Cork Tech TalkNews

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GREAT LABELS DEMAND UV ROTARY SCREEN

It's said that when you want the best in a label, one that causes products to jump off the shelf and sell, you want rotary screen capabilities in the mix.

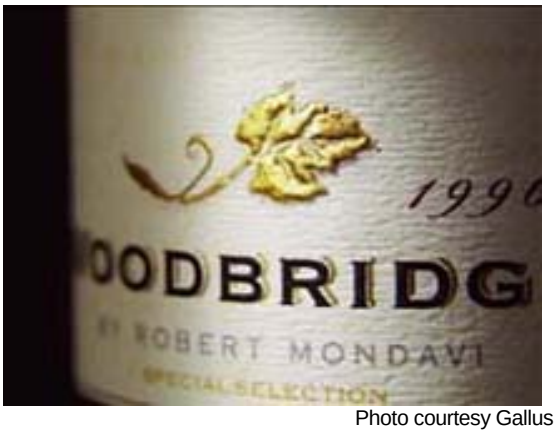


Photo courtesy Gallus

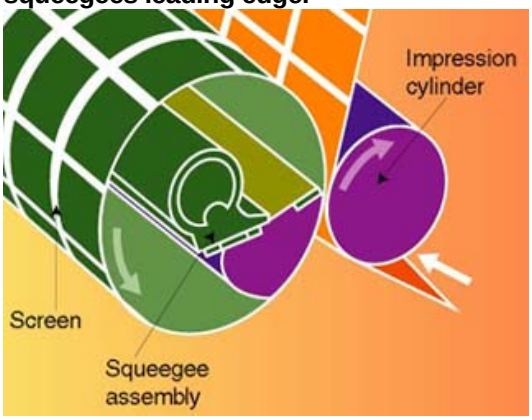
Rotary screen is a UV printing/coating process that has the capability to deposit a heavy film, up to 300 microns. This translates to better opacity and more brilliant colors. A common use is to lay down a heavy deposit of white ink to achieve brilliance in opacity. Often, images of high visibility or opaque undercoats are used in label designs where subsequent prints of flexo or offset images are laid down.

The nature of the rotary screen printing/coating process is such that it can easily be combined with other printing processes, allowing in-line combination printing. This is a "best of all worlds" situation with the best of processes being allowed to flourish. Modular rotary screen printing units are combined with other web printing processes, such as flexo, letterpress and offset. Fine detail or high resolution half-tones are best produced by flexo, gravure, letterpress, or offset.

Combination printing has the capability to produce stellar graphic results. Award winning labels and other products have demonstrated color vibrancy, along with a unique tactile feel.

Standout graphic products are creating a demand for the *look and feel*, possible only from the use of rotary screen printing/coating.

Rotary screen printing gets its name from the fact that it uses a cylindrical screen that rotates in a fixed location. The squeegee, common to screen printing processes, is located within the cylindrical screen. The squeegee is fixed with its edge making contact with the inside surface of the screen exactly at the point where the screen, substrate and impression cylinder meet. In the printing/coating process, ink/coating is fed into the center of the cylindrical screen. It collects there in a wedge shape, in the space formed by the screens inside surface and the squeegees leading edge.



The rotation of the screen causes the ink/coating to roll and be forced into stencil openings, flooding the screen. The squeegee shears off the ink as the stencil and substrate come into contact, allowing the ink to transfer cleanly to the substrate.

In rotary screen printing/coating the web moves at a constant speed with the rotating screen, the substrate, and the backing impression cylinder.

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Retrofitting a rotary screen to an existing press is typically a half-day event. Rotary screen units are servo driven to follow the main press. Portability is another benefit such that screen units can be readily moved from one location to another.

Screen-printing is relatively expensive, mainly because of the cost of heavy lay downs of ink. Other items, screen material, squeegees, etc., are other consumable items that add cost.

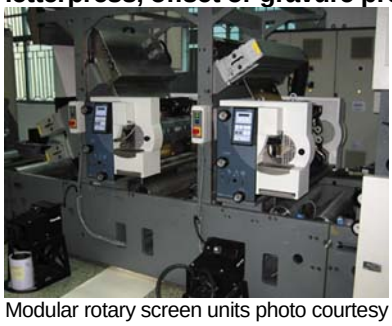
Popular web combination printing is being used for many label applications, including high-end cosmetic, beverage, food, personal care; flexible packaging; graphic overlays; promotional graphics and notably, the new emerging market, printing RFID antennae.

It goes without saying that one of the largest benefits of rotary screen printing/coating is production speed. In a combination web printing/coating process, print images can be applied to the entire width of the substrate as it move effortlessly through the press. As in other web printing processes, drying can be accomplished at press end or interstation.

Two manufacturers dominate the rotary screen press market, Gallus and Stork. Gallus has concentrated on combination presses that combine the benefits of rotary screen with flexo, letterpress and offset.

Combination press photo courtesy Gallus

Stork has concentrated on developing compact modular rotary screen units to be integrated into existing web OEM flexo, letterpress, offset or gravure presses.



Modular rotary screen units photo courtesy Stork

Stork units can be mounted in a fixed position, or mounted on a rail system that allows movement to any position on the printing press.

Stork has also developed a unique electroformed, non-woven, hexagonal nickel screen (Rotamesh), which is supplied in cylindrical form. They are available from 75 mesh openings to a very fine detail 405 mesh openings per inch.

Photo courtesy Stork

Stork screens are suitable to be reused several times while Gallus Rotascreens may be used only once. Gallus offers the nickel-plated stainless steel fabric in flat form, which is then formed into a cylinder. Both systems use "stencil rings" to stabilize the cylinder.

Photo courtesy Gallus

Rotary screen printing is preferred for specialty inks, metallic, thermochromatic and electroluminescent, as well as coarse halftones. The process is also capable of producing tactile imaging including Braille text. Rotary screen UV varnishes/coatings are also often used to provide visual/tactile effects as well as provide exceptional overprint toughness.

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