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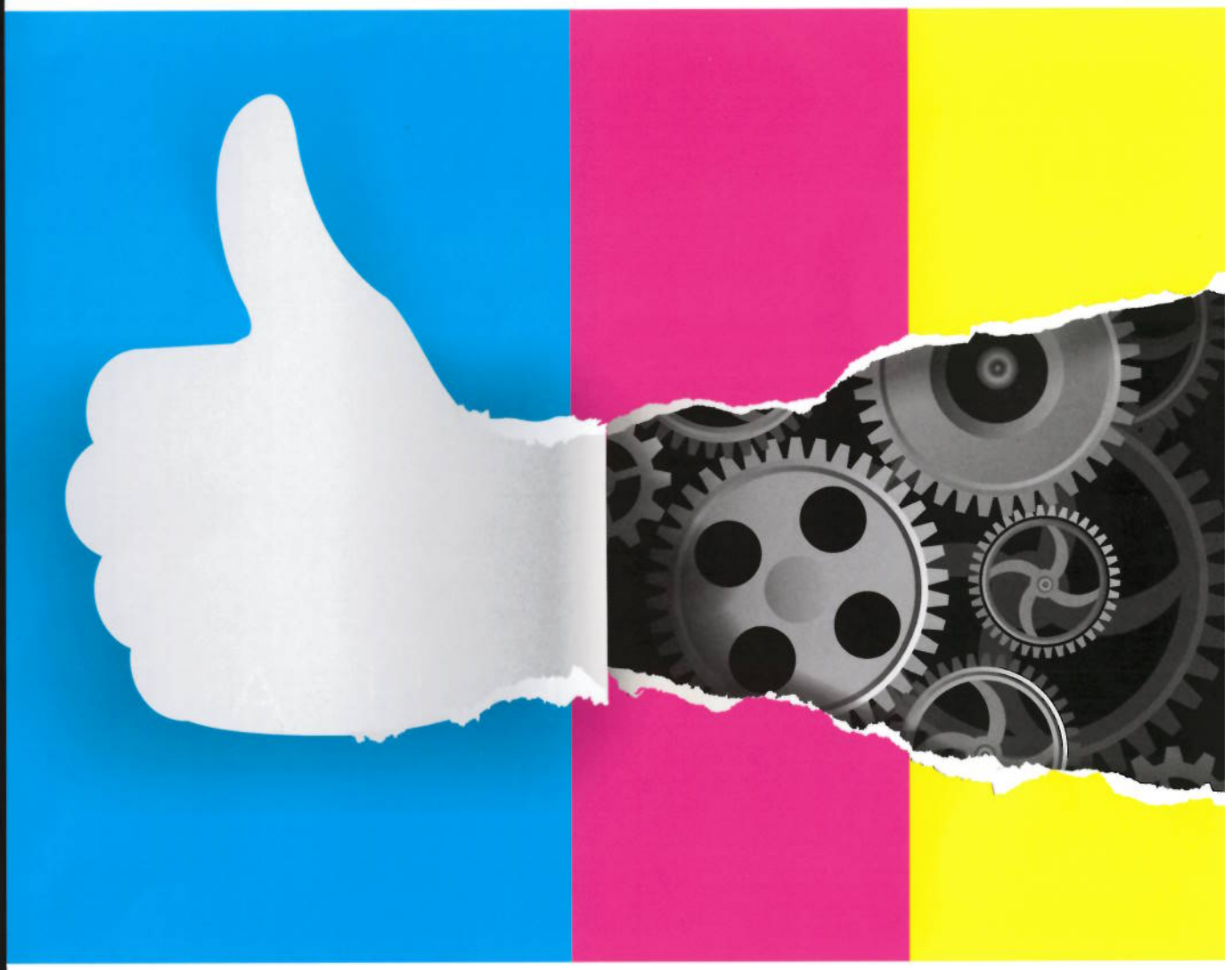
GLOBAL TECHNOLOGY IN FOCUS

DIGITAL SCREEN AND PAD PRINTING

SPECIALIST printing worldwide



DECORATIVE PRINTING ON FRONT PANELS

Salvatore Giuffrida looks at the ink options available for these applications

Touchpads and touch screens are very much part and parcel of our lives. In today's interconnected world, we communicate via smartphones, read novels on tablets, and use devices with sophisticated touch technology on a daily basis. And expectations are rising with regards to both functionality and appearance. There is growing demand for ever-more attractive user interfaces generally, and increasing use of touch screens on products such as household appliances.

HIGH-QUALITY PRINTING FOR DISPLAYS ON HOUSEHOLD APPLIANCES

Increasingly, manufacturers are incorporating input systems into front panels and panel inserts on household appliances such as washing machines, dryers, dishwashers, ovens, coffee machines, and microwaves. With growing frequency, the solution of choice is a capacitive touch interface.

The decorative inks used on these devices must demonstrate a high level of resistance to ensure the input system operates correctly. Unlike their resistive counterparts, capacitive touchscreens do not require mechanical pressure. The screen comprises a single plastic panel, rather than multiple layers, and is made of common materials such as PMMA or PC. However, glass is becoming more popular as a substrate as it offers many advantages – including a high level of resistance to scratches and soiling, as well as mechanical resistance.

PRODUCT AND COLOUR REQUIREMENTS

Household appliances make everyday tasks easier, but also are increasingly appreciated for their appearance. The materials and ink employed on input systems must therefore be attractive, and also capable of withstanding the trials of daily use. Inks must be easy to work with, be resistant to chemicals and high temperatures, have consistent batch-to-batch quality, and form thin films even when in multiple layers. They must also undergo various tests, such as low temperature, heat aging, water vapour and cyclic corrosion testing. Moreover, they must fulfil aesthetic requirements. These include crisp edges, smooth ink flow, white lightness (L value), colour co-ordinates (laboratory value), and high opacity.

Marabu has developed specially formulated shades of black with extremely high electrical resistance (such as the nonconductive Mara Switch MSW opaque black 181) specifically for front panels to ensure the reliable operation of input systems. Transparent varnishes, also known as diffusor or filter inks that are backlit by LEDs, are also available.

NEW SPECIAL-PURPOSE INKS FOR DECORATIVE PRINTING ON PANELS

Marabu's solvent-based and UV-curable inks are ideal for complex decorative printing tasks for input systems. Screen-printing offers a wide range of colours, special effects and functional layers for high-quality capacitive input systems. To achieve extremely high resistance and fulfil specific requirement profiles, the back of transparent plastic and glass substrates (front panels) can be screen-printed using one- or, if needed, two-component ink systems.

In this context, the Mara Switch MSW product line has a number of advantages. It includes new special-purpose inks that, unlike their predecessors, are not classified in reproduction toxicity category two. This means fewer workplace health and safety constraints for the appliance manufacturer. Moreover, the decorative inks can be blended to create custom colours. The Mara Switch MSW line is ideal for second-surface printing of the entire front panel, and also for diffusor and symbol printing. The new, specially-developed Mara Switch MSW 181 achieves excellent coverage on pre-printed inks (white, silver, black, colour, etc).

Marabu's highly-resistant, solvent-based two-component ink systems, Mara Glass MGL and Tampa Glass TPGL, are perfect for printing front and decorative panels in glass. If UV inks are required, the tried-and-tested Ultra Glass UVGO and Ultra Glass UVGL ink systems, as well as the special-purpose inks from the Ultra Glass UVG3C line, are ideal.

The Mara Switch MSW line is ideal for second-surface printing of the entire front panel

THE SOLUTION FOR INTRICATE DECORATIVE PRINTING

Use of UV-curable inks is steadily increasing across all segments, and input systems are no exception. The inks are solvent-free, and this has tangible advantages. They do not clog the mesh screen – making it easier to print intricate lettering and symbols. UV ink systems have very short drying times, resulting in higher production speeds and therefore lower costs.

Further advantages include compliance with thresholds for chemical concentrations in the workplace (MAK thresholds in Germany), and the environmental benefit of eliminating solvent emissions.

Structures combining UV-curable and solvent-based ink systems have also proven successful. In order to take advantage of the aforementioned benefits, letters and symbols on plastic panels are printed with UV inks from the Ultra Mold UVPC line. The subsequent blocking layer is created, for example, with the Mara Switch MSW line's nonconductive opaque black.

However, for plastic panels there is a clear trend toward using layers of inks comprising exclusively UV inks – as is already normal practice for glass panels. Against this background, Marabu is currently developing a UV-only solution for plastic panels. All defined requirements have been successfully fulfilled within the scope of initial tests performed with leading-name project partners. It proved possible to create a UV-only multi-layer structure for letters and symbols, including the final blocking layer. Marabu is looking forward to offering customers this new solution for plastic panels in the near future. ■

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conventional market requirements but are also moving to new niche and speciality areas where digital technology can realise jobs that, formerly, were not feasible. The ability to experiment with ink-jet and different materials is simplified because of fast-set-up and changeover, the ease of the pre-press process and the viability of producing one-offs or very low volumes.

Additionally, print service providers face challenges not only from competition generated by their counterparts trading in the same market sector but also by new investors in digital technology. Those recent entrants that have opted to take on a niche or specialist segment, rather than merely become a 'me too' operation, avoid the inevitable race to win orders in an arena where rivalry can too often be based on price.

Nonetheless, the growth in demand for wide-format ink-jet production devices continues across the entire digital spectrum with reasons driven by the desire for higher quality, faster throughput and the need for reliability.

SPEED VERSUS VERSATILITY

Is speed of the essence throughout today's wide-format printer users? The answer to this million dollar question differs depending on business model and type of demand. Versatility is still key to the throughput benefits of ink-jet and diversification can often prove to be the key factor that drives better margins and greater profitability. Ergo, effective workflow is as important as the throughput rates of a particular print device, and investment must be quantified against expected daily volumes, diversity and variability of work.

"We know many of our customers are using our printers to produce a wide variety of products on a range of substrates to meet the needs of their customers and to maximise ROI," acknowledges Richard Barrow, senior product manager, LFP signage at Epson Europe. "So one printer can be used to produce everything from retail POS graphics, pop up banners and self-adhesive decals and labels to wall coverings, external displays and vehicle wraps."

Mike Horsten, General Manager Marketing EMEA at Mimaki, concurs: "I believe that diversity in the offering is the key to success. For the most part, a single production type of print company no longer exists. Offering a diverse series of printing products is making the one-stop-shop a reality."

Flexibility is not only governed by the creativity of the display producer or the sign shop. It is encouraged by technologies that have been developed to minimise down-time during job changeover and the ability to produce applications that are right first time. Every minute wasted when a machine sits idle eats into a company's overall profitability, and present day device improvements certainly acknowledge these principles when it comes to functionality and performance.

END-TO-END WORKFLOW ADVANTAGES

Advances don't lie only in the print engine's design and construction; of increasing importance is the benefit of an efficient end-to-end workflow plus integration with onward services that aid accountability, such as streamlined finishing in print-to-cut environments, MIS/ERP and JDF compliance.

EFI's VP Inkjet Solutions at EFI, Ken Hanulec, confirms: "It is fairly obvious to calculate how a company can increase its throughput and its profits by printing more work on a wider, faster printer. But it is too easy for companies to overlook the ways they can also get better results with a better workflow. So it is definitely a way to gain a competitive edge that needs to be recognised."

However, Horsten is more circumspect: "if you are a large print house with multiple printers than the workflow is crucial to survival. Without a good MIS system or an automated workflow the amount of work would kill any company in the long run. But if you are small and know your entire customer base then the demands for perfect workflow are not as important."

Continued over

Marabu brings new inks to K 2016

Marabu has introduced a variety of inks for screen, digital and pad printing that open up entirely new possibilities for industrial applications. These are based on the principle that plastic is a fascinating material and exceptionally versatile. Highly malleable, it can be moulded and drawn into practically any shape – and it can be printed.

K 2016, taking place in Düsseldorf from 19 to 26 October, is the plastics industry's premier trade show and Marabu will be among the exhibitors (hall 4, booth C63-04). As a leading manufacturer of inks for screen, digital and pad printing, the company will be presenting its updated product portfolio. It will be showcasing UV LED-curable and low-migration inks for screen-printing of plastic packaging, for printing in the automotive industry and for touch user interfaces, as well as solutions for the safe printing on sensitive products.

Highlights will also include new technologies, such as a combination of screen and digital printing. For digital applications, Marabu will be demonstrating the possibilities of liquid coatings and water-based inks for plastics. ■

Marabu's new UV-curable screen-printing inks for personal care packaging

ICC releases Axeon non-pvc, non-phthalate high density white ink

International Coatings Company has released its new Axeon High Density White 1843 Direct Print ink. As part of its Axeon line of non-PVC, non-phthalate screen-printing inks, the Axeon High Density White 1843 is highly suitable for creating dimensional and 3D print effects on fabric.

The Axeon High Density White 1843 creates a heavy deposit and extremely sharp edges, especially when printed through thick stencils. It is easy to create interest and texture on print designs using this ink. Axeon High Density White 1843 cures to a very soft, pliable film.

This ink can be printed with manual as well as automatic presses and yields excellent wash-fastness on a variety of substrates, including cotton and cotton/poly blend fabrics. ■

Axeon High Density White 1843 makes it easy to create interest and texture

Vastex's semi-automatic screen coater brings consistent, repeatable results

Less than one year since its introduction, the Vastex C-1000 Semi-Automatic Screen Coater has been upgraded. It comes as standard with a digital voltmeter that allows the operator to easily dial in a specific coating speed based on the voltage reading for consistent, repeatable results, according to Mark Vasilantone, president.

Also new is a redesigned top screen clamp that can accommodate screens as small as 25cm and up to 90cm in height with virtually no width limitation, for greater design flexibility. The spring-loaded clamp securely holds wood, aluminium and retensionable frames up to 5kg.

The new screen coater is also equipped as standard with a larger and more powerful motor that provides smoother motion and handles heavier screens. It functions by causing the screen to descend at a steady rate using a foot pedal control, allowing a scoop coater to be held more steadily using two hands than possible with one-handed manual methods.

The rate at which the screen travels during the downward coating stroke can be adjusted according to emulsion viscosity, screen mesh and emulsion thickness to output as many as 50 screens/hour, each with three coats of emulsion.

The new digital voltmeter supplied as standard on Vastex C-1000 Semi-Automatic Screen Coater

According to Vasilantone, uniform application of emulsions can overcome blotchy screen exposures and inconsistent ink deposition, allowing screen-printers of every type and size to boost quality, cut rejects and save time at low cost. The wall-mount design saves floor space and is available in 110- or 240-volt models. ■

Expansion plans for STS Inks sees new facilities at Schiphol, Amsterdam

As part of its growth and expansion plan, STS Inks has opened a new branch office, warehouse and distribution headquarters located at Business Park, Schiphol, Amsterdam in The Netherlands. With this new distribution centre, customers from Europe, the Middle East and Africa will be able to order and purchase all products from STS Inks ever growing catalogue of alternative wide-format premium ink replacements.

All STS Inks Europe packages are shipped daily to its different distributors all over the EMEA regions, guaranteeing to satisfy all customer demands with a fast and efficient supply chain. Its cartridges, bags, boxes and bottles are based on the company's plug and play technology, which STS Inks says guarantees all users a perfect result, just as though they were using original inks.

All of the ultra premium inks distributed by STS Inks Europe are made in the USA at its manufacturing headquarters with the emphasis on outstanding quality and performance. The company says it has the ability to supply all the inks companies require, for final users and distributors alike, with no quantity being too small or too big so that products and services are specifically tailored to suit user needs. ■