glass WORLDWIDE

System for direct container screen printing completed

According to Matthias Rosenfelder, the Gallus complete system for industrial direct container screen printing is the only one of its kind on the market. It consists of pre-coated printing plates, image setting technology, a developing unit and a fast tension frame for all current formats. The service includes training and technical support.

Gallus Ferd Rüesch AG of St Gallen, Switzerland has developed a complete system for direct container screen printing. The system is designed for industrial flat screen printing onto hollow glass and plastic objects. It supports the use of thermoplastic and UV hardened printing inks, as well as one and two component inks.

At Gallus, screen printers receive all the technical components needed from one provider:

- The pre-coated Gallus Screeny C-Line printing plates cut at the correct angle.
- The Phoenix computer-to-screen system designed by Heidelberger Druckmaschinen AG.
- A developing unit for washing out the printing plates.
- A high-tech aluminium fast tension frame.

The services include training and technical support from Gallus. The overall package makes the Gallus complete system one of a kind on the global market for direct container screen printing.

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Ready to print in four steps

The Gallus Screeny C-Line contains a wide range of screen printing plates ready to use. They are pre-coated by Gallus and cut to the format at the correct angle of the mesh. A foil protects the emulsion against dust and damage.

A Screeny C-Line screen plate is ready for printing using just four steps: Exposure, development, tensioning and preparation (sealing the screen). The process takes less than 10 minutes. As results of previous trials show, this saves up to 60 minutes compared to conventional manual processes.

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The Gallus method is also highly reliable since a standardised industrial process is strictly followed to manufacture the screen printing plates. The angle of the screen mesh and the emulsion thickness are always precisely defined, thus producing consistent printing results.

Dual CtS system

The Phoenix computer-to-screen (CtS) system was developed by Heidelberger Druckmaschinen AG of Heidelberg. A water-cooled UV LED light source operates inside the so-called dual image setter, emitting radiation energy at 385 and ▸

Phoenix is a so-called dual image setter, emitting radiation energy at 385 and 405 nanometres.

Fast tension frame: Just a few steps are needed to insert and fix the screen printing plates into this high-tech system.

Gallus promoted its complete system for direct container screen printing at GlassPrint 2017.

405 nanometres. The energy is directed onto the light-sensitive emulsion by means of DMD (digital mirror device) technology. The DMD chip is made up of a multitude of tiny mirrors, which are virtually inertia-free and can be moved at high speed.

The two wavelengths are cumulated into one exposure beam, leading to a differentiated hardening on the surface and deep within the emulsion, which is why only one exposure is necessary. This produces consistently good results and above-average print form lifetimes.

In the Phoenix CtS system, precision optics from Zeiss and a predictive focus control ensure that the imaging elements on the screen printing plate produce edge-sharp exposure. The system exposes an area of up to 7m^2/h, at a maximum resolution of 5080 dpi.

Ideal Rz value for glass printing

In the developing unit, the exposed screen printing plates are washed out using high pressure water and dried afterwards. The dried surface of the hardened emulsion has an Rz value (roughness) of less than five microns.

Generally, the lower the Rz value, the finer the surface of the hardened layer and the more even the printed image. However, when it comes to glass printing, it is not advisable to have an Rz value of less than four microns because if a very smooth screen printing form comes into contact with the surface of a very smooth printing material, this can create a vacuum and an electrical charge where the two meet. This poses the risk of splashes of paint ruining the print image. An Rz value of between four and five as offered in the Gallus Screeny C-Line, therefore, provides the ideal conditions in terms of the technical process and the printing results.

Fast tension frame for all current formats

Gallus has developed an innovative, fast tension frame system, which is mounted onto the printing press. Just a few steps are needed to insert and fix the screen printing plates into this high-tech system. Screws are used to tighten the frame up to the point precisely defined by the force of inside springs.

The solid, well-insulated, fast tension frame is made of aluminium and is available in all current sizes of small-scale printing machines. The frames are electrically conductive and ensure homogeneous distribution of heat energy, thus facilitating work with thermoplastic inks.

Training and technical support

On request, Gallus Ferd Rüesch AG technicians are available to help screen printers to introduce this complete system for direct container screen printing. Training and ongoing technical support ensure that users get the maximum benefits. The Gallus system will help to achieve the best possible results at the lowest possible costs in day-to-day production activities.●

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