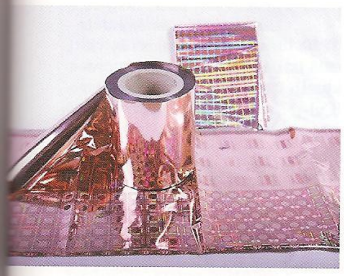
Copper metallisation into holograms

IDVAC ■ Due to its increasingly complex nature and difficulty to reproduce, the hologram has become an effective anti-counterfeiting device employed in a wide variety of security applications and therefore it is now part of a rapidly growing global industry. Holograms offer a wide variety of different features which can be matched to different levels of security requirements, from those used in relatively low-cost commercial applications such as packaging to more



sophisticated security methods of protecting currency and controlling illegal immigration. Whilst the intrinsic security of holograms is captured within the origination process, their commercial success is due to the continuous development of materials and application techniques. Developing new materials rendering new colours is another way to fight counterfeiting and to enter additional market segments.

Idvac has developed a cost effective process to deposit copper at a good line speed. Holographic film metallized by this method exhibits an aesthetically appealing Copper lustre. There are two main reasons for the introduction of Copper metallization as an alternative to standard silvery coloured Aluminium: the bright lustre of the Copper, which is difficult to be replicated by using standard Aluminium metallizing with chemical pigments or dyes, and secondly the de-metallizing of Copper, which is somewhat harder than the de-metallizing of Aluminium. In the de-metallizing process the metal is removed by chemical or physical process to print letters, logos or patterns within the metallized side. De-metallizing adds another feature to the security hologram to fight counterfeiting.

The other added advantage is the electrical conductivity of Copper, which could be used for other applications such as RFID antenna.

At present, *Idvac* is offering its metallizing process know-how and retrofits to convert standard aluminium vacuum web metallizers to Copper metallization. This technology does not hamper the performance of the standard metallizer to Aluminium metallization, and the machine operator can switch from standard Aluminium metallization to Copper metallization within a couple of hours.

➔ *www.idvac.co.uk*

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Automatic cleaning of sleeves

D.W. RENZMANN ■ The *Sleeve Washer* (of *SMB Schröder Engineering*) has been designed for the automatic cleaning of sleeves outside the printing press and supersedes the laborious manual cleaning method. The machine provides the following advantages: time-consuming cleaning by hand is no longer necessary. Labour costs can be saved and staff can be deployed for other work. Only 5 minutes are needed to charge the machine with five sleeves. Because of the automatic cleaning equal cleaning results can be obtained over the whole sleeve's circumference. The basic concept of the machine allows the customizing of the *Sleeve Washer* for the specific sleeve dimensions used by the customer.

The *Sleeve Washer* is offered in two different standard sizes. The smaller unit allows the cleaning of sleeves with an internal diameter from 70 to 146.6 mm (2.75"–5.77"), an external diameter from 146.6 mm up to 170 mm (5.77"–6.7") and a length from 300 to 1400 mm (11.8"–55.1"). The larger device is suitable for cleaning sleeves with an

internal diameter from 146.6 to 292 mm (5.77"–11.5"), an external diameter from 170 to 305 mm (6.7"–12") and a length from 1040 to 2000 mm (40.9"–78.75").

The *SMB Sleeve Washer* has been designed exclusively for use with aqueous media or cleaner with a flash point of more than 55 °C (131 °F). The device is not ex-proofed.

➔ *www.dw-renzmann.de*

Challenging sleeve technology

SIEGWERK ■ *Substrates and printing inks have to satisfy the most stringent requirements, irrespective of whether the sleeves tube is printed with UV inks or with solvent-based inks. The materials employed, PVC, PET or OPS, shrink at temperatures between 100 °C (212 °F) and 150 °C (302 °F). Not only does the ink have to be heat-resistant, it must also be extremely flexible. During the shrinking process in a hot air or steam tunnel, the material shrinks in some places by up to 80%.*

A growing number of sleeves are being manufactured using UV flexographic printing employing radical or cationic ink systems. Radical polymerising inks dry quicker and enable higher printing speeds, but can cope with only around 50% shrinkage. Cationic ink systems polymerise somewhat slower, but can cope with greater degrees of shrinkage.

The UV series Sicura Flex 39-3 (radical) and Sicura Flex 36-2 (cationic) have thoroughly proved their worth for the manufacture of sleeves. During this past year, the Sicura Flex 39-3 series has been improved yet again especially for sleeves printing, now with even lower odour levels and with outstanding adhesion to the materials employed. High printing speeds are possible thanks to fast drying.

➔ *www.siegwerk.com*

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PRINTCO INDUSTRIES LLC
3807 W. Mason St. • Oneida, WI 54155 U.S.A.
Phone: 1-920-869-7775 • Fax: 1-920-869-3624
Web: printco-industries.com
E-Mail: sales@printco-industries.com