



www.PFFC-Online.com

rdgmedia
PUBLICATIONS

APRIL 2021

**THE ADVANCING
FLEXOGRAPHIC
PRINTING MARKET**

8

ALSO IN THIS ISSUE

WEB CONSIDERATIONS FOR
TODAY'S FLEXIBLE PACKAGING

16

IN THE SPOTLIGHT

20

AND MORE!



**Machines Engineered
for Your Toughest Challenge**



DELTA MODTECH®
MASTERS IN MOTION®

www.deltamodtech.com

Web Converting, Packaging and Coating Equipment

HIGH PERFORMANCE BLADES & MACHINE KNIVES

Cadence manufactures superior blades of every shape, size, and edge for all applications – maker of Endurium, Optima Plus, and Optima blades – the most trusted brands in the industry!

Cadence Blades are engineered to outlast and outperform other brands. Contact us today to request a quote!



cadenceblades.com
sales@cadenceblades.com
800.252.3371



Proud U.S. Blade Manufacturer for More Than 35 Years

nordmeccanica events

The (live) showcase of innovations

Episode 04

BEING SIMPLE, BEING LINEAR.

*An insight into the evolution of innovation
in coating and lamination technology.*

May 25th, 2021

www.nordmeccanicaevents.com
(requires registration)

two shows: 9 am - 5 pm Central Europe (8 am - 4 pm GMT)



A series of live events to introduce innovations,
promoted by the company that developed the concepts behind the modern converting machinery technology
Episodes are available live on the day of the event or in download on the Nordmeccanica website



The leader in Trim Cutters

If you can slit it we can cut it!

- ▲ Custom Designed Systems
- ▲ Total Trim Cutter Refurbishment
- ▲ Replacement Knives
- ▲ Knife Sharpening

BloApCo®

BloApCo.com • 800-959-0800 • parts@bloapco.com

TABLE OF CONTENTS

8 THE ADVANCING FLEXOGRAPHIC PRINTING MARKET

The latest trends in the advancing flexographic printing market and what some companies have done in 2021 thus far.



16 WEB CONSIDERATIONS FOR TODAY'S FLEXIBLE PACKAGING

Engineering considerations with regard to precision tension control, web spreading and web guidance available to produce thinner webs at higher speeds.



20 IN THE SPOTLIGHT: LAEM IMS Q&A

Advancing Slitter-Rewinder Equipment: Discover LAEM IMS's Portfolio

DEPARTMENTS

4 EDITOR'S NOTE

26 PRODUCT NEWS

6 AIMCAL ACTIVITIES

29 AD INDEX

Make Your Business Eco-Friendly with BioSustainable™ Products



Compostable:

- ✓ Marine-biodegradable films and 6-pack rings
- ✓ Bioplastic trays for produce
- ✓ Flow-Pack film
- ✓ Absorbing pads for meat and produce.
- ✓ Candy-Wrap film
- ✓ Bags for produce and green bins
- ✓ Bioplastic-coated paper cups for hot drinks
- ✓ Water-resistant paper plates and clamshells

Recyclable and BioSustainable™ for accelerated natural biodegradation:

- ✓ PVC PLUS Clarity Food Wrap film for manual and automated wrapping.
- ✓ Perforated PVC PLUS Clarity Food Wrap film for mushrooms.
- ✓ Food handling PE Clarity Gloves
- ✓ Pallet Wrap stretch film



CLARITY AMERICAS

Alex Mann
Mobile: +1 (647) 229-5677
Tel: +1 (416) 742-7944
amann@clarity-americas.com



AUTOMATIC REWINDER ALF-506

Automatic high-speed rewinder for PE and PVC films, aluminum foil, and baking paper.

- Automatic core feeder
- Hot-melt glue start of roll
- Automatic unwinding tension control
- High performance 6 heads non-stop rewinding type
- Driven by servo-motors.
- Easy operation and reliability, high quality and throughput.
- Curling unit for plastic film
- Embossing unit
- Perforation unit
- Self-adhesive labeling unit included



FLOW PACKER LINEPACK F3M

Universal, compact and cost-efficient Horizontal Form-Fill-Seal (HFFS) machine LINEPACK F3M for flow packing of produce and piece products.

- Fully servo-controlled
- Stainless steel construction adapted for direct water jet wash
- Modular structure for simplified operation and maintenance
- Product infeed system customization
- Up to 240 cycles per minute
- Inert gas injection
- Hot film perforating
- Labeling and printing

Made in Europe LINEPACK F3M is a best choice for flow-packing of a wide range of products.

Penciled In



Joan Mantini
Editor

Was I the only one who struggled keeping up with all of the calendar changes in 2020? Moving into 2021, my motto is "I'll pencil that in." As a person who likes to plan my calendar well in advance, the challenge of being flexible is real! We have witnessed a few changes in our industries calendar as we moved further into 2021. Although not all events are able to do in-person gatherings just yet, we are certainly taking a step forward. Grab your calendars and let's pencil in a few things...

Making the 2021 calendar of events list this year, drupa will be kicking us off. Being held April 20-23, drupa will be moving forward as an all virtual event. You can find more about what it has in store at www.drupa.com.

Anticipated to take place May 12-20, INFOFLEX 2021: Pushing the Limits of Innovation – was also forced to shift gears to an all virtual event due to the global pandemic. You can find more information about who will be exhibiting and how you can make the most of this virtual event here: www.flexography.org.

Also anticipated to take place in May in Orlando, Fla., NPE 2021: The Plastics Show, Orlando, announced its cancelation for the show this year. You can find out why we need to erase this one from our calendars on NPE.org.

The Adhesives & Bonding Expo is currently scheduled to take place July 13-15 in Novi, Mich. Keeping a close watch on the way pandemic restrictions have been rolled out in the state, I would keep a close eye on what will happen with this event. You can find more information on it here: www.adhesivesandbondingexpo.com. If this expo manages to keep on track, it could be the first insight for the industry as to what we can expect at in-person tradeshow in the near future.

Pack Expo is also on the calendar, scheduled to take place in Las Vegas, September 27-29. Being a little later in the year, and having more open policies in Las Vegas, this show's location may be in its favor in 2021. More information on Pack Expo can be found here: www.packexpolasvegas.com. I am feeling a bit more hopeful this will be the show that will set the tone.

And finally, we have the 2021 AIMCAL R2R (roll-to-roll) USA Conference which is another scheduled to take place in-person October 17-21, in conjunction with ICEC (formerly ICE USA) You can find more information on this collaboration within this issue in the AIMCAL Activities.

With all of the conference changes and updates, PFFC launched the Conference Corner on its website, a place where you can find some of the latest conference news and updates. Check it out, and send us your event news so we can share it with our readers in the Conference Corner.

Take care,

Joan Mantini
Joan Mantini
586.295.1888 | joanm@rdgmedia.net



A RDG Media, Inc. Publication
P.O. Box 893
Fort Dodge, IA 50501
586.227.9344
www.pffc-online.com

President/Group Publisher
Randy Green
randy@rdgmedia.net

Editor
Joan Mantini
joanm@rdgmedia.net

Publisher
Lori Pisano
lori@rdgmedia.net
814.616.8380

Accounting Manager
Tara Scanlan

Systems Administrator
Angi Hiesterman

Operations/Customer Service
Jody Kirchoff

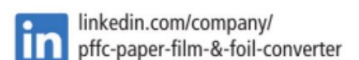
Web Design
Josh Scanlan

Auctions
Angi Hiesterman

PFFC will not be responsible for any errors in placement or content after first run of ad. Publishers shall not be liable for any costs or damages if for any reason it fails to publish advertisement. PFFC recommends that you take appropriate caution before buying items sight unseen. PFFC is not responsible for misrepresentation of advertisers. We suggest you contact your own attorney, the Better Business Bureau, or appropriate government agencies if you experience a problem.

Randy Green, President & Group Publisher

Advertising rates, deadlines, and mechanical requirements furnished upon request. Copyright 2021 PFFC. All Rights Reserved. Reproduction in part or in whole without written consent is strictly prohibited.



Want More Production?



Model HDU



Model EP



Model EP Jr



Model MS2MA



Model DU

Keep your converting machines busy!

See why major corporations, small converters and OEM's prefer the proven and versatile shaftless unwind machines from Powell Engineering, Inc.

- Proven to increase production
- Eliminates shaft related injuries
- Lifts rolls from floor or cart
- Proven quality and reliability
- Easy one-man roll changes
- Braked or spindle driven
- Widest range of options predesigned and available
- Reasonably priced

ALSO AVAILABLE:

- Cantilevered packaging unwinds
- In-floor roll trolleys
- Splice tables
- Dancer units
- Cast Grip™ series core chucks



Machine design specialists

POWELL ENGINEERING, INC.

Phone: 205-625-5444 • 800-213-4267
unwind@powellengineering.com
www.powellengineering.com





AIMCAL R2R USA Conference Co-locates with ICEC USA

The 2021 AIMCAL R2R (roll-to-roll) USA Conference will be held in-person October 17-21, in conjunction with ICEC (International Converting Exhibition and Conference) USA (formerly ICE USA) and serve as the ICEC USA Technical Conference. The partnership between ICEC and AIMCAL allows attendees to tour the trade show and participate in the educational conference during the same trip. The trade show will be held in the West Hall of the Orange County Convention Center in Orlando, Fla, with the R2R USA Conference located one level up.

The annual AIMCAL R2R USA Conference features presentations on the latest developments in metallizing, coating, drying, laminating, and web handling and applications in a range of markets including flexible packaging, battery manufacturing, printed electronics, photovoltaics, and optics.

AIMCAL Executive Director Chris Kerscher reports, “We are pleased to continue our longstanding relationship with ICEC USA 2021. AIMCAL will once again be offering the AIMCAL Fundamentals seminar for both Slitting & Rewinding and Coating & Drying in Orlando. In addition, AIMCAL will host a members-only pavilion on the show floor.”

AIMCAL members can purchase discounted booth space within the AIMCAL Pavilion by visiting www.convertingshow.com.

AIMCAL Adds Hybrid Converting School Courses

AIMCAL has expanded its schedule of live online Converting School Hybrid Courses for 2021. The hybrid courses feature one week of live online instruction for two hours each day (11 a.m. – 1 p.m. ET). These public sessions allow participants to interact with instructors, ask questions, and support group discussion.

On Friday, each participant can schedule a private, 15-minute meeting with the instructor.



Students who meet all course requirements receive a Certificate of Completion. The cost per course is \$699 for members and \$899 for nonmembers.

UPCOMING COURSES

April 5-9, 2021

Winding Course (Practical Methods to Wound Roll Quality)

Instructor: Neal Michal

April 26-30, 2021

Unwinding Dynamics

Instructor: Neal Michal

May 17-21, 2021

Easy Web Handling Modeling

Instructor: Ron Lynch

For other educational opportunities, check the schedule for live AIMCAL TV Webinars on www.aimcal.org, click Events, then select Webinar Schedule.

New AIMCAL Website Includes User Profiles and More Interactivity

The new AIMCAL website is open for members and non-members. Anyone can click “Sign In” and create an account and access useful industry resources, including an updated Event Calendar at the bottom of the home page.

Non-members can register for Converting School Courses, use the popular ASK AIMCAL service a technical question or locate a specific product or service, and search the SourceBook directory.

AIMCAL members have added access and resources within the Member Area (at top left after logging in) such as AIMCAL TV, conference presentations, and webinars. Plus, members can upload company videos, post jobs, submit news, and connect with the AIMCAL committees including Web Coating & Laminating, Vacuum Web Coating, Web Handling, Extrusion Coating, Women’s Leadership, and Membership.

2022 AIMCAL R2R Europe Conference

Announced for Spain

The AIMCAL R2R (roll-to-roll) Europe Conference will be held June 6-9, 2022, at the AIMPLAS Plastics Technology Centre in Valencia, Spain, and feature tracks on web coating, vacuum web coating, and web handling. Leading consultants and experts from academia and original equipment manufacturers will present best practices and advances related to coating process technology, oriented films, barrier, vacuum technology, system developments, printed electronics, sustainability, strategies for improving productivity, converting technology, new materials and processing developments, monitoring and measurement, coating materials for key market applications, and flexible packaging and materials.



The schedule includes Tabletop Exhibits during an

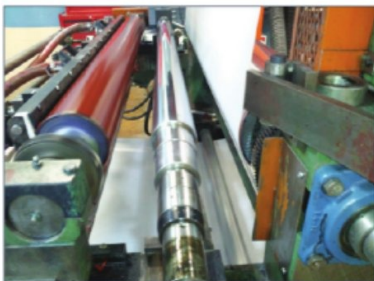
evening reception and other networking opportunities including tours of the AIMPLAS facility and the city of Valencia.

Registration and conference details may be found on the AIMCAL website, www.aimcal.org.

AIMCAL Membership Delivers Valuable Resources for Everyone in Your Company

With AIMCAL membership, each member of the organization receives access to a range of resources and discounts on event fees. Member benefits include an individual profile for each employee, and access to a Community Forum, more than 200 technical resources in the AIMCAL TV video library, and more than 10 years of Conference Proceedings. Member organizations are listed in the AIMCAL SourceBook directory and have the opportunity to present live webinars, join committees, and participate in technical training. Other perks include marketing and networking opportunities and access to global market research reports. ■

Absolute Converting Solutions LLC



Cantilevered Plate Roll Frames

ACS manufactures cantilevered plate roll frames and designs equipment in the Flexographic and Graphic Arts industry.



- Precision manufactured gears for plate rolls, impression rolls and drives
- Reverse Engineering Capabilities
- Spur/Helical/360/ Planetary
- Fast Delivery



2554 Bittersweet Ave
Green Bay, WI 54301
920-205-4614

bob@absoluteconvertingsolutions.com
www.absoluteconvertingsolutions.com

Slitting & Rewinding Services Solutions For Your Business

**PRECISION TOLERANCE
NARROW WIDTH
CUSTOM SLITTING**



PRECISION TOLERANCES: Down to +/- 0.001" or 0.025mm

SPECIALIZING IN NARROW WIDTH SLITTING:
Widths as narrow as 0.008" or 0.2mm

COILS, TRAVERSE, AND SPECIAL PUT - UPS



137 Frances Ave. Cranston, RI 02910 T:401-467-3435
converting@metlon.com • metlon.com F:401-467-8720

The Advancing Flexographic Printing Market

By Joan Mantini

Flexographic print has indeed established its place as a print process of choice for many market sectors. However, the global print marketplace is changing rapidly with new consumer, retailer and client demands requiring more variation and lower run lengths. These new ways are challenging the print supplier to implement advances in flexographic technology to keep pace with the market growth. New technologies are the solution to improving efficiency and allowing suppliers to meet expectations within and combatting increasing competition from both digital print and declining volumes in traditional markets.

In exclusive research from Smithers six trends that are changing the shape of the flexographic printing industry are outlined. According to Smithers, these trends include:

1. Automation

The flexographic process has often been reliant on skilled operator



BOBST works hand-in-hand with converters to enable them to produce fault-free packaging and satisfy the needs of their clients.

engagement to deliver quality results. New advances however, see the emergence of collaboration between OEM's at every stage of the flexographic process. Driven by the improvements in process, make ready, and plate preparation – and hence turnaround especially on lower run work automation is increasingly a trend for flexo

presses. Manufacturers are looking at all areas, from file preparation to print and finishing, to deliver an almost fully harmonious solution for operators.

A further key growth, resulting from technology advancement, is the extended fixed color palette to a near full pantone equivalent. Using fixed colors

minimizes plate and ink changeovers, reduces waste and offers a consistency between productions.

2. Skill shortages

Increased automation can also help address the problem of skilled labor – especially in developed regions. The flexographic industry as a whole has been slower to react to this problem as skilled press operators retire from the workforce and it has been difficult to attract and retain younger talent.

OEM's are in fact leading the way for the flexographic industry, by evolving process and print production to digitize and automate many of the key flexographic functional requirements. The result has created more intelligent and automated workflows and production with less emphasis on operator interaction and knowledge. While the initiative may reduce the volume of personnel required, it can stem the major problem facing the industry overall.

3. Digital Threat

The continued emergence of digital print into some of flexographic's traditional core markets is driven by trends in lower volumes and personalization options. As digital technology continues to evolve, the competitive volumes are constantly being challenged. Although flexographic remains a tried and trusted process for a wide range of materials, digital developments will see their range widen also.

There are obvious benefits of digital, which flexographic and OEM's are embracing, by offering both options as stand-alone solutions. We have also seen



The Marvaco Group is investing in reducing solvent processing in plate manufacturing and increasing the sustainability of production through several actions.

a transition into hybrid print units. This combination of flexo and inkjet printing can help provide a solid future in the industry.

4. Market Volatility

Some traditional markets for flexographic production are in decline, none more so than newspapers. The market is seeing a clear shift in demand in its core global regions. Other printed goods witnessing declining volumes are envelopes, bags and sacks. All three are reportedly suffering from the effects of a shift in demand, both in consumer habit for alternative pack formats, and the preference for more electronic media.

5. Regional Growth

Asia is now the dominant market in packaging markets and continues to grow with its developing population and economy. There is a surge of activity around consumer goods as economic growth forges a more affluent middle-class keen to enjoy the branded products found in the more developed states of Europe and North America.

6. Consumer Trends

Product variety continues to grow globally with more need for product ranges and clear shelf differentiation for products. Consumer habits are also evolving with more focus on convenience and portion control. People are living longer with busy lifestyles, which is clearly a driver for this convenience.

There is also an increasing movement towards more sustainable solutions in both product and packaging choices.

What follows are a few current news updates in the evolving flexographic printing market.

BOBST

BOBST, a leading equipment manufacturer, works hand-in-hand with converters to enable them to produce fault-free packaging and satisfy the needs of their clients. For more than four decades, the company has been developing sheet-fed printing and processing equipment for the production of high-quality printed corrugated board.

BOBST has developed Registon S6500, a user-friendly,

No Pain. More Gain.



Isn't it time you took away the razor blades and used the original Ripper to open rolls? You'll reduce waste, improve roller life, and increase roll yield—and eliminate nasty accidents.

See the complete line and place your order at ripperonline.com. Or fax us at 1.317.298.1328.

THE RIPPER

ripperonline.com • 1.800.783.7750

high-quality sheet-positioning system with easy set-up. This can be combined with the pioneering BOBST Start&Go system, which offers fast automatic set-up at the start of each job in just a few sheets.

INX INTERNATIONAL INK

INX International Ink Co. recently announced it has introduced GelFlex-EB gel-based inks for CI flexo printing. The surface print ink system has superior print quality similar to gravure and provides a cross-linked, durable ink film that eliminates the need for a lamination layer, reducing costs and total package weight. These eye-catching inks produce incredible print designs suitable for food packaging and other consumer applications.

In addition to food packaging, GelFlex-EB inks can be used for household, industrial, outdoor, and pet food and pet care products.

MARVACO

At the beginning of February, Marvaco moved to a new production facility in Helsingborg, Sweden, which initiated a series of investments to further improve the company's sustainability in 2021. The Marvaco Group is investing in reducing solvent processing in plate manufacturing and increasing the sustainability of production through several actions.

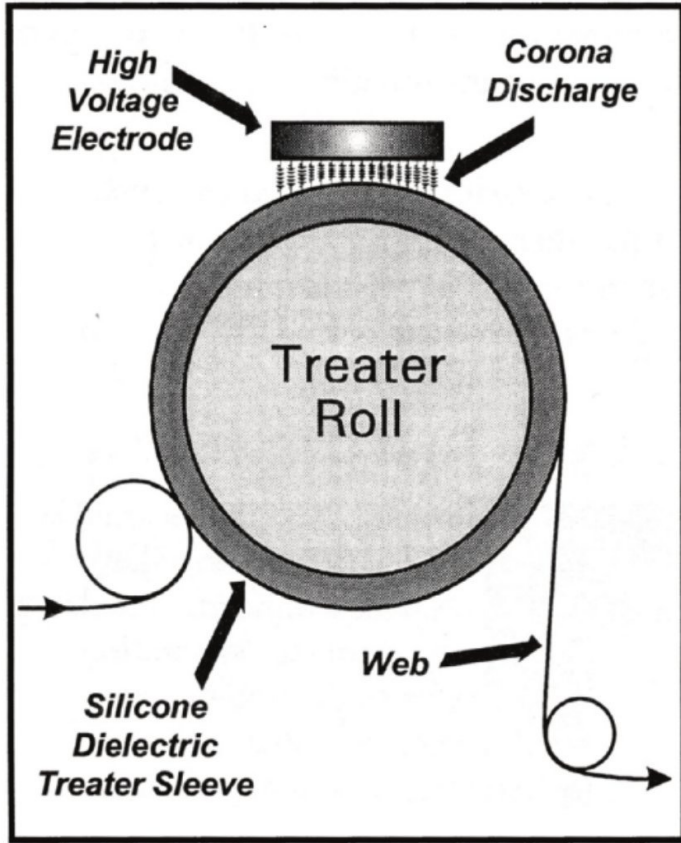
The new premises are planned for an optimal production flow with efficient heating and lower energy consumption. At the same time, the installation of state-of-the-art equipment reduces energy consumption compared to traditional plate production. This, combined with the site's strategic location, leads to more eco-efficient and agile flexo plate production.

While FMCG brand owners and packaging companies highly value the economical use of raw materials and energy, faster speed to market and flexibility are also required. Therefore, Marvaco continues to invest in EGP™ capability so that printers can achieve short color-matching times with fewer adjustments and more colorful designs with less waste.

PRAIRIE STATE GROUP

Prairie State Group, a printing company specializing in food-grade flexible packaging, and pressure-sensitive labels, has achieved 100 percent on its latest

SILICONE Treater Sleeves



Life inside a corona treater is hell.

Dielectrics must withstand high frequency, high voltage discharge, plasma-induced ion bombardment, elevated temperature, and concentrated ozone. Even the slightest defect can result in premature failure.

We closely inspect each and every sleeve that goes out the door, and we guarantee our sleeves against immediate blowout on your treater. *That's why we can say, with full assurance...*

"Our silicone sleeves are equal or superior to those supplied by the world's leading treater manufacturers."

We've been selling these treater sleeves for over 25 years now — in that long period of time, we have had only one or two sleeves fail on installation. 100% visual inspection is, indeed, very effective!

We guarantee these are the same high quality treater sleeves sold by OEMs worldwide — all at significant savings!

Product Code	Fits Roll OD*		Actual ID	Color	Wall Thickness	Price per Linear Inch
	English	Metric				
96152	1.5"	38 mm	35 mm	Orange	.080" (2.0 mm)	\$1.15
96202	2.0"	51 mm	46 mm	Orange	.080" (2.0 mm)	\$1.35
96252	2.5"	64 mm	59 mm	Orange	.118" (3.0 mm)	\$1.85
96302	3.0"	76 mm	70 mm	Orange	.080" (2.0 mm)	\$1.95
96402	4.0"	102 mm	95 mm	Orange	.080" (2.0 mm)	\$2.35
96602	6.0"	152 mm	141 mm	Orange	.095" (2.4 mm)	\$2.95
96802	8.0"	203 mm	190 mm	Orange	.102" (2.6 mm)	\$4.45

*These sleeves will fit any treater roll OD within +/- 0.125" (3 mm) of listed size.

Wall thickness variance: +/- .006"
Hardness (Shore A): 70-80

Dielectric Constant: 4-5
Dielectric Strength: 250 v/mil

www.accudynetest.com

Diversified Enterprises, 101 Mulberry St., Suite 2N, Claremont, NH 03743

Phone 800-833-4644 or 603-543-0038; fax 603-543-1334; email rsmith@accudynetest.com



Prairie State Group specializes in foodgrade flexible packaging, and pressure-sensitive labels.

SQF audit. SQF Edition 8.0 Food Safety and Quality is recognized globally as the premier food safety standard from the Safe Quality Food Institute.

The company has achieved the recognition for food safety seven times. This was the third time Prairie State Group has gotten a perfect score in food safety and quality since 2012.

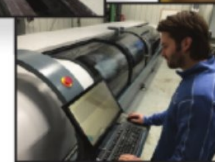
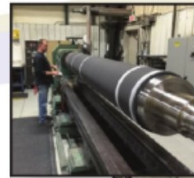
SOMA

SOMA, a producer of flexographic printing presses, plate mounters and slitter rewinders, recently announces it is partnering with DTM Flexo Services as its sales agent in Canada. DTM Flexo Services will be representing the entire SOMA range of equipment

Whenever you need rubber rollers or coating sleeves ...

Rol-Tec gets it done!

- Advanced rubber and cast urethane coverings
- Precision laser engraving
- Tapered and parallel sleeves
- Rubber roller and metal core repair
- Precision-ground steel & chrome rollers
- Metalized plasma coatings



We do it all in-house to give you a
Total Converting Solution!



info@rol-tec.com • www.rol-tec.com • 800.497.4950

• rubber rollers • sleeves • mandrels • metal rollers • roll finishing • laser engraving • urethane parts



BIG

System that can clean sleeves up to 70" long

OR

SMALL....

System that cleans narrow and medium web rolls



All our anilox roll and sleeve cleaning systems reflect:

- Preset functions that allow you to safely clean the highest line count anilox.
- Plug and play external power generators that can be easily replaced
- Stainless steel construction for longest durability
- Over 20 years of proven industry experience
- Fast friendly service that only a family run business can provide

...we can clean them all!



Call or e-mail us for more information

877.654.7800

customer_service@sonicsolutionsusa.com

www.SonicSolutionsUSA.com



Graphics Experience Center

Alpharetta GA

Sonic Solutions has developed custom cleaning systems for the HP Indigo 20000, HP Indigo 30000 and Pagewide T240 exclusively for HP and their customers.

to the Canadian market.

“DTM is delighted to be chosen as the exclusive representative of SOMA’s range of flexo equipment, particularly its line of mid- and wide web flexo presses—a fantastic press range for all Canadian printers. SOMA has made a strong impact in Europe, a testament to their technology, service and support. Companies are looking for technologies with added features, capable of handling high-definition plates, and expanded gamut technology, but at faster speeds with no bounce. This is where SOMA really has an advantage for our customers,” said David McBeth, DTM Flexo services president. “More important and applicable to us, SOMA has invested a



SOMA Optima 2 Pro

lot of resources to strengthen its presence in North America. They have been building a North American operations infrastructure and have partnered with MacDermid to build a one-of-a-kind, global innovation center

designed to help the flexo and packaging industries explore groundbreaking solutions. And, they have been partnering with sales teams, like DTM Flexo, who have strong reputations within the market.” ■

Northcore
INDUSTRIES

Family-Owned Global
Supplier of Plastic Cores

CALL 608 355 2898 EMAIL info@northcoreind.com EXPLORE northcoreind.com

**WE'VE
BEEN GIVING
BUSINESSES
LIKE YOURS
THE EDGE
FOR MORE THAN
50 YEARS**

SUPPLYING THE WORLD

Look to us for all your **NEW** and **RESHARPENING** needs

- PINKING WHEELS • SLITTER WHEELS • SHEAR BLADES
- SCALLOP CUTTERS • PERFORATORS • TRIM BLADES
- VERTICAL & HORIZONTAL CUT-OFF BLADES • HOT KNIVES
- SWATCH CUTTING BLADES • PRECISION MACHINING

Randolph Tool Co. Inc.
750 WALES DR. S.E. HARTVILLE, OH 44632 U.S.A.
PH. [330] 877-4923
FAX [330] 877-4924
e-mail: info@RandolphTool.com
Website: www.RandolphToolco.com




CONVERTING SCHOOL HYBRID COURSES

We offer an option combining the convenience of online learning at home or office, with the ability ask and answer questions live with the instructor.

- April 26-30 - Unwinds: Overview & Case Studies Week - Instructor: Neal Michal
- May 17-21 - Easy Web Handling Modeling - Instructor: Ron Lynch

learn more at www.aimcal.org

Click "Education" to Register



Full Line - Highly productive flexible packaging coating and laminating lines with precision web tension control zones & designed web handling to maximize productivity and profitability.

Web Considerations for Today's Flexible Packaging

By **R. Duane Smith**, Process Manager, Web Handling and Specialty Winding at Davis-Standard, LLC

Maximizing the productivity, versatility and profitability of an extrusion coating and laminating line is the goal of every flexible packaging film producer. Production lines that process films for food, industrial and consumer applications must be equipped to handle lighter gauge materials. Machinery must also address diverse multi-layer structures at higher production speeds without scratching and/or wrinkling defects. Web tension control systems and web handling components are a key part of achieving desired results. Factors such as the location of web tension control zones, the type of

support rollers and bearings used, and web spreading parameters are paramount. It is also important to correctly apply web guidance in coating, laminating and winding processes.

Technical advancements in flexible packaging materials have enabled thinner webs to be processed with the same or greater strength and barrier properties. Physics states that the resistance of webs to buckle (wrinkle) is a function of the cube of web thickness. Therefore, reducing the gauge by 10 percent makes the web almost 1.4 times more prone to wrinkling. Thinner webs must be run at lighter tensions and

with precision tension control to prevent wrinkling and distortion effects. These materials can also run at higher speeds, but greater care must be given in maintaining positive traction with web conveyance and guidance rollers.

Following are some engineering considerations with regard to precision tension control, web spreading and web guidance as you seek to produce thinner webs at higher speeds.

Precision Tension Control

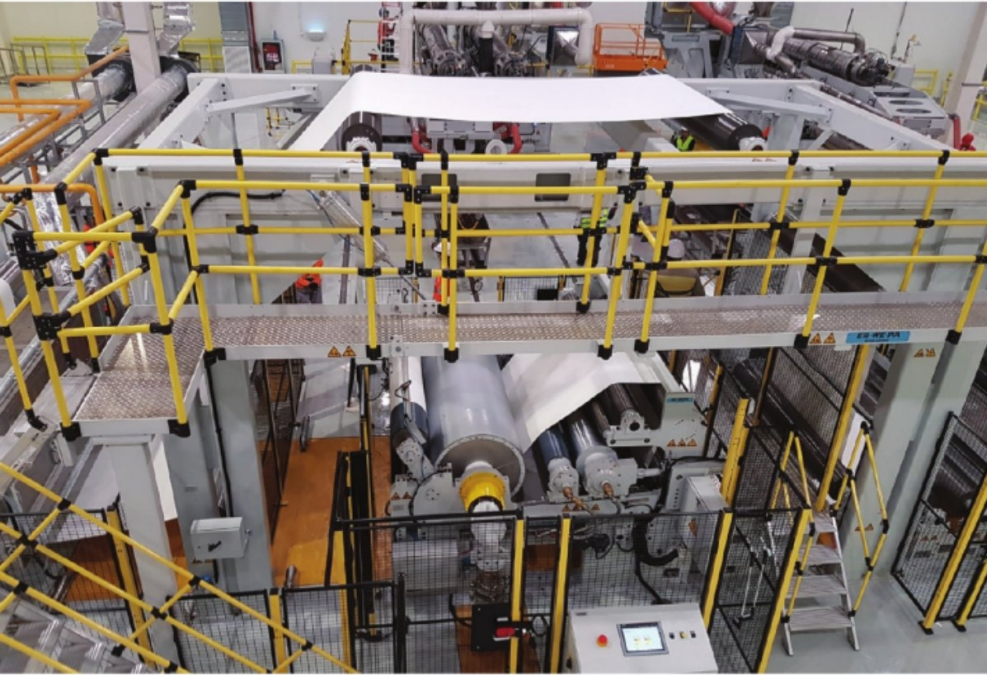
Flexible packaging lines need to have positive isolation between unwinding, process and winding

The solution for the demands of this moment

Catbridge 900-M now available for quick delivery

- Ideal for film & flexible packaging applications
- Rewind diameters to 32"
- Web widths to 62"
- Speeds to 2500 fpm
- Minimum 2" slit width
- Auto knife positioning





Web Handling - designed web support rollers, proper web spreading and the proper application of web guidance for consistent production of high-quality Flexible Packaging materials.

zones to achieve optimal tension control. Good tension isolation requires a driven pull roll section with a positive grip of the web between these zones. Precision tension control requires dependable and correctly positioned load transducers in each zone. Exact tension also demands well-designed web handling rollers. Rollers need to have low-friction bearings, effective traction surfaces, correct spacing and web wraps, and proper alignment to ensure positive conveyance of webs at the required lighter tensions. Well-designed web handling rollers will also help eliminate uncontrollable web tension and/or scratches. Using pre-set recipes in an integrated control system allows for consistent and repeatable tension programmed by zone.

Dry bond lamination lines are an example of how web tension is critical to avoid defects. Before

the lamination process, the web materials need to be properly tensioned to closely match the strains of the materials just before lamination. Failure to do so can result in a delamination defect commonly known as tunneling. Tunneling is common on aseptic packaging and transdermal patch production lines.

Web Spreading

Web spreading devices before the nips, before critical processes such as coating and laminating, and just before winding are mandatory for high-quality processes. Using the right type of web spreader in each of these areas is imperative, especially for high-speed production of thinner packaging materials. Multiple web spreader designs exist, so make your selection based on the types of structures you process for best results. Spreaders need to be

well-maintained and adjusted for consistency.

Web Guiding

Edge sensor guiding offers several production advantages in terms of performance and versatility. This technology positions incoming webs to compensate for potential telescoping of incoming rolls of material; guides webs after the coating and drying process; guides webs into a lamination process; and ensures winding of straight-sided rolls. It also can provide web oscillation to help randomize web profile defects in wound rolls.

Unwinds can be mounted on a side-lay base or used as an offset pivot guide (OPG) to steer the web into the extrusion coating process. OPGs are needed before critical edge position lamination processes. A steering guide is required after long web leads such as out of a floatation dryer. An OPG can guide a web into the winding operation or the winder can be guided to the incoming web. The type of web guiding system, sensor, and location should be engineered for the application. Traction should be sustained on the roll just before or after the edge sensor, and the sensor needs to be mounted as close to the roll as possible.

In conclusion, web conveyance design and optimization is a critical tool for any flexible packaging film producer to increase line speeds, reduce defects, improve uptime dependability, and produce a wider range of structures. Partnering with an OEM, such as Davis-Standard, will help you to address these challenges to improve profitability for thinner structures at higher speeds. ■



IT'S ALL ABOUT CONVERTING

INTERNATIONAL CONVERTING EXHIBITION & CONFERENCE—also known as ICEC USA—is the leading, largest & all-encompassing biennial event and the central meeting point for the international converting industry. Buyers, suppliers and manufacturers convene here to get a first-hand look at the latest machinery, technology, and manufacturing solutions.



WHAT'S NEW AT ICEC USA?

RETURNING TO ORLANDO Now under new management by leading global events organizer Reed Exhibitions, ICEC USA will return to the OCCC in 2021! The OCCC is leading the way to provide safe events and you can view their health & safety guidelines and the ICEC USA guidelines at our website: www.convertingshow.com

NEW FALL DATE PATTERN In a strategic decision that creates greater timing between June's Munich event, ICEC USA's move to Fall will allow manufacturers, suppliers and buyers an opportunity to attend both events and stay more aware of innovation and best practices throughout the year.

VIP BUYER PROGRAM ICEC USA will introduce a hosted buyer program that will identify key decision makers with open projects who are actively looking to purchase new products and services at the show.

Don't miss your opportunity to establish successful new business relationships, view the newest and most innovative products and services, and learn from top industry professionals within this dynamic market.

Join the conversation at #ICECUSA21

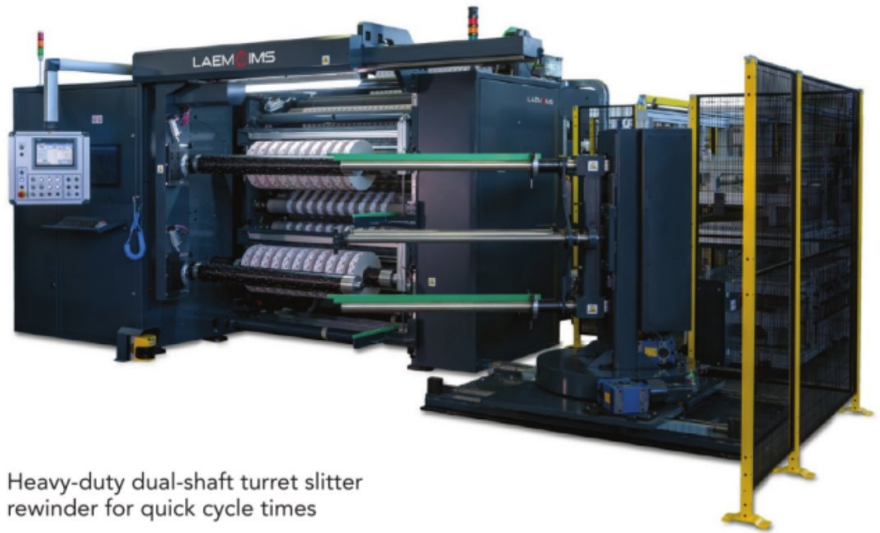
WWW.CONVERTINGSHOW.COM

Advancing Slitter-Rewinder Equipment: Discover LAEM IMS's Portfolio

Considering the great number of slitter-rewinder manufacturers worldwide nowadays, the equipment selection has been more challenging every day. Despite the technology and features being comparable, converters should always focus on several key factors that can dictate a highly successful acquisition of a new slitter-rewinder. Starting from a machine feature standpoint, within many considerations LAEM IMS, a brand of IMS TECHNOLOGIES, could recommend, there are:

robustness/vibration-free equipment, supreme tension control, speed, safety, automation, slitting precision, roll covering type, Advanced HMI/user friendly, high quality components and flexibility in customizing the equipment for the specific needs (material, process, ergonomics, etc.). How to choose? Look for a supplier that sells you a solution rather than a piece of equipment. Ask what else the machine can do for your business and how efficiency, high productivity and low waste can get you a ROI faster than expected.

Furthermore, converters must evaluate the OEM based on their reputation in the industry, company strength, local service, references, etc. IMS TECHNOLOGIES, the Group behind LAEM IMS and other brands in the converting industry, such as GOEBEL IMS and ROTOMAC, has a 170 years' history serving the industry with excellence in Europe-U.A.-China-India. The company belongs to a very solid Italian group, using only top-quality suppliers: the verticalization process in the manufacturing of the slitter rewinders guarantees unparalleled results. Indeed, all the



Heavy-duty dual-shaft turret slitter rewinder for quick cycle times

processes from designing, engineering, automation, software, CNC machining of the components, painting, assembly, testing, installation and after-sales service are all integrated within the group.

The company has a development center located in Italy called mylab where it keeps key equipment in the showroom. The goal of the mylab is to be able to run trials with customer's own material, display the company's technology and show converters the machine before buying, in order to appreciate the high quality and technology that can bring the converting business to the next level.

To tell more about their area of expertise in slitter-rewinding equipment, LAEM IMS took some time to answer a few questions from PFFC.

Some winding methods are "open-loop" with no load cell or dancer roller to provide feedback or calibration of tension. How does your equip-

ment calculate or estimate tension without load cells or dancers?

When not using load cells or dancer rollers, the tension is controlled by an open-loop platform based on sophisticated algorithms which estimates the actual tension based on measured values such as motor current absorption, etc.

Usually the "open-loop" tension control without load cells or dancer rollers are implemented for cost reduction. At IMS TECHNOLOGIES, we have closed-loop controls as standard using either load cells and/or dancer rollers allowing to take high advantage of the system in terms of precision when controlling the web tension.

In answering question #1, there are inefficiencies of how applied torque becomes tension, such as rotational resistance, changes in friction, and contamination. How do you ensure controlling torque at

ACCUDYNETESTTM Marker Pens



- **22 Standard levels, from 30 through 72 dynes/cm**
- **Specifically designed for fast, accurate on-line use by printers, coaters, and laminators**

Also ideal for process control or field use by suppliers of film, sheet, coated board, inks, coatings, and adhesives

Spring loaded tip meters fluid feed and guards against contamination

Reliable enough for many R & D and lab applications

Hundreds of tests from each marker

Usable on virtually all smooth non-absorptive substrates

Six month shelf life; mix certifications provided with every order

Specify any combination of dyne levels and quantities you require (minimum order four pens)

Conveniently packaged in ready to use setup boxes

Total Qty.	Unit Price	Total Qty.	Unit Price
4 - 7	\$10.20	32 - 47	\$5.60
8 - 15	\$7.80	48 - 95	\$4.80
16 - 31	\$6.40	> 95	\$4.40

Unit pricing is based on total order quantity. We now ship via ground service prepaid at no charge. Standard dyne levels include all even numbers from 30 through 72 dynes/cm. Free samples available on request.

Diversified Enterprises 101 Mulberry St., Ste 2N, Claremont, NH 03743
800-833-4644 or 603-543-0038; Fax 603-543-1334 www.accudynetest.com

FASTER
SHARPER
PRINTING

STEEL—BELTS—FOR —HIGH—SPEED— —PRECISION— DIGITAL—PRINTING

The drive for greater print productivity places new demands on press conveyors: as speeds increase, so does risk of vibration. As the world's leading manufacturer of high specification steel conveyor belts, we can help.

IPCO belts offer up to 5x better stability than plastic belts, and are precision engineered to the finest tolerances of thickness and straightness. Together with high precision belt tracking, this means the position of the print substrate is assured, and speeds can be maximized without compromising on quality.

- Maximum stability – up to 5x less vibration vs. plastic belts.
- Precision engineered for complete flatness/straightness.
- High tensile strength resists stretching.
- Solid steel or perforated for vacuum systems.
- High precision belt tracking.
- 100+ years' experience in belt manufacturing.

Read more at ipco.com/print




The knife section on LAEM IMS machine FLEXISLIT

the source creates desired tension with changes in these inefficiencies?

In every machine designed and manufactured, LAEM IMS, brand through which IMS TECHNOLOGIES operates in the field of flexible packaging industries and converting, develops unique software with sophisticated procedures to execute the auto-tuning sequence of each single motor and drives allowing to compensate those inefficiencies in the tension control both in open and closed loop mode, ensuring the desired results.

How do you recommend a converter find the winding recipe for a new product such as changes in thickness, width, stretchiness, coatings, friction, etc.?

The operator only needs to input the type of material, width, and thickness, and the LAEM IMS slitter rewinder's advanced software will automatically reset the machine accordingly. Data settings for the most common materials are already pre-loaded in the system. The required suggested tension settings are calculated by a proven algorithm and the predicted values will be displayed for review and evaluation on the operator control panel. The values can then, if necessary, be fine-tuned during the production for utmost results as each master rolls has its distinctive characteristics.

Additionally, LAEM IMS slitter rewinders have the feature to save all the settings into recipes which can be recalled for repeating work processes.

How do you recommend a converter make decisions on finished reels changeover methods? When is automatic finished reels transfer needed? What tools or designs help reduce downtime changeovers?

WEB WIDTHS CHANGE YOUR SENSOR SHOULDN'T HAVE TO



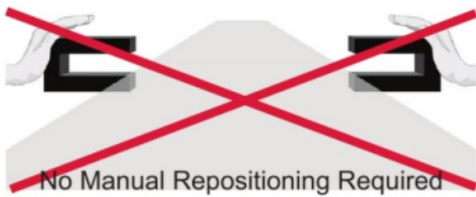
**Increase Uptime,
Line Speed, and Profits**
with the **NEW DSE-45**
Wideband Sensor from Fife.

Increase Uptime

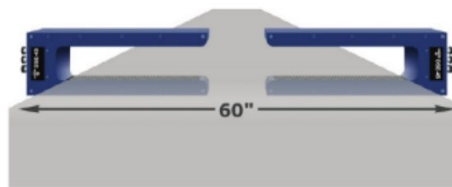
- No manual repositioning required
- IP65 rating allows for operation in harsh environments
- Guides up to 16 edges at a time
- Backward compatibility for easy installation

Increase Line Speed and Profits

- Superior resolution and accuracy
- Digital standalone operation with data monitoring



No Manual Repositioning Required



NEW INDUSTRY 4.0 TECHNOLOGY HELPS YOU RUN SMARTER



**End-to-End,
We Solve Your Problems Faster**

Visit our website at WWW.MAXCESSINTL.COM



FLEXISLIT: the dual shaft or turret slitter rewriter for flexible productivity

LAEM IMS offers a wide range of slitter rewinders, from manual and compact to fully automated high-end models including complete end-of-line automation and fulfill the offer that IMS TECHNOLOGIES has committed with the converting sector.

Based on the productivity and process required by the converters, LAEM IMS will make a full analysis of the process and application to

propose the best solution for every specific purpose. Based on the slitter rewriter model, several automated features can be implemented such as fully automated positioning of the slitting knives, automatic loading and positioning of the rewind cores, automatic tape application, closure of the finished rolls, unloading of the finished rolls including additional unloading station.

Furthermore, LAEM IMS offers a unique end-of-line automation to handle the finished rolls from the unloading station downstream to automatic packing stations which also includes weighing system, internal and external labelling, bagging, and palletizing.

What new technologies and products have you incorporated into your product portfolio? How do they benefit converters?

Within the dual shaft and turret slitter rewriter range, LAEM IMS has incorporated two new series in portfolio to complete its product line: RIBOSLIT 2/4, the new compact slitter rewriter available in dual shaft and turret version, as a perfect trade between performance, flexibility

Opening Features
Straw Holes

Spouts
Ventilation Holes

Half Cut

Opening Perforation
Beverage Carriers/Trays

Liquid Packaging

Development and design of machines, modules and spare parts for the production of
Packaging

Inspection Windows
Level Indicator
Flexible Packaging

Tobacco Blanks
Holes

Braille Embossing
Embossing

Hot Foil
Hologram

Schoberttechnologies GmbH
Industriestraße 2
71735 Eberdingen/Germany
Telefon +49 7042 790-0
info@schoberttechnologies.de

Cutting and creasing with maximum efficiency and quality, thanks to Vector Technology

As a manufacturer of digitally printed folding boxes and in-mould labels, your best way into the future is with our new RSM520HD-DIGI-VARICUT. Thanks to our innovative drive technology, continuous and intermittent processes can be combined in the ongoing cutting and creasing process without changing the magnetic cylinder. For you, this means shorter set-up time, minimal tool costs and optimal workflow connection with reduced waste.

schoberttechnologies.com when it comes to punching, stamping, cutting, perforating, creasing, scoring, embossing, sealing, ultrasonic welding, dispensing, applying, cut & place, collating, folding, gluing/bonding, or laser technology.

Please contact us! We can assist you – worldwide.

and return of investment. Then FLEXISLIT 4, available in turret rewinder version only, developed for high performance, productivity and full automation; this machine is the perfect choice to pair with our end-of-line automation for a state-of-the-art downstream material handling.

How are your products or services helping companies to achieve sustainability goals?

LAEM IMS has implemented a system called MAIA to interface with all the machines installed at the converter's plants and to the cloud where production data are gathered for further statistics, review, improvement.

Inside MAIA platform, it is implemented an OEE measuring

and reporting functions with full integration into the ERP system of our customers (full "Industry 4.0"). Additionally, all our slitter rewinders are equipped with regenerative drives allowing to balance the power consumption and input back to the power system, not dissipating energy on passive devices such as resistors; all is active and regenerative like the Kers system in cars.

What are some unique challenges your customers faced in 2020 and how did you help them overcome these?

Indeed, the COVID pandemic has created several issues for traveling domestically and internationally and therefore many of the customers could not receive in-person visits from our technicians in order to

install new machines or service existing equipment. Thanks to remote connection, augmented reality glasses and interaction systems, LAEM IMS has been able to keep its full service to the customers as well as to install and commission new slitters rewinders remotely.

The LAEM IMS Service has benefitted a great boost also thanks to the support of IMS TECHNOLOGIES, a Group with important resources in this particular area of customers relationship. Under IMS TECHNOLOGIES service team supervision, the customer's personnel equipped with our augmented reality glasses has been able to install, test, commission and run production on the new machine all by themselves. ■

SHEET-FED FLEXO MAGNETIC

THE AWARD-WINNING

Insignia
DIE CUTTING

- ✓ Ideal for ID folded cartons, ID cards, carriers and promotional items
- ✓ Die-cut, kiss-cut, score, emboss, fold & glue in-line with the award-winning Insignia!
- ✓ Ease of operation and fast changeovers at an economical price
- ✓ Four available sizes. Made in USA.



*More automated.
More productive.
More profitable!*



rollemusa.com/diecut
800-272-4381

MS Modern Manufacturing Services, LLC

A Leading Manufacturer of Converting Equipment

Pacer-356SUP
Compact Stand-Up Pouch Machine

Designed For The Narrow Web Stand-Up Pouch Market

www.modernmfg.net
sales@modernmfg.net
585-289-4261



D.W. RENZMANN SpeedyFlexPlateCleaner

D.W. RENZMANN's SpeedyFlexPlateCleaner is reportedly easy to operate and saves time and energy. The used plates are placed on a conveyor belt, transported automatically through the cleaner, washed and dried and then deposited in a basket.



SpeedyFlexPlateCleaner is equipped with washing tank and water rinsing section completely stainless steel built, cleaning section system operated by one rotating brush and one power traverse brush, assisted by a re-circulating immersed electric-pump and a solvent spray bar. Self-adjustment rollers pressure allow the passage of clichés with different thickness.

Different options for individual adjustments are possible. In the standard version, minimum plate length is 150 millimeters, maximum plate width is 440 millimeters for the small unit and 580 millimeters for the larger version.

Using the SpeedyFlexPlateCleaner means that customer's flexplates are clean, dry and ready for reuse or storage immediately after cleaning. The device uses sophisticated foam rollers to clean plates very gently – reportedly avoiding the typical damage that can occur during manual plate washing.

Adapted to the cleaning unit, cleaning agents for waterbased or solvent/UV based inks are available.

For more information, visit www.dw-renzmann.de.



Maxcess Announces Next-Generation Inspection System From Fife

Maxcess announced the Fife VEO 700 video inspection system. A cost-effective solution for label and narrow web applications, the VEO 700 provides end users with better product quality, reduced scrap and increased uptime.

"We are building upon our VEO 600 inspection system with the next-generation VEO 700," said Darren Irons, global product manager, Fife Inspection. "With an advanced graphical user interface, wider field of view and available touchscreen interface, the VEO 700 offers a more advanced inspection system for our customers at a fraction of the price of 100 percent inspection."

Featuring a high-resolution camera for accurate monitoring of the web, programmable positioning for precision viewing of defects and LED strobe lighting for longer life and less parts to replace, the VEO 700 reportedly gives customers a cost-effective, yet highly accurate solution for web monitoring.

For more information, visit www.maxcessintl.com.

Designers and Manufacturers of Totally Enclosed Chambered Doctor Blade Systems

Servicing the narrow and wide web industries since 1983



2596 St. Hwy 32
Pulaski WI USA 54162
New Phone: 920-865-7775
and Fax: 920-865-3824



Web: printco-industries.com
E-Mail: sales@printco-industries.com

With the highest quality, longest running, and lowest maintenance, Totani's pouch making machines provide

Safety and Convenience

Quick Changeover Machines with Recycle Ready Materials



Totani is committed to the wise and efficient use of our natural resources

TOTANI

**The World Leader
in Pouch Making Machinery**

TOTANIAMERICA.COM

920-632-7319

New Generation of H.B. Fuller Swift tak Adhesives Enables Growing Demand for Paper Straws

H.B. Fuller launched a new generation of high-performance adhesives with Swift[®] tak 5730 grade to create consumer-safe, liquid-resistant paper straws designed for fast-moving machines and improved sustainability.

A multidisciplinary team of scientists have developed Swift tak 5730 water-based adhesive to further advance the paper straw industry. This technology reportedly offers paper straw producers superior performance in terms of consistent, easy machinability, cleanability, and overall productivity in response to the increased demand for safe and sustainable paper straws.

The new generation of plasticizer free, three-hour liquid resistant adhesive, which exceeds the liquid resistance market requirement for cold beverages, reportedly enables a high-quality durable straw and reduces operational downtime. In fact, its high wet



tack allows manufacturers to meet aggressive productivity goals while using fast paper straw machines that can produce more than 500 straws per minute.

Swift tak 5730 gives a competitive advantage for core winding and slot nozzle application for straight or bendy cold drink straw production. Generally, this adhesive comprises less than 5 percent of the total dried weight of a paper

straw—enabling paper straws to be recycled and/or industrially composted.

This technology allows paper straws to be compliant with German Federal Institute for Risk Assessment (BfR) Food-Contact Recommendation BfRXXXVI (Paper and Board for Food Contact Materials) for food contact to help ensure maximum consumer safety.

For more information, visit <https://www.hbfuller.com>.



TECO REWIND MACHINES



TECO MANUFACTURING COMPANY, QUARRYVILLE PA
Call 717-682-1497
 web site: www.tecomanufacturing.com, e-mail: teco@tecomanufacturing.com

TICKETS

ticketsbycarter.com **FAST**

217.227.4464

Fax 217.227.4140
raffletic@aol.com



607 Elevator Street • Farmersville, IL 62533

Your Full Service Printer

CORPORATE • ENVELOPES • CARDBOARDS • BUSINESS CARDS
 BUSINESS CARDS • BROCHURES • NOTE PADS
 AND MORE

High Quality, On Time Converting

- Expert slitting, sheeting, trimming, die cutting, corona treatment & shrink wrapping services
- Quick turnaround on specialty projects
- Clean, affordable & reliable



WESTECH INDUSTRIES

Get A Quote Today:
www.Westech-Industries.net
 800-916-9488

Surface Tension Testing






























For Adhesion
AND Cleanliness Testing

- Quick • Easy • Clean



LOTAR ENTERPRISES
TESTING INKS & PENS

Tel: 920-465-6678
sales@lotarllc.com
www.lotarllc.com

	Absolute Converting Solutions.....7 www.absoluteconvertingolutions.com		Jemmco LLC.....BC www.jemmco.com		Rol-Tec Inc..... 12 www.rol-tec.com
	Blower Application Co.....2 www.bloapco.com		Lotar Enterprises 28 www.lotarenterprises.com		Rollem Corp..... 25 www.rollemusa.com
	Cadence.....IFC www.specialtyblades.com		Maxcess International 23 www.maxcessintl.com		Schober USA Inc..... 24 www.schoberusa.com
	Carter Printing Co., Inc. 28 www.raffle-tickets.com		Metlon Corp7 www.metlon.com		Singular Solutions.....3 www.SingularSolutionsGroup.com
	Catbridge Machinery 17 www.catbridge.com		Modern Manufacturing Services LLC...24 www.modernmfg.net		Sonic Solutions 13 www.sonicsolutionsusa.com
	Delta ModTechFC www.deltamodtech.com		Nordmeccanica Group.....1 www.nordmeccanica.com		Supply 55, IncIBC www.supply55.com
	Diversified Enterprises 11, 21 www.dynesonline.com		Northcore Industries 14 www.northcoreind.com		Teco Manufacturing 28 www.tecomanufacturing.com
	Global Plastics Inc..... 10 www.ripperonline.com		Powell Engineering Inc.....5 www.powellengineering.com		Totani America, Inc..... 27 www.totaniamerica.com
	ICEC USA..... 19 www.convertingshow.com		Printco Industries LLC 26 www.printco-industries.com		Westech Converting..... 28 www.westech-industries.net
	IPCO US LLC 22 www.ipco.com		Randolph Tool Co Inc..... 14 www.randolphtoolco.com		

CONVERTING SIMPLIFIED



Top converters worldwide rely on NEPATA to get the job done. To learn more contact Supply55, Inc. at 734-668-0755 or visit www.supply55.com.

 **NEPATA**
REWIND. TRIM. SLIT.
EQUIPMENT FOR EFFICIENT CONVERTING

SUPPLY55
www.supply55.com
info@supply55.com



PFFC
An RDG Media, Inc. Publication
PO Box 893
Fort Dodge, IA 50501

Presorted Std
US Postage
PAID
RDG Media, Inc.

CONDUCTIVE SLEEVES

for Corona Treating Applications



JemmTron™ CRS100 Conductive Silicone Treater Sleeves offer a great alternative to traditional bare roll and dual dielectric Corona Treating Systems:

- ✓ **Outperforms bare roll & ceramic**
 - » Soft rubber reduces back-side treat
 - » Unique electrical properties redistribute power to reduce energy waste
 - » Higher treat levels confirmed by independent OEM's comparison study
- ✓ Up to **50% lower cost** than traditional ceramic
- ✓ **Reduced overhead & downtime**
 - » No more sending out rollers for repair, as sleeves can be easily replaced on-site, eliminating the need for spare rollers

Use coupon code CRS21 for 10% off
your first order of JemmTron™ CRS100
262-512-9559 • www.jemmco.com

Jemmco, LLC