Presstek 52DI® and 34DI® Presses

Automated Four-color Digital Offset Printing Solutions

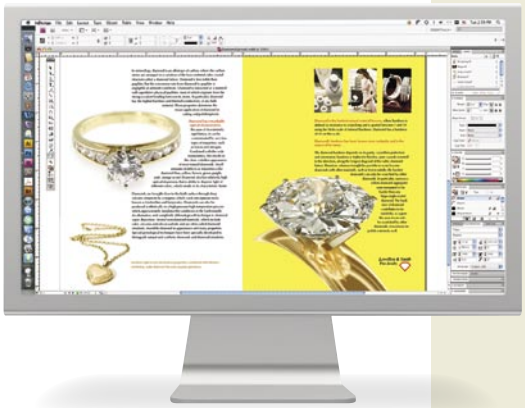
- Affordable short-run and fast turnaround printing
- High throughput
- Low cost per page
- On-press, chemistry-free imaging
- High resolution printing
- Streamlined workflow
- Compact footprint
- Environmental benefits

PRESSTEK
A SMARTER WAY TO PRINT

Digital Printing, Offset Versatility

Presstek DI® Presses Are the Right Choice for Today's Market

As a print service provider, you are experiencing demand for shorter run lengths, faster turnaround, and lower cost printed products. To compete, you must streamline your printing operation and increase efficiency. You must respond to a wide range of job requirements and satisfy the highest quality requirements. And, you want a quick return on your investment and equipment that will perform profitably for years to come.



Presstek DI digital offset presses are the right solution for today's market conditions and demands. Presstek DI presses are highly automated sheetfed four-color offset printing presses. They provide the speed and efficiency of digital printing while delivering versatile, high caliber offset printing.

DI presses are the best solution for any print service provider who needs to:

- **Regularly print runs from 500 to 20,000+ impressions**
- **Produce a stream of high quality four-color output**
- **Meet a wide range of ink and stock specifications**
- **Meet the toughest deadlines**
- **Fully capitalize on digital communications**
- **Be more capable, profitable and competitive**

Bridge the Gap

Bridging the gap between digital toner printers and conventional offset, Presstek DI presses offer the best of both worlds: digital efficiency and true offset performance. Presstek DI presses combine all imaging and printing procedures in one automated and integrated system.

DI presses are designed to deliver:

- Low cost per page for the most frequent run lengths in today's market
- Consistent, easy-to-achieve high quality color, up to 300 line and stochastic screening
- Ease-of-use and minimal operator interaction
- Minimum prep time; more time printing
- More jobs and higher volume every shift
- Versatility to print any job that can be printed on a conventional offset press
- A streamlined workflow and compact footprint
- Environmental benefits

Presstek DI presses meet nearly any ink and stock specification and are ideally suited for the majority of jobs in today's market. From postcards to multi-page booklets, DI presses offer printers a profitable way to produce the short-run color and versioned publications for which demand is growing.

Automated Digital Printing

- On-press, chemistry-free digital plate imaging
- Automated printing cycle, including plate loading, imaging, registration, inking and cleaning
- 10 minute makeready from the start of the print cycle to sellable color
- Zero Transfer Printing eliminates gripper changes and ensures precise registration from the first sheet to the last
- Speed up to 20,000 four-color, letter-size pages per hour
- Advanced Printing Density Control enables the operator to match printed output from run to run

True Offset Press Output and Engineering

- Superior waterless printing with less dot gain and a broader color gamut
- Versatility to print true Pantone® color inks, fluorescent inks, opaque white, vegetable oil inks, and varnishes
- Print on any offset stock, including onion skin, cover stock up to 20 pt. thick, pre-made envelopes, foils and plastics
- Real offset press engineering and manufacturing, with heavy duty parts throughout
- No duty cycle; no click charges
- Aqueous coating and UV options

A Smarter Way to Print

Superior Results for Your Customers and Your Business

High Productivity and Profits

Fast, effective response to customers' needs is critical to success in today's market. Presstek DI presses are designed to open doors to new business in the short-run and on-demand color market by dramatically increasing the speed, efficiency, and profitability of offset printing—without compromising quality.

Presstek DI presses provide the most streamlined workflow from digital files to printed offset quality sheets. There are no special skills or operator experience required. The entire printing process is automated—from plate advancing and imaging to printing and cleaning. No off-press plate production is required. The entire operation is consolidated in one compact system.

A complete job changeover takes as little as 10 minutes, including imaging plates and coming to color.

Accurate by Design

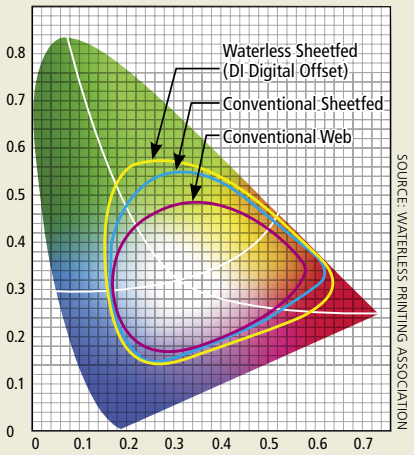
Presstek DI printing is inherently accurate: All plates are imaged on press in precise registration. Because the printing is waterless, there is no ink/water balance to achieve. Smart Inking automatically pre-sets ink keys, supplying the right amount of ink to the rollers to match the image. Zero Transfer Printing (ZTP) ensures that the sheet receives all four colors without movement.

Boost Your Productivity

Fast job changeover and makeready, printing speeds up to 10,000 sheets per hour, and the fast drying characteristics of waterless inks combined with infrared drying all dramatically increase throughput in your pressroom. You'll quickly print second sides, move jobs to finishing faster, and process more jobs every shift.

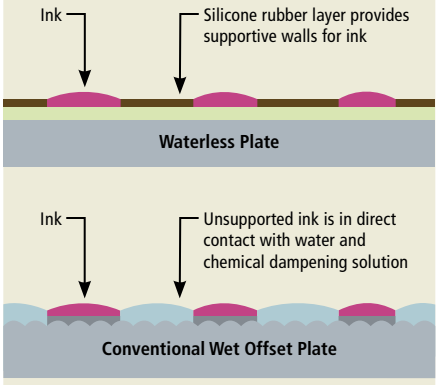
Higher Quality, More Accurate Color

DI waterless printing provides higher quality color with higher ink densities that expand the color gamut and produce more saturated color.



DI waterless printing provides a 20% larger color gamut than conventional printing.

When printing with a Presstek DI press, dot gain is reduced because the press eliminates the need for dampening solution. The dots are sharper and photographic shadow detail is rendered more clearly. Screen rulings of 300 lpi and FM screening are easily reproduced and the color is consistent.

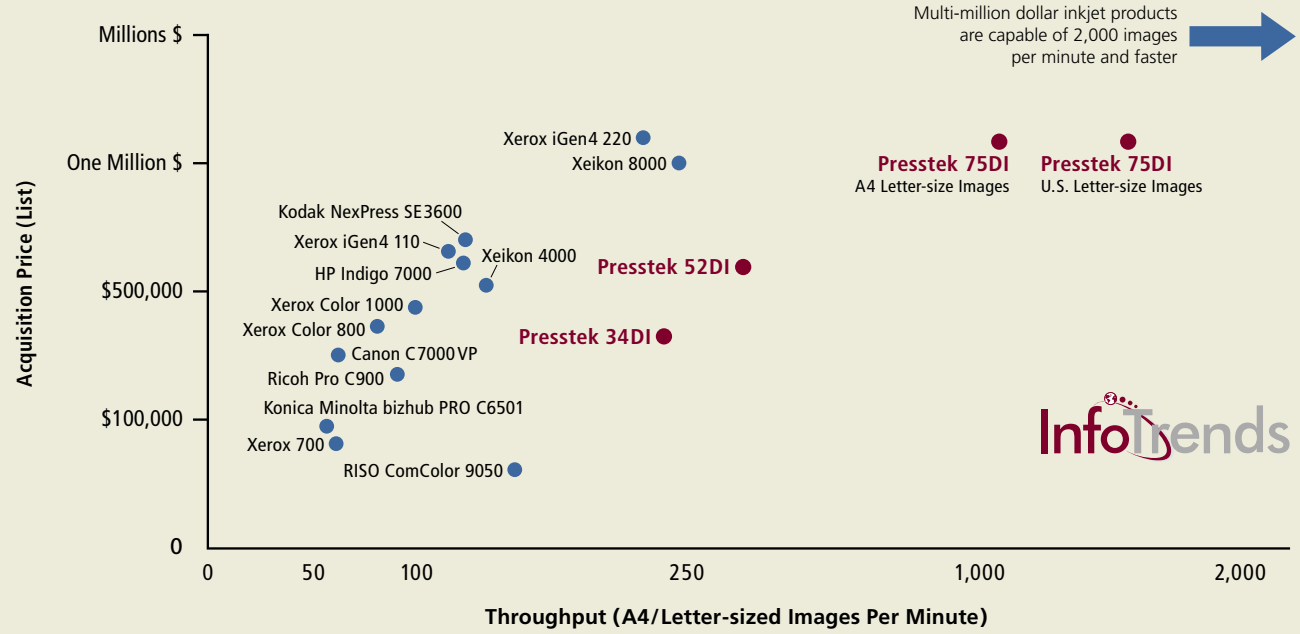


The Bottom Line

Today's financial environment calls for a maximum return on equipment investments. DI presses have consistently demonstrated price/performance advantages over other printing methods for a majority of jobs and run lengths. Proven to help printers strengthen their bottom line, Presstek DI presses offer:

- Affordable acquisition and operating costs
- No click charges
- Profitable printing of the majority of jobs and run lengths in today's market
- Capabilities to meet a wide variety of job specifications
- Substantially higher throughput than toner-based presses
- Greater profitability than conventional offset on short to medium run lengths
- Fast turnaround without scheduling conflicts
- High quality to attract new customers and win more business from current customers
- Maximum uptime
- Fewer operating steps, less equipment and waste than conventional offset

Digital Presses: A Price versus Throughput Comparison



Note: Scales are not linear.

Source: InfoTrends, Inc., 2010

Easy to Integrate

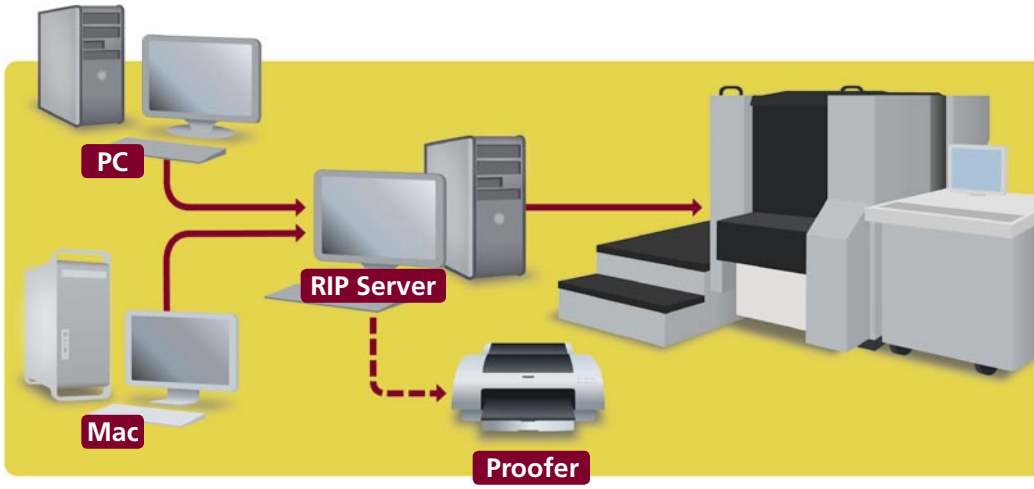
Presstek DI presses are easy to incorporate into any printing business and production environment. Their compact, all-in-one footprint eliminates the need for special space considerations or changes in your pressroom or prepress layout. Capabilities and condition of existing platemaking equipment are not factors when considering the acquisition of a Presstek DI press.

Existing personnel will easily transition to DI press operation. Operators require only minimal print production experience. Presstek's installation and training will have your DI press and operators working at full potential soon after installation.

All-Digital Workflow

Not only is a DI press easy to operate, it integrates easily into your existing digital workflow. Presstek DI supports PostScript® and PDF files in both Macintosh and PC environments. A DI press can be simply positioned as a high performance output device on your network.

DI digital offset printing is a perfect solution for today's on-demand and web-to-print sales models—where output devices must produce a steady stream of digital four-color printing with minimal steps and few interventions.

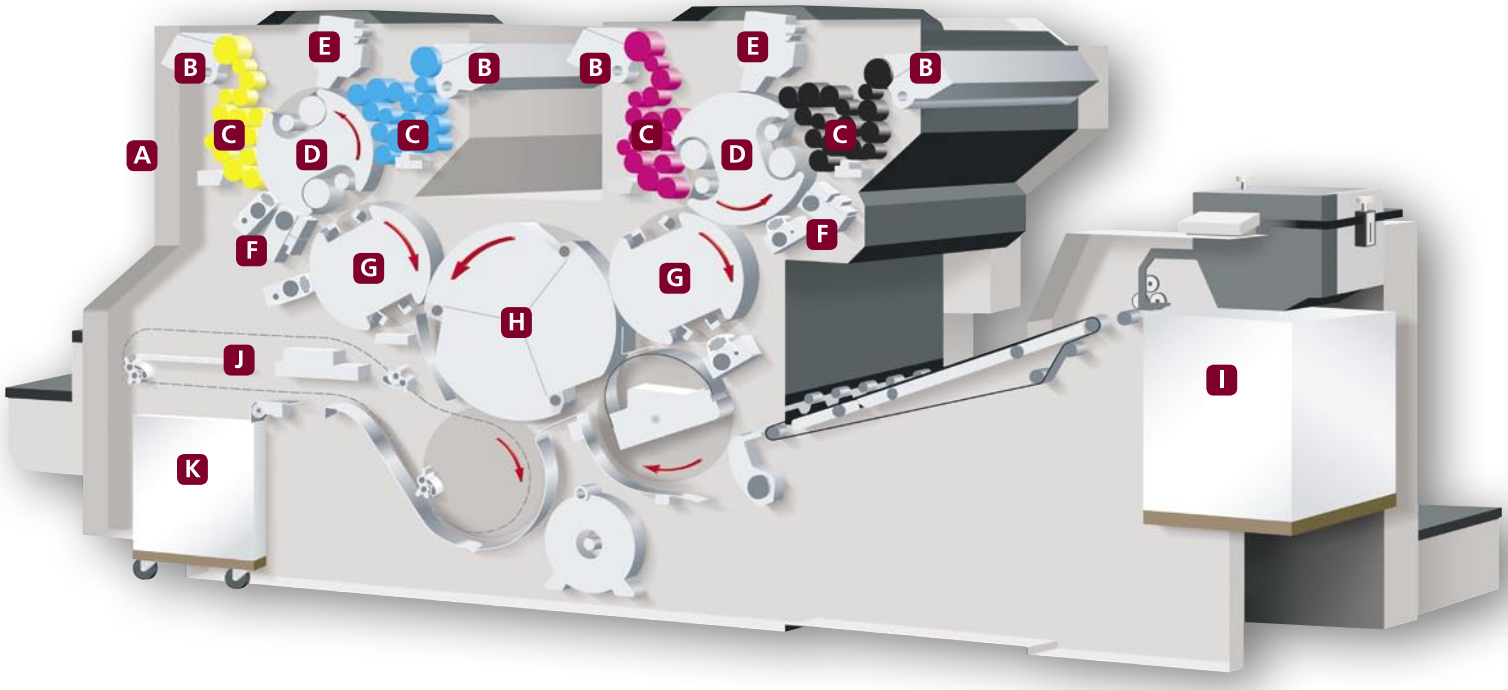


To help you create an integrated hybrid production environment, Presstek will work with you to calibrate your DI press color profiles across a spectrum of output devices in your shop.

For direct mail customers, Presstek DI presses are the perfect solution for printing integrated campaigns. Consistent color is easy to achieve across a spectrum of printed materials. Print high quality offset shells on a DI press, adding customized content on a toner-based press when needed.

Easy-to-Use, Highly Advanced Offset Presses

Integrating Digital and Offset Printing Technologies



A) Real offset press engineering features 1-inch cast steel side plates, helical steel gears and heavy duty metal parts.

B) Four-color waterless printing offers superior color range and image definition; also prints Pantone® inks, metallics, varnishes, and other specialty inks. Waterless printing eliminates fountain solutions and the resulting wastewater and VOCs, as well as the need to monitor ink/water balance.

C) Ink keys are preset based on color profiles and specific job requirements. Auto start-up pre-inks plates.

D) Spooled ProFire Digital Media is automatically dispensed, press declutches to spin plate cylinders at imaging speed. Used plates are automatically retracted onto take-up spools.

E) ProFire Excel imaging units simultaneously image all four plates at 2540 dpi. On-press chemistry-free thermal imaging eliminates plate chemistry and all the time, materials and expenses of off-press platemaking.

F) After imaging, plates are automatically cleaned and made ready for inking.

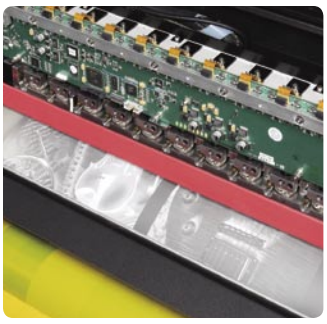
G) Presstek DI press design features double-plate and double-blanket cylinders.

H) Central impression cylinder holds three sheets. A sheet picks up four colors in two rotations without gripper changes, significantly reducing the potential for misregistration.

I) Print any offset stock from 0.0024" to 0.02" (0.06mm to 0.5mm) thick, including foils and plastics. The envelope feeder accommodates most pre-made envelope sizes and styles.

J) Infrared dryer expedites curing of inks. The auto clean cycle prepares ink rollers, blankets and plate cylinders for the next job.

K) Automated job changeovers and 10-minute makereadies facilitate profitable short-run printing, fast turnaround, and high throughput volume.



Left: ProFire Excel imaging and ProFire Digital Media provide an optimized system for fast, accurate, high resolution imaging. Right: On the central impression cylinder, sheets are inked with all four colors without gripper changes. Precise registration, from the first sheet to the last, is an inherent feature of Presstek DI press design.

Presstek DI Press Design

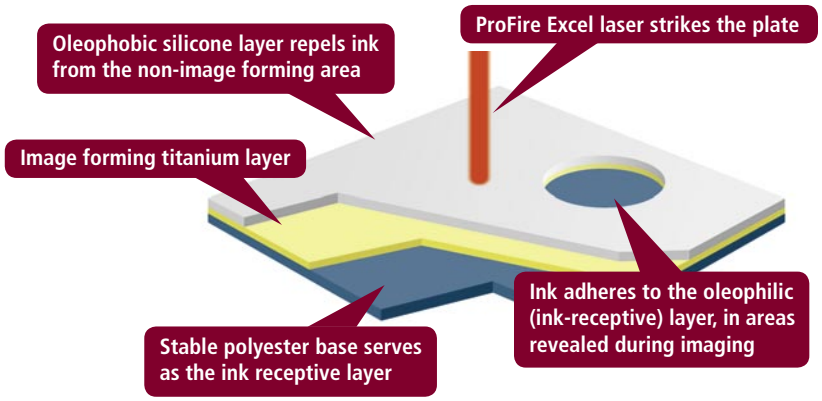
The exceptional efficiency and quality of DI presses are the result of three Presstek technologies—press design, laser imaging and thermal plate media—working together as an easy-to-use, highly automated system that produces outstanding results.

Presstek 34DI and 52DI models feature Zero Transfer Printing (ZTP), in which all four colors are printed on a sheet without transfer between cylinders. Each sheet is held firmly in place on a central impression cylinder for unsurpassed accuracy. The results are:

- First sheet register
- Precise registration, sheet to sheet and job to job
- Sellable color within 20 sheets
- Excellent ink coverage and reduced waste

ProFire Excel Imaging

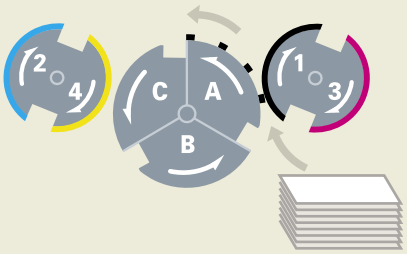
Presstek ProFire Excel imaging combines infrared laser diodes, laser drivers, data electronics, and motion control in one compact module. The multiple laser diodes each contain four uniquely addressable 16-micron beams. ProFire Excel imaging produces high resolution images of exceptional quality. Fine details, color fidelity, minimum screen values, and large solids are all produced with results that meet the most demanding offset printing needs.



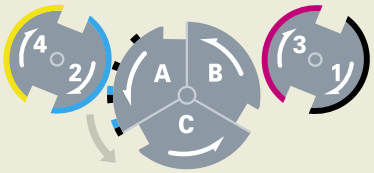
ProFire Digital Media

Presstek ProFire digital plate media is supplied on spools that hold enough media for 44 full-size jobs on the Presstek 52DI and 28 full-size jobs on the Presstek 34DI. It is manufactured with an ink-accepting polyester base layer, an image forming middle layer of titanium, and an ink-repelling top layer of silicone. Because the imaging process is a thermal reaction, there are no variables of exposure and chemistry. The result is sharper and better defined details and halftone dots. Presstek DI presses easily print screen rulings up to 300 lpi and FM (stochastic) screening.

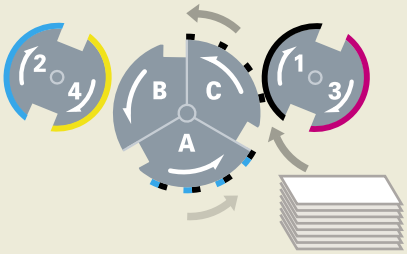
ZTP: Zero Transfer Printing



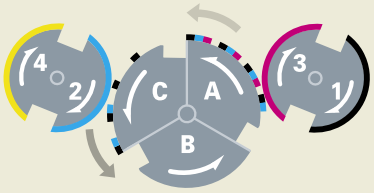
Sheets are fed one per revolution of the plate and blanket cylinders. Blanket 1 prints the first color.



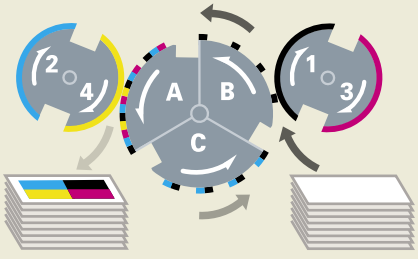
Blanket 2 prints the second color.



The next sheet enters the rotation, while the first sheet begins its second rotation.



Blanket 3 prints the third color on the first sheet during its second rotation of the impression cylinder, while blanket 2 prints the second color on the following sheet.



Blanket 4 prints the final color on the first sheet, which is then sent to the dryer and pile. The following sheet begins its second rotation, while another sheet enters.

Advanced Quality Control

Automated Color Management and Control

The Printing Density Control System (PDS-E) feature of Presstek DI presses enables operators to easily match printed output and keep color consistent sheet to sheet and run to run.

PDS is an Integrated and closed loop ink density control device on the DI press console. It measures:

- Solid density
- Screen percentage
- Trapping

Using a manual scan densitometer, density measurements are performed along a measuring strip (color bar) printed on the sheet for the PDS system.

The PDS system calculates the differences in density between the measured actual values and those of a target or 'OK' sheet. The results are returned to the console where ink key settings are regulated and automatically adjusted.

Benefits of PDS-E

- Simple, but accurate measuring system to determine solid density values in the individual ink zones
- Faster attainment of solid density target values
- Reduced waste
- Faster makeready
- Stable constant density values over the whole length of a run
- Target values are stored for reprints and collateral printing
- Reduced operator intervention
- Increased productivity with more jobs completed every day

The highly consistent and reliable color produced by DI presses, plus their ability to print Pantone® inks, make them a perfect choice for corporate printing applications and in-plant shops.

A Wide Dimension in DI Presses

Presstek 75DI Multi-tower Digital Offset Press

In addition to the versatile 52cm and 34cm models, Presstek offers the Presstek 75DI. A multi-tower digital offset press, the Presstek 75DI delivers the advantages of Presstek DI in a robust 29-inch sheetfed press.

- 4-color to 10-color models
- In-line aqueous coating option
- Sheet sizes to 31.02" × 23.62" (788mm × 600mm)
- Speed up to 16,000 sheets per hour
- Six minute job-to-job turnaround
- Print a wide range of applications for as little as a penny per page

Visit www.presstek.com for additional features and specifications.

A Greener Way to Print

Good for the Environment and Your Business

The same DI printing features that bring high quality, efficiency and lower cost operation to your business also bring substantial workplace and environmental benefits. These green features can be a major differentiator for your business.

- Chemistry-free on-press imaging eliminates the handling, disposal and hazards of imaging chemistry. The need to remake plates because of process variables and errors is also eliminated.
- The waterless printing and automation of Presstek DI presses eliminate the largest portion of a printer's VOC output—solvent-based dampening solutions and blanket wash solvents. In addition, waterless printing doesn't produce the chemically-tainted waste-water that results from conventional wet offset printing.
- With fast makeready, automated and precise registration first sheet to last, and fewer variables in the printing procedure, DI presses generate considerably less waste paper than other offset printing methods.
- Offset inks, including waterless inks, can generally be deinked for recycling without difficulty, while inkjet or liquid toners present challenges to deinking, according to the International Association of the Deinking Industry (INGEDE).

"Companies that take advantage of environmental opportunities can gain a competitive advantage over their peers through cost reductions, quality improvements, increased profitability, and access to new and growing markets."

— Jackson W. Robinson, Founder and Chief Investment Officer, Winslow Management Company, Investment Professionals

End-to-End Solutions for Your Business

Presstek is Committed to Your Success

Presstek's mission is to provide our customers with end-to-end solutions; this includes equipment, workflow solutions, installation, training, and support.

Presstek offers workflow choices for any size printing operation from small commercial shops to large operations with multiple digital and conventional output devices. These integrated, flexible solutions can be customized to fit any production environment. Plus, Presstek's solutions are scalable so you can protect your initial investment by adding new functionality as your business grows.

To ensure maximum performance of your DI press, Presstek provides an integrated support network of field engineers, customer care representatives, technical support engineers, and on-board monitoring of presses—all supported by advanced information sharing and technology systems.

A dedicated team provides DI press and workflow training at your site. In certain regions, DI press training is available at Presstek-certified training centers.

The Right Choice

Meeting Today's Market Opportunities

Shorter Run Lengths

The move toward short-run color printing has been a consistent trend over the past decade. Printers responding to a recent InfoTrends survey[1] report an increase in jobs with run lengths less than 5,000. Today, 80 percent of all print runs are less than 5,000.[2] At the same time, long run lengths are declining.

Hybrid Production Solutions

Increasingly, printers are profiting from a hybrid production environment in which a combination of technologies address the wide range of demands. While there is some overlap in the work that can be cost-effectively produced via conventional offset, DI digital offset and digital toner-based printing, these technologies are complementary when assembled into a production portfolio that takes advantage of the strengths of each.

In shops that have both a digital toner press and large format offset press, there is often need to bridge a production gap between those devices to more cost effectively produce runs of less than 20,000, the fastest growing segment of the printing market.

In this segment, printers are finding Presstek DI presses are the most suitable technology to meet their needs. InfoTrends survey respondents reported that their DI presses were the best choice of equipment for runs between 500 and 20,000 sheets, and they are still a profitable solution for jobs with as few as 250 sheets.




"To take full advantage of shorter runs, digital media and digital workflows, a business can augment its production portfolio with a fully automated Presstek DI digital offset press."

— Dr. Joe Webb, Author, Industry Consultant, and Director of WhatTheyThink's Economics and Research Center

The Most Versatile Solution

A DI press is an optimal choice when versatility is a priority. DI presses can profitably address the vast majority of jobs in the marketplace, from business cards and postcards to multi-page brochures and packaging. Unlike digital toner presses, DI presses offer unit cost advantages as volume increases and can meet nearly any customer specification. The Presstek 52DI-AC offers in-line aqueous coating for maximum versatility.

The Right Solution for Any Printer

Medium to large print providers benefit from Presstek DI solutions by adding flexibility. They are able to meet their customers' needs for fast turn-around, small-format and cost-effective short-runs, while still delivering offset quality and better utilizing their base of large conventional presses for long runs and multi-page publications.

Small to medium-size printers can upgrade to high quality four-color offset printing and compete on a wide range of projects and run lengths, without investing in additional labor, space or prepress infrastructure. Compact size, automation and ease of use make Presstek DI presses ideal for small businesses, as well as in-house printing services.

Digital printing services can add offset capabilities, print on a wider range of substrates, and compete on longer runs without adding platemaking equipment and personnel.

Printers of all sizes can attract new customers with a more environmentally-friendly printing method, while also creating a cleaner work environment.

Printing on nearly any offset stock, including foils and heavy cover weights, Presstek DI presses effectively address the growing packaging and label market. DI presses are able to print non-toxic vegetable-based inks when required.

[1] InfoTrends, *Presstek DI Printing Study: Bridging the Gap Between Digital Toner and Conventional Offset*

[2] Strategies for Commercial Print 2010

InfoTrends

Key Findings:

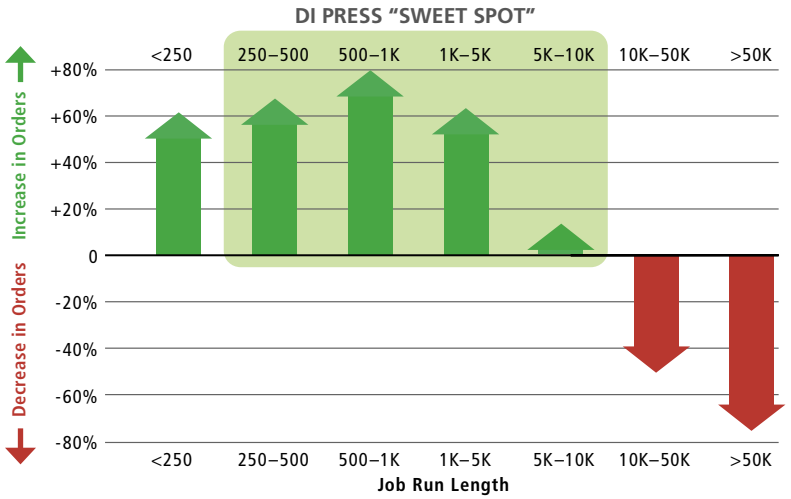
- Makeready on a Presstek DI press is up to 38 percent faster than conventional offset.
- The "sweet spot" for DI printing is 500 to 20,000 sheets, making it ideal for the majority of run lengths in the market and an ideal bridge between toner-based presses and conventional offset.
- 80 percent of surveyed DI owners report that they have increased business by winning new customers after installing a DI press.
- A majority of DI press owners also operate toner-based presses and/or conventional offset presses.
- More than 90 percent consider DI printing their best choice for runs between 500 and 5,000 sheets.
- 93 percent of respondents expect their DI printing business to grow faster than that of other printing technologies.

"Presstek DI delivers a 50 percent cost savings on average per letter-size page when compared to toner-based digital equipment."

"DI press job profitability is more than 13 percent higher when compared to a conventional press."

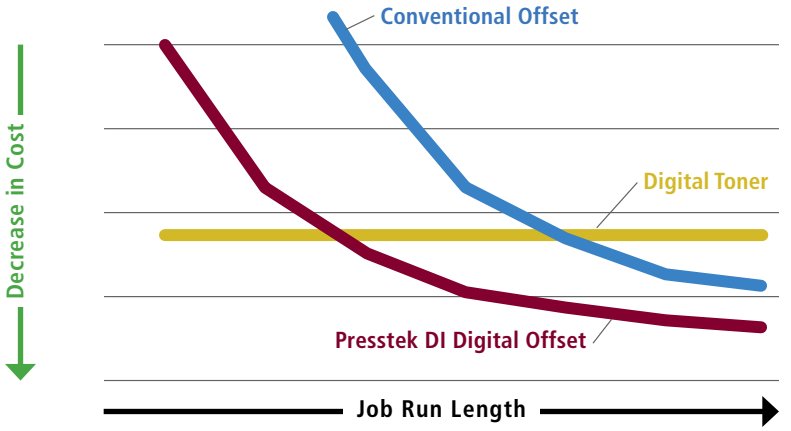
— InfoTrends, Inc.

Market Trend in Run Lengths of Commercial Print Orders



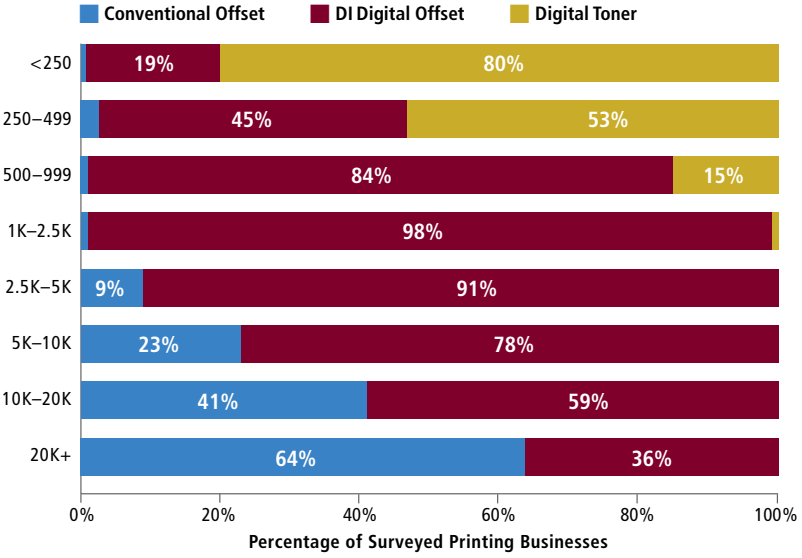
Source: InfoTrends, Inc. *The Next Generation Digital Color Printing Opportunity*

Comparison of Printing Cost Per Letter-size Page



Data compiled by Frank Romano, Professor Emeritus, School of Print Media, Rochester Institute of Technology

Technology Choice Based on Run Length



Source: InfoTrends, *Presstek DI Printing Study: Bridging the Gap Between Digital Toner and Conventional Offset*

Presstek 52DI and 34DI Models: Key Specifications for Comparison

Presstek 52DI

Maximum Printing Speed*	10,000 full size sheets per hour; 333 letter size pages per minute
Print Format	Landscape
Sheet Size	Max. 20.47" × 14.76" (520 mm × 375 mm) Min. 4.33" × 3.94" (110 mm × 100 mm)
Print Area	Max. 20.07" × 14.17" (510 mm × 360 mm) with 0.354" (9 mm) gripper margin
Automated Makeready	10 minutes (includes plate imaging and cleaning, ink presetting, and printing to sellable color)
Ink Zones/Rollers	16 zones per unit/15 rollers per unit
Form Rollers	4 per unit
Feeder	Rotary stream feed with suction feeder board
Feeder Pile Capacity	19.69" (500 mm)
Delivery Pile Capacity	15.75" (400 mm)
Infrared Dryer	Standard
Dimensions (L×W×H)	13'2" × 10'1" × 5'6" (4009 mm × 3082 mm × 1667 mm) including catwalk and console

Presstek 34DI

Maximum Printing Speed*	7,000 full size sheets per hour; 233 letter size pages per minute
Print Format	Portrait
Sheet Size	Max. 13.39" × 18.11" (340 mm × 460 mm) Min. 3.54" × 3.94" (90 mm × 100 mm)
Print Area	Max. 12.99" × 17.72" (330 mm × 450 mm) with 0.354" (9 mm) gripper margin
Automated Makeready	10 minutes (includes plate imaging and cleaning, ink presetting, and printing to sellable color)
Ink Zones/Rollers	11 zones per unit/15 rollers per unit
Form Rollers	4 per unit
Feeder	Universal
Feeder Pile Capacity	15.75" (400 mm)
Delivery Pile Capacity	15.75" (400 mm)
Infrared Dryer	Optional
Dimensions (L×W×H)	10'7" × 8'8" × 5'6" (3230 mm × 2635 mm × 1665 mm) including catwalk and console

Presstek 52DI-AC

Maximum Printing Speed*	10,000 full size sheets per hour; 333 letter size pages per minute
Print Format	Landscape
Coating Mechanism	In-line, Anilox metering; supports flood and spot coating
Sheet Size	Max. 20.47" × 14.76" (520 mm × 375 mm) Min. 4.33" × 3.94" (110 mm × 100 mm)
Print/Coating Area	Max. 20.07" × 14.17" (510 mm × 360 mm) Min. 3.34" × 3.74" (90 mm × 95 mm)
Automated Makeready	10 minutes (includes plate imaging and cleaning, ink presetting, and printing to sellable color)
Ink Zones/Rollers	16 zones per unit/15 rollers per unit
Form Rollers	4 per unit
Feeder	Rotary stream feed with suction feeder board
Feeder Pile Capacity	19.69" (500 mm)
Delivery Pile Capacity	19.29" (490 mm)
Infrared Dryer	Standard
Dimensions (L×W×H)	20'9" × 15'7" × 5'6" (6370 mm × 4785 mm × 1667 mm) including catwalk and console

*Actual numbers will be affected by ink and paper conditions.

Product specifications are subject to change.

UV Printing Versions

UV printing versions of Presstek 34DI and Presstek 52DI presses are available. Ask your sales representative for more information.

For more information and specifications, visit www.presstek.com

Purchase DI press and other pressroom supplies at shop.presstek.com

For more information about Presstek Products:

Presstek, Inc.
55 Executive Drive
Hudson, NH 03051 USA
Tel: 603-595-7000
www.presstek.com

Printed on a Presstek DI digital offset press on Chorus Art 100lb. Silk Cover. Chorus Art stock contains 50 percent recycled fiber, including 25 percent post-consumer waste, and is Forest Stewardship Council certified.

9-2699 11/10

PRESSTEK
A SMARTER WAY TO PRINT