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POSTPONED BLISTER FINISHING WITH BLISTERJET CMYK

Hapa introduces the BlisterJet CMYK, the market's first sealed-blister printing system to print graphics and text in a full-color, CMYK application. The innovation creates new, unrivaled opportunities to revolutionize product design, differentiation, and finishing.

To date, options for pioneering pharma companies implementing a postponement strategy in blister production have been limited. Available printing technology designed for use in a pharma environment has printed up to two spot colors only. Now a new set of capabilities has arrived: Hapa's BlisterJet CMYK. It prints text and graphics on sealed, blank blisters in full color, changing the market game.

Unleashing opportunities

An installed BlisterJet CMYK unleashes opportunities in product design advances, including product differentiation and multi-colored visual tags, that underscore and support both the protection of brand image and patient safety. A company equipped with full-color blister printing capabilities has complete customization flexibility for off-pack customer communication, personalization, codes and links that improve product tracking and patient compliance.

Utilized in a postponement strategy, the BlisterJet CMYK bolsters business objectives by improving supply chain agility and reaction times

to volatile market demands and the pressures of rising regulations. When combined with the pull-production model of customizing products and secondary packaging regionally, the advantages multiply.

In a pull-production set up, a high-speed blister line or central blister-production factory can produce semi-finished blisters for several markets, its high-speed line unaffected and all assets fully utilized. A BlisterJet CMYK in a near-to-line configuration can then customize the semi-finished products. Alternatively, they can be shipped to distribution sites where installed BlisterJet CMYKs customize the text and artwork to each order's destination market, language, and regulatory specifications. The printed, finished blisters are then ready for final processing and shipment.

Easy on line personnel

In the search for technology best suited to a postponement strategy, it is important for a system to be operator friendly. The BlisterJet CMYK is format-free and easy to operate, and existing line operators are quickly trained on the system.

The quality and performance Hapa customers expect

The BlisterJet CMYK printing system is Swiss designed and Swiss manufactured, attuned to the needs and expectations of the pharmaceutical packaging market. A DOD piezo inkjet system, it uses solvent-free, UV inks produced by Hapa Ink. All text and graphics are printed in a single pass. The print is cured immediately by an integrated UV-LED curing system.

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The BlisterJet CMYK creates new, unrivaled opportunities to revolutionize blister design and product differentiation.

INDUSTRY FIRSTS – INSPIRED HORIZONS



At Hapa, we've been observing with great interest the rise of the postponement of product finishing within the pharma segment. We have a long history partnering with companies to develop in-house, late stage customization and just-in-time

packaging printing systems that support postponed product finishing as well as improve production and supply chain processes. Experience proves that a Hapa printing system becomes our customers' key asset to profitable, low-volume production. So it is with great pride that we introduce another industry first, a CMYK printing system that prints sealed, blank blisters in up to four colors. The BlisterJet CMYK is the ideal late-stage-customization technology to support the postponement finishing of blisters.

One of the passions that has driven Hapa from its beginnings is to provide the market with technology easy to install and easy to operate as well as robust and reliable. We are at work every day streamlining our own processes to

promote "lean" best practices to produce systems that adhere to best practices. And in this positive vein, Hapa closes another year inspired to profit from changes internal and external.

Enjoy the stories of the technology and people who make it all happen.

Beat Rupp
Chief Executive Officer
Hapa AG

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The printed blisters can be transferred directly into a cartoning machine. Integrated pre- and post-print vision inspection systems are available, as well as a wide range of proven blister feeders.

A dedicated partner in postponement strategy

As supply chain, SKU complexities, market volatility, and regulations increase within the pharma sector, companies are turning to a postponement strategy long used in

other industry sectors, and Hapa has a history of helping them realize it.

Globally, a mature installed base of Hapa BlisterJets is in daily production. These systems have been fitted in production processes inline or near-to-line. Customers are reporting improved logistics, significantly reduced SKUs and waste. They operate leaner and with improved blister-line utilization regardless of batch size,

and are more flexible, agile, and responsive, getting products shipped faster.

Postponement creates genuine reductions of overall operational costs, especially in the disinvestment of resources. Other cost-savings include freed warehouse space and a reduction of the labor-capital tied to warehousing activities.



BlisterJet CMYK

The BlisterJet CMYK is a fully digital DOD piezo inkjet printing system. It prints blank blisters with solvent-free, UV-curable inks, and delivers sharp graphics and text in single or multi-color spot and CMYK process applications. The system is available for inline or near-to-line configurations.

Key advantages

- Late Stage Customization of blank, sealed blisters – facilitates increased utilization of blister line
- Increased production agility and faster throughput time for small volumes
- Leaner logistics and more accurate forecasting
- Reduction of waste and finished-goods inventory
- Tax savings on international shipments of semi-finished goods
- Highest quality print for serialization, randomizing, and codes
- Full-color capability
- Prints on blank blisters, on demand, just in time
- Format-free operation

MEDJET 470: DEDICATED TO MEDICAL APPLICATIONS



MedJet 470 is proven suitable for medical packaging requirements including serialized UID marking and coding.

Hapa adds a printing system dedicated to medical applications to its digital portfolio.

The MedJet is Hapa's latest addition to its portfolio of in-house digital printing systems using UV-curable inks. Built on the same platform as the proven and successful WebJet, the system originates from a family of machines with an installed base of over 350 inline systems in the medical and pharmaceutical markets.

The MedJet offers the market high contrast, high definition, printing in up to two colors on blank or preprinted Tyvek and medical paper up to 470 mm wide. It is a proven solution for printing product artwork, variable data such as lot and manufacturing date, and pack customization including serialized UID marking and coding. It is easily installed into a wide range of medical packaging machines.

Clean and easy to operate, it features automated print head maintenance, is ozone-free, and uses low-migration, UV-curable inks.

Competitively priced, the MedJet 470 delivers supply chain optimization with industry-proven technology – a great return on investment from a global supplier.

The MedJet 470 is a fully digital, piezo inkjet printing system for medical packaging lines. It prints up to two colors on web material up to 470 mm wide at 27 m/min with a print resolution of 360 dpi.

EUROPEAN ROAD SHOW

The Hapa Mobile, outfitted with a Hapa 230 Hybrid, hit the road to deliver packaging printing capabilities directly to European customers and prospective clients.

The Hapa Mobile's European Road Show team arrived at each customer site, parked and hooked up to an electrical supply. It then readied the installed Hybrid to print on blank blister foils. Customers then chose the number of employees who visited the printing demonstrations, from CEO to line operators. The opportunity to see firsthand the bestselling system in operation was well received.

The Hybrid combines UV DOD piezo inkjet and UV Flexo technologies into one flexible printing system to print up to four colors on blank or pre-printed web materials. The print modules operate as one, but can run separately to achieve the highest cost/performance ratio and best results – whatever the job size.

In 2016, the European Road Show's sixth year, the Hapa Mobile made two multiple-site visits to Germany, visiting in total 14 companies. On a 5-day tour of Spain, the Mobile and team visited five companies.

The 2017 European Road Show will kick off in April. To book a visit, contact your Hapa representative or e-mail marketing@hapa.ch.



Visit at Aristo Pharma GmbH; location Osterweddingen (espharma GmbH).

PRINT MAT SERVICES – KEEPING CUSTOMERS LOYAL

Top pharma companies know that Hapa print mats are long lasting and produce the highest quality of print. Out of more than 120 Print Mat Services clients, the top 12 have been with Hapa a minimum of six to seven years. Quite a few have been with Hapa even longer.



Each Hapa print mat is tested for quality.

Keeping customers loyal are Hapa's order-to-shipment speed, the quality of finished mats, and the knowhow of a first-rate Print Mat teams. Customers worldwide know that the teams, located in Switzerland and the United Kingdom, deliver best value in product and services.

Fast and professional

Customers rely on Hapa's highly professional and fast service. In a typical case, mats are ready for shipment within twenty-four hours after receipt of the customer's order and approval. The three engravers located in Switzerland put in

over 7,000 production hours last year on mats alone.

A range of services

Clients benefit from Hapa's experience and knowledge in a range of services. As layout and application specialists, the team helps clients in all aspects of product-presentation design, from concept of the design – selecting the best graphic elements and colors – to optimizing layout, artwork, and variable data objectives. For customers engraving their own mats with a Hapa Laser Engraver, the team trains operators in the use of the Engraver, and provides templates and offers back-up mat production.

Services for Drop on Demand technology clients

For customers working with Hapa's Drop on Demand technologies, the same smart team creates and tailors digital templates to meet all needs and regulations. Comprehensive training in layout and

artwork as well as in the use of Hapa's Place-It software is offered.

Customer loyalty

Customers stay with Hapa knowing they receive the best support and knowhow for their Hapa systems. Improvements to processing orders and preparing layouts and templates is ongoing. In 2015, Hapa reduced its failure rate to below 2%.

Over 13,000 laser-engraved print mats left Hapa headquarters last year. That equates to 2 km (that's 1.2 miles) of rubber. If the approximately 1,800 orders of 1.7-millimeter-thick mats were stacked, they would reach a height of 18.5 meters (that's 60.7 feet), which means that "highest quality" reaches new heights!

QUALITY MANAGEMENT AND BEST PRACTICES

Hapa's Quality Management (QM) team shapes the company's processes for Best Practices, focusing on the present and future needs of both customers and company.

We asked Peter Richter, Supervisor Quality Management, to walk us through the lean practices and kaizen approaches that make up Hapa's "Quality Management 2020."

Briefly, Peter, what is "Quality Management 2020"?

To me, Hapa is in a cultural change, and part of that change is the implementation of this project as an overall push for Best Practices. Our goal to be visionary for our customers. Proactive. Now, when we speak of "quality management," we're speaking of minimizing risk, and to minimize risk we need lean (Six Sigma) processes. The basis for lean processes is knowledge. An efficient way to achieve our goals is by practicing kaizen, continual improvement.

In 2015, Hapa was nominated for a Swiss Lean Award by Swiss Lean Network. Along with ABB Ltd., Switzerland, Siemens Switzerland AG, and Spühl GmbH, Hapa was recognized for its interpretation and implementation of "lean thinking" in company practices, processes, and problem solving.

Describe Lean Six Sigma, please.

Hapa started its lean program, in 2012, and then incorporated Six Sigma practices into it 2015. Targets include increasing efficiency and effectiveness of our products and services to create best value for money for our customers. Investing in improved processes is capital saved. Last year, when the Swiss franc's peg to the Euro was dropped, our lean practices served Hapa and our customers well. Lean is also the best approach for the "internet of things": Never digitize waste!

What about Hapa's risk management?

QM has developed a new "risk policy" to handle potential business and internal risks at Hapa. The company has been ISO 9001:2015 certified since April 2016 – risk management included – and practices proactive risk management.

A lot of activity is going into knowledge management. Can you explain more?

Yes. QM team has implemented an internal center of knowledge, "HapaWiki." It's a dynamic approach. Currently, 40% of Hapa employees are actively delivering knowledge and nearly 100% are using the tool. We've also created 500 Frequently



Peter Richter, Supervisor Quality Management

Asked Questions (FAQ) documents to communicate technical and practical knowledge internally. Knowledge is a tool to improve customer support. Giving an employee easy access to information, for example, goes to increasing that person's knowledge, which is then key to decreasing our customers' lead-times and production risks.

Hapa practices Kaizen. Can you explain the concept?

Kaizen is "continuous improvement." Hapa's working to improve all employee functions and company processes following the kaizen principles – plan, do, check, and act. Due to this approach,

Hapa's seeing significant increases in product improvements. Each year we are doubling the number of machine improvements – in 2016, the number rose to 500. Customer-generated ideas are welcome, whether they come in the form of a problem to solve or an idea with improvement potential. Hapa has a serious attitude toward improvement.

Lastly, can there be pleasure in the work of risk and improvement management, Peter?

This involves detective work. Any kind of detective work involves curiosity, and curiosity is always fun, yes. My new slogan is, "Don't expect miracles, invite them!"

ONE DAY IN THE LIFE OF ...

By nature, Migjen Rrahimi, Leader Ink Development at Hapa Ink, is curious and upbeat. With warm smiles and a spirit of generosity, he shares his enthusiasm for testing and developing inkjet inks in the laboratory of Hapa Ink.

Migjen's a bit of a detective. His typical day involves helping customers solve ink application puzzles. "Most customers come to Hapa Ink with a familiar problem. Sometimes with something unfamiliar." He doesn't mind the unfamiliar – because he's also a researcher, happy to find new materials and ways to produce superior inks. As a detective and researcher, he turns to lab work for answers. His chemistry knowledge and skills help him solve ongoing projects short and long-term, internal and external.

A new life in a new country

In 1991, war broke out in Migjen's native Kosovo in former Yugoslavia. At the time, he was visiting his sister in Lucerne – in the German-speaking heart of Switzerland. His short visit became a 6-month stay. "It was time to learn German," Migjen says. "My studies had been interrupted. I wanted to pursue a degree in chemistry." So, in his adopted German, he repeated his Matura, the exam required for acceptance into any Swiss university. At the end of his studies, the University of Basel awarded Migjen a Bachelor's Degree in Chemistry.

His journey then led him to employment as a project manager at Pelikan Hardcopy Production, and on to a Bachelor's in Business. Along the way, he married. He and his Italian wife have a son and two daughters. Since the spring of 2013, and the start of Hapa Ink, he has headed inkjet ink development.

A day at the lab

On any given day at Hapa Ink, Migjen is giving customers feedback, suggestions, and solutions for application projects. Although most of the problems he deals with are familiar, there are times when someone comes to Hapa Ink with a unique problem to solve. "If there's the chance to find a solution, we do not stop." Migjen smiles, his smile as generous as his curiosity. "We always have to know why – why did this work? Why did this not work?" He adds, "When we're assigned to do a job, we get results for sure."

Spurring his curiosity

Unexpected developments will spur his curiosity. In rare cases, and for reasons outside of a client's relationship with Hapa



Migjen Rrahimi, Leader Ink Development, looks for the presence of small particles. Their presence may require a liquid's reformulation.

Ink, a client abandons a project. Migjen, however, carries on his detective work. "I draw information from both resolved and abandoned projects. Knowledge gained from one job can be useful for another." He also researches the work Hapa Ink's competitors are doing. And he does solo work: "I search for new ink ingredients – pure chemistry. Maybe I'm looking for a greener solution to a problem. Maybe I'm looking for ways to make an ink as safe as

possible for those who work with it. Can I come away from hazardous materials or the use of dangerous lamps without compromising results?"

Migjen's tip to customers

Does Migjen have a tip to pass on to customers? "If a customer knows what he or she wants, half of the work is done. Identify your goal. It saves time and money."

SWISSNESS – DID YOU KNOW?



Mountaineers helped unfurl the huge Swiss flag.

The world's largest Swiss flag measures 80 by 80 meters (that's 262.4 feet by 262.4 feet) and covers an area of 6,400 square meters (68,853 square feet). Each year, on the 1st of August, Switzerland's National Day, the oversized flag hangs resplendent on the face of the Säntis mountain. The Säntis, with an elevation of 2,502 meters (that's 8,209 feet), is the highest mountain in the Lake of Constance region, in the northeastern part of Switzerland. Initiated by Säntis-Schwebbahn AG, the project included sponsorships in which donors could purchase sections of the flag.



EXHIBITIONS & EVENTS

2016

November

PACK EXPO
Chicago, USA
6–9 November 2016

P-MEC
Mumbai, India
21–23 November 2016

November

ALL4PACK
Paris, France
14–17 November 2016

November

INPRINT
Milan, Italy
15–17 November 2016

2017

February

PHARMAPACK
Paris, France
1–2 February 2017

April

CIPM
Qingdao, China
19–22 April 2017

May

INTERPACK
Düsseldorf, Germany
4–10 May 2017

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