Screen

Truepress Jet520 HD Series

Full-Color Variable Printing System

High-definition inkjet on offset stocks

This brochure is printed by the Truepress Jet520HD with SC inks (CMYK) on offset coated stock.
Quality that opens new doors

Capitalizing on innovations in quality, speed and accuracy of inkjet printing, we are continually evolving the Truepress Jet520HD series. Each new development advances our pursuit of quality and capability, and expands the boundaries of conventional inkjet concepts, taking inkjet printing to levels never previously seen.
Books
Its ability to print on a wide range of paper stocks without the need for pre-treatment and a fully automated workflow enable full scale “book of one” production. Outstanding productivity and uptime, superb color reproduction and impressive detail all contribute to the achievement of the quality levels required for high-end publication work.

Commercial printing
Achieve high quality, offset-like reproduction on the wide variety of stocks required by this challenging market, including heavy weight offset coated and uncoated fine stocks. The flexibility to print to thickness ranging from 40 to 250 gsm enables the production of catalogues, posters, POP display and a diverse range of other applications essential for commercial printing.

Transactional printing, direct mail
A new range of applications is now possible thanks to a support for a wide variety of coated and uncoated stock. High-speed RIPping enables high volume print production at image resolutions up to 1,200 dpi. It also features Screen’s original secured workflow solution using integrated camera inspection system to achieve accurate and reliable printing.

Other applications
The Truepress Jet520HD incorporates a wealth of core technologies, such as its wide paper compatibility, excellent print quality, automated workflow, and cutting-edge imposition and color management functions. These strengths make it ideal for on-demand printing of manuals, maps, timetables and many other applications.
Diversity

The unique and innovative technologies included in the Truepress Jet520HD and its SC inks have been widely praised. Their excellence led to them receiving an InterTech™ Technology Award from Printing Industries of America (PIA) in 2017 and a technology award from the Japanese Society of Printing Science and Technology (JSPST) in 2018.

Wide-gamut inks for direct printing on offset coated paper

SCREEN’s SC Inks are proprietary water-based inks designed to print directly onto offset coated paper. Their unique permeability and adhesion technologies eliminate the need for an anchor coat while helping to preserve the texture of papers and reduce operating costs.
SC inks offer both high density and high-speed drying, enabling the formation of sharp, well defined dots with no bleeding. They allow the Truepress Jet520HD to create rich, vibrant color tones that are compatible to offset printing.
Powerful drying functions

Inkjet inks have a high moisture content compared to offset inks, which means the drying system has a large impact on print quality and productivity. The Truepress Jet520HD features a highly stable and efficient drying mechanism, and when this technology is combined with the high-density, quick drying characteristics of SC inks, the result is outstanding quality and rapid output. The Truepress Jet520HD+, the model with optional additional dryer, further improves both print speed and quality, especially when using offset coated stocks and difficult-to-dry substrates.
BREATHTAKING

Smooth and delicate textures that fascinates readers

The Truepress Jet520HD takes inkjet to a completely different level, vividly reproducing images, textures, details and solid areas of color in a way not previously seen from high-speed inkjet printing.

Cutting-edge printhead technology

The Truepress Jet520HD is equipped with inkjet printheads that deliver an industry-leading minimum droplet size of two picoliters as well as advanced proprietary screening technologies. Its 1,200 dpi resolution also enables the creation of extremely realistic looking textures. These features produce smooth and vibrant gradations, providing quality levels comparable to offset printing. This quality is matched by extremely high precision. Printhead control technologies and unique inks that eliminate bleeding enable the reproduction of the most minute details. Even fine characters and lines can be printed with outstanding accuracy.
Inspiring
Vivid colors that excite the senses

SCREEN’s proprietary inks enable unprecedented quality levels for an inkjet press.

Wide-gamut inks
Unique Truepress SC inks feature vivid CMYK primary colors and fast drying characteristics that eliminate bleeding and support the reproduction of a wide color gamut. These high value added inks are the fruit of SCREEN’s dedication over many years in developing inkjet presses and their expertise in ink characteristics, screening and color management, unique head control systems and more. With a tremendous color gamut, SC inks with the Truepress Jet520HD, maximize the exceptional quality and open up a wide range of new possibilities for inkjet printing. Take advantage of this winning combination to help grow your business.
Hardware performance

The Truepress Jet520HD incorporates a range of leading technologies in its printhead, ink and transport systems, all designed to maximize its capabilities and produce quality levels comparable to offset printing. This outstanding performance redefines the existing concept of variable printing systems and opens up new business opportunities in the printing market.

Print Quality

- **Maximum resolution of 1,200 dpi**
  The adoption of newly developed grayscale heads allows multi-droplet printing at a resolution of 1,200 dpi. This enables extremely high-quality output of the gradations for middletones, supporting smooth color reproduction with minimal graininess.

- **Precise 0.1 pt lines and microtext**
  Conventional inkjet presses are known for their issues with printing microtext and fine lines. The Truepress Jet520HD features high-resolution 1,200 dpi printheads with a minimum droplet size of two picoliters plus proprietary Truepress SC inks, enabling it to deliver extremely precise reproduction even in this range. The result is a sharp, eye-catching finish with no bleeding or jaggies.

- **Quality control using built-in scanner**
  Density differences between printheads are often cited as a problem when using presses with multiple heads. The Truepress Jet520HD is equipped with built-in quality control scanners that perform regular checks and automatically adjust uniformity. After correction, the information is registered as an individual paper profile. The workflow can also be expanded to include JetInspection (option), a specialized unit capable of inspecting the entire surface of all media in real time. Using JetInspection dramatically reduces the time required for the creation of correction data.

Ink and Head control

- **High-performance specialized inks**
  SCREEN has developed the SC inks with various properties including water, rub, heat, light and chemical resistance. With a wide color gamut virtually the same as offset inks, SCREEN’s proprietary inks enable unprecedented quality levels for an inkjet press.

- **Two additional printheads**
  Two additional printhead arrays can be added as options (planned), allowing the Truepress Jet520HD to accommodate specialized inks such as spot colors, in addition to CMYK (up to six colors). The wider expressive capabilities provided by these inks greatly expand the range of printing services that can be offered to clients.

- **Smart printhead control**
  The Truepress Jet520HD is equipped with a unique printhead control that recognizes the colors included in print data in advance and activates only the required heads. The printheads that are not in use keep the cartridge caps closed, increasing the efficiency of both ink and energy usage.
Various Capabilities

▶ **Compatibility with various paper types**

The Truepress Jet520HD comes preinstalled with heated rollers and air heating units, creating a powerful drying system that is optimized for its cutting-edge SC inks. The Truepress Jet520HD+, the configuration with optional additional dryer unit, further improves throughput and quality. The press also incorporates a four axis mechanism that enables stable transfer of a wide variety of paper types. Together these features provide rapid, high-quality printing on standard inkjet papers as well as recycled and special papers with a variety of characteristics. The Truepress Jet520HD also supports paper thicknesses from 40 to 250 gsm, significantly expanding the range of potential applications.

▶ **Dynamic Nozzle Shift (DNS)**

The Truepress Jet520HD is equipped with the Dynamic Nozzle Shift mechanism. This unit includes a transport system that is designed to reduce meandering to an absolute minimum. Sensors installed as part of the mechanism also perform real-time detection of the minute natural oscillations that occur during the high-speed transport of paper. The printing position is then automatically adjusted to the optimal location for the printing data. The mechanism reduces the effects of meandering and skewing much more effectively than in previous systems and ensures stable, consistent print quality.

▶ **Cooling roller**

The cooling roller normalizes paper that has lengthened due to heat while passing through the drying unit of the first printer (front side). This helps to maintain registration accuracy between the front and back surfaces in the second printer (back side). It also prevents heat transfer to the back side printer by the paper and supports stable control and maintenance of the equipment.

▶ **Easy maintenance**

The Truepress Jet520HD uses a pull-out type printhead module, allowing daily maintenance to be performed with minimum effort. In the unlikely event a problem does occur, support staff can handle the situation more quickly, helping to maintain high operating ratios.

▶ **Safe and reliable ink supply system**

Easy-to-handle 10 liter ink cartridges feature a different cap shape for each color to prevent incorrect insertion. The cartridges also automatically tilt as the remaining volume of ink decreases. Two cartridges for each color can be set as a standard spec and optional 200 liter ink supply system is also selectable as option.

▶ **Paper feeding assist mechanism**

Once the leading edge of the paper is fixed by the paper feeding assist bar, it can be quickly and reliably sent through to the discharge section simply by turning a handle. The stability of this process eliminates paper feeding errors and greatly reduces the labor involved in preparing for printing.

▶ **Easy touch panel operation**

The entire sequence of operations from job registration to printing can all be entered and checked from the touch panel. This includes advance registration of paper information and fine adjustments to settings. Touch panel control helps to maximize both on-site work efficiency and uptime.
EQUIOS is a universal workflow system that draws on SCREEN’s extensive prepress and printing knowledge to maximize the performance of our cutting-edge inkjet technology. EQUIOS offers high-speed processing using Adobe’s PDF Print Engine 4 and Mercury RIP Architecture, a newly developed color management system that links to paper information and user-friendly imposition functions that integrate SCREEN’s full prepress knowhow.

These features have been developed based on SCREEN’s rich experience and encompass the full range of our professional knowledge. Together they help to provide a work environment that is easy to use regardless of the operator’s own skill level.

The Mercury RIP Architecture is a scalability framework and distributed multi-tier cache technology developed by Adobe for its PDF Print Engine. Mercury enables enhanced, high-performance rendering and is essential for digital presses as well as variable printing.

The EQUIOS workflow system for the Truepress Jet520HD incorporates this advanced RIP architecture.

PrintSimulator

Test runs can easily be transferred to PrintSimulator, significantly improving uptime of the whole system. PrintSimulator offers three key functions. It provides accurate estimates of ink consumption volumes and RIP speeds, including a judgment of whether on the fly RIP’ing can be performed. It also allows PDF analysis reports to be created by assessing and listing any issues that may be caused by PDF descriptions.

PrintSimulator NEW

- Ultra-fast processing of high-volume data
  For web press printing, the computation speed of output data is an important factor that affects the operating ratio of the printing system in various ways. EQUIOS helps to minimize the load placed on RIP processing by caching the shared sections of variable data (reusable objects). It also supports on the fly RIP’ing by allowing RIP processing to be performed as the required data is being transferred. The parallel processing effectively maximizes press operating ratios.

- Automatic selection of optimum color profile
  The EQUIOS Color Management System first converts all the elements in a job to the targeted color space, such as GRACOL, G7 and SWOP. It then automatically selects the appropriate ICC profile according to paper types and output devices. Thanks to the EQUIOS Color Management System, specialized skills are not required to achieve professional results.

- Proprietary screening technologies
  The Truepress Jet520HD utilizes SCREEN’s proprietary screening technology, enabling optimal display of gradations in images from highlights and shadows through to midtones. This system also minimizes moire and broken lines to produce high-definition output.

- Spot color
  Matching spot colors with process color inks is a challenge when considering full digital production. The EQUIOS Spot Color Editor helps reproduce the closest possible match by evaluating individual spot colors and approximating the closest CMYK reproduction values. The Editor then automatically generates a patch chart of the full range of possible process color matches for the target spot color. The operator then selects the process color patch that is the closest visual match and the selected separation is registered within EQUIOS to better match the spot color for subsequent jobs.

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As print quality has continued to increase, calls for improved detection capabilities have also grown. The Truepress Jet520HD can be loaded with the JetInspection software that is capable of performing highly comprehensive real-time inspection of high-quality variable images across all pages, in addition to providing conventional processing of OCR fonts and decoding of barcodes. JetInspection helps the Truepress Jet520HD to achieve its maximum possible performance. The software is also the foundation of the system’s consistent accuracy and reliability.

- **Original built-in design**
  The Truepress Jet520HD can be loaded with optional JetInspection, its own specially designed, dedicated inspection system. JetInspection can be controlled directly from the operation panel of the Truepress Jet520HD. Even during printing, the operator is alerted by a warning light if any defects are detected and images of the defects and their positions can be checked in real-time via the operation panel and network. Inspection logs including defect data and OCR and barcode decoding results can also be compiled and saved to EQUIOS.

- **Superior defect detection function**
  Inspection is highly detailed. It is possible to detect everything from OCR fonts, decoded bar codes and missing dots to foreign substances, color variations and improperly output text. Defects are displayed in an inspection results screen, making it easy for operators to spot them. Operators can also register printing data and the base color of the paper in advance. This helps prevent false positives and improves the accuracy of defect detection.

- **Linking with postprocessing**
  Error information and its record ID can be transferred to postpress systems as CSV files. SCREEN collaborates with industry leading postpress and other POD printer vendors and can offer total workflow solution from real-time error inspection, to diverting in postpress process, and to reprinting using both toner-based cut-sheet printers and our Truepress inkjet press.

- **Dual simplex inspection**
  In a dual simplex configuration, the two printers usually used for the front and back sides can both be operated independently as front side printers. With this configuration, it is possible to perform separate inspections for each printer.

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### Greater efficiency during daily maintenance

Using JetInspection greatly speeds up the creation of printhead correction data normally performed with the preinstalled scanner of the Truepress Jet520HD. This in turn cuts the time required for quality management, helping to improve operating ratios. JetInspection Lite is also now available as an option. The built-in camera system is equipped with the quality management functions to create the printhead correction data.

**Supported printhead correction items**
- Shading correction (color matching between printheads)
- Checks for nozzle clogging of printheads
- Alignment correction (print position accuracy)
EQUIOS DM Solution

Rapid automatic creation of consistently high-quality direct mail with real-time inspection of all pages

▶ Varystudio variable data printing design software
Varystudio is proprietary software we have developed for the editing of variable print data (Adobe Creative Cloud plugin). It enables on-screen mapping of variable data elements in InDesign, processing of a wide variety of imposition patterns, insertion of postprocessing barcodes, and high-speed output of variable PDFs using hot folders. Varystudio can be easily configured to suit any client’s production environment. It also adapts seamlessly to any security measures and output volumes, helping to create an ideal workflow.

▶ Record management functions (EQUIOS option)
The PDF/VT international standard for variable printing offers the advantage of being able to embed attribute data such as ID numbers and recipient names directly into PDFs. EQUIOS is able to read this data and perform page management using individual records. This enables the insertion of variable barcodes for record management and the execution of defect removal and reprinting from postprocessing devices using the information. The result is a highly streamlined automated workflow that boosts productivity.

▶ AFP/IPDS Support
Reliable and high speed IPDS controller co-developed with TagG Informatique is selectable as a optional controller.

▶ PDFormstudio solution software for variable PDF
The use of PDFs for data submission is also increasing in variable printing thanks to their reliability and high quality as a file format. PDFormstudio uses character strings such as ID numbers, postal codes and names in PDFs to perform aggregation and sorting. It also offers simple editing functions that enable composition with background data, creation of serial numbers and addition of variable images. PDFormstudio provides a comprehensive solution for optimizing PDFs submitted for variable printing without returning to the original data.

▶ End-to-end workflow solution
SCREEN has been working with industry leading postpress and other POD printer vendors to ensure secured and automated end-to-end workflow. EQUIOS features many functions to bridge gaps between processes, such as automated job creation and input, centralized output instruction, etc. It also enables the construction of a seamless workflow from the creation of variable barcodes for record management, to defect detection on inspection systems, to removal of error records on postprocessing devices and finally issuing the output commands for reprinting on production printers. Only SCREEN offers such an incredibly comprehensive workflow solution.
EQUIIOS Book Solution

Automatic optimized imposition of mixed and small lot book runs with different page sizes and counts

▶ Automation with open interface

Books are available in many different sizes and there are also wide variations in page counts, making it difficult to create job settings. EQUIIOS is equipped with open interface functions that enable it to link freely with upstream systems such as MIS and Web2Print. Order data received in CSV or JDF format can be reformatted on the basis it will be automatically processed by EQUIIOS. This allows the automatic grouping and transfer of jobs that are able to share output conditions such as their paper types, sizes and fold patterns.

Once EQUIIOS receives the job instructions, it quickly and automatically performs job creation, imposition and output setting, then adds different barcodes and marks, and finally executes RIP processing in a continuous flow. In other words, EQUIIOS has the ability to automate almost all of the operations required to prepare for printing.

▶ Support for diverse postprocessing methods

Barcodes for section sewn binding

EQUIIOS supports roll to book impositions that are suitable for Meccanotecnica’s Universe Sewing Web-fed, the innovative Roll-to-Book solution for sewing books directly from the roll. It also includes dynamic barcode output capability required to identify signatures and book blocks for sewing.

Variable cutting of lengths within jobs

Performing book production with a single imposition pattern can generate surplus pages, leading to waste paper and higher costs. EQUIIOS Book Solution controls multiple imposition patterns and sheet lengths using barcodes. If surplus sheets are created when using 16 page imposition, a 12 page layout can be incorporated to eliminate waste.

Compatible systems:
- Horizon Smart Binding System
- Tecnau Libra One
- Hunkeler CS6-HD / SD7
Space requirements

Truepress Jet520HD specifications

Printer system
Inkjet, single-past LV/VI

Controller
EQUIOS - Standard: PS, PDF, PDF/VT
IPDS Connector - Optional: AFP/IPDS

Inks
Truepress SC inks for Truepress Jet520HD
CMYK (standard)

Resolution
Max. 1,200 x 1,200 dpi

Printing speed
Max. 150 m/min. (with options)*1

Printing width
150 to 508 mm (6" to 20")

Media width
165 to 520 mm (6.5" to 20.4")

Media thickness
40 to 250 gsm (64 to 157 gsm for the speed of 150 m/min.)*1

Dimensions (W x D x H)
4,070 x 2,370 x 2,200 mm (160.3" x 93.4" x 86.7")

Weight
Approx. 4,050 kg (Approx. 8,910 lb)

Power requirements

Printer
Three phase 200 to 240 V, 30 A / 380 to 415 V, 20 A

Controller:
Single phase 100 to 240 V, 2 A

Additional dryer -Option*2
Three phase 180 to 220 V, 110 A / 380 to 480 V, 50 A (A separate 400 V step-up transformer is required when using 200 V facilities.)

Operating environment
Temperature:
18 to 24°C (64.4 to 75.2°F)
(no sudden temperature change)

Humidity:
40 to 60% (no condensation)

Barcode reading function
2D barcodes: QR, Data Matrix, PDF417 (Black 100%)
Placement angle: 0, 90, 180, 270 degrees
Background: white
(No voids within the area around each code is based on the quiet zone of the code concerned)

Log
Acquired through the user interface

Decode results
Saves all results and outputs them as a CSV file

Power requirements
PC: Single phase 200 to 240 V AC, 15 A
(can be installed in the rack for EQUIOS)

Specifications of JetInspection (option) for Jet520HD

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Full after-sales service network ensures more reliable system operation, helping to build a stronger production base and greater peace of mind for customers

**Real-time maintenance minimizes down time**

TRUST Network Service

TRUST Network Service is a proprietary support program provided by SCREEN to prevent unexpected problems. This program offers a full menu of services including predictive diagnosis based on monitoring equipment conditions, as well as regular analytical and maintenance reports. If trouble does occur, it is also able to precisely identify the area of malfunction.

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