accurate color presetting
- Optimized Green Light shortens the time after which a sheet can be pulled from the delivery for measurement from 120 to 60–100 sheets, depending on the color assignment
- Automatic ink vibrator switch-off shortly before the end of the job, and automated pre-inking program 2, ensure fast and stable inking after every job change
- Existing color presetting profiles can also be made available to other presses via Prinect Pressroom Manager



Color Assistant Pro highlights the difference between old and new coloring. The printer decides at the touch of a button whether to adapt an existing profile or create a new one.

Functions and benefits at a glance:

- Fast and accurate color presetting at the touch of a button
- Use of digital presetting data from prepress
- Calculation of ink zone opening based on coverage values
- Color presetting profiles adapted precisely to paper, ink, and coloring standard
- Results stored in a database
- Fast setup with minimal waste
- Good reproducibility for repeat jobs

Prinect Easy Control. The Standard Color Measurement System for Reliable Production.



Prinect Easy Control is a compact unit integrated into the Prinect Press Center control station and is the ideal color measurement system for small and medium-sized print shops.

The quick and easy way to precise coloring. Prinect Easy Control is the ideal entry-level solution for precise color measurement in commercial applications. Integrated into the Prinect Press Center or Prinect Press Center Compact, it benefits from the control station's user-friendly touchscreen operation without taking up any working space. Prinect Easy Control measures spectrophotometrically in the print control strip and incorporates an online connection to the press's ink zone control system. In the event of color differences, the ink zone openings on the press are adjusted automatically.

Spectral measurement for accurate results. In addition to the polarized density and halftone values for CMYK, the printer obtains unpolarized colorimetric CIE Lab values, the color deviation ΔE , and slurring and doubling details. It is also indicated if the required color shade can be produced with the actual ink in the fountain. This eliminates potential complaints even before printing starts.

Accurate results in seconds. The Prinect Easy Control measuring head is freely positionable, which means the print control strip can be placed anywhere on the print sheet. This is a big advantage, for example, with perfecting printing or when printing repeats and folding cartons. Prinect Easy Control works at a speed of 150 millimeters (5.91 inches) per second, which means the color values of a sheet measuring 30.5 × 44 centimeters (12.01 × 17.32 inches) can be recorded in just three seconds. The ink zones are adjusted immediately afterwards following approval by the printer.

Functions and benefits at a glance:

- Spectrophotometric color measurement system for CMYK (process colors) and spot colors
- Touchscreen operation
- No restriction of the press console working area
- Online adjustment of ink zones on up to six printing units with straight or perfecting printing
- High measuring speed of 150 millimeters (5.91 inches) per second
- Display of density, ΔD , $L^*a^*b^*$, ΔE , slurring and doubling, dot gain, inking difference ΔF , and color difference that cannot be eliminated ΔE_0
- Print control strip can be placed anywhere on the sheet
- Reliable measurement of sample colors for accurate reproduction

Prinect Axis Control.

The High-Performance Color Measurement System for Effective Quality Assurance.



The Wallscreen makes it easy to read the values measured by Prinect Axis Control from any part of the press.

Indispensable assistance at the press. Prinect Axis Control is the high-performance color measurement system for effective quality assurance in commercial and packaging printing. Simultaneous control of the ink zones on up to ten printing units is based on spectral measurements. Stored target values are compared with the print control strip's current measuring result. Prinect Axis Control then ensures that the ink zones are adjusted as necessary based on the differences calculated. Inking-up becomes faster still, especially in conjunction with the new, digital ink zone motors of the Speedmaster® XL, CX, and SX series. This reduces the amount of paper waste during setup and production.

Reliable measurement whatever the grammage. Thanks to its powerful vacuum suction, Prinect Axis Control ensures that sheets remain absolutely flat, even with high grammages. In contact-free operation, the makeready assistant guides the measuring head to the start of the print control strip no matter where

this is located on the print sheet. Automatic tracking then ensures reliable measurement, even if the sheet is not placed exactly square. For the first time, the compact spectral sensor and maintenance-free LED light source now also make it possible to measure paper-saving micro print control strips without any delay.

Comprehensive reporting. Prinect Axis Control records all quality parameters, measuring results, and measurement processes for a print job. These can be evaluated on a job-specific basis for quality analyses or process monitoring.

Functions and benefits at a glance:

- Fast and reliable measurement in the print control strip
- Online color control of ink zones on up to ten printing units with straight or perfecting printing
- High measuring speed of 200 millimeters (7.87 inches) per second
- Print control strip can be placed anywhere on the sheet
- Optimum print sheet suction for accurate color measurement
- Automatic location and recognition of the print control strip
- Simple operation via the Prinect Press Center
- Measuring results can be displayed on the Prinect Press Center's Wallscreen
- Integrated HKS and PANTONE® color databases
- Comprehensive quality reports and process monitoring

Prinect Image Control. Full Sheet Color Measurement for Optimal Quality in the Printed Image.



Prinect Image Control measures the color of the entire print image. This minimizes color fluctuations and makes it possible to work with uniform, reproducible color values.

Reliable monitoring of day-to-day print production. Prinect Image Control is the world's leading spectrophotometric color measurement system for monitoring the entire printing process. Its main advantage is that it measures not only the print control strip but the entire print sheet, with simultaneous automatic online monitoring of all printing units on up to four presses.

Fast and reliable coordination. Prinect Image Control is the only system on the market that automatically locates CMYK images and halftone areas, and solid patches of process and spot colors directly in the print sheet and adjusts them with stable results even under fluctuating process conditions. In addition to the print control strip and print image, Prinect Image Control also measures Mini Spots on the print sheet and evaluates process quality using the integrated analytical software Quality Monitor. For this purpose, the deviations in the individual ink zones are determined on the basis of the stored target color values,

the substrate, and the measured values from the print control strip and print image. The impact of paper and ink can be analyzed separately in each case. In this way, the print process is continuously checked and automatically adapted.

Rapid measurement and evaluation of test forms and direct export of measurement data to the Prinect Color Toolbox ensure effective color management. All quality parameters, measuring results, and measurement processes for a print job are recorded continuously and can be evaluated on a job-specific basis for comprehensive quality analyses or process monitoring.

Functions and benefits at a glance:

- Online adjustment of ink zones on up to ten printing units with straight or perfecting printing
- Quality center for prepress and pressroom
- Color measurement system for up to four presses
- Spectrophotometric control based on the print control strip and directly in the print image
- Integrated process analysis software
- Measuring results can be displayed on the Prinect Press Center's Wallscreen
- Fast job setup based on CIP data from prepress
- Integrated HKS and PANTONE® color databases
- Comprehensive quality reports and process monitoring

Prinect Inpress Control. The Inline Color Measurement System for Maximum Productivity.



Prinect Inpress Control measures and controls on the fly. This results in fast inking-up and less paper waste – for maximum productivity.

Accurate measurement at any speed. Prinect Inpress Control automatically measures and controls color and register on the fly. Integrated directly into the press, it measures process colors, spot colors, and register in the print control strip. All necessary corrections and adjustments are forwarded to the Prinect Press Center control station. The press does not need to be stopped for setup or print run monitoring. Faster inking-up with less paper waste maximizes press productivity. This system is particularly beneficial for print shops with frequent job changes, short runs, and standard jobs. With Prinect Inpress Control, your production operations benefit from both cost-efficiency and quality assurance.

Continuous monitoring of the production run. Prinect Inpress Control is located in the final printing unit – and also ahead of the perfecting device on perfecting presses. It monitors each individual sheet reliably, extremely accurately, on the fly, and at any speed. Even tiny deviations in process and spot colors are recorded. The register is also monitored and adjusted if necessary.

The fully automatic end-to-end production monitoring performed by Prinect Inpress Control ensures fast throughput times. The press is set up quickly and does not need to be stopped for sheet pulls or measurements. What's more, all quality parameters, measuring results, and measurement processes are recorded for comprehensive quality analyses.

Functions and benefits at a glance:

- Spectrophotometric inline measurement of process and spot colors in the print control strip
- Online adjustment of ink zones on up to ten printing units with straight or perfecting printing
- Automatic register control and adjustment on the fly
- Measuring results can be displayed on the Prinect Press Center's Wallscreen
- High color stability thanks to continuous production monitoring
- Simple operation via the touchscreen on the Prinect Press Center
- Integrated HKS and PANTONE® color databases
- Comprehensive quality reporting
- Includes an external handheld spectrophotometer for measuring color samples and paper color

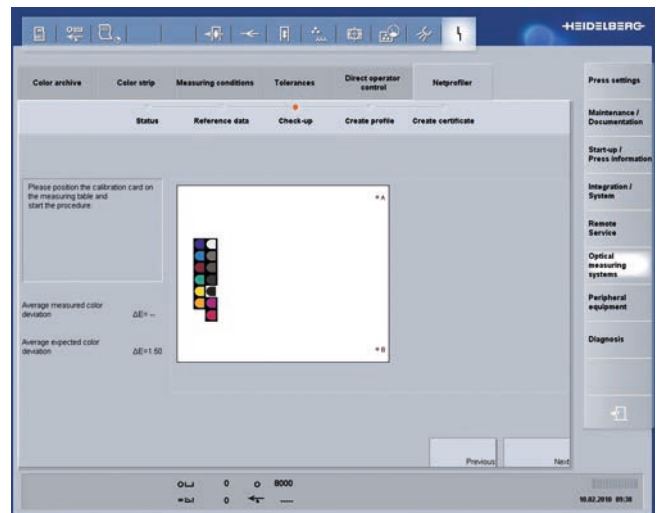
Netprofiler. The Software for Independent Calibration.

Fast and systematic coordination. Netprofiler calibration software is designed for spectrophotometric color measurement systems such as Prinect Axis Control, Prinect Image Control, and Prinect Inpress Control. It ensures that these systems always comply with the certified standard factory settings and work with maximum precision. Netprofiler minimizes negative effects on color reproduction by correcting deviations in color data and using calibrated color references to adjust measured values to standardized target values. Calibration can be performed independently at the print shop without service engineers.

Regular calibration of color values. Heidelberg is the only press manufacturer to offer print shops the option of colorimetric calibration for their color measurement systems. This prevents color deviations in production and makes it possible to use several measurement systems reliably in a single operation. Netprofiler provides binding documentation of all measuring results. This is a significant benefit for customers printing within the narrow tolerances of ISO 12647-2.

Three steps are all that is needed:

1. **Checking the tolerance.** The color measurement system checks its own measuring accuracy using a reference color chart. The result shows whether the measurement is within the required tolerance.
2. **Calibration.** After this check, Netprofiler automatically starts the calibration process and corrects deviations from the target values.



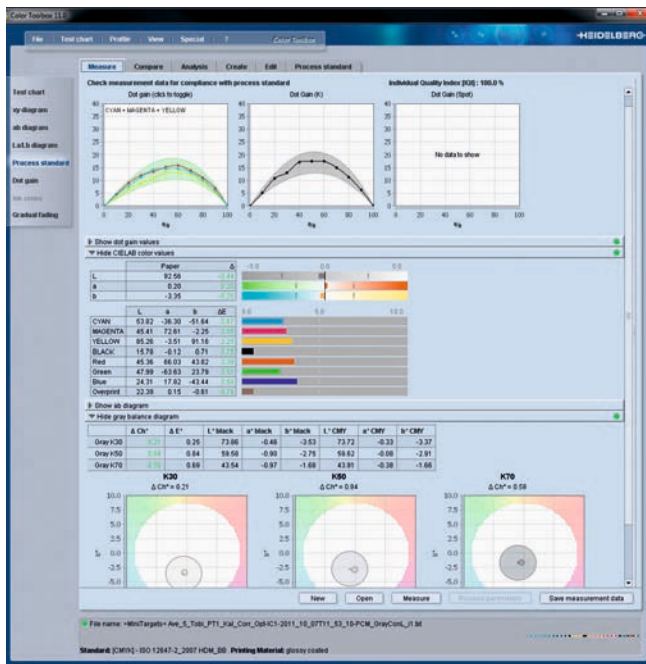
Netprofiler calibration software checks whether the color measurement systems comply with the certified factory settings and automatically corrects deviations from the target values.

3. **Certification.** If the print shop has an online Remote Service connection to Heidelberg Systemservice, a detailed report is automatically generated. A certificate confirms the device has been checked as specified by the manufacturer.

Functions and benefits at a glance:

- Suitable for Prinect Axis Control, Prinect Image Control, and Prinect Inpress Control
- Colorimetric calibration
- Color measurement systems always benefit from optimum settings
- Fewer complaints thanks to color fidelity
- Compliance with ISO 9000
- Identical colors across all sites
- Reliable, certified quality

Prinect Color Toolbox. The Tool for Perfect Color Management.



Whether ISO 12647-2, in-house standard or gray balance, the Prinect Color Toolbox analyses quality data and reliably corrects it to match the desired target values if necessary.

The Prinect software suite for reliable color management consists of three components:

Quality Monitor: Analytical tool for seamless quality control. All color measurement data is compared with the required standards. Reports provide a clear graphic and numerical overview of the deviations in densities, CIE Lab values, ΔE , dot gains and gray balance. If corrections are necessary, the other two components of the Prinect Color Toolbox come into play.

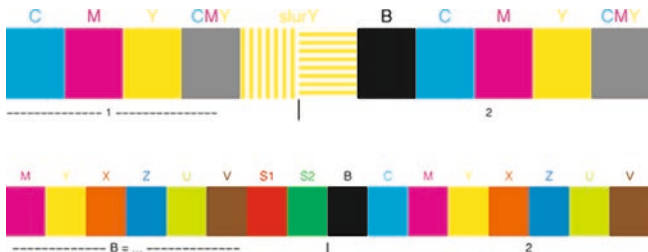
Calibration Tool: This tool ensures the correct dot size on the printing plate. Linearization of the CtP system is separated from process calibration so that these two things can be corrected independently. In addition to calculating tonal value corrections for various screening processes independently, the Calibration Tool can also make these calculations available to several RIPs simultaneously. With the help of Mini Spots, tonal values can be corrected quickly on the fly.

Profile Tool: This tool is the undisputed number one when it comes to ICC color profiles. It is used if the image contrast is to be increased by reducing the chromatic color and increasing the amount of black (GCR), if the total ink limit is to be reduced, or if the proof system is to be adapted precisely to the print. A further strength of this tool is its multicolor workflow, which has profiles with up to seven embedded colors to expand the color space in images but also to replace spot colors with mixed colors – something that packaging printers with short runs particularly appreciate.

Functions and benefits at a glance:

- All the tools needed for perfect color management in one suite
- Tools can be individually enabled as required
- Quality Monitor: Comprehensive quality control, long-term analyses, and reliable proof of compliance with standards
- Calibration Tool: Central management of process and calibration data; Mini Spots ensure optimum tonal value reproduction in no time at all
- Profile Tool: Generates and modifies ICC profiles for CMYK, multicolor applications with up to seven colors, proofs, digital printing, and offset printing

Prinect Dipco Elements. The Comprehensive Digital Print Control Package.



Print control strips with solid and tonal value patches

Print control elements for enhanced reliability and quality. In addition to suitable color measurement systems, digital print control elements specifically coordinated with these systems are also needed to ensure the required production quality. They enable rapid and reliable control of print processes.

Prinect Dipco Elements® provide the requisite digital control elements for prepress and press for all press formats. This includes print control strips for all print applications, measuring patches for quality assessment, search and control marks for register control, marks for visual register control, measuring blocks to determine the printing characteristic, and Mini Spots for continuous process monitoring in print.

Control elements for all requirements. Print control strips contain various measuring patches for determining the solid colors, ink trapping, dot gain, print contrast, and gray balance, and for recording slurring and doubling errors. Further control elements for specific applications are used to optimize register control.

There are also Mini Spots. These are halftone and solid patches that can be placed anywhere on the print sheet to provide precise information about changes to the color space or dot gain on the print sheet.

Functions and benefits at a glance:

- All print control elements available from Heidelberg combined in a single package
- Customized for all measurement systems and press formats
- Available in EPS, PRE and PDF formats
- Included in the scope of delivery for Prinect Signa Station and all Prinect color measurement systems

Prinect Inspection Control. The Inline Sheet Inspection System for Maximum Process Reliability.



Prinect Inspection Control continuously monitors and documents the quality of the entire production run. This provides maximum evidence of sheet content integrity.

Ultra-precise inspection is required to achieve top-quality results. The Prinect Inspection Control inline sheet inspection system ensures comprehensive monitoring and documentation of the entire run at full production speed. This quality measurement system is available in two versions – Prinect Inspection Control RGB for quality control in commercial and packaging printing, and Prinect Inspection Control PDF for pharmaceutical printers.

The early-warning system for maximum process reliability. Prinect Inspection Control compares each print sheet with the digital reference sheet and reports production errors before any costs are incurred. A strip inserter integrated into the delivery automatically marks the start and end of defective sheets. The Speedmaster XL 106 also offers the option of marking with an inkjet device for automatic ejection of defective folding cartons in the folder gluer.

Customized inspection solution for pharmaceutical printers. Prinect Inspection Control PDF is designed for the strict specifications in the pharmaceuticals industry. It combines two quality assurance functions. The first is automatic, objective checking of the first print sheet using the PDF data from prepress or the approved customer PDF. The second is a full comparison of each sheet with a digital reference sheet. Imaging and print errors are reliably detected and can be rectified straight away.

The integrated reporting function provides binding proof of quality for both systems. This makes time-consuming manual quality assurance measures and expensive reprinting as a result of tiny printing errors a thing of the past.

Functions and benefits at a glance:

- Perfect sheet inspection for early detection of printing errors and material defects
- Uses two high-resolution line scan cameras (RGB or BW)
- Verification of a printed sheet against a PDF from prepress
- Constant monitoring of all print sheets passing through the press right up to the maximum print speed
- User-friendly operation and clear display of errors on the Prinect Press Center's Wallscreen
- Comprehensive documentation
- Customized solution for packaging and label printing
- Prinect Inspection Control is available for the Speedmaster XL 75, CX 102, and XL 106 series

Print Color Management/ISO Certification. For a Reliable and Sustainable Printing Process.

Print Color Management (PCM) is a print shop service that only Heidelberg offers on this scale. The aim is to optimize and standardize the entire Color Workflow, and to provide consulting and training services for everyone involved. PCM delivers maximum color fidelity and a perfectly coordinated process from pre-press to press. In addition to significantly improving quality, it also reduces paper waste and makeready times and boosts productivity and cost-efficiency. The extent of PCM depends on the print shop's needs and wishes.

The individual modules:

Intensive consulting and analysis of the current situation. Analysis of the print shop's current situation with recommendations for further modules, scheduling, specifying of standards, and tips on necessary aids.

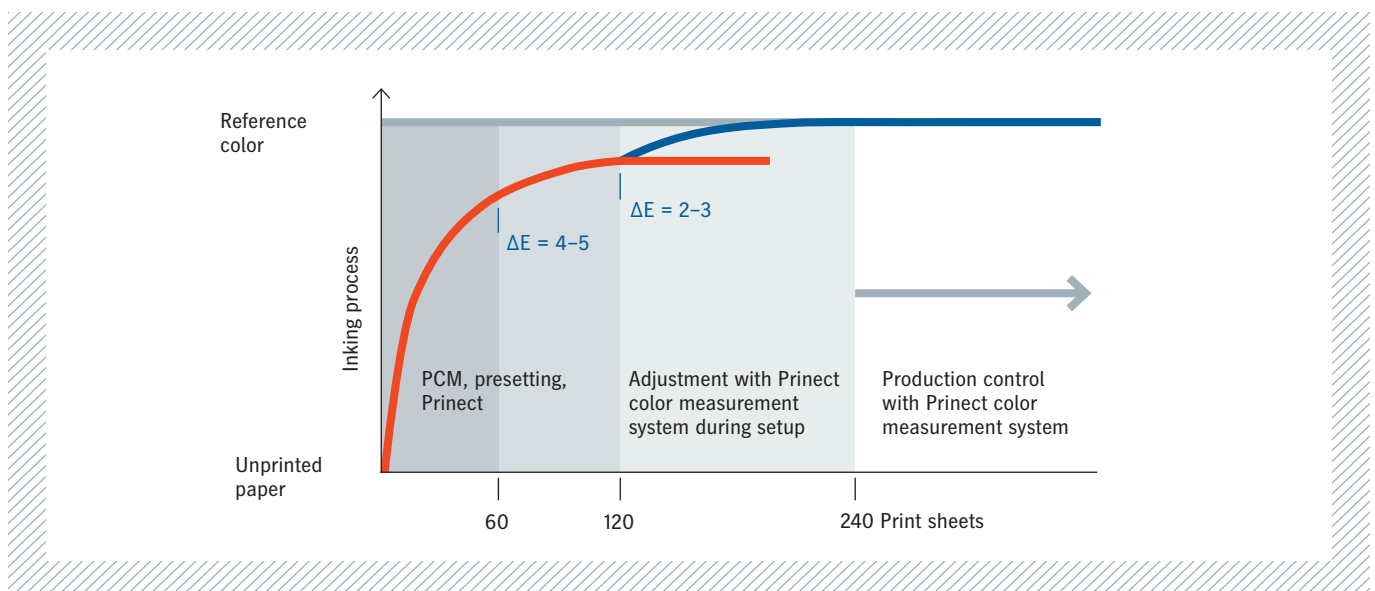
Press optimization. Adjustment of pre-inking and color presetting in conjunction with CIP data. Adjusting rollers, inks, dampening solutions, underlays, etc. for good and reproducible print results.

Process calibration. Adjustment of the CtP system for accurate reproduction. Determining the printing characteristic and transfer to the CtP system. This produces printing plates that achieve precise tonal values and high-contrast results.

Color management, proof, and ICC color profiles. Creation and modification of ICC color profiles and their application at the prepress stage for true-color proofing. Ink saving and gray component replacement requirements are also taken into account.

Monitoring and documentation. All steps are recorded and documented for processes, presses, and consumables alike. Training sessions enable your staff to make corrections independently. Regular checking of results ensures consistently high quality.

Certification to ISO 12647-2. Following standardization to ISO 12647-2 and once the print shop has independently achieved appropriate results in the production run and during proofing, Heidelberg issues a certificate that is valid for two years.



Far Less Waste. Thanks to Controlled Processes with the Prinect Print Shop Workflow.



Huge amounts of paper can be saved each year by using the Prinect workflow throughout the setup process.

Annual CO₂ emissions of a printing press. The volume of CO₂ emitted by a press during operation depends on the paper, energy, printing plates, and other auxiliary and process materials used. With ink in particular, there is huge potential for cutting CO₂ emissions by preventing paper waste.

Perfect coordination of all Prinect components – including presetting of ink zones, control systems, and color measurement systems – results in savings of 350 sheets per setup process. Calculated over an entire year, this adds up to a total of 210 metric tons of paper and 270 metric tons of CO₂ for a Speedmaster XL 106-10-P. What’s more, the setup time can be cut by up to twelve minutes.

Less waste – more environmental protection. In this way, Prinect color measurement systems enable you to use your resources far more effectively. The savings made deliver both ecological and economic benefits. The end result is a healthier environment – and a healthier balance sheet.

Potential savings per million sheets
Savings achieved by reducing setup waste by 350 sheets per setup process:

Paper	Energy	CO ₂
5.86 t	-	7.50 t

Prinect Offers the Ideal Measurement System for Every Application.

Newcomers to Prinect are pleasantly surprised by how quickly they learn to use Prinect Easy Control. Whereas manual measuring devices previously had to take measurements in individual zones, it now takes just a few seconds to measure the entire print control strip and set all ink zones simultaneously. This saves time during setup and results in greater print run uniformity.

The same is true of Prinect Axis Control, which also offers the ideal support for industrial commercial and packaging printers with its higher level of automation, color databases, and reporting function. Vacuum suction always ensures optimum flatness, even with thin paper and thick cardboard.

Prinect Image Control delivers uncompromisingly uniform quality if you are comparing individual repeats or printing a job on several different presses. The possibility of dispensing with the print control strip by placing measuring elements between packaging flaps is a special feature of Prinect Image Control. This delivers invaluable benefits, especially in packaging printing.

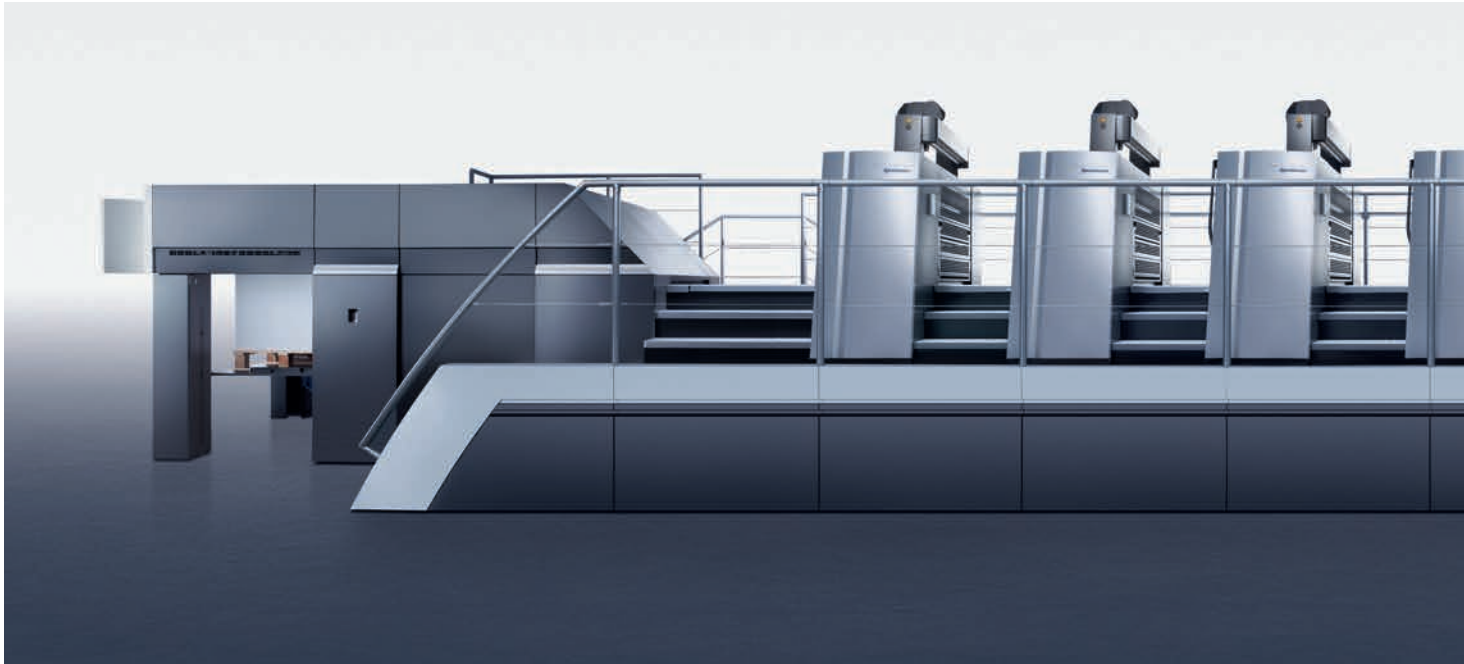
Prinect Inpress Control is the ideal solution for standardized processes and numerous job changes. The setup speed is the same as the production speed, and register and color control processes are completed automatically. The use of spectral measuring technology enables the press to be set up for new paper or spot inks without stopping it. Prinect Inpress Control is also the best solution when long runs need to comply with very narrow tolerances. After all, every single print sheet is measured.

Prinect Inspection Control spots everything from hickeys, smudging, and scumming to blanket defects, thereby ensuring that only error-free repeats reach the customer. This level of quality is required in particular for pharmaceutical packaging, but also for other high-quality print products.

The Prinect quality measurement systems – which system for which application?

	Prinect Easy Control	Prinect Axis Control	Prinect Image Control	Prinect Inpress Control	Prinect Inspection Control
Commercial printing	•	•			
Industrial commercial printing		•	•	•	•
Packaging printing		•	•		•
Label printing			•		•

A Real Success Story: Heidelberg has been Setting Benchmarks for Spectral Color Measurement Systems for more than Two Decades.



before 1992

1998

2001

2002

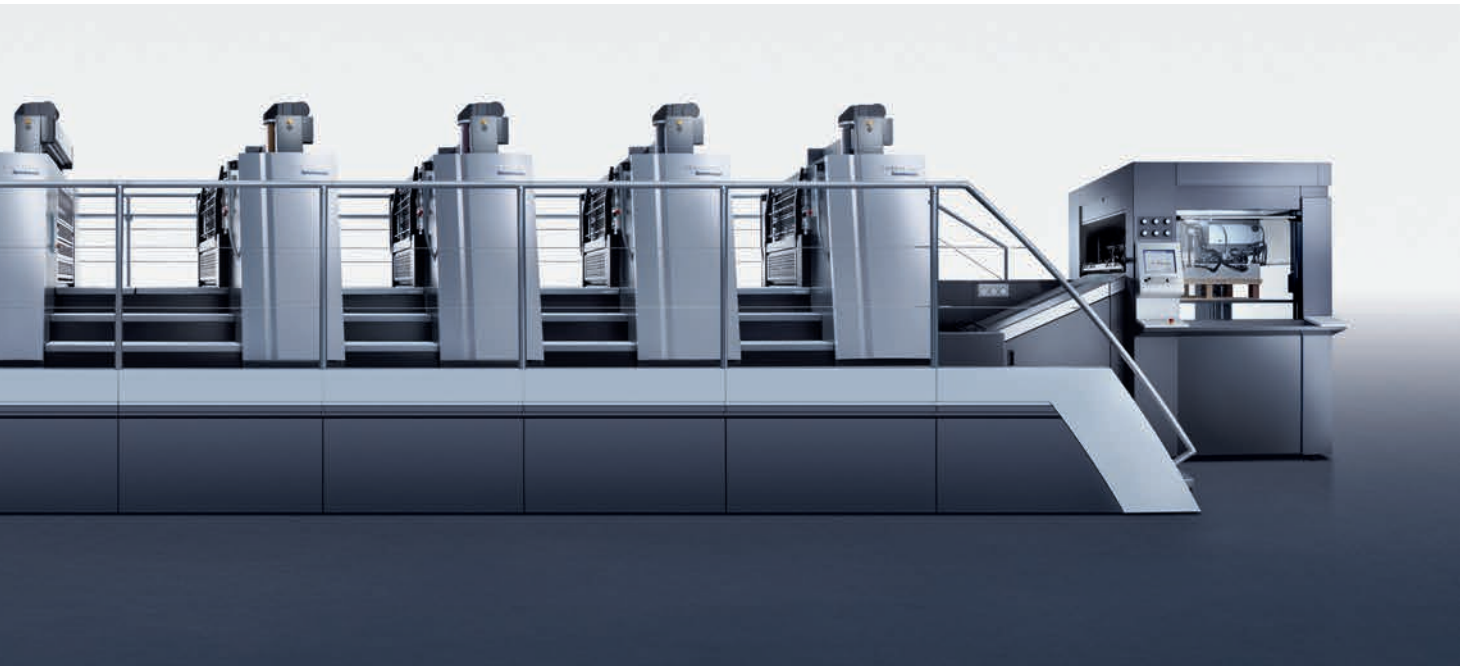


In 1989, Heidelberg unveiled Quality Control – the first spectral color measurement system on a press. Even then, Heidelberg could predict that a process-independent measuring method had a promising future.

Prinect Image Control: The first and only color measurement system on the market for spectrophotometric measurement of the entire print image.

Color Interface on Prinect Image Control: Transfer of measured values to prepress for adjustment of ICC color profiles and tonal value correction on the printing plate.

Prinect Axis Control: The first color measurement system on the control console of a press with a motorized measuring head that moves in two directions, thereby enabling the print control strip to be placed anywhere on the print sheet.

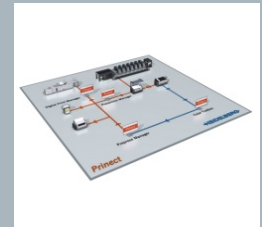


2006

2008

2010

today



Princt Inpress Control:
The only spectral measuring system in an offset printing press. Maximum measuring accuracy combined with extremely fast ink zone control and register adjustment before printing starts.

Princt Inspection Control:
The inline sheet inspection system for performing comparisons with the PDF from prepress. This ensures not one single error is missed!

Princt Easy Control:
Integrated into the Princt Press Center control station, it benefits from touchscreen operation. A standard measurement system with the functions, precision, and design customers have come to expect from Heidelberg.

The Princt Color Workflow:
The measurement systems become the print shop's central quality station. They automate press setup operations with prepress data. Measuring results from the pressroom ensure consistently high quality in the workflow.

Technical details

	Prinect Easy Control	Prinect Axis Control	Prinect Image Control	Prinect Inpress Control
Connectable to Speedmaster presses				
Prinect Press Center	SM 52, SM 74 SX 52, SX 74	•	Not for XL 145 and XL 162	SX 102, CX 102, XL 75, XL 105, XL 106, XL 145, XL 162
Prinect Press Center Compact	SM 52, SM 74, SM 102, CD 102	-	•	-
Prinect CP2000 Center	-	-	•	-
Multiple press connection	-	-	Up to 4 presses	-
Location of the color measurement system				
Integrated in the control station	•	•		
Built in the press with additional handheld device				•
Separate console		XL 145 und XL 162	•	
Print control strips				
Regular 5 mm × 6 mm patch size	•	•	•	•
Micro strips 3.25 mm × 4 mm patch size	-	•	•	•
Auto tracking and makeready assistant	-	•	Starting 2013	Not required
Automated position detection	-	•	•	•
Automated type identification	•	•	•	-
Mini Spots	-	-	•	-
Substitution of the print control strip by CIP4-PPF data	-	-	•	-
Full print image measurement, 50 million CIELab values	-	-	•	-
Measuring speed				
	150 mm/sec.	200 mm/sec.	200 mm/sec.	Max. press speed
Illuminant				
Maintenance-free LED		•	•	
Halogen lamp	•			Manual device
Electronic flash				•
Vacuum suction				
	-	•	•	Not required
Netprofiler spectral calibration				
	-	•	•	Manual device
Workflow integration				
Analyze Point Qualitätsreports	-	•	•	•
Quality monitor data for process control and color management	-	•	•	-
Database for spot colors				
User-definable, unlimited storage	•	•	•	•
Pre-installed Pantone and HKS databases	-	•	•	•

• Available - Not available

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