



A really smooth running machine

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

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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.

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



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-

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