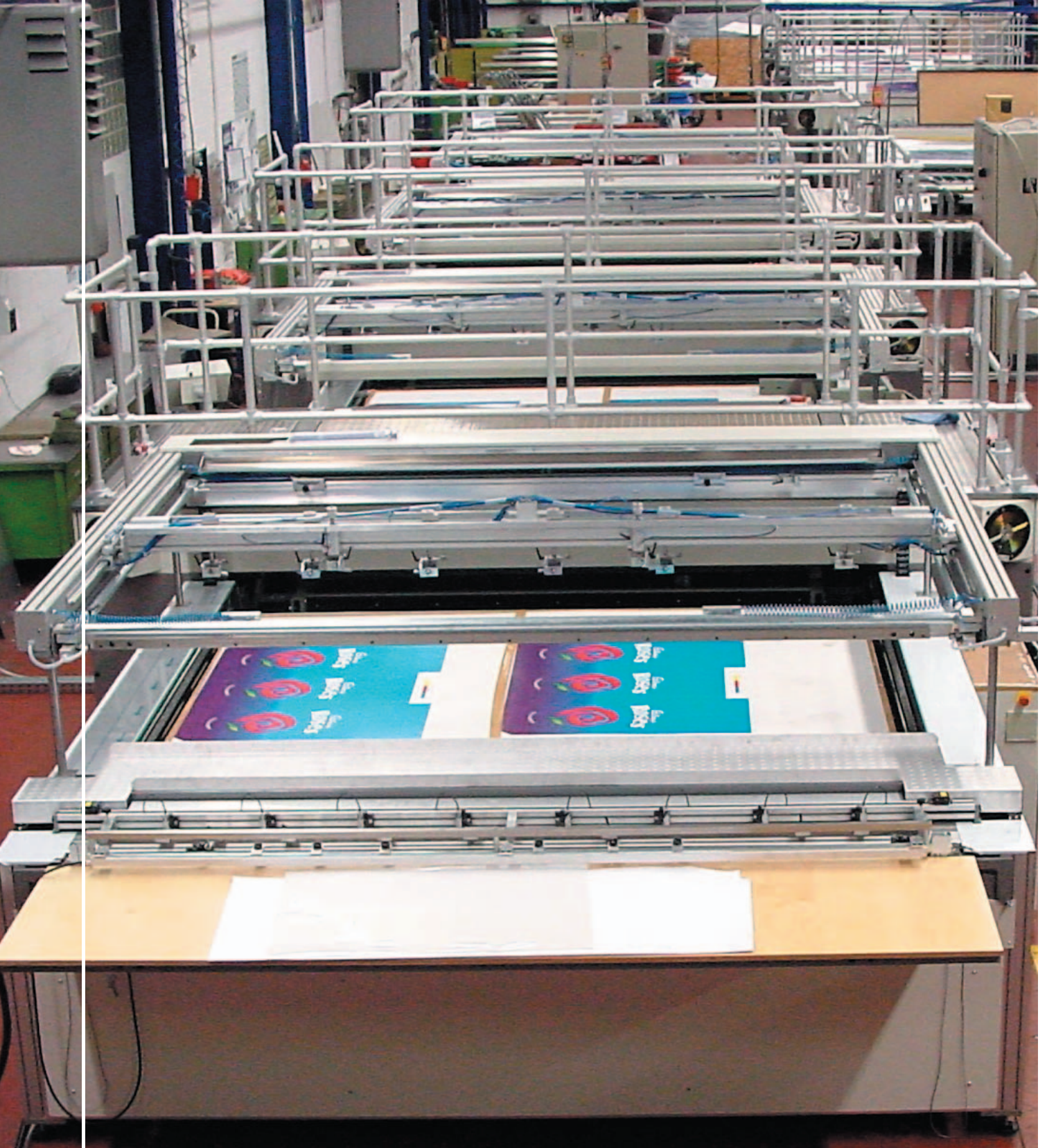


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SCREEN PRINTING HAS A FUTURE

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Times, when many things are being questioned do have a strong influence on evaluation of various technologies. The speedy developments of computer-aided manufacturing processes like those of large format digital printing are the reason why many screen printers are very careful with their decisions about new investments. The question whether one should invest in screen printing or in digital printing is not easily answered to.

It is very important though, to clearly emphasize the advantages of screen printing.

COST

Cost efficiency to meet market requirements is undoubtedly the top priority. It does not make too much sense to mourn about a technology, which would limit or even endanger the own competitiveness.

This argument is clearly in favour of screen printing. Naturally the number of prints has to be considered when calculating costs. Individual prints or jobs with a very small number of prints were and never will be cost efficient in screen printing. Actual cost also comprises machines, printing preparation as well as materials like printing inks, substrates etc.

Machine capacity also has a significant influence on printing costs. Just compare large format digital printing with UV-curing ink systems to the screen process. Modern 4-colour printing equipments form the base of this comparison. Large format multi-colour equipment with a width of 2-3 m can easily handle up to 3000 m² of a substrate in one hour. It is hardly possible that digital printing equipment will achieve such high printing speeds in the near future. Talking about profitability – the price of digital printing equipment also has to be compared to that of multi-colour screen equipment. Limitations of UV-digital printing weighed against screen printing have to be considered as well.

Modern UV-curing screen printing inks can be used for high quality decoration of nearly all substrates – no matter if graphic screen printing jobs followed by forming or deep drawing applications or special customer requirements such as printing of optical and haptic effects.

There is a great variety of UV screen printing inks. The efficiency of the integrated UV driers is the decisive factor.

Multi-colour lines basically run with two different drying technologies:

1. FLASH CURING

When flash curing, impulses of UV-energy are emitted to the substrate. The disadvantage of these drying equipments often is the limitation of the existing energy for problematic substrates and ink systems.

2. SCAN CURING

Scan curing uses conventional high-pressure mercury lamps, which move across the substrate. Conditions are similar to those in conventional UV-belt driers.

Geometry of the reflectors, which apply the UV-light in a more or less concentrated form onto the substrate, is essential for the polymerisation of UV-curing inks. Standard equipment often only has reflectors with a partial focus. The reason is that they apply as little infrared heat as possible to heat sensitive substrates. Non-focussing or only partially focussing radiators do not allow the high degree of curing required for certain applications. Therefore many machine manufacturers offer the uncomplicated possibility of changing the reflectors, so that depending on the job reflectors can be exchanged with little effort. Use of focussing reflectors again will allow processing of slower reacting UV-inks in multi-colour printing equipment. It is important that the high heat energy transferred to the substrate is then discharged in connected intensive cooling equipment. This is technically possible. Prior to purchasing a multi-colour equipment one should discuss this with the manufacturer.

Various requirements prints have to meet, naturally also call for use of special ink systems. A few examples of the Coates Screen inks program:

MULTISTAR MLS

Universal ink system for printing of paper, cardboard, rigid PVC and polystyrene. However this system only has limited flash cure properties. When used in multi-colour printing equipment scan drying is required. MULTISTAR MLS is a cost-efficient ink system for many applications.

UVE

A highly reactive ink system for printing of polystyrene and rigid PVC materials. Printed substrates cannot be formed. There are special UVE process colours with a high colour density for diapositive printing.

UVN

An ink system suitable for scan-drying as well as flash drying. UVN is mainly used for printing of PVC materials. Using inks like UVN and UVE special attention needs to be paid to embrittlement of rigid PVC and plasticized PVC foils.

UVPO

In France and Italy polypropylene flute materials are often printed. In addition to high reactivity UVPO also shows good adhesion on these materials. Moreover UVPO shows a suitable weather resistance, so that prints can be used outdoors for 1-2 years. Another field of application is printing of polypropylene sheet materials.

VIOFLEX

This successful product of Coates UK is suitable for 4-colour printing equipment. The advantages of this ink system are a low degree of embrittlement of rigid PVC materials, an extremely high reactivity and excellent printability.

MUSKETEER MTR

Also quite a universal ink system, used for production of deep-drawn parts. However, such ink systems have a low reactivity and – if stacked - show a tendency to blocking. In addition to sufficient UV-energy it is important to care for corresponding aftercooling.

You will find detailed information of all above mentioned ink systems on our web page. In addition, our laboratory will be happy to be of assistance with regard to ink recommendations.

There is a constant and continuing development of UV-curing products for screen printing applications. Thus screen printing will remain a cost-efficient, effective and competitive process.



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