## PREPRESS – A KEY FACTOR IN THE SCREEN-PRINTING INDUSTRY

David Forrester Zamith, Chairman of Ruy de Lacerda, discusses the need for innovative technology and automation in the prepress process, including the company's acquisition of the Grünig-Interscreen G-STRETCH 270 UV BOND LED



David Forrester Zamith is Chairman of Ruy de Lacerda & Co, S.A.

Using modern, innovative technology and automation, in the prepress process, is fundamental. It helps to ensure final accuracy of a print job and error-free reproducibility. With digital support, prepress can result in faster and improved quality. It also contributes to zero printing waste and promotes job differentiation.

Traditionally, prepress included artwork preparation for print technology, proofing, quality-control checks and the production of printing matrices. More recently, digital handling and automation have brought new factors and opportunities to the printing industry. All print technologies greatly benefit from innovative technologies in automation and a sustainability mindset.

### DIGITAL TECHNOLOGIES IN SCREEN PRINTING

Today, the regular use of prepress processes is supported by digital technologies (Industry 4.0, AI and training) for all printing technologies. These include graphic-image management, easier process steps and increased productivity. High-cost savings on existing structures or faster return-oninvestment (ROI) on new implementations are added advantages. Digitalisation processes can lead to new printing methods – such as digital printing – in a revolutionary and diverse way. These methods create new business opportunities in previously unimaginable areas of application. All other printing technologies,



Full IN-LINE CtS solution from SignTronic to automate the process

such as offset or flexo, have enormous benefits as well. Prepress is a key factor for digital benefits and the automation process.

#### **STENCIL MAKING**

Stencil making is one of the most important aspects of screen-printing technology. It is significant for the real image reproduction exposed on the screen, constant reliability, repeatability and sustainability.

# *"With digital support, prepress can result in faster and improved quality"*

Stencil making using automated, state-ofthe-art technologies, takes advantage of data-digitalisation sharing by using fully automatic units. Examples of these are the SignTronic computer-to-screen (CtS) and Grünig-Interscreen stretching technologies. These systems create a completely new approach to sustainability in the screenprinting industry.

As with offset or flexo, screen-printing technology has made great improvements in its matrices and stencil concepts. CtS was a key factor in the survival of this print method.

Different resolutions, a perfect sharpness, stand-alone or IN-LINE units (one-step process) and modular concepts, cover all different screen-printing applications for all screen sizes.

Digital screen making and automation are key factors in the screen-printing industry. CtS

technology encompasses all the advantages of screen-printing technology in graphics and even more so with industrial (functional) printing, with high-demand applications.

#### **G-STRETCH 270 UV BOND LED**

Acclimatisation of the shop floor and continuous team training are essential contributors to efficiency and productivity. Mesh quality selection, squeegee and squeegee sharpening are also important considerations.

New and revolutionary examples are growing after extensive technological testing and analyses with the main focus on automation, quality, productivity and sustainability. Decisions were taken in the fully automatic screen-mesh stretcher from Swiss screen-printing equipment leader Grünig-Interscreen model G-STRETCH 270 UV BOND LED. This model offers PLC control, UV glueing and LED-curing process in digitalised automation. It can automatically create stencils in a sustainable and environmentally friendly way, in anticipation of The European Green Deal Industrial Plan.

#### "Stencil making is one of the most important aspects of screen-printing technology"

This new advanced technology allies quality, productivity and automation, with a new revolutionary concept – the 'one-way screen'. This offers important production and *Continued over* 

#### SignTronic



Modular CtS solution from SignTronic with automatic developing

#### new sustainable elements:

- Perfect stencils and constant fully automated quality
- Avoidance of labour mistakes
- Reduction of water and energy consumption
- Fewer production steps and chemicals
- Faster set-up time
- Better stencil registration, with constant mesh stability during printing
- Improved mesh surface tension improving ink transfer
- Constant image registration and parameters on the printhead
- Overall improvement of print quality on existing presses

The G-STRETCH 270 UV BOND LED + G-PREP 370 is a costly investment. However, after an intensive cost-benefit analysis and much discussion, Ruy de Larcerda decided to go ahead. An important consideration was that of its environmental benefits.

#### ROI

Ruy de Lucerda believes that the cost-benefit analysis, ROI and differentiation of all investments on the shop floor is essential. Today, the screen-printing industry among others is accountable to Industry 4.0. In the progress of digitalisation and automation, looking for innovative technologies, standardised processes, flexibility and simplicity are key.



Automatic stretching and apply UV-glue with UV-curing to get a safe and fast process

#### **SUSTAINABILITY**

More and more policy makers, such as the EU environmental social governance (ESG) directives, business leaders and banking systems are seeking a global picture of sustainability. The ESG's purpose is to take better care of our planet (E), staff (S) and the economic governance (G) of companies.

#### **CTS TECHNOLOGY**

Nowadays, it is a must for screen printing to achieve fundamental technological factors such as perfect image reproduction, job repeatability and perfect stencil making. In addition, emulsion curing and the contribution to sustainability in energy, water and the reduction of waste are essential. Much research and development is taking place at European universities and technology centres.

#### **CONCLUSION**

In a world moving increasingly towards artificial intelligence (AI), quick reactions, high competences, skills and training are crucial. Continuous improvement and the proper use of digitalisation in automation are part of the current and future solutions on the shop floors of the printing industry.

Screen-printing technology will be highly represented at drupa 2024 (28 May–7 June) in Dusseldorf, Germany at the ESMA Pavilion. This area is dedicated to industrial and functional applications on printing platforms.

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