

Rhopac Inkjet-Flatbed Printer for Packaging

At last there is a flatbed inkjet printer based on Quadro® Array Technology that is especially designed for the packaging industry: Rhopac. At last there is a special product on the market for printing on corrugated cardboard boxes and for printing displays.

This means that you can now produce short production runs, or even specimen packages, quickly and economically without having to invest in printing plates. With a print speed of up to 160 sqm per hour, the Rhopac is the fastest inkjet printer specifically engineered for printing corrugated cardboard. Thanks to Quadro® Array Technology and 600 dpi, text as small as 6 pt or barcodes are just as precisely printed as coloured areas or image details. Using the lacquer effect upgrade, the printed surfaces are given a protective gloss coating. Or you can place special emphasis on individual image or text elements. By means of an ingenious transport and guide-roller system, you can process all common types of corrugated cardboard (A, B, E, F corrugations).

A built-in cleaning system using brushes keeps the print surfaces free of dust. The Durst operating software has proved its worth a thousand times over in photographic and inkjet printing. This software has now been extended to include subsequent punching devices in the automatic packaging processing sequence, including cutting.

The Durst feeder-stacker for automatic operation (feed and delivery) enables virtually unmanned operation.



The Technology

Designed to tackle anything:

Rhopac – the unbeatable inkjet printer for the packaging industry. Now you can fulfill your packaging needs in the blink of an eye; modifications at the proofing and correction stage are carried out online, and if the customer wants to, he or she can even wait for new printouts. Now you can offer just-in-time jobs involving small packaging batches at unbeatable prices. You can produce displays and promotional units cheaply and, if needs be, overnight. Companies that manufacture their own packaging and display stands, designers and advertising agencies involved in the design of packaging can offer their customers all-inclusive solutions with Rhopac.

Benefits wherever you look.

Print what you need just in time every week or every month, and save yourself large batches of packaging that take up a lot of storage space. If the details, text content or pictures on the package change, the layout can be updated in a flash, without expensive and time-consuming setting copies, because the changes are carried out on the computer, and the new version is ready for printing in a matter of minutes. And there is no longer any need to stock a wide range of colours, because printing is carried out using CMYK inks and colour management Pantone colours. The same applies to the storage of printing plates or templates, because from now on you will save your files digitally.

Precision of the inkjet nozzles is a prerequisite for top-quality inkjet printing. Crucial factors include the control of the trigger impulses and precision in the placing of the droplets. Quadro's Dot Size Control technology delivers precise adherence to the specifications. Whereas in the past you could choose between good print quality and high production speed, today Quadro technology delivers both at once, exactly in accordance with the motto: uncompromisingly fast, uncompromisingly good.

The print heads.

Four compact and precisely aligned Spectra slots produce a packing density of 512 outlets per Quadro head. The modular structure permits several print heads to be installed in various alignments with no difficulty. Consequently the resolution and positioning of the inkjet are precisely adjusted to the desired requirements. The nozzle channels are triggered by means of a serial-parallel converter. Addressing is carried out individually or simultaneously, depending on the job. Top-quality printing is guaranteed by the ink feed to the nozzle outlets developed by Durst. The constant droplet volume and the extremely even shape and speed of the ink droplets are simply outstanding. The ink is degassed as in the Rho 600 by means of osmotic filters, heated and then constantly fed to the piezo printer system. The print head alignment is selected in such a way that white printing can be carried out at the same time as CMYK in one pass.

Clean and tidy: the transport system.

In order to obtain a clean surface for printing, a rotating brush system cleans the surface of any dust or contamination before the boxes are fed in. By slightly moistening the surface with water, it is grasped by the intake roller sets with no distortion and fed manually (or by means of the automatic feeder) into a patented hold-down system. The transport belt, equipped with an infinitely variable vacuum system, carries the corrugated board neatly through the system for the printing process, and onto the roller stacker platform.

Quality right down to the last drop: Durst UV ink

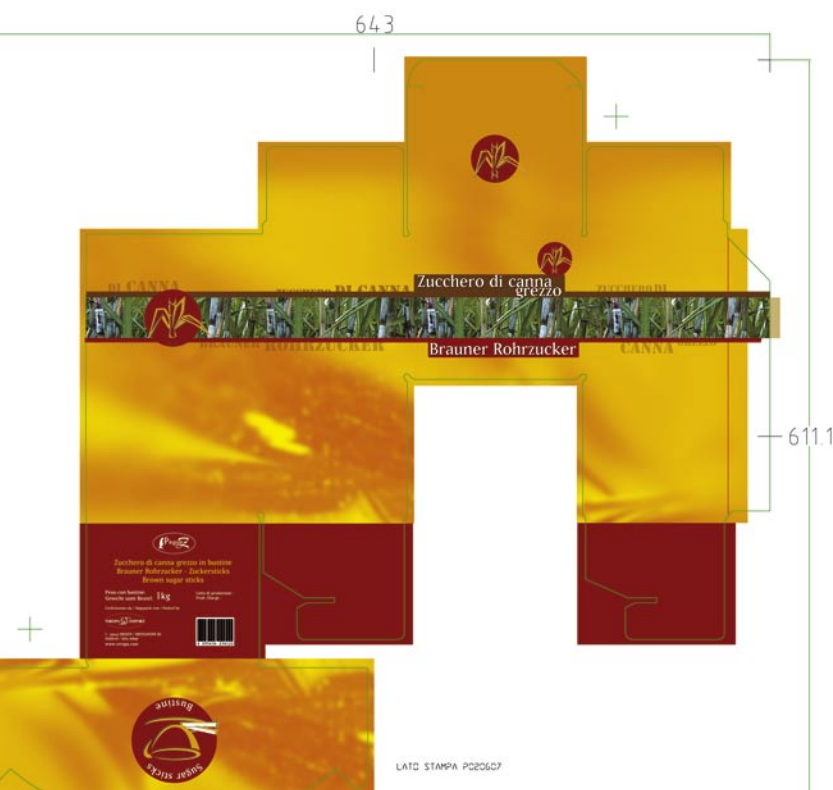
The paper-board ink developed for Durst is hardened by UV radiation. Viscosity, surface tension and UV light are coordinated in such a way that the optimum resistance of the ink is achieved with the best possible adhesion on paper surfaces.

Hardworking Software

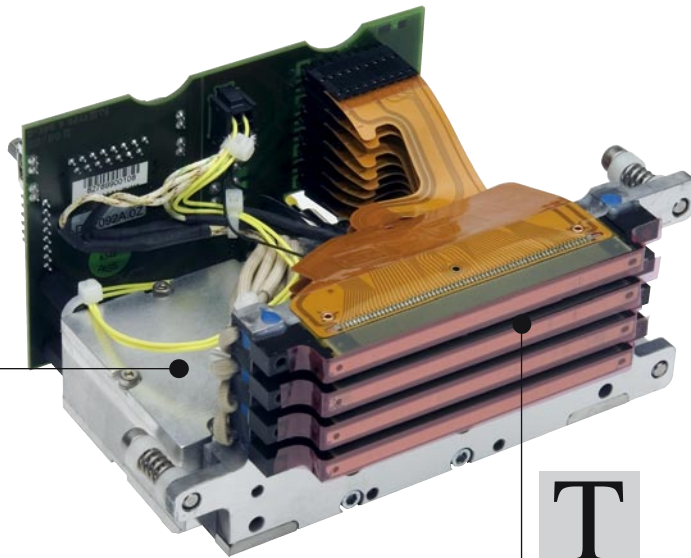
The tried and tested LINUX-based Durst user software with „on-the-fly“ image editing offers you rapid and reliable production, taking up minimal space on your hard disk (on-the-fly pixel interpolation/scaling, colour, density, contrast, saturation and definition correction, cut-outs etc.). „On-the-fly“ image editing eliminates the need for additional print files, which drastically reduces the overall printing time and minimises the space taken up on the hard disk. The media employed are stored with their properties, and immediately retrieved again when needed. Depending on the print media and the requirements in terms of colour density and colour quality, you can choose between four different printing modes. These include Backlit Mode, which automatically applies twice the quantity of ink without any time delay, thus guaranteeing the required density.

Mechanical design

The Rhopac is designed for continuous operation, 24 hours a day, 7 days a week, in the dusty environment of a cardboard packaging production plant. All the mechanical components are milled from durable solid aluminium plates. The electronics meet the top European and American standards for industrial production. The device is fully enclosed and fitted with extractor fan connections for eco-friendly extraction.



The Quadro Print Head – technology that puts things in focus.



What sort of technology does Durst use to achieve its great reproduction of skin tones, colour gradients or pastel coloured areas, without colour outlines or abrupt transitions? Dot Size Control and precise droplet size and placing is the secret behind colour gradients of 400/600 dpi. And Quadro technology with its constant monitoring of droplet geometry makes it possible to print critical colours over large areas without modulation.

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And you will also be astonished at the reproduction of text with Quadro® Array Technology. Crystal clear printing of even very small font sizes down to 6 point, by means of controlled droplet geometry without satellite droplets. Similarly precise printing of barcodes (A-class). With Rhopac, extremely small text on packaging, display boards, maps or directional signs is no longer a problem.



Rhopac is loaded on one side and delivery takes place on the opposite side. The feeder-stacker enables unmanned production. Reference marks are also automatically printed for the subsequent cutting devices. Overall verdict: A thoroughly sturdy design for continuous and lasting industrial use.

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Speed is no trick. At up to 160 sqm per hour, the Rapid is the fastest flatbed printer on the market. Four Quadro Arrays per colour give it power and 130 cm/min. feed with good, saleable quality. This is a genuine quantum leap.



Technical data

General specifications

Dimensions:

Width: 545 cm (215 in.)
Length without roller tables:
195 cm (77 in.)
Length with roller tables:
425 cm (167 in.)
Height: 188 cm (74 in.)
Height with open doors: 255 cm (101 in.)

Weight:

approx. 3.800 kg (8.100 lb)

Safety standards:

complies with currently valid guidelines

Printing specifications

Printing system:

Patented Durst flatbed system with Quadro® array technology for the finest quality and the highest speed

Resolution:

400/600 dpi selectable

Colours:

Standard: CMYK
Optional: White, Clear Varnish for special effects, Spot Colours (on request)

Inks:

UV-resistant pigment inks for interior and exterior applications
Rho Ink Paper Board Set: Flexible, low odour inks specifically developed for corrugated packaging applications

Ink supply:

Integrated ink tanks with 10 litre capacity per ink, refillable during the printing process. The refill inks are in 5-litre, non-returnable containers, easily disposal in collapsed condition, thus avoiding pollution to the machine and the environment.

Software/RIP:

Durst Linux-based 64 bit printer software with on-the-fly image processing (scaling, pixel interpolation, sharpness correction, cropping, panning and further corrections) for very fast processing with minimum storage capacity occupation on the hard disk. Integrated Cheetah PostScript Level 3 RIP (400 MB in approx. 1 min.)

File formats:

- Grey levels CMYK, RGB and Lab TIFF
- Grey levels CMYK and RGB JPEG
- Windows Bitmap (BMP)
- PostScript Level 2/3, EPS (only Type 1 fonts)
- PDF
- RGB PPM raw format

Productivity

Rhopac Presto: up to 80 sqm/h
(65 cm/min – 25,5 in./min)

Rhopac Rapid: up to 160 sqm/h
(130 cm/min – 51 in./min)

Printing speed is measured on full width at continuous production at 400 dpi

Media specifications

Maximum printing width:
205 cm (80 in.)

Maximum printing length:
Only restricted by medium length

Maximum thickness:
Standard: 40 mm (1.58 in.)

Maximum board weight:
Standard: 50 kg

Smallest sheet size:
DIN-A3 – 29.7 x 42 cm (12 x 17 in.)

Registration of materials:

Materials are registered mechanically at the left side and by means of fibre optic sensors at the leading edge. An encoder measures the transport sequences, ensuring utmost precision in image alignment.

Location requirements

Space requirement:
min. 8 x 8 m (27 x 27 ft.)

Maximum height:
2.400 m (8.000 ft) above sea level

Temperature range:
+15 °C to +30 °C (+59°F to 86°F)
non-condensing

Relative air humidity:
25 - 80 %, non-condensing



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