



TECHNOLOGY REVIEW

By Chris and Kathi Morrison

Chris and Kathi Morrison own and operate The Image Specialists, a full-service graphics company based in Clements, CA. Chris is also a Microsoft-certified systems engineer.

The Durst Rho 800 Presto

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Big jobs can yield big profits.

Durst has heavily invested in digital printing. Sign companies that have invested in its fast, accurate, wide and precise printers have reaped the rewards gleaned from optimized workflow and image quality. These printers can output large jobs profitably by reducing the cost per piece.

The new Durst Rho 800 Presto, the latest in the line of Rho digital printers, culminates Durst's trademark engineering and design savvy. If your shop is looking for the ultimate in large-format productivity, read on.

The Rho family

The Rho printer family targets several markets. Durst sees the Rho family as the natural evolution of industrial-screenprinting operations. Screenprinting operators adopted digital printing to produce short-run, full-color jobs quickly and

economically. UV inks and grand-format widths were the tipping point that made these devices plausible in a screenprinting business – the large, automatic presses delivered the needed volume.

The Rho printers, such as the Rho 600, offered the speeds, reliability and image quality that matched the screenprinters' automatic presses. Specialty-print applications spawned printers that were designed for roll-to-roll applications, or rigid, corrugated and even backlit media.

Durst identified the Rho series' buyers as photo labs, large sign companies and digital service providers. The latest entry, the Rho 800 Presto, is the product line's next evolutionary step. The 800 Presto

Key Information

Durst Image Technology U.S. LLC

50 Methodist Hill Dr., Ste. 100
Rochester, NY 14623
(585) 486-0340
Fax: (585) 486-0350

Company Profile: Durst Image Technology U.S. LLC, a wholly owned subsidiary of the Durst Phototechnik Group, is the exclusive distributor and service provider for all Durst professional, digital-imaging equipment in the United States and Canada. Durst's professional imaging products include the Lambda laser imagers and Rho large-format, UV, inkjet printers.

Contact: Christopher Guyett, marketing and sales, (888) 480-3588

At a Glance: The 98-in. Durst Rho 800 Presto is a continuous-board, production-oriented flatbed with a roll-feed option. The 800 Presto employs the company's Quadro array technology with up to 16 printhead arrays, which equate to 64, 128-nozzle printheads.

printer isn't just a little wider or faster than previous products – its revolutionary changes, such as the contin-

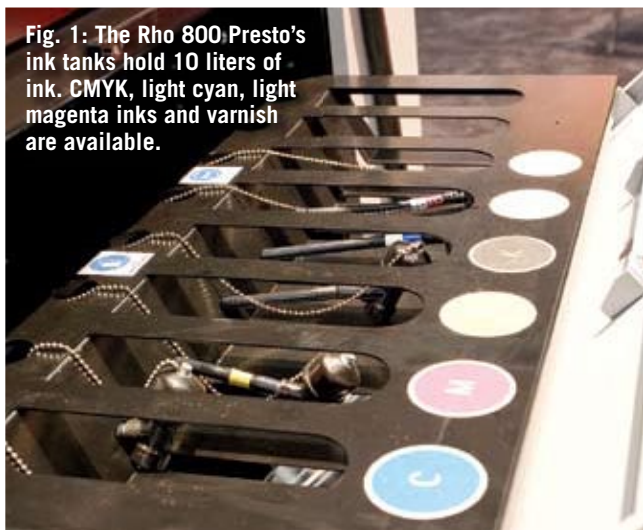


Fig. 1: The Rho 800 Presto's ink tanks hold 10 liters of ink. CMYK, light cyan, light magenta inks and varnish are available.

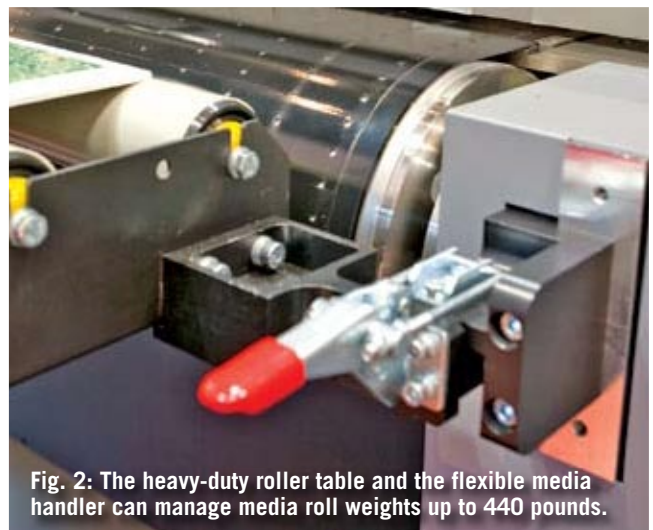


Fig. 2: The heavy-duty roller table and the flexible media handler can manage media roll weights up to 440 pounds.



Fig. 3: Many UV printers can image 4 x 8-ft. boards. Usually the pieces are fed from the 4-ft. side. Notice that the Rho 800 can handle the long, 8-ft. side.

uous-board feeding and linear-drive motors, enhance productivity.

Durst also sells its product as field upgradeable, so you won't be stranded when new business needs arise.

Specifications

The Rho 800 Presto is a hybrid – it handles both flexible and rigid media. The maximum, 8-ft. printing width perfectly matches its target markets' needs. The Rho measures 230 in. wide (roughly 20 ft.) x 77 in. high x 181 in. deep with the roller tables (75 in. without the tables). For maintenance and operational purposes, Durst recommends a 26 x 20-ft. space to house the printer.

Before placing the printer, make sure the floor is sturdy to accommodate 7,700 pounds. The printer's operating temperature range is 59 to 86° F. Relative humidity should range from 25 to 80%, non-condensing.

Printhead technology

We think this technological marvel is built like a tank. But why is it nearly 20 ft. wide, when it accommodates "only" an 8-ft. printing width? When you examine the head mechanism, you quickly understand the reason.

The inkjet printer uses Spectra heads, as do many other printers. However, the Durst Quadro® head technology assigns an array of four

nozzle sets to a common, heated jet plate. Combined, the head delivers 512 nozzles of continuous ink flow. Rather than use a variable-dot technology, Durst engineered the heads to provide precise dot volume and size to ensure placement accuracy and density without compromising speed.

The base Rho 800 Presto, a four-color (CMYK), 600-dpi model, can be ordered, or field upgraded, to include white, light cyan and light magenta inks, as well as a specialty varnish overcoating. Durst says these additional colors can be added to the printer without impacting printing speeds.

Inks and ink handling

Because the Rho 800 is a UV-cure printer, its ink system accommodates many media and can provide outdoor durability. Durst takes a step forward by offering specialized inks optimized for various media. One ink, which works best with such flexible media as films and vinyl, stretches to eliminate the cracking that can occur when applying the printed media to the final substrate. Another is optimized for rigid materials, and yet another is more suited to absorbent papers for indoor applications.

The 10-liter ink tanks (roughly equivalent to 20, 500ml cartridges that many digital printers use) quell any worries about ink shortages during jobs. Ink, available in 5-liter, disposable bottles, can be added on the fly (Fig. 1).

Media handling

As a hybrid, the Rho 800 handles roll and rigid materials (Fig. 2). The massive roller table and media rollers are built to last. Typically, printers favor one media, but the Rho 800 is different.



Fig. 4: Here's the real money shot. These images were being printed one after the other. The operator didn't need to wait to remove one piece before printing the next one.

Fig. 5: The Linux-based operator's console, the printer's control center, displays status information and allows the operator to manipulate the job queues. The graphical interface facilitates usage. Also, you don't have to be a Linux expert to run the printer.

Let's start with roll-to-roll capabilities. The Rho 800 is compatible with Durst's new, heavy-duty, take-up system. With this option, the printer can handle media widths up to 98 in., which includes large banners, vehicle-wrap vinyl and even billboards. When productivity matters, you don't want frequent media changes. This system can handle roll weights up to 440 pounds.

The Rho 800's real innovation lies in its rigid-media capability, which not only prints quickly, but intelligently. Also, don't wait until a piece is completely finished before you feed the next one – you'll cancel any speed benefits.

The Rho 800's new media-feed system addresses these concerns. It images an entire, 8-ft. width – you can feed 4 x 8 boards long edge first (Fig. 3). You can feed smaller pieces side by side to exploit the width.

Durst speeds operations with its leading-edge registration system. A set of fiberoptic sensors ensures proper registration of the leading edge of the board(s). You can also use a mechanical stop. An encoder measures the transport system to ensure image alignment. Consequently, you can butt a board's leading edge to the trailing edge as they're fed into the printing station (Fig. 4). The heavy-duty transport system moves everything forward.

Simultaneously, for example, a finished image could come from the printer, one could be printing, and a blank piece could queue up. One operator could both feed each piece and remove finished pieces.

The standard Rho 800 can handle media thicknesses up to 1.58 in. An industrial upgrade will handle media thicknesses up to 2.75 in.



Image quality and speed

This 600-dpi printer uses a fixed dot size, which typically doesn't provide outstanding print quality. When we saw the printer in operation, the inks were very saturated – Durst's UV-cure ink really makes the images pop. However, the precisely placed dots allow the printer to produce sharp text down to four points. Yes, you read that right.

We found no apparent image banding in any of the three print modes. The fastest, the single-pass draft mode, is suitable for images viewed at a distance. The two-pass mode, a production setting, balances speed and quality. The highest-quality, and slowest, mode, the six-pass, is used for printing such closely viewed items as posters, sales-counter displays.

We've only hinted about the Rho 800 Presto's impressive speed. The highest quality mode is roughly 200 sq. ft. per hr. Yes, that's the slowest speed. The draft mode, on the other end of the spectrum, will sail at 1,200 sq. ft. per hr. Of course, most shops will operate between these two extremes. As a high-production, rigid printer, while also loading and unloading material, the printer can produce 120, 4 x 2.6-ft. boards per hour. That would be slightly more than 50, 4 x 8-ft. sheets. That's really cooking.

Software and service

The system is driven by a Linux-based system that runs Durst's

proprietary package (Fig. 5). It allows the operator to rapidly change settings, view status and monitor the printer. An included Caldera RIP feeds this system, and helps prepare and submit the jobs.

Durst has designed the Rho 800 as a 24/7 industrial-use printer. In addition to Durst's excellent support network, the company has introduced a new, web-based service portal. Shop operators can use the portal to diagnose problems, search an online library of documents and videos for solutions, and even open tickets from the site. We saw an impressive demonstration at the SGIA show.

Conclusion

The Rho 800 Presto is certainly not a printer for everyone. It will be most at home in a high-volume shop that depends on fast job delivery. The Rho would be perfect for virtually all rigid-printing applications, and it can also offer flexible printing for banners and vinyl work. The head system will allow the shop to start with a basic CMYK setup, and add white, varnish and even light primaries if needed.

The Rho's real gem is the rigid-media handling system. It is fast, precise and optimized for operator productivity. If you have the budget and the need, the Rho 800 Presto can really boost the bottom line.

Rho 800 Presto

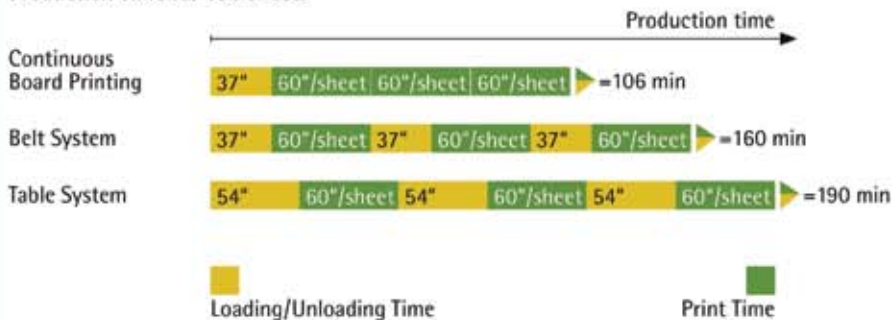
The world's first continuous board printer



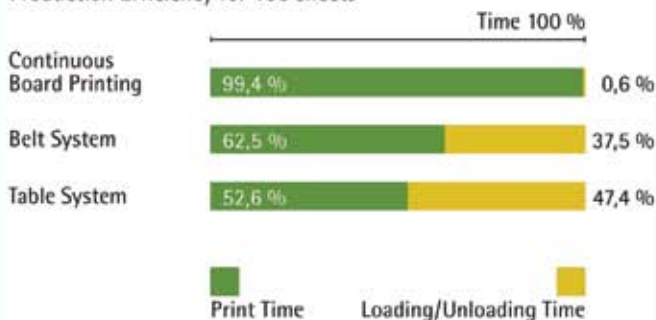
The new Durst Rho 800 Presto represents a new generation of UV flatbed printers. Innovative improvements give the new Rho 800 Presto a production output in a class of its own amongst UV flatbed printers.

The combination of a compact, robust design with the facility for the continuous printing of any number of boards, without interruption, and an unrivalled print quality, provide a previously unattainable level of productivity and quality in industrial printing.

Production Time for 100 sheets



Production Efficiency for 100 sheets



The Rho 800 Presto features the following benefits and innovations:

- Mechanism for continuous board feeding
- Mechanical front stops allow for printing boards alongside each other
- Perfect print registration on narrow boards printed across the full width
- Large print width (250 cm/8 ft.)
- Exceptional productivity, up to 120 boards/h (125 x 80 cm/4 x 2,6 ft.)
- Newly developed operating software for faster production
- Quadro® Array Technology combines the highest print speed with the finest quality
- Printing of white and light colours without loss of speed
- Highest reliability in the market allowing for 24/7 production

Users of the new Rho 800 Presto will appreciate many new or improved business opportunities. Print orders are completed more cost efficiently than previously, increased productivity provides extra capacity for additional business and, above all, increased levels of profit for your business are realized.