



FINAT RECYCLING AWARDS

FINAT announced the winners of its first Recycling awards competition during the Monaco congress.

In the converter category, the winner was Hagmaier Etiketten & Druck, which impressed the jury with its high recycling rates for both paper and film liner, the communication efforts made both inside and outside of the company, and the solutions offered for other secondary materials. The company also offers to take back its customers spent liner.

The end-user category was won by Unilever, which demonstrated a clear commitment to a zero waste to landfill policy. Not only is this clearly communicated on the company's website and in its sustainability report, but it is also reflected in Unilever's long history in liner recycling and its impressive liner recycling figures.



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THE SPM-340LR press
from Smooth Machinery

Hagmaier's Smooth investment

GERMAN CONVERTER Hagmaier Etiketten has purchased an intermittent letterpress from Smooth Machinery, and may follow it with the Taiwanese company's latest development: a semi-rotary offset press. James Quirk reports

Hagmaier Etiketten, based in Münsingen, 60km from Stuttgart, purchased a semi-rotary letterpress from Smooth Machinery earlier in the year – the latest in the German converter's line of machinery from the Far East.

The company also has machines from Link, Shiki and Lintec, and Thomas Hagmaier, joint director with his brother Werner, believes there has been great evolution in press manufacturing in the Far East. 'A few years ago, a company would tend to offer only one kind of machine. Now, they often have a variety of technologies and can manufacture according to your needs.'

Smooth Machinery is a case in point. The company has installed its SPM-340LR letterpress at Hagmaier Etiketten, and has developed a water-based offset press to be launched shortly (see 'Offset development' boxout).

'A lot of European companies will take the easy route and buy locally,' says Thomas Hagmaier. 'People might think there is a problem with language and access to spare parts, for example. Buying machines from the Far East does require more effort – you need to take a leap of faith and have an adventurous spirit. But it has been very rewarding. I trust the people I work with and the technology is advanced.'

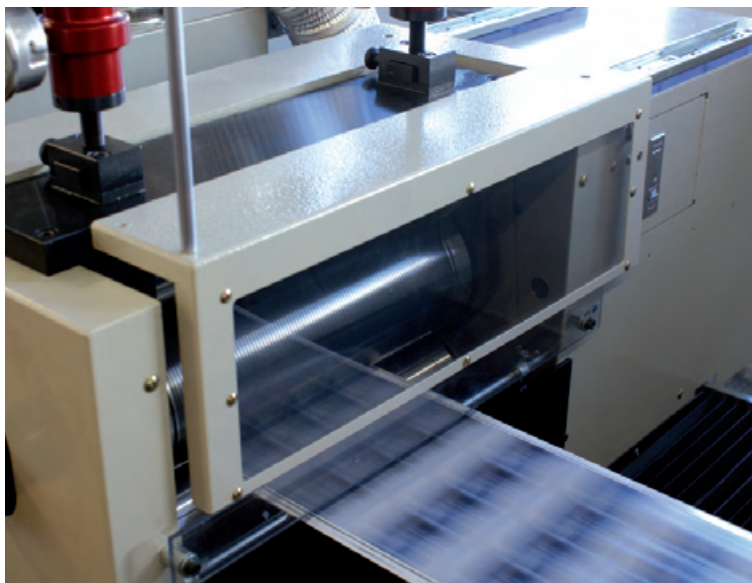
"Buying machines from the Far East does require more effort – you need to take a leap of faith and have an adventurous spirit. But it has been very rewarding. I trust the people I work with and the technology is advanced"

Smooth's shaftless letterpress machine comes in two models: the 340mm, bought by Hagmaier, has over 30 installations since its launch four years ago; the 270mm version, introduced seven years ago, has over 50. The presses have been sold to over 30 countries throughout Asia, Europe, the US and Latin America.

'We started with semi-rotary technology seven years ago with a different supplier,' says Thomas Hagmaier. 'But when we discovered Smooth Machinery, we were amazed. The printing is very automatic and the machine is very advanced. There are so many options that can be added.'

'We don't want to produce large quantities of labels – we prefer to concentrate on specialty products. This is the reason we are interested in semi-rotary technology.'

Transport and textile applications are Hagmaier Etiketten's biggest markets, accounting for around 70 percent of its business. The company also produces labels and tags for warehouse pallets, while nearby slopes provide a big market for PET ski passes. Its 4,000 square meter facility, expanded seven years ago, houses 15 printing and die-cutting machines. Alongside the equipment from the Far East are a Vectra and Omega from AB Graphic and laser die-



TWO BECOME ONE

Smooth Machinery has developed an on-line reciprocal system and dancer-controlled web buffer which allows two presses to operate as one machine.

The system can be used where, for example, a job requires 12-14 color stations and the alternative is an expensive rotary combination machine. In operation, two Smooth Machinery presses would be placed end to end, allowing the web to run continuously through both. To avoid the problem of differing speeds and registration between the presses, the on-line reciprocal system allows one operator to control machine speed and stop-start on both presses simultaneously.

cutting machines from Italian companies Prati and Cartes. Hagmaier Etiketten employs around 50 people and produces 7-8 million square meters of labels and tags per year.

'For our size of printer, it is important to have the right machine for the right job,' says Hagmaier. 'This press is ideal for small and medium jobs because of the very fast changeover – it is so fast it is almost comparable to a digital press. In one day we can change between up to ten jobs. It allows reverse printing at great speed with good registration. It is very rare to find a semi-rotary press that can print 310mm repeat lengths.'

'We think that these machines are the future, because whereas 5,000 labels are faster printed on digital, jobs of 10,000-20,000 labels are quicker on a semi-rotary machine. Digital, of course, is also very expensive.'

Hagmaier Etiketten's SPM-340LR has five color stations and two of rotary die cutting. It prints at 65m/min at full rotary or 40m/min at intermittent, and can switch between the two.

The machine is very automated. Independent motors control plate cylinders – which can be changed at the push of a button – registration and the ink keys, which allows independent adjustment of ink levels.

Digital registration allows for higher precision. 'If you need a 10 micron movement, how can you do it manually?' says Jim Tien, sales manager for Smooth Machinery. A second pass scanner allows the registration to be replicated. 'We can not only move the scanner to match the web, we can also move the web to match the scanner,' explains Tien. 'This is an advantage because with a second pass it is harder to achieve the same registration as in the first pass. So we can automatically repeat the same registration.'

OFFSET DEVELOPMENT

Smooth Machinery has developed a water-based offset press to add to its range of letterpress machines. The machine will be launched next month, and will be shown at Labelexpo Europe next year. 'Many of our customers have requested that we produce an offset machine,' reports Smooth Machinery's director Frank Lo. 'We have been developing it for three years, and have cooperated and shared technology with our Japanese partner Fuji. Our supplier partners have been preparing for offset for many years, the background is in place.'

The machine can contain five offset units, plus UV flexo varnish and magnetic rotary die-cutting stations. With a maximum web width of 450mm (17 inches) and printing at 12,000 impressions per hour, the press has independent, multiple digital servo-drives to secure print registration. With fully automatic web tension control, the machine is suited to label, card, ticket and tag converting, as well as A3 paper and A4 booklet printing. Options include hot stamping, embossing, perforating, laminating, silkscreen, slitting and sheeting.

Sales manager Jim Tien is confident that Smooth Machinery's letterpress expertise stands the company in good stead for entry into offset technology. 'Much of the offset you see is in the sheetfed market, but this is very complicated for anything but the simplest of labels. You need lots of different machines for coating, die-cutting etc. But reel-fed semi-rotary offset gives the possibility of just one machine. Intermittent job change means that size is no longer an issue for offset. Job change is quick, and the advantages are similar to an intermittent letterpress.'

Thought the machine will be water-based, waterless will be available if the customer requests it. Tien admits that an equal number of clients are interested in the two forms, but prefers to concentrate on the core of the machine as opposed to a multitude of options: 'Offset is offset,' he says. 'There won't be lots of functions for show. Many companies like to have a press which can switch between offset and letterpress, between water-based and waterless. But the important thing is to concentrate on quality and simplicity. Water-based offset will be the standard – it is a more natural technology and offers more security.' Thomas Hagmaier calls offset 'the next step', and admits that the company is interested in Smooth Machinery's development. 'You could see at Labelexpo Europe in 2007 the growth in the offset market, and at the next event there will be even more.'

A job memory system stores previous settings indefinitely, so, even a year later, a job can be exactly replicated. The Smooth Machinery unwinder, with a 1,000mm diameter roll, is equipped with an automatic breaking system for tension control. 'Almost every aspect of our machine is controlled by a computer,' says Tien.

The Hagmaier brothers have been impressed with



L-R: Jim Tien and Frank Lo of Smooth Machinery; Werner and Thomas Hagmaier of Hagmaier Etiketten

THE FINAT CONNECTION

Thomas Hagmaier has been a member of the FINAT board for three years, and has introduced Smooth Machinery to the organization too: the Taiwanese company joined in December last year.

'Thomas taught us the importance of being a member of FINAT,' says Smooth Machinery's Jim Tien. 'Being part of it helps to build our reputation and credibility. It forces us to reach a certain level of quality and service. We want to get market information and learn about trends. FINAT members will also learn about us. We are proud to be a member.'

Thomas Hagmaier fervently believes in the importance of a global organization that can connect the label industry worldwide. He is upset at his country's poor quantity of members, and cites the popularity of local association VSKE. 'FINAT does a lot of good work, but the German people don't seem to realize it. We are now a global community, which cannot be taken care of by a local organization. You need something like FINAT to bring it all together.'

'The information we get from our meetings and seminars is fantastic. I talk from other printers from around the world, and can talk about things that I am unable to with German companies because we are competition.' Hagmaier Etiketten took part in FINAT's India converter exchange last year. 'It was very interesting,' reports Thomas Hagmaier. 'You have to open your mind to new countries and markets: exposure to them can allow you to spot trends earlier. You learn many things that are useful for the future.'

the machine: 'It is new for a press in this price range to have a scanner on every station,' says Werner Hagmaier, while his brother Thomas admits: 'We're sure it won't be the last Smooth Machinery press we buy.'

The machine is one of two recent Hagmaier Etiketten purchases: the other being a 2-color press from Link Label. 'On our 4-color machine we were printing many 2-color jobs, so this frees up our 4-color press,' says Thomas Hagmaier.

The company remains dedicated to letterpress machinery. Flexo is regarded by Thomas Hagmaier as an American technology, which, though useful for certain applications, is of no interest to his company. The company was unable to make money through digital printing and recently sold its Xeikon press.

'People like to buy very fast machines,' he says, 'but not everyone wants to print five million labels. That's why we believe the future is in short and medium runs, and there aren't so many companies catering to this market.'

Hagmaier Etiketten places a great deal of importance on the work environment and the training of young staff. 'We are a family-run business,' says Thomas Hagmaier, 'so the workers are part of that family. We always have a lot of apprentices so we can educate them and keep them with us. The label industry requires increasingly fast reaction times, so an educated workforce is essential.'

Given its presence in the apparel market, it is no surprise that Hagmaier Etiketten has prepared itself for RFID technology. 'We are RFID capable,' says Thomas Hagmaier. 'It is coming, but very slowly. It is like digital printing – before it arrived, everyone was talking about it replacing conventional printing. But it doesn't replace; it is a different option. RFID is the same. There are other ways.'

FAMILY MATTERS

Smooth Machinery's president Kim Lo is the elder brother of the president of fellow Taiwanese press manufacturer Labelmen. The pair worked together at Labelmen, before Kim Lo left to found Smooth Machinery 30 years ago. There is an unwritten agreement between the companies not to compete with the same technology: so Smooth is dedicated to intermittent; Labelmen to full rotary.

HAGMAIER LAUNCHES INTERESTING SMART LABELS

Hagmaier Etiketten has recently introduced a patented smart label which detects magnetic influence. The label changes color under exposure to a magnetic field: something which can destroy an RFID label. The company claims the development to be the first time magnetic manipulation can be shown on a label.

Also new is a gravity indicator label, which will alert the user if a box has been dropped. The product is deemed ideal for pallets of electronic equipment, for example. The two products have been developed simultaneously and are designed to complement each other.









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COMPANY REPORT

A really smooth running machine

High-grade equipped letterpress printing press supplied by Smooth installed at German company Hagmaier Etiketten

KLEMENS EHRLITZER

The naming of Smooth Machinery Co Ltd says it all. Therefore the Taiwanese mechanical engineering company chose the motto »simple, smart, smooth« to illustrate the simple handling, intelligent control and smooth running of their machines. To verify these suggestions, NARROWEBTECH visited Hagmaier Etiketten & Druck in Münsingen/D, which installed a letterpress printing press in January 2008.

Due to the increasing share of short run print jobs to be executed with high quality and fast delivery times, Hagmaier looked for a compact as well as variable printing press in line with the product portfolio of the company established in 1946 by ADOLF HAGMAIER. Since then, cardboard labels for the textile industry are a traditional and still important market for the now 50 people company led by the founder's sons WERNER and THOMAS HAGMAIER. Recently they complemented the product portfolio with logistic labels, tickets and labels for security applications. In common, the range of products has been very much enlarged and now mostly consists of codeable continuous products including tags, tickets for theatres and leisure facilities and blank and printed pressure sensitive labels for data printing systems.

While searching for a suitable printing press, they discovered Smooth Machinery of Taiwan. Although the semi-rotary letterpress machine SPM-340LR capitalizes state-of-the-art technologies like servo drives and automatic register control there is no technological overloading which has a very positive effect on pricing. Therefore, WERNER HAGMAIER states that he knows no semi-rotary printing press supplied by a European manufacturer which offers a comparable price-performance ratio. On the other side the level of engineering quality completely meets European standards. Hagmaier already uses several machines of Asian origin and strongly emphasizes security safety features. Therefore the new press supplied by Smooth has been tested and accepted by the German Technical Control Board (TÜV), and the company itself is certified according to ISO 9002 since 1994.

Computer controlled printing technology

The Taiwanese press manufacturer attaches great importance to providing their products with state-of-the-art technology. According to FRANK LO, Director of Smooth Machinery, the company is characterized as being the vanguard in the field of CNC controlled printing

presses. This allows the automation of many functions resulting in higher print quality which to a lesser extent depends on the respective skills of the press operator. Actually, THOMAS HAGMAIER estimates the Smooth SPM-340LR as a real alternative to digital printing for jobs with a certain print run. Of particular importance is the easy and fast plate mounting with magnetic cylinder sleeves. All the relevant production data is stored at the respective facility of the machine especially for repeat jobs which results in significantly reduced make-ready times and the efficient production of small run print jobs.

According to THOMAS HAGMAIER, the well dimensioned printing units of the new machine facilitate high print quality. Certain products like tickets benefit greatly from the long printing length offered by the machine. In recent years, the printing of tickets with different motives – e.g. different species for zoo tickets – required several print runs. Now many different images can be placed on the printing plate.

Constant register accuracy

The new Smooth machine is supplied with an automatic register control system which contributes to the reduction of start-up waste. According to JIM TIEN, Sales Manager for Smooth, in general only 24 cycles are necessary from initiating the register control system until a register accurate print run which represents a waste rate of 1–3 web meters. The machine keeps accurate register during the whole print run which is most important for flexible substrates. Moreover, the system is also very useful during machine stops for reel changes as it reduces waste to just one machine length.

The system also works effectively during speed changes. A print test performed by Smooth showed that even when doubling the machine speed from 75 to 150 cycles per minute no register deviation oc-

Frank Lo, Thomas Hagmaier, Werner Hagmaier and Jim Tien (from left to right) with the new SPM-340LR press supplied by Smooth.



cured. The tolerance for register accuracy is 10 micron maximum.

Gearless drive as standard

All presses supplied by *Smooth* are servo-driven. Moreover, servo motors are used for print register adjustment and for adjusting the inking units. The machine is operated via a HMI touch-screen where all the settings for all print decks are digitally controlled. For repeat jobs the respective data is stored in a special facility with a capacity for about 100 jobs. After entry of the job name the printing units are automatically set into their working position which considerably reduces the effort for machine set-up.

Another characteristic of the userfriendly automation is the inspection status of the digital control which monitors the main functions of the machine. In the case of malfunctions like voltage fluctuations or problems with the servo technology the operator is warned immedi-



ately by the machine's HMI system.

Up to eight print and converting stations

As the model name *SPM-340LR* suggests, the maximum web width is 340 mm. The press installed at *Hagmaier* is supplied with five decks for semi-rotary letterpress printing and two die-cutting stations. The model is available with a



total of eight working stations, with the configuration being left to the individual needs of the respective user.

If required, *Smooth* offers the coupling of two machines for special purposes. In this case the two machines are digitally synchronised to reach a maximum speed of 300 cycles for the tandem configuration, which can be operated by just one person.

Left:
The printing units of the Smooth press are well dimensioned and facilitate high print quality.

Right:
Thomas Hagmaier demonstrates the HMI touch-screen control unit.

High quality single components

For WERNER HAGMAIER the integration of components supplied by different international companies is an important indication of the quality awareness of *Smooth*. According to JIM TIEN, the company either chooses professional suppliers or purchases the components to meet customer preferences. In the case of *Hagmaier*, the die-cutting technology was supplied by German company *Kocher+Beck*.

Because of the many requirements of label printers, *Smooth* feels compelled to supply individually configured presses. Therefore, the matching of these components including machine control and software is normal business for the Taiwanese company. Altogether, the quality and capacity of a machine always depends on the integrated components and systems. As far as the UV-curing system is concerned, the eight step power control is a benefit for THOMAS HAGMAIER. It facilitates the matching of the UV curing system to the respective required level of performance to print even sensitive label substrates like thermal paper.

Listen to the customer

Hagmaier not only is a new customer for *Smooth Machinery* but also an unselfish adviser. As the Taiwanese manufacturer intends to strengthen its position in the international market, THOMAS HAGMAIER recommended the *Finat* membership. »Whoever wants to be active in the global market should be a member of an international association.« Following this advice, *Smooth* gained *Finat* membership in December 2007.

With this decision *Smooth* hopes to achieve better access to the markets in Europe and other regions. Moreover, the membership may serve to better understand the peculiarities of the different world markets.

Brotherly market allocation

The Taiwanese companies *Smooth* and *Labelmen* were both founded by two brothers. The younger of the



two, CHIN-SHIUNG LO, focused on the central impression presses after founding *Labelmen* in 1965. By contrast, *Smooth* (founded in 1973) evolved into a specialist for the semi-rotary press design for the production of short and medium run jobs. According to Director FRANK LO, *Smooth* currently has a workforce of 30 people in Taiwan alone but several dozens in Mainland China to directly serve this important market. The presses for the international markets are all manufactured in Taiwan and installations can be found in more than 30 countries on all continents.

Offset in the pipeline

Currently *Smooth* intends to expand their product portfolio with a semi-rotary narrow-web offset printing press. In the summer of 2008, the company will present the new model which will use wet offset as the sole process. According to JIM TIEN, the company will offer a qualitative upgrade to established print shops using the letterpress and flexo processes, as offset provides the opportunity to achieve higher print quality. This machine is also destined for users of sheet-fed offset presses; this is because the high converting level of contemporary labels is difficult to achieve with the complex sheet-fed offset process, as most converting processes can only be performed with off-line machinery and therefore require additional process steps. By contrast, a web-fed narrow-web offset press enables complete inline production.



Left:
The unwinding unit as well as other press components were chosen according to *Hagmaier's* requirements.

Right:
The magnetic form cylinder sleeve technology enables fast makeready of the machine.



Final fine tuning during the installation of the SPM-340LR at *Hagmaier* Etiketten.

comparable quality level but at a lower price. *Hagmaier* also expects further expansion of their offset capabilities for label printing, as the bulk of the relevant print shops strive for higher quality. Especially for the European market, many challenging customer requirements may force the acquisition of an offset printing press. Therefore *Hagmaier* is also thinking about opting for such a press when considering their next investment for new equipment.

→ www.hagmaier.de
→ www.smoothmac.com

