

E 14009 · Volume 16 · September 2010

3-2010

Flexo Gravure Int'l

Leading Technical Magazine for the
World's Paper, Film and Foil
Package Printing and Converting Industries



Proven in hospital real time studies and supported by full independent laboratory data, the Biomaster technology works via a release of silver ions on demand which in turn safely inhibits bacteria growth. The inorganic nature, small particle size and high temperature tolerance of the product makes it ideal for use in the production of antibacterial coatings.

Biomaster products contain typically ten times more silver than any other silver biocides which are on the market, and consequently they only need to be used at very low concentrations. With a minimal loading level required, the on-cost is not significant but the results are impressive – reducing bacteria levels by 99.99%.

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Finer write resolution available

HELL GRAVURE SYSTEMS
 ■ HD ready is the latest option available for Helio-



Flex. It uses finer write resolution to optimise the imaging quality of Hell CtP imagesetters. The new, high-resolution lens used for HD ready is of critical importance for imaging resolutions between 2540 and 5080 dpi. This makes it possible to image much smaller pixels, giving them a far sharper edge at higher resolutions.

This, in turn, results in advantages with regard to the structure of screen dots, enabling improved reproduction quality for images, text and gradations. HD ready is also available for existing HelioFlex systems.

→ www.hell-gravure-systems.com

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Safe solvent recovery

OFRU ■ Storage and disposal of used solvents is difficult, dangerous to handle and also quite expensive. The easiest and most popular way is to assign the disposal to the solvent suppliers, who however charge a high price for this extra service. Moreover, due to rather low amounts of used solvents, for most companies such an external service is a non effective solution.

For more than 30 years, **OFRU** has offered inhouse solvent recovery devices. The Babenhausen/D-based company is a worldwide technology leader in the field of used inflammable solvent recovery for the printing industry. This includes substances like Ethanol, Ethyl acetate, Toluene, N-propanol, and other alcohols which are easy to recover.

Depending on

integrated agitator is equipped with a scraper for thorough cleaning of the vessel walls. The heating area is efficiently used and therefore ensures steady distillation. However, if a fire breaks out a water shower floods the vessel and the power is turned off. The ASC series also recovers solvents used for the wash out of photopolymer plates and self-formulated n-Butanol and Tetrachloroethylene solvents.



Recycling

Usually, solvent recovery devices are installed in a separate room. In case that there is a lack of space, **OFRU** offers the fully enclosed Z2 version with suction. It is EXII3G approved for installation directly to the printing press.

→ www.ofru.com

the nature and degree of soiling, both the ASC-100 and the ASC-150 recovery systems process about 160–800 litres of used solvents per shift in full automatic mode. Usually, recovery systems are directly linked to the printing machine and its automatic wash-up device. The size of the system depends on the number of print units and the daily consumption of solvents.

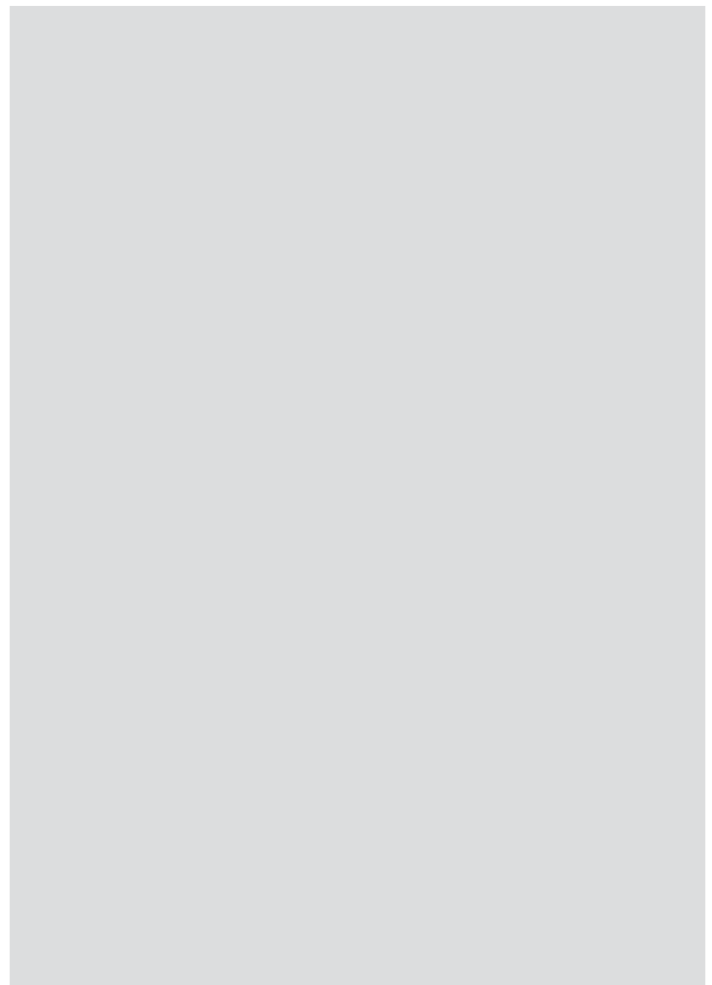
Today, solvent consumption of 250–1000 litres per day and machine is not unusual so effective recovery is a must. Moreover, security is another important issue with highly inflammable solvents. Therefore, **OFRU** developed a special safety device for the handling of Nitrocellulose-based solvents, which are distilled and monitored under strong vacuum conditions. A unique feature of all ASC type recovery systems is the conical vessel design, made of a single block. The

Keep it rolling

AMERICAN ROLLER ■ The *Pegasus* dual-layer compression roll is a contact lay-on roller for the paper, film and foil converting markets. It is used in the lay-on, infeed and bump roll position and is designed to provide improved abrasion resistance coupled with dual-layer compressibility. This is the only roller on the market today that offers a true compressible base layer with a highly abrasion resistant outer cover and is 75% lighter than the standard rubber rolls. This new roller has proven to help reduce the problems of telescoping, tin canning and air entrapment, the company says. »The *Pegasus* dual-layer roll has outperformed our initial expectations during customer trials«, according to **JIM CARLSON**, Product Manager.

→ www.americanroller.com

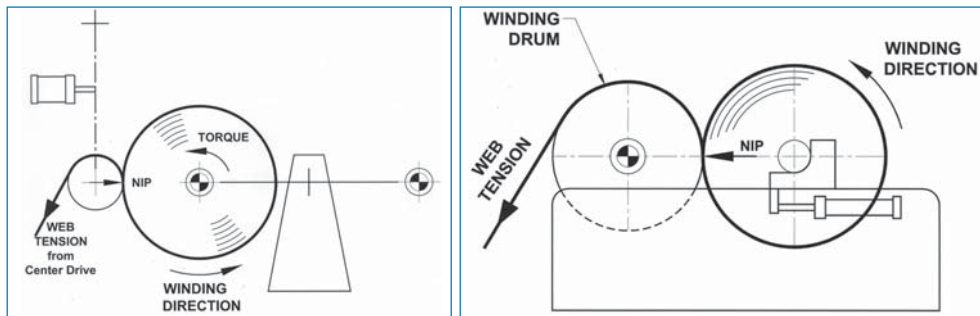
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to control roll hardness (figures 4A and 4B). Web tension is controlled to optimise the slitting and spreading operations. The nip controls the roll hardness by removing the boundary layer of air following the web into the winding roll. The rolling nip also induces in-wound tension into the roll. The harder the nip, the harder the winding roll. The challenge for winding flexible packaging film is to have sufficient nip to remove the air and wind hard straight rolls, without winding in too much in-wound tension, to prevent causing roll blocking or deforming the web over the high caliper area.

The important considerations in applying the nip principle of winding are:

- The nip must be applied where the web enters the winding roll.
- The winding film's weight and the lay-on roll's weight, and web tension should not affect the nip loading.
- The nip load should be tapered as



the roll winds to prevent »starring« and »telescoping«.

- The larger the winding roll's diameter, the more air is introduced to the nip. This produces a nip taper with a constant load.

Gap winding

Films that are relatively narrow, which can be wound at higher tensions and are wound at speeds generally less than 250 m/min (800 fpm) can be gap wound. Gap winding allows a small amount of air to be wound into the roll to prevent

deforming webs that have high caliper band areas. To successfully control roll hardness when gap winding, the lay-on roll must move to maintain a small but consistent gap between it and the surface of the winding roll. Roll density is controlled through torque, which is the web tension, applied through the spindle drive.

Torque winding principle

Torque winding is the force induced through the centre of the winding roll which is transmitted through the web layers and tightens the inner wraps of film. This torque is used to produce the web tension on centre winders. With these types of winders; »tension« and »torque« are the same winding principle. However, when the pressure roll is driven to control the web's tension, then the torque induced through the centre of the roll can be independently controlled to control the winding roll's hardness profile.

Film's COF properties effect on winding

The film's layer to layer coefficient of friction properties have a major effect on the ability to apply the TNT principles to produce the desired roll hardness without roll defects. In general, films which have a layer to layer coefficient of friction (COF) value of 0.2-0.7 will wind well. However, consistently winding defect free rolls of high slip or low slip (low COF or high COF) films usually presents major winding challenges.

Low COF films

High slip films have low layer to layer COF (generally COF< 0.2). These films will often have inner web slippage or cinching problems

Figure 4a (left):
Tension: nip principles on a centre turret winder.

Figure 4b (right):
Tension: nip principles on a drum surface winder.

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