

The completion of one of its latest generation sheet fed gravure presses gave H C Moog GmbH the opportunity to remind high quality packaging printers of what its bespoke technology has to offer.

GRAVURE QUALITY FOR SHORT TO MEDIUM RUN PACKAGING

The latest 3-colour sheet fed gravure press from German manufacturer H C Moog is currently available for print trials at the company's Research and Technical Centre in Germany.



A recent visit to H C Moog's Research and Technical Centre in Miehlen/Taunus, Germany, provided the opportunity to see the Moog 3 TBR in action, and discuss the potential for sheet fed gravure in today's highly competitive packaging market.

The case for sheet fed gravure is based on its ability to produce high quality printing with high levels of ink coverage, and great repeatability across a range of substrates. Typical markets for this type of work are

cosmetics and security, and now principally the tobacco industry, where the visual impact of the cigarette carton has assumed a new level of importance with the banning of media advertising in so many countries. In addition, the growth of illegally produced counterfeit products strengthens the case for gravure printed packaging, with its inherent ability to produce 'secure quality' results.

The gravure market splits into web fed and sheet fed machines, the choice of which has previously been largely a function of run

length, with web presses preferred for longer runs. But, this principle is now changing according to industry experts. As run lengths shorten, and greater flexibility is demanded, the sheet fed gravure press, with its faster make-ready (typically 90 minutes for 4-colours), and ability to print up to eight colours, or varnish and micro emboss inline, means that high quality sheets can be delivered direct to the die-cutter. The quality of the sheet in this case is often measured by its 'slide-ability', which enhances the

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performance of downstream automated packing lines, and leads to a smoother product throughput.

As one of the leading proponents of sheet fed gravure, H C Moog, which was established in 1950, and is now under third generation family management, makes a strong sales case for its latest TBR series of presses. Mr Achim Kurreck, Executive Sales Manager, explained: "We see our press technology as the best solution for consistent colour reproduction, which is vital for global branding, and for the stability that packaging converters demand when very fine characters need to be printed across the full sheet with no loss of quality and legibility. We can print up to four times the ink quantity of 'kiss techniques', like flexo and offset, and deliver a sheet that is ready for further processing. In addition, our waste levels are significantly lower than those of web fed gravure lines."

The Moog TBR series was first introduced in 1986 and featured a design that replaced the inter unit chains with drums, similar to an offset press. In the 20 intervening years Moog has continually refined the design and secured 70 worldwide sales, mostly to Asia, North America, and Europe, though the Middle East is currently showing major growth potential.

According to Mr Kurreck, while Asia typically specifies three-colour machines, and undertakes multi passes (because of low labour costs), Europe and America prefer six-colour lines. The majority (around 80 percent) of Moog's installed customer base produce cigarette cartons, which like many other branded products, are now demanded in

shorter runs with a variety of limited editions to constantly refresh market awareness. A growing trend in this market is for cartons printed six-colours gravure plus four-colours offset.

Mr Kurreck explained why sheet fed gravure had established such a firm foothold in this market: "We have the ability to use special inks, such as UV reactive, and security inks, which are essential to combat the highly lucrative counterfeit market. Gone are the days of soft-packs and flip tops in the quality end of cigarette packaging – what our customers are producing is high end cartons

All machine functions are controlled from the remote central console, which also offers job data recall and fault diagnosis.



of a bespoke nature."

Explaining the versatility of Moog's sheet fed gravure lines, he added: "Sheet fed gravure works well in combination with offset. It also offers an economical alternative to hot foil stamping, particularly where less than 50 percent sheet coverage is required, which is highly wasteful of expensive unused foil. Instead of hot foil stamping high gloss gold can be printed in one unit, or for added effect, we can print a silver, and then overprint a yellow varnish. The customer can choose which is best for each job. Another advantage is that our product is recyclable, unlike laminated foil. Speaking of waste and recycling, where laminated board is traditionally used for special effect, such as on premium cigarette cartons, gravure printing offers significant cost savings and a recycling option."

Moog claims that a significant part of its success in gaining acceptance for sheet fed gravure is the close consultation work it carries out with packaging designers and innovators. A pro-active approach towards end users, by way of demonstrating new techniques and effects, stimulates demand for what sheet fed gravure has to offer. In addition to its traditional markets, previously mentioned, Moog is closely studying its options for development into high end food, drinks and confectionary packaging, as well as pharmaceutical cartons that meet the new EU regulations.

For today's market, Moog offers three machine sizes, 520 x 740, 740 x 1040, and 780 x 1140mm in single to eight colour configurations. Capable of handling paper

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from 70 gsm to 400 gsm cartonboard without gripper change, and up to a maximum of 600 gsm, the Moog TBR series offers 9,000 sheets/hour (paper) and 10,000 sheets/hour (board) production speeds, with operating requirements of 1.5 persons (1-3 colour machine) to 2 persons (4 colours and more).

Moog claims a working life expectancy of around 20 years for each of its bespoke presses, which more than offsets its price differential over litho, and produces superior quality throughout. Commenting on the 'on-costs' associated with gravure printing, Mr Kurreck claimed: "The cost and time required for producing engraved cylinders has reduced considerably in recent years, but in many cases our customers opt for direct laser

interested party.

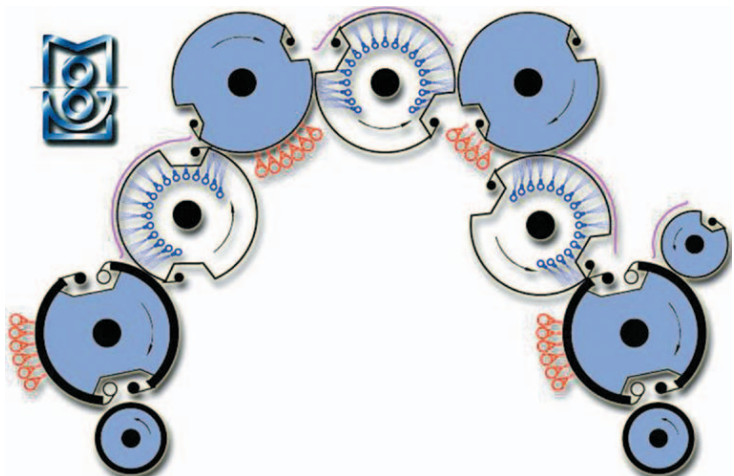
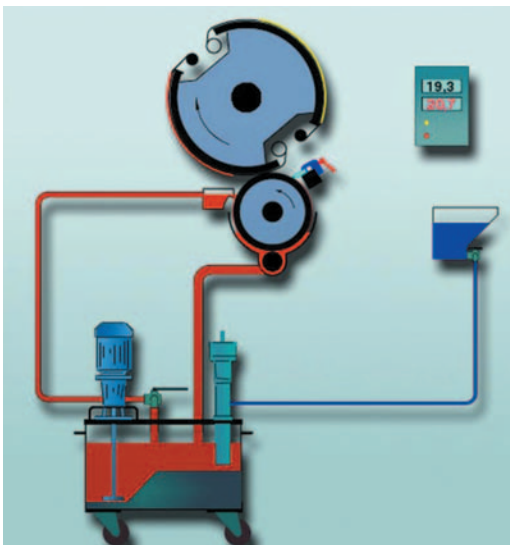
The brain of the Moog TBR production line is its central multi-functional console, which allows the operator to control the entire sheet fed gravure press from all machine settings and remote adjustment to instant job recall for repeat work. The computer also reads sensors on the press to give both job analysis and fault diagnosis.

The line itself begins with a Heidelberg high pile sheet feeder, which is set up from the console and remotely adjusted for sheet format, thickness, air suction and speed. The electronically aligned sheets are fed into a swing gripper that accelerates them to the press speed before passing them to the double diameter transfer drum, and from here

and unlike web presses, the register is constant on a sheet fed press.

After the last printing unit, the sheets pass through the delivery dryer, which includes a three-stage heating register and optional water cooled UV lamps, before arriving at the high capacity delivery unit. Piles can be changed without slowing the press from full production speed.

Two of the major benefits of sheet fed gravure, according to Mr Kurreck, are the lack of downtime, when compared with offset production, and the ability to run high quality work without highly trained specialists. "Gravure is a relatively simple process, where the principle investment is in the plant itself. It is also a very clean process, and despite



Far left: The new inking system offers improved handling of ink overflow and virtually eliminates ink splash. Left: More drying capacity and reduced maintenance are the key advantages of the latest drying system.

etching, which is faster to produce. It's another reason to cast aside traditional thoughts on the problems associated with gravure printing – it has moved into the modern era and come of age!"

The first of the latest series of Moog TBR lines was installed in Dubai six months ago, having been sold at Drupa 2004. The second machine, currently sitting on the floor at Moog's demonstration facility in Miehlen, is a three-colour 1040 x 740 mm press, with a high specification to enable print tests of different customer jobs. To fully appreciate the design and performance of the TBR, one needs to witness the press in action, but a simple description of its basic principles should suffice here to whet the appetite of any

to the impression cylinder and ink duct gravure cylinder. It is here that the Moog cylinder cocking system comes into play, allowing adjustment of diagonal register, and making a significant saving in substrate waste.

The inking system, which uses pneumatically controlled doctor blades, includes precise viscosity management, and along with the gravure cylinder, can easily be changed by means of a trolley. The transfer drums have both internal and external drying nozzles that ensure the ink on each sheet is completely dry before transfer to the next unit. There is also an adjustable air cushion between the drum and sheet to prevent any sheet distortion and resultant mis-register,

using solvent inks, incurs no problems with emissions, and thanks to its exhaust volume being greater than its air intake, it runs in an odourless environment," he concluded.

As carton converters look for profitable niches, the latest generation of sheet fed gravure presses may well offer an unexpected lifeline. Adapted to suit today's short to medium run market, and with a renowned quality image to match, H C Moog is intent on expanding its manufacturing base and spreading its sales into new territories.

(In a future issue of Folding Carton Industry, we shall be reporting from a Moog user, and running a Case Study of how effective this type of production is within its field of carton converting.)