

Alpha Series

The Process Innovation for Digital Textile Print



The Alpha Series presents Durst's next generation of Inkjet Printer Systems, featuring an outstanding print quality, a high level of flexibility, industrial production capacity and scalability, as well as new process solutions to provide a more economical and efficient digital production process.



Durst Textile Printing

The Alpha Series is the solution for the current challenges of the industrial textile finishing sector: It features a sustainable and eco-friendly print technology and is designed for economic productivity and efficient processes, it minimizes warehousing by just-in-time production and produces highest print quality with unlimited colors and complex designs.

The Alpha Series combines new process technologies to control the interactions of printheads, ink system, textile material, tissue type, pre- and post treatment, thereby making them reproducible, when required.

Durst. The Specialist for Industrial Inkjet Applications

Durst is the world's leading supplier of Digital Inkjet Printer Systems for industrial applications. High performance, print quality, reliability and flexible fields of application are unique selling points of the Durst Inkjet Technology across many industries. In the last ten years Durst has been instrumental for the adaptation of digital print technologies for the sectors of glass, large format print, ceramics, label and textile. In 2010, Durst introduced the Rhotex 320, a dye-sublimation textile printer that immediately set a new quality standard for the industrial soft-signage segment. In 2011, Durst introduced the Kappa 180, a High Performance Inkjet Printer for the clothing industry, that met the new and changed customer requirements and needs. In late 2013, Durst introduced the Durst Kappa 320 especially for the home textiles segment. Meanwhile it has been integrated into the production process of leading European manufacturers of home textiles. The Alpha Series is Durst's latest innovation to achieve more efficient production processes with the aim of further advancing the economic efficiency of digital textile print.



Magnetic Linear Actuator

The transport print carriage, engineered by Durst, is equipped with a magnetic linear actuator to achieve continuously precise print results. Durst's running rail forms the basis for this precision, to print flawless and precise within a tolerance of 2 micrometers.

Durst Technology - 24/7

Durst integrates components in all Alpha Inkjet Printer Systems, which are selected to guarantee consistent quality, high performance and reliability. The print machines feature an unrivaled versatility, they are low-maintenance and are designed for 24/7 operation.

Alpha Series Printhead Technology

The Durst Alpha Series Printhead-Technology is equipped with the new, durable Alpha Slots Piezo High Speed Printheads. The Alpha Series can be configured with up to 64 printheads and 8 colors (CMYK, Orange, Red, Blue, Lm, Lc, Dk, Acid Black, Fluo). Each printhead has 1280 nozzles, prints with droplet sizes of 7-14-21 picoliters and achieves a native resolution of 600 dpi. The Durst Alpha Series Printhead Technology arranges the colors symmetrically (mirrored), thus ensuring precise color application for bi-directional print directions, and eliminating banding. Furthermore, the continuous ink circulation guarantees a high reliability and constant operational readiness of the printheads. In case of a printhead defect, the automatic emergency mode will deactivate the affected printhead row and will continue printing with the maximum available number of printhead rows.



Alpha Inks

Durst has developed its own ink systems for digital textile print, which enable printing with eco-friendly, water-based dispersion-, reactive- and acid inks on different textile fibers. The reactive ink system (Alpha Ink R) is GOTS-certified and produces brilliant colors for silk and polyamide, in addition to cotton, linen and viscose. Durst developed the new Pigment Ink (Alpha Ink P) especially for the Alpha Series. This ink creates smooth haptic properties after the print and can be used on a large number of different textiles. Also, standard materials such as cotton, cotton blends and polyester do not require pre- and post treatment with this ink, so the entire digital production process is accelerated and simplified.



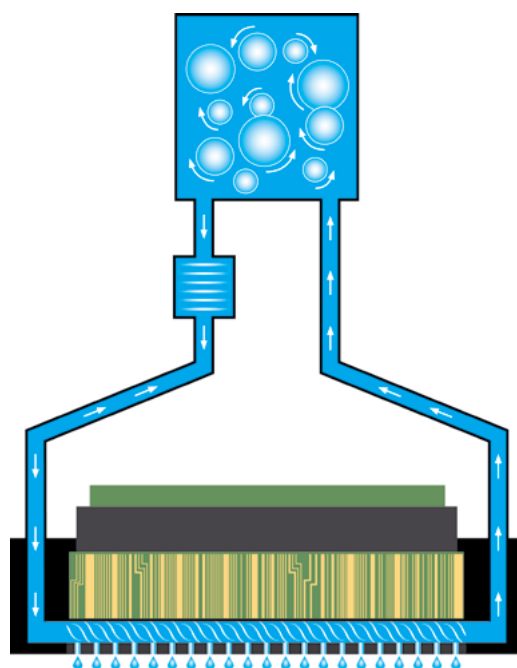
Symmetrical Color-Alignment

Due to the symmetrical alignment of 8 colors, identical color sequences are printed in both print directions to eliminate banding and to increase the speed by 30% compared to an asymmetric printhead assembly.



Durst Alpha Series

The new Alpha Series features different configurations and print widths for the digital production of clothing, home textiles and upholstered furniture. The Alpha 330 is Durst's flagship for the industrial production of home textiles. With a maximum print width of 330 cm, interior fittings and decor products such as duvets, linen, table cloths, curtains and drapes, as well as advertising materials such as flags and banners can be printed in their entire width. Depending on the number of printheads, the production output can vary, fully configured with 64 printheads the Alpha 330 produces 460 running meters/h in 310 cm print width and 670 running meters/h in 160 cm.



Permanent Ink Circulation and Degassing

The continuous ink circulation and the dual degassing prior to the printheads, assure a consistent ink quality and a reliable readiness of the printheads.



Touch Screen Interface

The Alpha Series was designed with a new user software, to enable a straightforward and visual supervision of print jobs and parameters by touch screen interface. The new software is intuitive and allows for a direct interactive processing of print data and profiles on the printer. It logs all print orders, calculates the exact required ink amount per square meter and can reproduce any job under identical parameters at the push of a button.

Color Workflow

Durst developed a Color Workflow System especially for the Alpha Series, to simplify color reproduction on various textile materials. The continuous quality control and One-Step Profiling software facilitate an easy set-up of new materials and color adjustment. Additionally, the Durst Chroma Spectrometer ensures color harmonization between the print design and the print output. Web-to-Print processes can now be implemented and help to keep costs and process times transparent.



Ink Mist Extraction

The print carriage is equipped with an ink mist extraction device to guarantee a haze-free print image, a clean interior of the printer and therefore low maintenance costs.

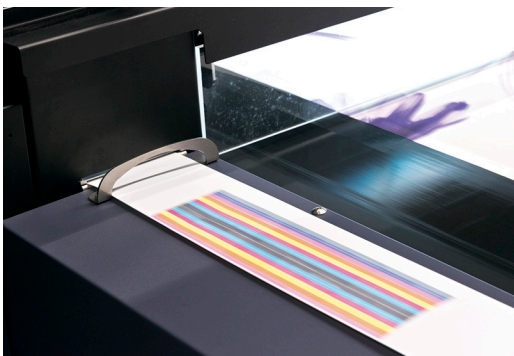
Anti Crash System

The new Anti Crash System operates directly at the print cart and with laser sensor at the feed-in system to suspend the print cart for any potential textile irregularities, with the aim of preventing damage to the printheads.



Capping-Station

The Printhead Capping Station hermetically seals off the nozzles to guarantee immediate availability of the printer, even after longer stand-by periods. Additionally, a continuous Spitting of the nozzles is activated.



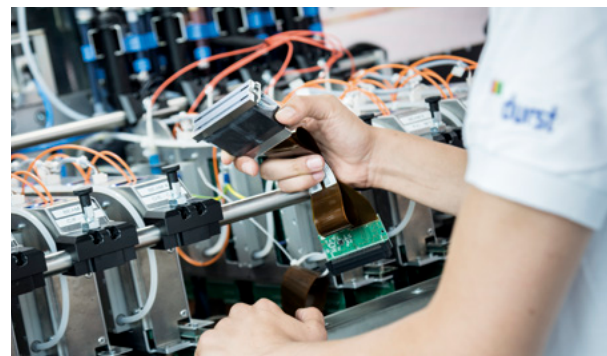
Online Nozzle Control

The Online Nozzle Control allows the operator to print a control strip in order to check the print process and to apply any required changes, without interrupting the ongoing print process.



Quick Purging Cycle

The Purging Station will affect a complete and automated cleaning of the nozzles within 160 seconds. This new purging concept also allows for individual color rows to be cleaned.



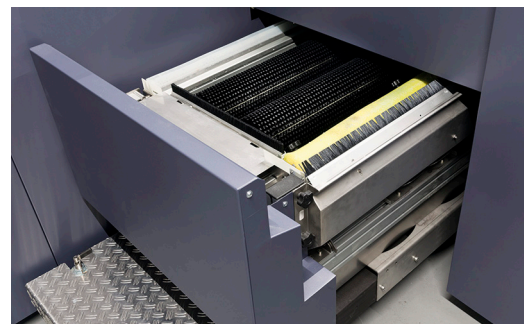
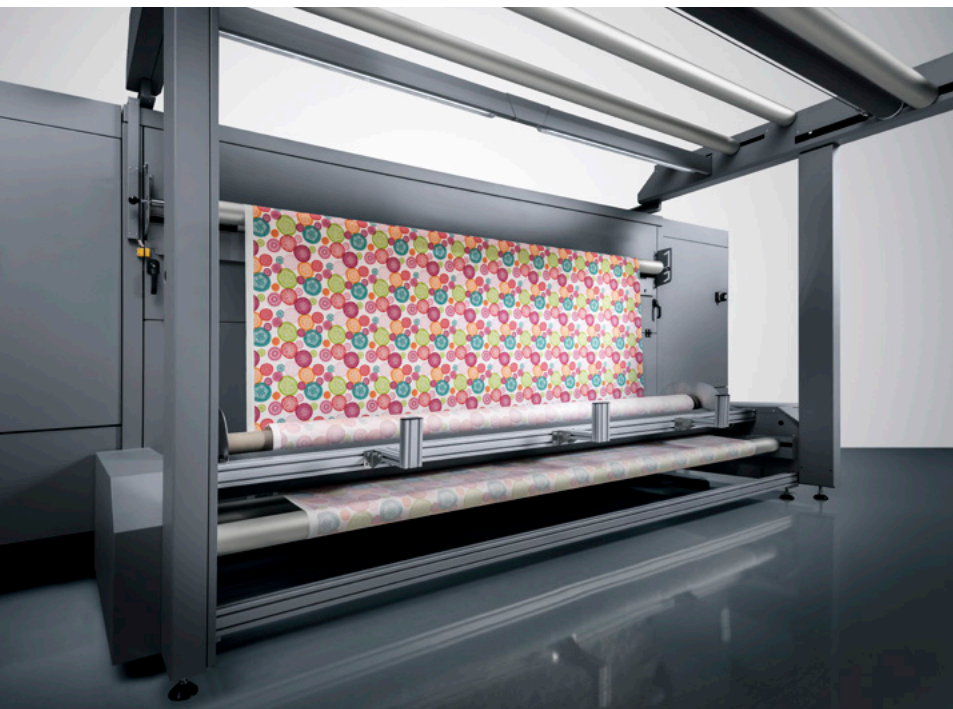
Simple Exchange of Printheads

When necessary, the Alpha Printheads can be exchanged by the operator within a minimum amount of time, thus minimizing down-time.



Precise Fabric Guidance

A new intelligent guidance system was developed especially for the Alpha Series. This system automatically adapts itself to different textile materials and print roll diameters. The respective dancer rollers, expander rollers, center- and batch winders can be activated by touchscreen to control the precise speed and tension all the way to the printing table.

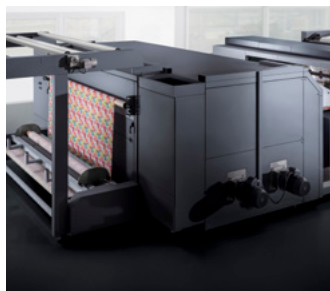


Washing System

To achieve an optimal adhesion level of the print material, the Alpha Printer Systems were designed with a special washing system, equipped with rotating brushes, which are permanently sprayed with water, a pre-cleaning sponge and drying squeegees. This washing system facilitates an unlimited and high-speed print on high-fiber and dirty materials. The integrated AirBlade Technology guarantees an optimal drying process of the printing band.

Dryer Unit

The dryer unit is equipped with a special thermal insulation with an efficiency level of 80%. A consistent speed control with an infrared-sensor, as well as homogeneous temperatures guarantee a uniform drying process. Optionally there are 1-3 passages, depending on the desired drying process. The settings can be stored as a print profile and are available for reproduction anytime.



Pre-treatment Spray System

To accelerate the digital print process, the Alpha Series provides optional an integrated Spray System to chemically prepare the textiles before the print. This process can be applied wet and the respective materials can be quickly exchanged. The software controls the level of penetration and the spray strength.

Inks

For the Alpha Printer Systems, Durst offers eco-friendly, water-based dispersion-, acid-, reactive-, as well as a new pigment ink system.

Alpha Inks

- Alpha Ink A: Acid Ink System
- Alpha Ink D: Dispersion Ink System
- Alpha Ink R: GOTS certified Reactive Ink System
- Alpha Ink P: Specially developed Pigment Ink System for an efficient and economical application on a large number of textile materials. Main characteristics are an outstanding color reproduction and a smooth touch. No necessity for pre-treatment and finishing for standard applications, which makes the Alpha Ink P especially suitable as an all-rounder for the production process.

The Alpha Inks are characterized by a deep black, high brightness and excellent print results. They are impressive for all relevant features such as color space, image quality, uniformity and light fastness.


























Durst Ink System

The printheads and the inks are synchronized and from a single source, to guarantee a functioning overall system.

Which ink system for which application

Alpha Ink A	Alpha Ink D	Alpha Ink R	Alpha Ink P
For silk, silk blends, polyamide and wool. Applications: clothing, accessories, swim wear.	For chemical fibers, polyester and polyester blends with a polyester share of more than 50%. Applications: flags, banners, outdoor signage, POP, automotive, home textiles, sports wear.	For cotton and cotton blend with a cotton share of more than 60%, as well as polyamide, silk and viscose. Applications: home textiles, curtains, linen and upholstery, clothing and fashion.	For cotton and cotton blends polyester and polyester blends. Applications: home textiles, clothing, fashion, flags.

Available colors for the ink systems

Alpha Ink A	Alpha Ink D	Alpha Ink R	Alpha Ink P
CMYK 	CMYK 	CMYK 	CMYK 
Orange 	Orange 	Orange 	Orange 
Red 	Red 	Red 	Green 
Blue 	Blue 	Blue 	Light Magenta 
Light Magenta 	Grey 	Light Magenta 	Light Cyan 
Grey 		Grey 	Grey 

Color Fastness

- All Alpha Inks are continuously tested and constantly achieve very good results to meet all relevant ISO-Standards:
- Color Fastness - ISO 105-B02
 - Color Fastness to Wash - ISO 105-C06
 - Color Fastness to Water - ISO 105-E01
 - Color Fastness to Perspiration - ISO 105-E04
 - Color Fastness to Artificial Weathering - ISO-B04
 - Color Fastness to Rubbing- ISO 105-X12



Certifications

ISO 9001

Durst's Quality Management System (QMS) is certified according to the international quality management standard ISO 9001.

CE-Certificate

All European machine manufacturers must provide a self-declaration with regards to product safety compliance. Durst commissioned an official certification from the automation technology supplier Pilz. This guarantees a high standard for legal- and occupational security for the operating company.

GOTS

For its reactive ink system (Alpha Ink R), Durst has, for the second time, obtained the GOTS certificate. According to Greenpeace, the Global Organic Textile Standard is the most sought after quality label for the entire textile production chain. Only textiles, made from at least 70% of controlled organically grown natural fibres, will be certified. All utilized chemicals, as well as coloring agents and additives, must comply with defined regulations, regarding their environmental and toxicological impact.

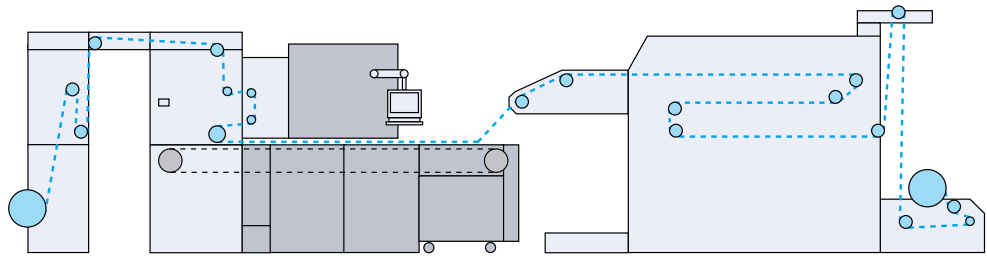
Green Label

In 2010, the Italian Association of Textile Machine Constructors ACIMIT, introduced the 'Green Label', a certification programme for sustainable technologies. The 'Green Label' indicates the energy requirements, the consumption of water and chemicals, the CO2 footprint and the production efficiency. The production efficiency of Durst textile printers is 95% higher than traditional print methods, while featuring an absolutely positive ecological balance.

OEKO-TEX Standard 100

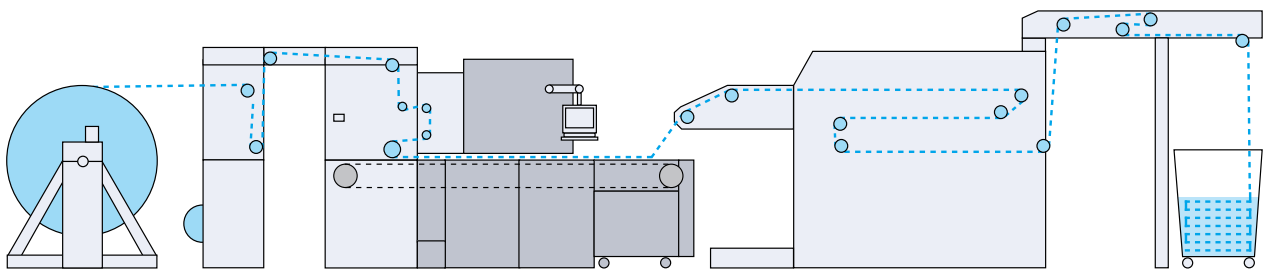
The OEKO-TEX Standard 100 is an independent control- and certification system for textile end products including all processing stages. The Alpha Ink system guarantees the absence of pollutants and absence of detrimental health effects for applications such as clothing, home- and house textiles or bed linen.

Alpha Series Versions



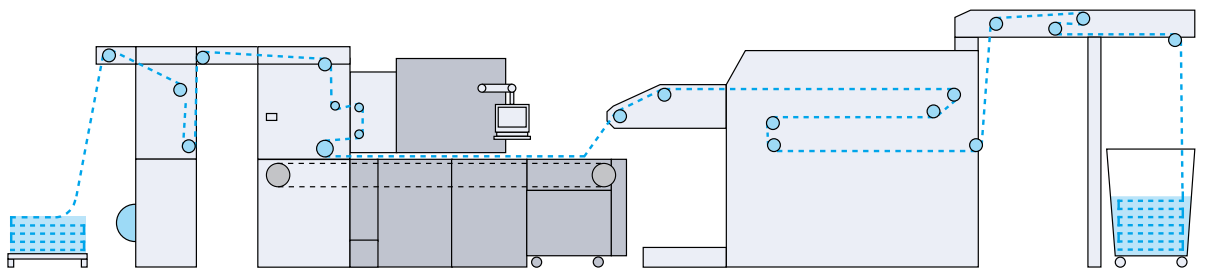
Version 1

Durst entrance unit for small rolls and exit unit on roller bed winder for small rolls.



Version 2

Durst entrance unit for big and small rolls, exit unit for folded fabrics.



Version 3

Durst entrance unit for folded fabric, small rolls and exit unit for folded fabrics.

Technical Data

	Alpha 190	Alpha 330
Print speed:	1-Pass 300 x 600 dpi, 610 lm, 975 m ² /h 2-Pass 300 x 600 dpi, 305 lm, 488 m ² /h	1-Pass 300 x 600 dpi, 460 lm, 1.470 m ² /h 2-Pass 300 x 600 dpi, 230 lm, 735 m ² /h
Printing width and material thickness:	Max. printing width: 1,900 mm, max. material thickness: 8 mm	Max. printing width: 3,300 mm, max. material thickness: 8 mm
Material feed options:	<ul style="list-style-type: none"> • Integrated material entry for roll diameters up to 500 mm • Axis unwinder for large rolls and material feed system for optimum advancement and tension monitoring • Feed unit for folded textiles 	<ul style="list-style-type: none"> • Integrated material entry for roll diameters up to 500 mm • Axis unwinder for large rolls and material feed system for optimum advancement and tension monitoring • Feed unit for folded textiles
Printing blanket:	<ul style="list-style-type: none"> • With permanent adhesive and integrated washing system • Heating roller 	<ul style="list-style-type: none"> • With permanent adhesive and integrated washing system • Heating roller
Dryer:	Horizontal dryer with 3 passages: Thermal air dryer of up to 150 °C; with either gas, steam or electricity	Horizontal dryer with 3 passages: Thermal air dryer of up to 150 °C; with either gas, steam or electricity
Material discharge options:	<ul style="list-style-type: none"> • Re-roller for roll diameters up to 500 mm • Discharge unit for folded textiles 	<ul style="list-style-type: none"> • Re-roller for roll diameters up to 500 mm • Discharge unit for folded textiles
Print heads:	32/64 Durst Alpha Slots, 8 colors arranged symmetrically (mirrored) on the print heads and featuring 40,960/81,920 nozzles	32/64 Durst Alpha Slots, 8 colors arranged symmetrically (mirrored) on the print heads and featuring 40,960/81,920 nozzles
Printing mode:	Binary (7 pl) and variable droplet size with 7/14/21 picoliters	Binary (7 pl) and variable droplet size with 7/14/21 picoliters
Resolution:	Standard 300 x 600 dpi, up to 1,200 x 1,200 dpi	Standard 300 x 600 dpi, up to 1,200 x 1,200 dpi
Functions:	<ul style="list-style-type: none"> • DASC – Durst Advanced Stroke Control • DARD – Durst Advanced Remote Diagnostics • ONC – Online Nozzle Control • Durst CostView – Production reporting and cost control 	<ul style="list-style-type: none"> • DASC – Durst Advanced Stroke Control • DARD – Durst Advanced Remote Diagnostics • ONC – Online Nozzle Control • Durst CostView – Production reporting and cost control
Ink tanks:	18 liters per color	18 liters per color
Ink system:	8 freely fillable channels with integrated degassing and filter system	8 freely fillable channels with integrated degassing and filter system
Ink types and colors:	<ul style="list-style-type: none"> • Pigment: CMYK, Orange, Green, Gray, Light Magenta, Light Cyan • Reaktiv: CMYK, Light-Magenta, Red, Orange, Blue, Gray • Dispersion: CMYK, Red, Orange, Blue, Gray • Säure: CMYK, Red, Orange, Blue, Gray, Light Magenta, Fluo Yellow, Fluo Pink 	<ul style="list-style-type: none"> • Pigment: CMYK, Orange, Green, Gray, Light Magenta, Light Cyan • Reaktiv: CMYK, Light-Magenta, Red, Orange, Blue, Gray • Dispersion: CMYK, Red, Orange, Blue, Gray • Säure: CMYK, Red, Orange, Blue, Gray, Light Magenta, Fluo Yellow, Fluo Pink
Dimensions:	Feed + printer + drier + discharge (values depend on configuration) Length: 15,000 mm; Height: 2,700 mm; Width: 9,000 mm	Feed + printer + drier + discharge (values depend on configuration) Length: 15,000 mm; Height: 2,700 mm; Width: 11,000 mm
Production parameters:	20-25 °C, relative humidity: 45%-60% (non-condensing)	20-25 °C, relative humidity: 45%-60% (non-condensing)



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IX751EN - 11/2015