

MARABU and KOENIG & BAUER: Collaboration to launch an innovative digital printing solution for glass

Marabu and Koenig & Bauer have recently joined forces to create a pioneering solution that offers glass product manufacturers an attractive alternative to traditional embossing techniques, which is also suitable for three-dimensional decorations on standard glass products.

Digital printing enables sophisticated designs and a high degree of personalisation at low cost. However, this process was, until recently, not suitable for three-dimensional decorations on standard glass products – instead, a costly made-

to-measure mould had to be created for each item. Now, Marabu and Koenig & Bauer have joined forces to create a pioneering solution to this problem. It offers glass product manufacturers an attractive alternative to traditional embossing techniques.

INNOVATIVE INKJET SOLUTION FOR RELIEF PRINTING ON GLASS

The manufacture of glass products with textured decorations conventionally requires a variety of preparatory steps prior to embossing. This process is associated with high energy con-





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sumption, and short production runs are prohibitively expensive. Each glass object to be given a textured decorative finish must be made with its own dedicated mould to produce a suitable raised surface for the embossed decoration. Production is time-consuming and requires corresponding planning. However, embossing is not ideal for highly customised glass items, for which there is currently strong demand, for example, in the perfume and beverage industries, i.e. for wines, spirits and beer.

Marabu and Koenig & Bauer have now developed an innovative inkjet solution that allows the direct printing of highly customized glass products of all kinds, from one-off items to large industrial-scale volumes – in conjunction with excellent results. Contours, for instance, are far sharper than with conventional embossing. The precise single pass application of multiple varnish layers is possible, producing extremely textured finishes. This is performed with printing systems from Koenig & Bauer's KAMMANN K15 and K20 family. The method also permits large areas to be printed, including colour gradations, often required for brand logos. In addition, textured

varnish finishes can be combined with coloured elements to produce striking visual effects. All printing process steps are seamlessly integrated into the K15 and K20 systems. Servomotors are employed to accurately position and move the object to be printed and the print unit. This allows the raised decoration of glass products of any shape.

The corresponding varnish was developed in close cooperation between Koenig & Bauer and Marabu to ensure it was perfectly tailored to the printing process. During the development stage, the corresponding decorations achieved excellent results for dishwasher resistance, and resistance to chemicals and abrasion, in line with applicable standards.

This simple yet effective process is therefore a highly attractive alternative to conventional embossing.

THE BENEFITS OF MARABU HIGH-PRECISION VARNISH

Marabu's new varnish was conceived especially for digital printing of textured decorations, in particular on glass substrates. The precise printing method allows designs of extremely sophisticated and elegant appearance on glass objects, such as perfume bottles, drinking glasses and beverage bottles. The number of layers can be varied in accordance with customer-specific needs. The use of this purpose-developed digital-printing varnish permits the creation of highly



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customised, personalised decorations without the need for dedicated moulds. The benefits include excellent contour sharpness, extremely fine textures and exact points, coloured and transparent designs, printing of convex and concave shapes, and rapid, simple adjustments during the printing process. Unit costs are not dependent on volume. It is possible to apply any number of designs to the chosen glass product during a single print pass. There is no need for a minimum production quantity or unique moulds. The results comply with the requirements defined for dishwasher resistance: 500 cycles in an industrial dishwasher and 50 cycles in a domestic dishwasher. The varnish is also highly recycling-friendly: the print oxidises entirely without residue when the glass substrate is melted down for reuse.

THE MASS CUSTOMISATION MEGATREND

Demand for customised products is on the rise, and can be observed in a variety of fields: packaging, games, fashion, household goods, and many other everyday items. Consumers are also prepared to pay a premium for such products. According to a survey by the Deloitte Consumer Review, 30 to 50 per cent of respondents are willing to pay up to 20 per cent more for a personalised product. Manufacturers and retailers are responding accordingly, and are keen to find corresponding solutions.

Against this background, Marabu and Koenig & Bauer have pooled their skills and resources to make it possible to produce highly attractive designs quickly and inexpensively, without compromising on quality.

“State-of-the-art technology

has great potential with regard to decorating glass,” emphasises Tobias Lang, Product Manager for Digital Inks at Marabu.

Tim Schnelle, Sales Manager at Koenig & Bauer Kammann, adds, “Koenig & Bauer and Marabu have given the packaging industry a further tool with which to address emerging challenges.”

The new varnish and the matching printing method represent a unique glass decoration process that complements existing techniques.

KOENIG & BAUER



Koenig & Bauer is the world's longest established manufacturer of printing systems, with the widest product range in the industry. For over 200 years, the company has provided customers with innovative technology, tailored processes, and diverse services. Its portfolio includes solutions for banknotes, for cardboard, foil, sheet-metal, and glass packaging, and for books, displays, labels, decor, magazines, advertising materials and newspapers. Koenig & Bauer is a proven expert and often market leader in nearly all printing processes – offset and flexographic printing on sheets and rolls, waterless offset printing, steel engraving, plus simultaneous, screen and digital inkjet printing. In fiscal 2020, its 5,593 highly skilled employees across the globe generated revenues of 1.029 billion euros. Koenig & Bauer Kammann GmbH, headquartered in Löhne, Germany, is the

group's specialist for finishing hollow objects made of glass, plastic, metal and diverse other substrates, by means of screen printing, digital printing, hot stamping and labelling.

MARABU GMBH & CO. KG



Marabu is a leading global manufacturer of liquid coatings and screen, digital as well as pad printing inks with headquarters near Stuttgart, Germany. Marabu's track record of innovation stretches back to 1859, featuring many industry-first solutions for both industrial applications and graphic design. With its 16 subsidiaries and exclusive distribution partners, Marabu offers high-quality products and customer-specific services in more than 90 countries. Exceptional technical support, hands-on customer training, and environmental protection are core elements of its corporate philosophy. Sustainable business practices are also key to Marabu's vision. These have been implemented through a number of initiatives, with concrete results. Marabu will continue to pursue these activities with commitment in the future and is certified according to ISO 9001 and ISO 14001. ■

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