03/2017

VM VERLAG
Cologne /Germany

EXTRUSION INTERNATIONAL DIGITAL

p. 22

Double synchronized cutting for high extrusion speeds

STEIN BLUE-LINE
for a sustainable future

EXPERTS IN DOWNSTREAM

The NEW generation of cutters for profiles

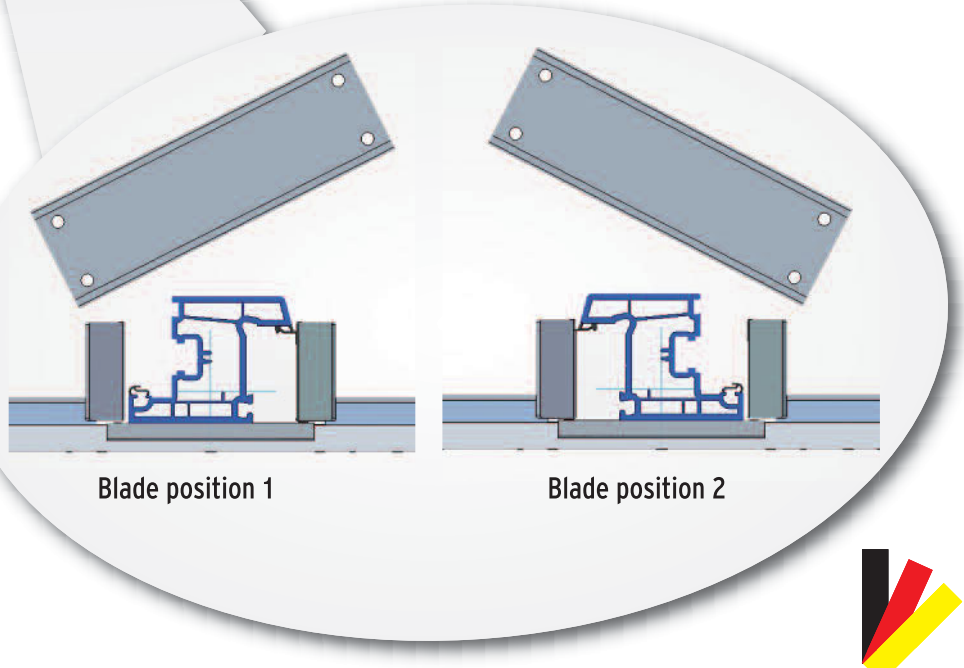
- **Mirrored** changing of the **cutter angle** during **running production**
- For optimised cutting of the respective profile
- Changing within 10 to 15 seconds, between two cuts
- Without loosening screws, by hand, with pneumatic clamping device using two retaining cylinders
- **Sensational price thanks to increasing demand and manufacturing in large quantities**

The cutter was manufactured for the first time in 1998 and in constant use throughout the world. They offer the absolute best cutting quality for glass strips, small profiles, main profiles and technical profiles.

Additional devices such as automatic film wrapping, measurement wheels for precise length determination or lettering with inkjet or laser printers can be attached.

PTW-200
changeable cutting angle

Cutting Unit



Blade position 1

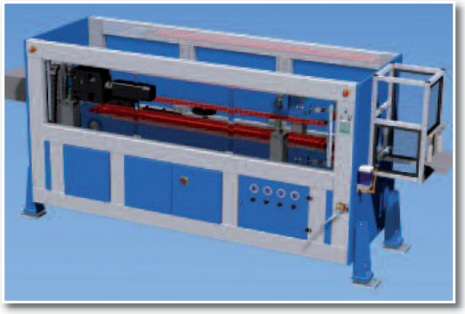
Blade position 2

Made in Germany

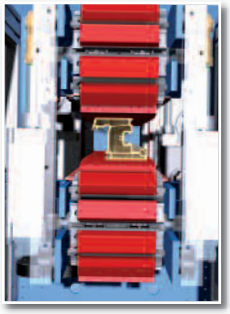
EQUIPMENT FOR EXTRUSION

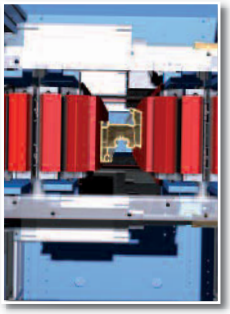
FOR PROFILE EXTRUSION LINES

Calibration table KTS 01, rear



Caterpillar Haul off

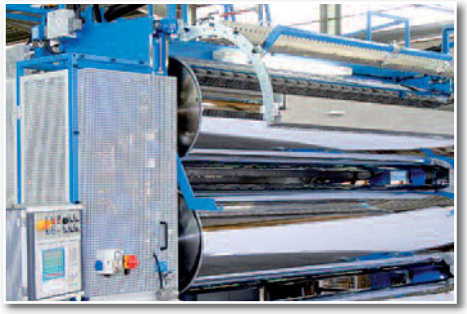




Haul off rotating 90°

PRO 63 automatic stacker

FOR SHEET EXTRUSION LINES



Calender

Roller withdrawal AZ 8, outlet side

Slitting RB 2 with four sawing stations

Transverse separating cutter QSS, inlet

„STEIN BLUE-LINE – for a sustainable future"
stands for sustainable and energy-efficient equipment.

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STEIN Maschinenbau GmbH&Co.KG
Wartbachstr. 9
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stein@stein-maschinenbau.de ·
www.stein-maschinenbau.de

Tosaf's new white masterbatch ME800047 significantly reduces smoke and odour in extrusion coating.

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The focus of the motan-colortronic and his distribution partner Plast Line Group (Wroclaw) joint exhibition stand at Plastpol 2017 were the portable dry air driers LUXOR E A and LUXOR EM A and the coupling system METROCONNECT U/C.

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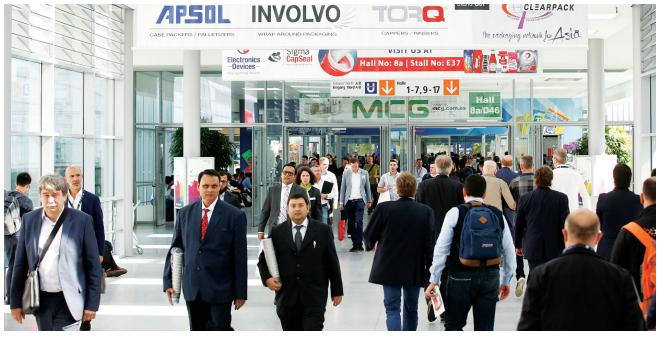

INTERPACK 2017: 170,500 Visitorsfilled Exhibitors' Order Books.

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The AD PLASTIC 2 machine for film valve sacks requires no adhesive as it seals the sacks with hot air.

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AZO Group: solutions for automatic handling.

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P.O.Box 501812, D- 50879 Cologne, Germany

EDITORS
Dr. Yury Kravets (Editor-in-chief)
Tel. +49 2233 979 2976
y.kravets@vm-verlag.com

Bettina Jopp-Witt
Tel. +49 221 546 1539
redaktion@vm-verlag.com

Alla Kravets
Tel. +49 2233 949 8793
a.kravets@vm-verlag.com

ADVERTISING SALES
Martina Lerner
Tel.:+49 6226 971515
lerner-media@t-online.de

ADMINISTRATION
Alla Kravets
Tel. +49 2233 949 8793
a.kravets@vm-verlag.com

SALES REPRESENTATIVES
Quaini Pubblicita (Milano IT)
Tel. +39 02 39216180
grquaini@tin.it

Worldwide Services Co., Ltd.,
(TAIWAN)
Tel. +886-4-2325-1784
global@acw.com.tw

www.extrusion-info.com

Composites Europe 2017
12th European Trade Fair and Forum for Composites, Technology and Applications
19. - 21.09 Stuttgart, Germany
www.composites-europe.com

Plastex Uzbekistan 2017
7th International Specialised Exhibition
20. - 22.09.2017, Tashkent, Uzbekistan
www.plastex.uz

T–PLAS 2017
International Trade Fair for the Plastics and Rubber Industries
20. - 23.09.2017 Bangkok, Thailand
www.tplas.com

POWTECH 2017
Trade Fair for Processing, Analysis, and Handling of Powder and Bulk Solids
26. - 28.09.2017 Nuremberg, Germany
www.powtech.de/en

Interplas 2017
The british plastics show
26. - 28.10.2017 Birmingham, UK
www.interplasuk.com

Equiplast 2017
The International Plastics and Rubber Event
01. - 05.10, Barcelona, Spain
www.messe-barcelona.de

FAKUMA 2017
International trade fair for plastics processing
17. - 21. 10, Friedrichshafen, Germany
www.fakuma-messe.de/en/fakuma/

COMPLAST – SOUTH AFRICA
Complete Plastics Exhibition
16. – 18.11, Johannesburg, Republic of South Africa
www.complastexpo.in/southafrica/

High Capacity Centrifugal Pellet Drying of High Rate Pellet Slurries

■ Maag/Gala has engineered a centrifugal dryer with the highest known capacity for drying polyolefins. High capacity resin producers, engineering companies and OEMs require a single dryer for virgin resins. "After the development of the Model 100 in 2008, based on our proven 48-inch rotor platform, with over 300 running applications, we have continued our R&D work to increase the drying capacity rates of the Model 100," says David Bryan, President and CEO at Gala Industries, a Maag company. "Through full scale testing and continual design adjustments, we have successfully increased the drying capacity of its Model 100 dryer to 150 t/h, processing HDPE with lentoid pellet geometry and melt flow index of 0.35, with moisture below 500 PPM. Future plans include a number of new concepts that will be evolving over the next 12 months."
The Maag/Gala full scale dryer demonstration facility allows customers to see their material being processed at actual rates. This eliminates the risks of small dryer upscaling for larger production rates. Customers are invited to witness a free demo of our Model 100 dryer testing the most difficult pellet geometries.
Gala is a leading manufacturer of centrifugal dryers and underwater pelletizing systems worldwide. Gala has developed a global reputation for engineering, manufacturing and application expertise across a diverse range of materials. Gala supplies highly customized turn-key pelletizing systems with multiple pelletizers on a single production line, as well as simple compounding lines and laboratory systems. Installations include medical and food grade polymers, hot melt adhesives, color masterbatch and flexible and rigid PVC. Gala recently joined Maag, who is represented in the markets with its brands „Maag Pump & Filtration Systems", „Automatik Scheer Strand Pelletizers", „Gala Automatik Underwater Pelletizers" and „Reduction Pulverizing Systems".

Gala's 100 Dryer for higher capacity drying

www.maag.com , www.gala-industries.com

Technical profiles are versatile – e.g. **for use** in cars, in construction, in the furniture industry or in the white goods industry. And **with** profiles manufactured on **extruders from WEBER**, the quality is **simply perfect**.

hansweber.de

WEBER

Extrusion of technical profiles and pipes

ES 60

5-fold co-extrusion line

The best properties –

the best quality

The variety of polymers, compounds and compound systems allows for application-specific and individual solutions in the extrusion of technical profiles. The selection and mixture of the materials used influence strength properties, ageing properties, UV resistance, elasticity, geometric design and many other aspects.
WEBER co-extrusion technology is used increasingly to meet the different requirements of extruded products. This allows specific use of the different polymer properties to achieve perfect results.

Scan code and
download data sheets
extrudertechnologie.de/en/
technicalprofiles_pipes

Advantages

// High technical standard through long-standing experience and further development

// Highest level of flexibility through high vertical integration

// Complete systems for manufacturing technical profiles

// Complete systems for manufacturing PA, TPU, PC/ABS and POM pipes

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info@hansweber.de · www.hansweber.de

WEBER

Peak performance for high standards

■ The new ZE Performance twin-screw extruder from Krauss-Maffei Berstorff is produced in China for China. Its performance profile has been specially adapted to this market. A compounder from this series has been in use at Zhejiang Xinli New Material Co. Ltd. in Wenzhou for a few months – with complete customer satisfaction.

"Since we began using the new compounder, we've seen significant increases in our cost efficiency and ability to stay competitive in the cutthroat market for polyamide compounds," states Ye Yaoting at Zhejiang Xinli. The compounder is a twin-screw extruder of the new ZE Performance series from KraussMaffei Berstorff. Its performance profile is adapted precisely to the needs of the mid- to high-range market.

On a total of 25 lines with a yearly capacity of 20,000 tons, Xinli produces flameproof and reinforced PA6 and PA66 compounds for the automotive and electrical industries. Customers in these industries have very high standards. High product quality is absolutely essential for any plastics processor that hopes to stand out from the competition and earn the business of customers like Chint, Tengen, Huanyu or Great Wall Motors.

Successful user - Xinli produces plastics for the automotive and electrical industry on a ZE Performance twin-screw extruder

Live from the Chinaplas 2017 – The new ZE Performance twin-screw extruder

Like all twin-screw extruders, the ZE Performance is equipped with process elements that were developed exclusively by KraussMaffei Berstorff using resources from renowned suppliers. In conjunction with the screw elements developed specially for the standard compounding tasks, the ZE Performance offers a wide application range for compound quality and productivity. The process unit has a modular design. This allows it to be adapted to various applications throughput quantities.

ZE Performance machines are available in sizes 52 and 62 for through puts of 300 to 1,200 kg/h. They cover the entire standard spectrum for compound manufacturing. Four housing sizes in various models with L/D ratios of 4, 8, 10 or 12 are available for optimum process adaptation. Cooling is by means of water injection, and heating by means of electric heating cartridges. The C-clamp flange system for quick and easy housing element replacement ensures short setup time.

www.kraussmaffeiberstorff.com

HPE Extruder and Promote Regional Capabilities at Chinaplas

■ As an example of its extrusion technology, Davis-Standard will exhibit at CHINAPLAS an HPE-H extruder for medical tubing applications. The energy-efficient HPE-H is compact in design, available for a fast delivery, easy to maintain and one of the company's most widely used models. It is available in 20mm (3/4-inch), 25mm (1-inch), 30mm (1 ¼-inch), 40mm (1 ½-inch) and 45mm (1 ¾-inch) sizes for processing versatility.

Davis-Standard continues to see strong demand throughout Asia for feedscrews, control systems, medical tubing technology, and its dsX™ product line for cast film, blown film and packaging applications. Davis-Standard's regional presence has continued to grow since opening Davis-Standard (Suzhou) Plastics Packaging Machinery Co., Ltd. in 2012. This facility is Davis-Standard's manufacturing base in China and houses an R&D laboratory for process development and trials.

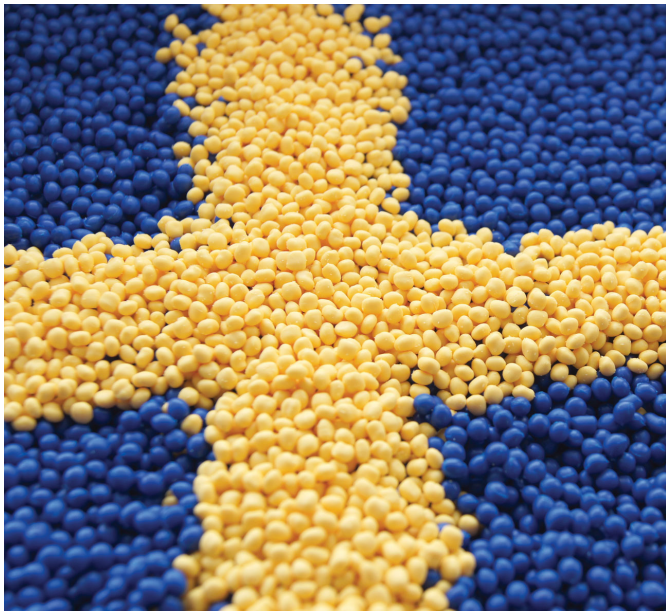
The Suzhou lab features direct-drive 19mm and 24mm single screw extruders, each with a polymer melt pump, a sophisticated three-layer spiral flow tubing die, PLC line

control with data acquisition, precision vacuum sizing tank for both rigid and flexible products, closed loop ID/OD control via an ultrasonic gauging system, a servo controlled combination puller/cutting system, and a transport conveyer with single-zone air eject. It also includes a single layer tubing line designed specifically for the production of FPVC tubing for IV & fluid delivery applications. Products ranging in size from 2mm OD to 8mm OD can be produced with an accuracy of +/- 50u at line speeds up to 100mpm. Davis-Standard's facility in Pawcatuck, Connecticut, also has a fully equipped medical tubing laboratory. Both labs support applications for Alternate Polymer®, microbore tubing, multi-lumen and catheter tubing, edotracheal and tracheotomy tubing, radio opaque tubing, bubble tube, taper tube, pipette tubing and multi-layer tubing, among others. Complete medical tubing systems support extruder outputs up to 315kg/hr (700 pounds per hour) and line speeds up to 240 mpm (800 feet per minute) for a range of materials including PLA, PLLA, PEEK, FPVC, polyurethane, nylon, PEBAX and FEP. Extruder options are available depending on process and application and engineered for a fast delivery and competitive pricing.

www.davis-standard.com

KRAIBURG TPE comes to Sweden

■ KRAIBURG TPE, the global competence leader for Thermoplastic Elastomers, has expanded its international network to include a sales office in Sweden. In the future, the company will serve its customers in Sweden and also in Norway directly from the office in Sunne, in western Sweden. For decades KRAIBURG TPE has been developing its compounds with a market-oriented strategy and providing extensive customer support – from the product idea to the choice of material, possible material combinations and tool design all the way to series production.



From May 17-18, 2017 KRAIBURG TPE had its own exhibit for the first time at Nordic's leading plastics fair, Plastteknik Nordic, in Malmö. The specialist for Thermoplastic Elastomers has presented its product and service portfolio at booth B13. The highlights has included the latest product innovations, such as flame retardant compounds, temperature-resistant materials with adhesion to polyamides, and TPEs for the packaging industry.

Around the world, KRAIBURG TPE offers service and support concerning all aspects of Thermoplastic Elastomers, including their use in the manufacture of components. With about 550 employees the company, under the management of CEO Franz Hinterecker, earned revenue of € 167 million in 2016. KRAIBURG TPE is highly regarded as a pioneer and innovator in its business sector. Worldwide customer orientation, custom engineered product solutions and dependable service are the strengths of the specialist with production sites in Germany, the USA and Malaysia, as well as agencies at numerous other locations – now also including Sweden.

www.kraiburg-tpe.com

SPE announces a successful ANTEC® 2017 and new governance structure

■ SPE (Society of Plastics Engineers) announced today that their flagship annual technical event ANTEC®, which took place May 8-10, 2017 in Anaheim, CA, had total attendance just shy of 1,500 people.
This year SPE tested a new concept of ANTEC adding additional forums to the known technology sessions. 1,350 attendees listened to over 550 technical presentations. The "Plasticity Forum" focused on sustainability issues and the "Industry 4.0 Forum" focused on the internet-of-things in our industry. Both forums attracted an additional 150 people to the event. Other ANTEC event attendance included The Plastics Race (115 participants), Student Speed Interviews (86 participants) and Women Networking Breakfast (120 participants).
SPE will start the 2017-2018 governance year with Dr. Raed Al Zubi as its new president. Under his leadership SPE's new governance structure will officially begin with a renewed Executive Board. Vice Presidents of the society will now have functional roles and more authority. This will make SPE more agile and allow them to better serve the plastics professionals and the industry. It will also allow them to adapt faster to changing industry market conditions.

SPE also forecasts a very strong financial performance in 2017 as a result of the renegotiations of several agreements. This will lead to an estimated result of over $1 million USD for the year (non-consolidated). SPE does not consolidate with its affiliates. The consolidated yearly revenue for SPE as a whole would be close to $7 million USD with its affiliate groups. Consolidating would add an annual positive result of about $750,000 USD on top of the central SPE result. The total consolidated financial assets of SPE and all its affiliates is close to $12 million USD.

Dr. Raed Al Zubi

www.4spe.org

EREMA Group: new record result of EUR 138 million

The 500 employees of the EREMA Group companies achieved a record turnover figure of EUR 138 million in the last financial year 2016/17 (Photo credit: EREMA)

■ Thanks to a 5 per cent increase in turnover the consolidated sales of the EREMA Group reached EUR 138 million in the 2016/17 financial year. The Group's two youngest sister companies PURE LOOP and UMAC recorded a strong turnover result shortly after being founded.

"A key success factor in the positive turnover result in the previous financial year is without doubt the relentless innovative spirit within the EREMA Group," says CEO Manfred Hackl with confidence. EREMA GmbH, manufacturer of plastics recycling systems and technologies, presented new technical developments in all three recycling divisions.

The highlight in PET Recycling was the new recycling system Vacurema Inline Preform which was developed together with Sipa. This accomplishment enables the direct and flexible processing of washed PET flakes to make preforms. In the field of Post Consumer Recycling, the Intarema RegrindPro for regrind material was joined by the ReFresher which was presented in autumn. The thermal-physical cleaning process of the ReFresher removes even migrated odours and thus extends the field of application for recyclates from post-consumer material. The new SW Direct Flow melt filtration for minor contaminants, on the other hand, has led to improvements in the recycling of production waste. At the K 2016 trade fair EREMA then offered the solution for the future challenges facing its customers in the form of a smart factory package. This package features the online quality monitoring of colour and MVR plus the first Manufacturing Execution System for the extrusion industry. These innovations led to a notable increase in order intake. Machine-based order intake alone between October and March increased by 50 per cent compared to the corresponding period of the previous year.

In the previous financial year PURE LOOP presented the new ISEC evo which has an impressive up to 25 percent increase in capacity compared to the predecessor model. The company ended the financial year with turnover at EUR 4.5 million. The company UMAC, which was founded last year, specialises in the sales of used recycling systems and components. Only one year after it was founded, the company's turnover has reached EUR 1.5 million. 3S was able to continue its successful course in the previous financial year, too, with turnover reaching EUR 14.5 million. 3S specialises in the manufacturing of core parts for the extrusion and crude oil industry.

Manfred Hackl, CEO EREMA Group (Photo credit: EREMA)

www.erema.at

Tosaf's new white masterbatch

■ ME800047 is a newly developed white masterbatch from Tosaf for extrusion coating applications. Its increased heat stability significantly reduces smoke and odour when processed at high temperatures. Beyond, this new masterbatch contributes to a higher production efficiency compared to traditional products of this kind.

Extrusion coating is a highly demanding process to apply a very thin polymer layer to a substrate at processing temperatures close to the thermal degradation point of the processed polymers (app. 300 °C). Known challenges include necking (the melt dripping unevenly on the sheet in a neck shape), heavy smoke and strong odour due to the high processing temperatures, poor dispersion, gel formation und die buildup.

To overcome these extrusion coating related issues, Tosaf has developed ME800047 white MB. It withstands the extremely high processing temperatures whilst at the same time maintaining its high dispersion quality. This results in a constantly homogenous coating and reduces the need for filter changes during production. Gel formation is significantly reduced and its opacity allows for a lower addition level of ME800047, even in very thin layers. And because this new white masterbatch does not contain migrating additives, it provides high corona retention, good printability and reduced die buildup.

Tosaf's new white masterbatch ME800047 significantly reduces smoke and odour in extrusion coating. © Tosaf

www.tosaf.com

LANXESS: Capacity Expansion For Emerald Innovation 3000 Flame Retardant

■ Specialty chemicals group LANXESS has announced the successful completion of a project which increases the capacity of its Emerald Innovation 3000 flame retardant production unit. The debottlenecking project increases the sustainable output from 10,000 to 14,000 MT per year.
Polystyrene insulating foam makers are switching from using HBCD (hexabromcyclododecan) flame retardants to more sustainable alternatives such as LANXESS Emerald Innovation 3000. "About 50 percent of global demand has already adopted the new technology," says Anno Borkowsky, Head of LANXESS's Additives business unit (ADD). The business with Emerald Innovation 3000 was taken over by LANXESS as part of the acquisition of US company Chemtura, which was successfully completed in April 2017.

"With global commitment from foam producers to eliminate HBCD use by 2021, the polymeric brominated flame retardant supply base must be capable of supporting necessary customer conversion and certification activities over the next few years with sufficient supply and technical support," explains John Davidson, EVP bromine solutions business with ADD. "LANXESS is committed to helping customers switch and to further increasing the reliable supply of the most sustainable technology for construction markets."
Emerald Innovation 3000 is manufactured at LANXESS's El Dorado, Arkansas (USA) facilities. Recently announced was the opening of a new 11,000 square-foot pilot plant at the company's South Plant facility which will support development of new and improved flame retardant products.

➟**www.lanxess.com**

US–Compatible Stretch Film Line is up and running in Record Time

■ Last September, Sigma Plastics went into production with the first SML cast stretch film line for the US market. The 9-up line with a width of 180" (4.5m) was built to UL specifications and following modifications to meet state code requirements was installed by SML at Sigma's Riverside facility in California.
Adjusting the line design to meet Californian demands was a straightforward process owing to the fact that SML supplies machinery worldwide, including the USA, and utilising many standard components that are already UL-approved.
More difficult and key to being awarded the order was gaining Sigma's confidence that SML, a new supplier to the group, could complete the project on schedule and provide seamless training and support post-commissioning.
To simplify planning for Sigma and provide SML with greater control over the schedule, the film line was offered with a turnkey package that ran from delivery and installation all the way through to full production. In combination with SML's all-inclusive approach to line supply, which involves the shipping of all interconnecting components such as pipework and cables along with the line, this resulted in both a minimal workload for Sigma's personnel and rapid assembly and start-up. From the shipping containers arriving on site to commencement of production took less than 12 weeks.

With the line now in full operation, an SML field engineer based in Los Angeles, within an hour's drive of the Riverside plant, is available for ongoing support.
As well as offering technical and process back-up, he is also assisting Sigma's maintenance personnel as part of SML's commitment to help customers minimise operating costs.
SML extrusion lines are a familiar sight at production plants around the globe and with its first cast stretch line now in operation in the USA, the company is looking to further expand its business in North America with the same combination of winning features.

➟**www.sml.at**

New X-ray systems for non-destructive testing

■ This year, over 30.000 visitors came to the Control exhibition in Stuttgart to learn about the latest innovations in the field of quality assurance. At the exhibition VisiConsult X-ray Systems & Solutions GmbH presented its two latest innovations: an automated XRH111 system through an industrial robot and the compact InSpect cabinet. The XRH111+Robot is a combination of the renowned cabinet XRH111 for comprehensive X-ray inspection of small to medium parts and an ABB robot. Its modular setup allows manual inspection, automated defect recognition (ADR) and computed tomography (CT) in a single unit. VisiConsult automated these processes with an ABB robot to achieve higher throughput and reduce labor costs. The system can be placed directly at the production line to take parts from a tray, conveyor belt or similar and places them inside the cabinet. The system is one of the first combined in-line ADR and CT systems allowing a hundred percent 3D analysis of the parts. Typical checks are wall thickness analysis, porosity analysis or nominal-actual-comparison. This makes such a system the perfect choice for high-volume and safety relevant industries like automotive.
The compact X-ray cabinet InSpect can be used with Mini-Focus or Micro-Focus tubes and film, imaging plates (CR) or digital detectors to generate high resolution images of samples. The compact form factor allows usage in laboratories, technology centers and even quality checks of samples on the production floor. Due to the flexible choice of image sources the system can be customized towards customer requirements and budget. The embedded screen directly shows inspection results and allows high-end image processing within a few clicks to achieve outstanding results. Comprehensive archiving options to databases, PACS servers, file systems or reports allow users to store their results. The intuitive operation allows highest efficiency.
Beside the XRH111+Robot and the InSpect VisiConsult has a lot more inspection systems based on X-ray technology in its product portfolio. The family company from Northern Germany has always focused on high end customized solutions like automated in-line inspection systems, computed tomography systems and roof mounted gantry systems.

www.visiconsult.de

High performance electric belling machines

■ The need for innovative green technology in the plastic pipe production industry capable of guaranteeing high performance, process flexibility and ease of use while allowing reduced energy consumption, has become increasingly pressing and has had a marked influence on the design of the various types of extrusion line machinery, including belling machines.

SICA, a specialized manufacturer of downstream equipment in pipe extrusion lines and keenly aware of the factors outlined above, was the first manufacturer to offer belling machines with an electromechanically operated socket forming unit in place of the conventional hydraulic and pneumatic solutions. The decision to use electrical technology produced several benefits: highly dynamic operation, low noise levels, exceptional precision and repeatability of positioning, total real-time control of process parameters in terms of working strokes and speeds, which is important especially for belling machines that were originally pneumatically operated.

It is very important to notice that no more hydraulic system means a complete transformation and improvement of the production process, thanks to:

-elimination of the functional problems associated with oil, as the temperature-related viscosity variations can affect the response of the regulating system

-elimination of problems associated with the physical presence of oil which, in the event of leaks, the machine and the surrounding work area become dirty and unsafe for operators, producing a slipping and falling hazard;

-elimination of the environmental problems associated with hydraulic technology, by achieving lower noise levels typically associated with electrical technology and dispensing with the need to dispose of waste hydraulic fluid;

-significantly lower energy consumption, strictly related to the socket forming cycle.

The market responded positively to SICA's newly introduced "Unibell" electric belling machines for PVC-U pipe diameters up to 200 mm and 250 mm. The Unibell belling machines heat the pipe by means of short wave IR heating elements (called IR-SW ovens, or simply "short wave ovens") that maximize heating efficiency thanks to accurately defined oven geometry, precise distribution of the heating elements, and structural and electrical configuration of each heating element in relation to the specific plastic material to be heated. The many benefits of this system include lower effective energy consumption, compared to the one of the conventional heating systems, because the heating elements operate exclusively during the heating stage and for the time strictly necessary for the pipe to reach the required final thermal conditions. Instead, in conventional ovens, only a minimal part of the energy consumed is used to actually heating the pipe, while the remainder is used to keep the oven at its working temperature or it is simply lost in the environment. With sales of around sixty Unibell models in the past two years, the positive response from the market led SICA to proceed in this line of development and devote more and more resources both to the optimization of electrical technology applied to plastic pipe thermoforming operations and to the increasing of efficiency and reliability of the process

Electrically powered thermoforming solutions have also been extended to our Unibell 400 range (for PVC-U pipes up to 400 mm in diameter), to belling machines for PP pipes up to 200 mm in diameter (Everbell) and to Multibell 110 Rieber belling machines, designed for Rieber system multisocketing on PVC-U pipes of up to 110 mm in diameter.

Sica's decision to invest in these new technologies encourages not only a regard for the environment, it also leads to a reduction of pipe production costs, thus allowing faster returns on capital expenditure.

➟**www.sica.it**

GRAFE Design Center presents the trend colors for 2018 with an interactive story

■ "The Pursuit of Colors" with GRAFE. That is the motto of this year's presentation of the 2018 trend colors by the GRAFE Design Center. Always a creative highlight, the orchestration of this year's color preview features the well-known Thuringian poetry slammer AIDA. He has created an exciting adventure story in twelve chapters that will take the reader month for month on a journey around the world. A calendar illustrates the trend colors and embodies the visualized accompaniment to the truly colorful story. On the website www.pursuit-of-colors.com exclusive chapters will be unlocked every month by solving twelve puzzles which also offer the chance to discover a great treasure in form of a fabulous journey.

Registered readers can accompany the protagonist, Ben, and his friend Kara on an interactive search for colors that will take them through the most diverse and inspiring regions of the world. The fast-paced hunt for different shades, nuances and colors coupled with the battle against colorless monotony and drab uniformity culminates in a breathtaking finale.

On their tour through the world of colors, the heroes of our story will find 2018 to be a year characterized by intense ambivalence. Autumn and winter are marked by reserved blue, green and brown tones. The most salient aspect of these colors is their naturalness. In addition, they will also find metallic colors in a wide array of nuances. Pastel colors will appear more self-assured and intense, almost a bit synthetic. The combination of what is seemingly incompatible results in interesting contrasts and sets unmistakable accents. Matt-textured colors will play an important role, leading to velvety, cozy-warm and soft hues. These matt textures can also create a light shimmer.

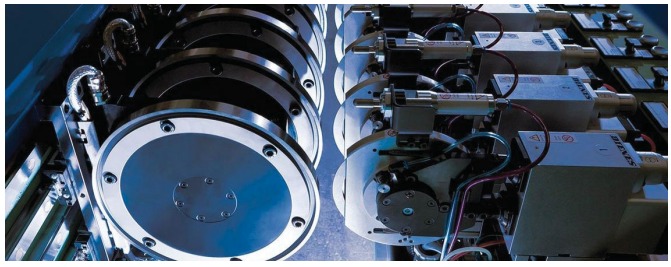
Blue will also display some dominance in spring and summer 2018, as it ranges from very light to deep and dark. There is a new interpretation of pastel colors, on the one hand, very delicate and gently wafting, and on the other a move towards much stronger and livelier variations. Very deep, dark hues, almost black in appearance are also a point of focus. All in all, the coming season reflects a fragile optimism paired with deep mystery.

The adventurous story as the framework for the pursuit of colors was created by the well-known Thuringian slam poet, Andreas in der Au – otherwise known as AIDA. Born in Erfurt, the artist is one of the most active slam poets in the German-speaking world with extensive stage experience from over 1,000 performances. He has qualified for the German-language championships six years in a row and in 2013 received a national award for the promotion of tolerance. His anthology „Poetry Slam in Thüringen" was published in 2016. AIDA is on the board of Highslammer e.V. and organizes and moderates poetry slams along with workshops nationwide.

www.grafe.com

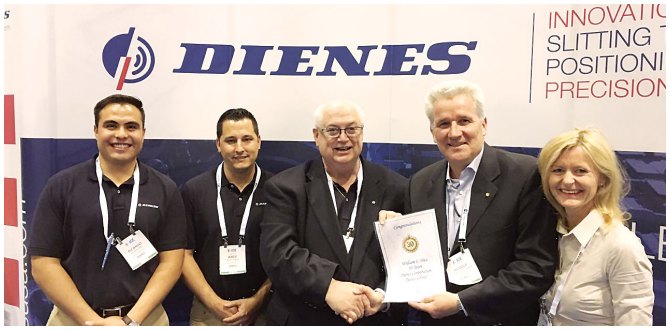
Dienes Corp President Bill Shea 30 years anniversary

■ Rudolf Supe-Dienes, CEO and owner of Dienes Group was proud to present the 30 years certificate of honor and a solid silver pin to Dienes Corp's long standing CEO William S. (Bill) Shea at the ICE show in Orlando.
With his more than 30 years of experience Bill Shea is recognized in the US as one of the leading experts in the slitting and converting industry. His long employment at the Dienes Group is just another example of the company's culture of long term strategic thinking which is so typical for companies from the German Mittelstand (SME) sector.
The DIENES Group founded in 1913 with it's more than 400 employees in 10 countries supplies highest quality circular and straight machine knives, knife holders and complete automated cutting assemblies for web based materials such as (among others) paper, film, ferrous and non ferrous foils and coils, textiles, nonwovens, battery foils along with complementing re-sharpening and technical service.



Dienes automatic positioning system

Bill Shea (Center), Rudolf Supe-Dienes (second from right)



www.dienes.de

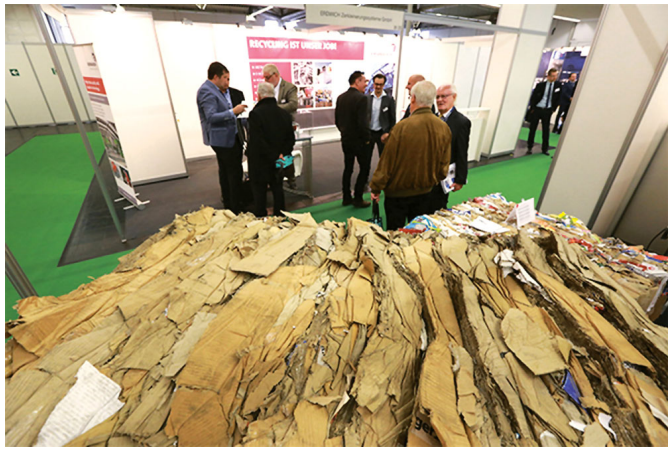
ExtricomBlach Extruder & Components joins CPM Extrusion Group

■ CPM Holding Inc. (CPM), the world's leading supplier of processing equipment and technology tot he animal feed, oilseed, bioenergy, food processing, and plastics compounding industries announces the acquisition of ExtricomBlach Extruder & Components in Lauffen, Germany.
Extricom is a leading supplier of twin screw extruder replacement parts and is the inventor of the innovative RingExtruder, a multi-screw extruder developed to compound high vicosity materials.
Extricom represents a technology and geographic complement with CPM Extrusion Group's Century Extrusion of Traverse City, Michigan, and Ruiya Extrusion of Nanjing, China. With the acquisition, the CPM Extrusion Group builds on ist global platform for compounding equipment and systems, replacement parts, and services.
„The CPM Extrusion Group has grown to meet the needs of our global customers and this acquisition will allow us to further complement that service with a major base in Europe," remarked CPM Extrusion Group President Bob Urtel, „Extricom's advanced twin screw and multi-screw design and process knowledge will enhance the Group's applications capabilities and with it, our value proposition to the customers."
„The CPM Extrusion Group with locations in the United States, Germany, and China will provide customers with an extensive compounding product offering including three levels of twin screw extruders and the RingExtruder. With our expanded portfolio of compounding equipment and our world class process and applications group, we will deliver highly innovative solutions to a wide array of end users.
This merger of twin screw and RingExtruder technologies offers customers with the widest portfolio of equipment and parts in the world ", says Charlie Spearing, General Manager, Global Twin Screw Operations.
„We are committed to delivering process solutions for all sectors working with high-viscosity material, from plastics to powder coating and rubber to food products," says Markus Blach of Extricom. „With our expanded portfolio of compounding equipment and a world class process and applications group, we will deliver highly innovative solutions to a wide array of applications."
The acquisition will significantly expand CPM's portfolio of compounding equipment, replacement parts and services. The CPM Extrusion Group offers sales, service, manufacturing and process technology centers in the Americas, Europe and Asia.

www.extricom.de,
www.corporate.cpm.net,
www.cpmextrusiongroup.com

Recycling–Technik in Dortmund breaks records in exhibitor and visitor numbers

■ On the 10 & 11 May, industry experts gathered together at the fourth edition of Recycling-Technik in Dortmund. Once again, the show closed having seen record numbers of visitors and exhibitors. The popular event offered a comprehensive programme of lectures, guided exhibition tours and a wealth of information on the recycling sector's hottest topics. A matchmaking exchange helped put exhibitors and visitors in direct contact with potential cooperation partners from Germany and abroad. The overwhelming majority of survey respondents reported wanting to partake in the next Recycling-Technik Dortmund in 2018. "Recycling-Technik Dortmund has really evolved and became a must-attend event for our industry," says Tim Stratmann, Technical Specialist for Mechanical Engineering in the Engineering and Maintenance Department at Aurubis AG. Having once again produced record numbers and satisfied attendees, the two-day trade show ended on a very positive note in Dortmund. Together with the co-located Solids Dortmund, the show's 6731 visitors and 500 exhibitors represented 3% and 10% increases respectively over the previous edition.



Scoring with quality and applicable knowledge

As an industry trade show, Recycling-Technik in Dortmund counts among the most important business and innovation platforms for material recycling and re-use. Exhibitors presented machinery and technical components for reclamation and environmentally-sound disposal. Through the high-calibre lectures taking place throughout both show days on the stages of the Innovation Centre, the show offered audiences new and relevant information from science and practice: the spectrum ranged from future-oriented research results and the latest regulations through to use cases and best practices. Representative of the quality of the lecture series was, for example, the topic of building material recycling, organised by vero e.V., Fraunhofer IML and IAB Weimar gGmbH; or the panel discussion moderated by WFZruhr on "Packaging: Design Today - Recycling Tomorrow"; and the metal recycling talks curated by the online magazine 320°.

Important business and innovation platform

The show featured an international cooperation exchange with the debut of Matchmaking Recycling Technology, an opportunity created by Enterprise Europe Network, Zenit GmbH and WFZruhr to establish concrete and targeted contacts and to open discussions with potential cooperation partners from Germany and abroad.

1100 guests at the evening event-cum-award-ceremony

For the first time ever, the evening event for exhibitors, visitors and conference participants took place on 10 May in the arena of the neighboring Ice Sports Centre. 1100 guests – filling the hall right down to the last seat in the house – witnessed the bestowal of the two show awards on FTK Förderbandtechnik Kilian GmbH (Solids) and Spaleck GmbH & Co. KG (Recycling-Technik). Melanie Kilian from the FTK and Andreas Ahler, Managing Director of Spaleck, accepted the prizes of EUR 5,000 each. The project provides a home for orphaned children. With its modular concept and extensive show programme, Recycling-Technik has become one of the most important trade shows for recycling and environmental technologies, as well as for urban mining. Preparations are already underway for the next edition of Recycling-Technik and Solids, which take place on 7 & 8 November 2018 in Dortmund.

➠**www.easyfairs.com,**
www.recycling-technik.com

Sica has patented an innovative method for cutting plastic pipes that makes it possible to reach very high production rates (patent EP2008749). The machines are designed to cut and chamfer PP, HDPE and PVC-UP pipes, performing simultaneous double cutting cycles automatically.

Double synchronized cutting for high extrusion speeds

For example, the Duet125 automatic cut-off saw can reach hourly production rates of around 2000 pipes of 150 mm in length + sockets and more than 2300 pipes/hour of 500 mm length + sockets. At the same time, the system also guarantees the necessary cut length precision (tolerance of ± 1 mm) thanks to the machine's CNC control system. This system allows perfect synchronization of the cutting unit with the pipe extrusion speed and consequent exact positioning of the unit at the required cutting dimension. Moreover, the machines are equipped with specific anti-wear tools to guarantee exceptionally high and enduring quality of the cutting/chamfering process.

The logical control system also offers 'on the fly' cutting capabilities (Sica patent EP129515), optimizing the use of the effective stroke to further increase output in terms of the number of cuts/hour. Equipped with an intuitive icon-based graphic interface and a classic production system for preset sequences of lengths, the machine also features ta new length sequences management system. Specifically, having entered the basic production parameters (extrusion speed, pipe diameter, capacity of downstream machines) the user can define the required production batches, automatically optimized by the system in order to exploit the machine's potential to the full. Intelligent planning of production sequences in addition to the availability of libraries in which process parameters and user product dimensions can be stored, determines the definition of a new state of the art field in terms of versatility and ease of control.

Given the large number of cuts that can be performed per unit of time, the machine has been equipped with an extra-powerful cyclone-type dust exhausting system.

The range of automatic in-line planetary saws in the Duet series (available in the Duet 125, Duet 160 and Duet 200 versions) includes the Duet/K (cutting with knife without material removal for HDPE and PPR) and Duet/C (cutting with chamfering unit and knife without producing chips inside the pipe) versions, in addition to the standard model for PVC. Duet/C is particularly suitable for PP lines equipped also for the production of double-joint pipes.

The machines are entirely based on electro-pneumatic design eliminating all possible problems linked to the use of hydraulic actuators and hydraulic power packs, and are configured in order to optimize total energy consumption.

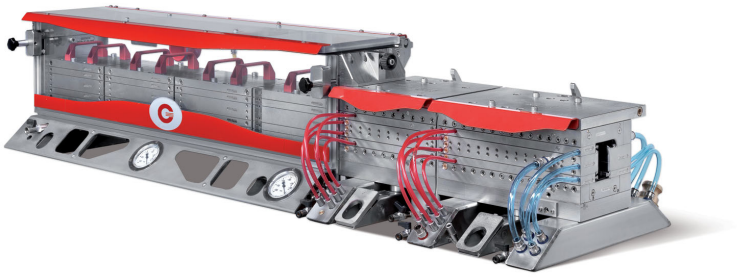
With this range of saws, Sica responds to market demands for cutting at high extrusion speeds with reduced energy consumption, ease of use and control.

Sica S.p.A.
www.sica-italy.com

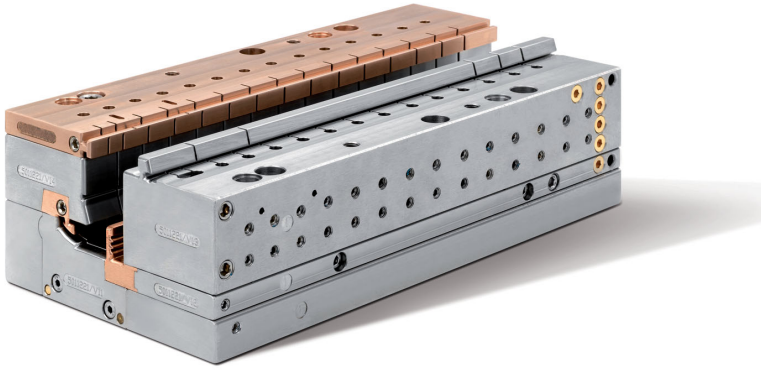
Solid.Cooling

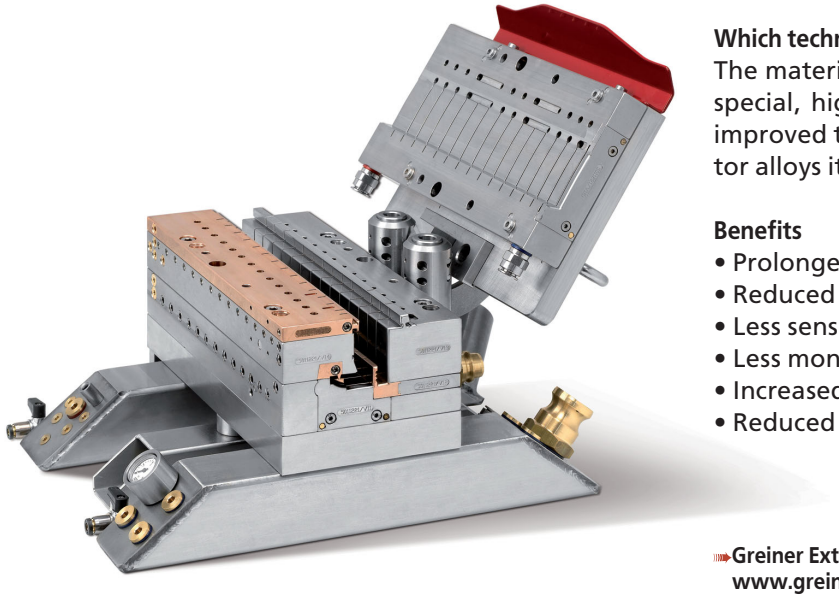
Extended Net Production Time

SOLID.COOLING is an innovative calibrator technology from Greiner Extrusion Group. Specific sections of the calibrator elements can be made from a special copper alloy of highest thermal conductivity improving the cooling effect. Optionally SOLID.COOLING can be integrated in the RED.TOOLING system and thus further enhances its performance.



How does SOLID.COOLING work?
Designated calibrator sections are not equipped with small, cross section cooling channels. As a result contamination or blockages no longer occur. Cleaning and maintenance efforts decline. The system reacts significantly less sensitive to contamination in the water circuit, as well as with fluctuations in water pressure and temperature. The use of SOLID.COOLING further increases process stability whereas at the same time the manual monitoring requirement during production decreases.





Which technology is implemented in SOLID.COOLING?
The material SOLID.COOLING is made with consists of a special, high-strength beryllium-free copper alloy with improved thermal conductivity. Unlike the usual calibrator alloys it features wear resistance.

Benefits
- Prolonged net production time
- Reduced cleaning and maintenance requirements
- Less sensitive to process fluctuations
- Less monitoring requirements
- Increased process stability
- Reduced production and profile costs.

Greiner Extrusion GmbH
www.greiner-extrusion-group.com

A successful trade fair exhibition

"The Plastpol 2017 has far exceeded our expectations with regard to networking and forging new contacts", was the positive feedback given by Jacek Dobrzyński, managing director of the Plast Line Group, Wroclaw, a long-time distribution partner of motan-colortronic, Friedrichsdorf. The Plastpol 2017 was the 15th time that the Plast Line Group exhibited at the International Fair of Plastics and Rubber Processing in Kielce, Poland. "The Plastpol, being the most important trade fair for the plastics industry in Central and Eastern Europe, has always been highly significant for us, but Poland has also continued to be one of our most important markets", added Jochen Freier, Sales Director Export at motan-colortronic. The focus of the companies' joint exhibition stand this year were the portable dry air driers LUXOR E A and LUXOR EM A and the coupling system METROCONNECT U/C

Mobile dry-air dryer for small throughputs

In order to dry hygroscopic plastics for small material throughputs or stand-alone applications, motan has developed the new, mobile dry-air dryers LUXOR E A and LUXOR EM A. Equipped with a permanently installed drying bin, the compact dryer provides the manufacturer with 60, 100, or 150 litres of drying bin volume.

The LUXOR E A models of the new range can be integrated into existing systems. They are designed to be connected to existing conveying systems. Alternatively, they can be equipped with their own stand-alone material loader. The LUXOR EM A dryers, on the other hand, are self-sufficient, moveable stand-alone units, for isolated application, for example. As standard, they are equipped with integrated dry-air drying and a side-channel blower, as well as a small, monitored cyclone blower protection filter. The cyclone filter consists of an easy to clean fine filter cartridge and a transparent dust collection bin. The pipe work for dry-air conveying with rigid hose connections ensures that the suction box is protected from environmental air and filled with dry-air. This is why material can remain in the suction box even during down-times, as it continues to be a dry environment, protecting the material from reabsorbing moisture.

The new dryers operate in a closed process cycle in combination with temperature-controlled regeneration. Both dryer ranges are controlled and operated via the LUXORnet EM controls via a colour touch-panel with self-explanatory illustrated guides. All functions for drying, conveying and the operation of the proportioning valves can be set easily. A weekly timer is also integrated. Operation is also user friendly after a re-start: Employees need only to select the material which needs to be dried and start the system. Filling of the drying bin and the material specific pre-drying then occurs automatically. The unit will signal when production can be started. Along with the integrated database with the drying parameters of over 70 types of plastic, a second database is available for the customer with free slots for the parameters of up to 50 materials.

Julian Sommerey, Sales Area Manager, motan-colortronic, Jacek Dobrzyński, managing director of Plast Line, Jochen Freier, Sales Director Export, motan-colortronic (from left)

Via an Ethernet interface the dryers can be integrated into existing networks. This means that all functions can also be operated from a superordinate system. The drying system's data can also be collected centrally.

Both ranges can be equipped with options already familiar from larger drying systems, for example with a dew-point gauge, dew-point-controlled regeneration, or with ETA plus®- energy saving technology with automatic air flow adjustment and temperature reduction. motan-colortronic delivers the dryers pre-installed with all chosen options. All functions are previously tested in a factory setting. Only the material loaders need to be set-up after delivery. After a short installation, the dry-air dryers are ready for use. A benefit regarding their flexible operation is the compact design of the dryers.

Images: motan-colortronic

LUXOR EM A: compact dry-air generator with integrated conveying

METROCONNECT C – wireless coded coupling table

Coded material assignment with RFID-technology

With the new METROCONNECT U/C coupling system, motan-colortronic is introducing a high quality, manually operated coupling station for pneumatic conveying systems, optionally as either an uncoded version (METROCONNECT U), or as a coded version (METROCONNECT C) with the maintenance free RFID-technology. The main benefit: The uncoded version can be retro-fitted to a coded version at any time. Additionally, older coupling systems can be extended with METROCONNECT C independent of manufacturer. Not only do coded coupling stations prevent coupling errors, they are often necessary if material tracking, validation, or certification is required.

In machine dedicated conveying systems, every single processing machine is assigned a conveying material feedline. The connection of the pipe to the different material sources occurs via a coupling station, which enables simple and flexible material changes. However, the manual switching of uncoded couplings is a latent source of error, which can have expensive consequences if the wrong material is conveyed to a machine. The coded version of the coupling system, METROCONNECT C, is equipped with RFID-technology. RFID stands for Radio Frequency Identification, a contact-free identification process. RFID-systems consist of a data storage (also called transponder or "tag"), as well as a reading/writing unit (sensor). When the transponder is within range of the reading unit, bidirectional communication begins. motan-colortronic has equipped the hose couplings of the coded METROCONNECT C coding system with a swivel grip handle with an integrated tag. The lids of the coupling supports are also fitted with a tag. The reading/writing sensors are built in to the casing of the coupling supports. The swivel grip handles of the hose couplings have the advantage, that the transponder can be in the correct position for the sensor without having to turn the material hose itself. There is a removable cover on the coupling holders. Behind this is an LED light which signals operation or data exchange which is helpful for service work.

The coupling system is controlled, monitored, and configured with the METROCONNECT controls. These can be connected to the conveying controls METROnet and a visualisation via Ethernet. Up to eight blower lines (vacuum systems) can be configured with the METROCONNECT controls. A maximum of 96 loaders and material sources, as well as up to 125 coupling points can be connected to each blower line. If required, an extension of up to 250 coupling points is possible.

The mostly self-explanatory operation offers extensive monitoring and diagnostic possibilities. The operational state for every material outlet can be viewed via a status report. The reconfiguration of the sensors and transponders is also possible through the METROCONNECT controls.

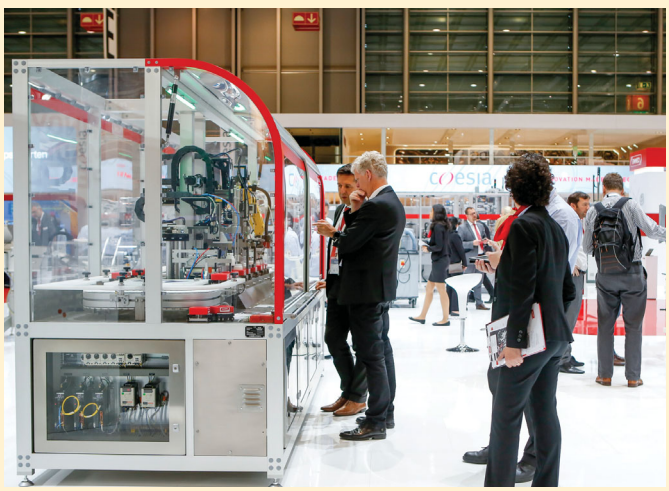
motan is offering the METROCONNECT C coupling system completely configured ex-factory on request. The coupling system is also interesting for processors who may wish to change existing coupling tables when in the process of updating existing systems: Independent of the manufacturer, the METROCONNECT C coupling system can be adapted to older coupling systems.

motan-colortronic gmbh, Plast Line Group
www.motan-colortronic.de, www.plastline.com.pl

The avid interest taken by exhibitors in the run-up to interpack 2017 that brought the world's biggest and most important trade fair of the packaging sector and related process industries record attendance of 2,865 companies, was followed by trade fair days from 4 to 10 May with high spirits and further records: 74% of the approximately 170,500 visitors travelled to Düsseldorf from abroad – three quarters of them were decision-makers.

INTERPACK 2017: 170,500 Visitors filled Exhibitors' Order Books

The high percentage of German and international top-notch experts from a total of 168 countries made for highly satisfied faces among exhibitors, who delighted at promising business contacts and even concrete deals concluded in the seven-digit range. Visitors in turn benefitted from an internationally unrivalled multitude of innovations on display and a unique market overview. This was also reflected in the corresponding high scores they gave the trade fair: just under 98% stated in the official survey that they were satisfied or very satisfied with their visit to interpack 2017. They took an interest in all ranges and segments of interpack but packaging media received significantly more attention than at the previous event.



Images: Messe Duesseldorf

Top Trends: Digitalisation, Industry 4.0 and Sustainability

Proving a top trend at many stands was the further digitalisation of production processes on the way to Industry 4.0 applications. Production linked along these lines makes it possible to manufacture personalised packaging efficiently or to guarantee traceability, to name but two options. Furthermore, the modular design of packaging machines and process lines and optimised digital operating concepts play a pivotal role in order to reduce complexity in manufacturing and achieve the highest degree of flexibility possible for changing batch sizes or product versions. Some companies even focused on virtual reality applications that allow machines or equipment to be experienced holistically in order to manage complexity better even in the manufacturing process of machinery

and equipment as well as in training and operation. The sustainability theme also remained "omnipresent" at interpack 2017. Companies presented improved resource efficiency in terms of both the material used with ever smaller wall thicknesses and of manufacturing processes. Moreover, alternative packaging materials are gaining ground.

Successful Special Features

Not only the exhibitors had innovations in store for Industry 4.0 – the interpack special show of the same name organised in cooperation with the German Engineering Federation VDMA (Verband Deutscher Maschinen- und Anlagenbau e.V.) also showcased the latest ideas and approaches and was received extremely well by visitors. Proving one of the major attractions here was the Demonstrator "smart4i" that produced and packaged personalised powerbanks. Here, not only the entire workflow was digital from online ordering to tracking and tracing, but the machine itself was also installed in record time thanks to a virtual twin and the networked planning in cooperation with several universities.

SAVE FOOD Congress and innovationparc

Six years after SAVE FOOD was launched, the initiative has grown into a broad-based alliance of over 850 international members from industry, associations, NGOs and research institutes. One of the milestones of the Initiative is the SAVE FOOD Congress at interpack; its third edition held on 4 May was highly praised by delegates for its broad thematic coverage. The Congress pursued a multidimensional approach in order to address the issue of food losses and waste comprehensively. Participants included high-ranking political representatives as speakers such as Vytenis Andriukaitis, EU Commissioner for Health and Food Safety, and Gargi Kaul, Joint Secretary & Financial Adviser at the Indian Ministry for Food Processing Industries, as well as committed NGOs activists and representatives from business. Over the course of the Congress the perspective changed, focusing either on global views or national details and conditions – with India as a focal theme this time. The Food and Agriculture Organization of the United Nations (FAO) presented results of a study in India funded by the Initiative; it had been carried out with the aim of identifying the mechanisms involved in losses of important base foodstuffs and of finding approaches for solutions.

components: New Concept Received Very Well

The concept of "components – special trade fair by interpack", which had been revised for interpack 2017, was received very well by visitors. According to the feedback received from the extremely satisfied exhibitors the quality of visitors was also high. "The decision to place the second "components" after a more subdued debut three years ago, in a central location of the exhibition centre now and to hold it in parallel with the complete interpack, proved absolutely right. There had never been any doubts about the importance of this theme anyway since upstream suppliers with their components and software for packaging and process technologies play a key role for the digitalisation of manufacturing processes all the way down as Industry 4.0 approaches. We will therefore also establish "components" at trade fairs of interpack alliance abroad in future," added Bernd Jablonowski, Global Portfolio Director Processing & Packaging at Messe Düsseldorf.

The coming interpack will be held in May 2020 in three years' time at Düsseldorf Exhibition Centre – then with a completely new South entrance and a new Hall 1. The exact dates will be published at a later date.

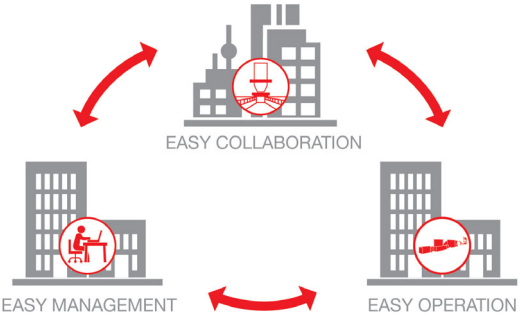
www.messe-duesseldorf.de

The focal point at the W&H interpack booth was the TOPAS SL FFS line with new EASY CONTROL automation and operating modules that increase the machine's intelligence

Windmöller & Hölscher:

EASY CONTROL automation and operating concept

The complete FFS line from W&H, comprising theTOPAS, PLATINUM palletizer and the ARGON stretch hooder



The EASY CONTROL automation and operating concept and its variety of modules is designed to make the system more intelligent and increase uniformity across the entire FFS line. It can be divided into three broad areas: EASY OPERATION, EASY MANAGEMENT and EASYCOLLABORATION

At interpack 2017, machine manufacturer Windmöller & Hölscher has presented the latest model of its successful TOPAS FFS machine as part of a complete FFS line, which also includes the PLATINUM palletizer and the ARGON stretch hooder. The company's presentation has focused on the EASY CONTROL automation and operating concept and its variety of modules designed to make the system more intelligent and increase uniformity across the entire FFS line.

EASY CONTROL can be divided into three broad areas: EASY OPERATION, EASY MANAGEMENT and EASY COLLABORATION. EASY OPERATION are modules that make working directly on the machine in the production environment easier. One example of this is the integration of third party equipment, such as metal detectors, inkjet printers and weighing scales, into the line management systems. Third-party equipment can be managed and monitored centrally via the PLATINUM controls. The benefits are obvious: the operator only has to learn a single system, they have all of the data in one central location, and when it comes to making optimizations, analyses provide better insight because they include data from the entire line.

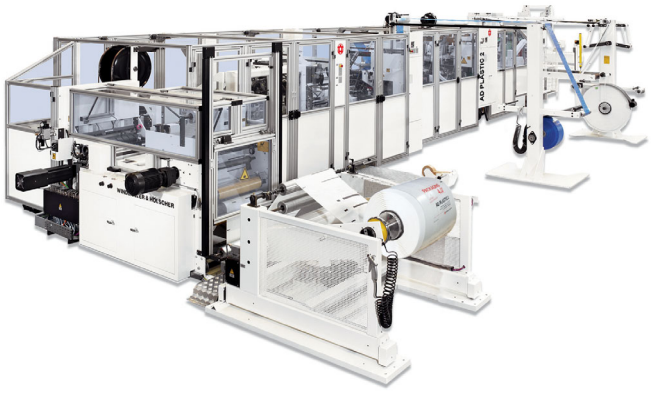
Another example is a MOBILE function that makes status alerts available anywhere via smartphone or tablet PC, and also provides information about upcoming events. The machine can report an upcoming roll change, for example, and the operator can then plan the most efficient route and resources in advance. The status of the machine is visible anytime, anywhere, so operators can react quickly when they need to which ultimately minimizes downtime.

The next module, EASY MANAGEMENT, involves providing and analyzing data. Staff working in the back-office can use an "Office" function to pull and analyze all of the production data.

EASY COLLABORATION involves integrating process steps from outside of the system itself. At interpack, W&H has demonstrated data transfers from an extrusion application using its SMART ROLL system. Inline quality assurance and 100% traceability are becoming increasingly important for end customers.

The intelligent TOPAS system enables us to connect information about the film from the extrusion system with production data from the packaging machine using QR or barcodes. This not only gives customers the complete traceability they need, but also optimizes extrusion and FFS processes.

Valve sacks made from paper, film or woven plastic – W&H has the perfect machine solution for every material



The AD PLASTIC 2 machine for film valve sacks requires no adhesive as it seals the sacks with hot air

The valve sack experts

The market for industrial packaging is full of different valve sack concepts for paper, woven plastics and plastic films. There are a number of reasons for this, such as different applications, availability of the respective materials, or even regional differences, sometimes with historical root causes.

The AD proFilm MP sack is manufactured on the AD PLASTIC 2 valve bottomer. The machine, launched in 2015, is unusual in that it uses hot air to seal the sacks. This means that it does not require adhesives, which can be the source of significant production costs and technical process limitations.

When the company was developing the new AD proFilm MP film valve sack, it chose to focus on two key factors: high moisture protection (MP = moisture proof), and extending the product's shelf life. It achieved this through the use of its innovative Breathing Chamber Technology – a ventilation chamber along the longitudinal seam of the sack. This technology means that effective ventilation and high moisture protection are no longer mutually exclusive.

Valve sacks have the important benefit of being able to be filled on nozzle packers, which ensure a high filling output. But although paper, woven plastics and plastic film sacks all have this one factor in common, each material has its own specific advantages. Paper valve sacks are a comparatively cost-effective form of packaging made from a renewable source.

Windmöller & Hölscher
www.wuh-group.com

Food packs are always designed for the respective product, e.g. the „take away container" thermoformed by ILLIG which can be tightly closed or cups with IML-T decoration. With Pactivity, the new business sector for packaging development, ILLIG offers conceptual and practical solutions in thermoforming. The experts show the great potential of packaging in thermoforming and they support the development process from the initial idea through to the realization of the line concept and the production system
Picture: ILLIG

ILLIG:

360° Custom-made Packaging Development in Thermoforming

At his year's Interpack ILLIG, the systems provider for thermoforming solutions, has presented for the first time its new „Pactivity" business sector for packaging development. Pactivity is a combination of Packaging and Activity. The machine manufacturer has demonstrated its expertise in this sector with latest packaging systems. At the stand the Heilbronn experts have demonstrated the great versatility of In-Mold Labeling in thermoforming (IML-T) in combination with clean and hygienic filling and packing of food. From the initial product ideas through to realization of the corresponding mold and production system, numerous requirements must be met. ILLIG shows the great potential of thermoforming to the customers and offers development services for thermoformed packs. Everything from one source.

From the packaging idea to the pack and to the production system

For many decades ILLIG has been engaged in packaging development and the support of customers for successful market launch of packs. In principle, each project is an individual project, whether confidential or not, since every pack is unique. From the customer's initial idea through to an excellent pack which meets all recent requirements. There are numerous development stages in between and many technical questions that have to be answered. There is, for example, a great variety of packs for fresh fruit and vegetables. Packs have to ensure visibility of their contents while also protecting it from outside influences, and they have to be suitable for transport and logistics processes. The ILLIG packaging experts develop different variants for ventilation (hole punching or closure knobs with spacing for hinged trays) and closures (hinged lids, separate lids, without lid). Product, packaging material, volume and feasibility, all those have to be analyzed. Design variants, mold design as well as line concept have to be determined, since thermoforming offers different methods of pack production. Which thermoforming method will be employed depends to a large extent on the properties of the pack. Design, material and output are essential elements. Once the initial criteria have been successfully determined in the packaging development stage, an extensive testing phase follows that begins with the production of samples. This is followed by a number of required product tests and finally ends with the customer approval. Subsequently, the realization of the production system can be started. ILLIG can meet these requirements thanks to its expertise in mold making and machine manufacturing and its knowledge of the markets – worldwide.

Thermoformed liquid-tight container with lid

A current example is the development of a thermoformed „take away container" which can be tightly closed for the Asian market. In Asia, hot soups and meals are filled in containers to go by restaurants and mobile snack booths. Previously, such a cost-effective and safe transport solution did not exist. The liquid-tight container with lid is manufactured on an automatic pressure forming machine, type IC-RDK 80, with a 12-up container mold out of transparent PP. The ILLIG packaging specialists designed and realized all stages of the pack development from the initial idea, the material selection, through to the mold production. This also included own application tests with respect to tightness and stackability (top load).

ILLIG Maschinenbau GmbH & Co. KG
www.illig.de

Leistritz: ZSE 12 HP-PH – the smallest Leistritz twin screw

Leistritz Extrusionstechnik GmbH has presented at the Interpack Fair their range of products and services from the pharmaceutical and direct extrusion sectors. The smallest twin screw extruder must not be missed here: the ZSE 12 HP-PH in GMP design for pharmaceutical applications.

„This twin screw extruder is the smallest machine Leistritz has ever built," says Albrecht Huber, Head of Pharma Extrusion at German Leistritz Extrusionstechnik GmbH. "We will be presenting the concept of our smallest extruder which is applied in the pharmaceutical industry." On each of the seven fair days, there will also be an Info Hour at 5 pm giving an "Insight into Extrusion Technology 4.0". „Our aim is to provide our customers an added value. This definitely includes some of the features dealing with Industry 4.0. We will show that in our lectures with a few examples," says Huber. Those examples involve efficient service via iGlasses, the advantages of an online rheometer used in both R&D and production. In addition, visitors will see how the process can be analyzed by means of UV light.

ZSE 12 HP–PH

The ZSE 12 HP-PH realizes a throughput of 50 to 1,000 g/h and is therefore ideal for research and development. The production of clinical batches is also possible with this machine, depending on the requirements. During the design phase of the ZSE 12 HP-PH special attention was given to easy handling, simple assembly and disassembly, as well as good cleanability. The machine has a mobile design and horizontally split barrels which facilitate a look at the process. The screws are only available in compact layout in order to reach maximum torques. „The heating/cooling system was a very important issue for us," says Albrecht Huber. "We invented an innovative concept which has not been available in the pharmaceutical market until now." It facilitates the control of eight separate heating and cooling zones, and it also has temperature probes. The heating/cooling device can easily be assembled and disassembled due to a simple clamping system. "A further highlight is the powerful drive," explains Albrecht Huber. The high torque of

ZSE 12 HP-PH twin screw extruder – Leistritz' small one (image © Leistritz)

20 Nm ensures stable operation at various process conditions and scale-up to the larger next machine size. After all, the geometrical characteristics of the ZSE 12 HP-PH comply with the larger ZSE HP-PH machines. All this is rounded off by a PLC control with a large touch screen that controls and monitors all necessary extruder functions like torque setting and heating/cooling.

Leistritz Extrusionstechnik GmbH
www.leistritz.com

The hopper serves to feed bulk solids in powdered and granular form into closed materials handling systems, such as pneumatic conveying systems. Products can be fed from sacks, boxes, barrels or similar receptacles. As different branches will have very diverse requirements regarding quality and hygiene, the feeding hoppers are available in a variety of materials and surface finishes.

Feeding hopper with integrated vibrating perforated sheet and automatic evacuation of coarse materials

AZO Group: solutions for automatic handling

After opening the lid to the feeding hopper, the aspiration process of the interior starts, thus preventing dust from escaping while the product is poured in. Depending on the requirements, dust filtration can be implemented either via an attached individual filter with built-in filter cleaning or via a central filter station. To assist discharge of bulk materials with poor flow properties, the feeding hoppers have been fitted with rappers, vibrators, bin activators or aeration jets. The design can be adapted to downstream equipment such as rotary valves or dosing screws by using appropriate flanges for an optimum fit. Installation is carried out according to customer requirements using support brackets, consoles or in a separate frame.

An integral vibrating perforated sheet prevents packaging residue and other unwanted coarse material from entering production. The layout of the vibration motors and vibration elements and their direction of rotation cause the product to flow in a defined direction on the screen. Coarse particles that are larger than the screen mesh size are conveyed to the coarse material outlet and evacuated there. The inclination and intensity of the vibration motors can be varied to adapt them to accommodate each product. The circular screens are available with a polyester/plastic fabric in mesh sizes of 2 to 5 mm or with special metal screens in a range of mesh sizes with a maximum actual screening area and with no risk of wire rupture.

All operations at the new feeding hopper, such as filling, screen inspection, removal of coarse materials and screen replacement, are carried out from one side. It is quick and easy to replace screens using standard tools.

Throughput rate varies depending on the product and mesh size. The following throughput rates can be used for reference purposes: 4500 kg/h wheat flour with

a mesh size of 3mm, 1700 kg/h powdered milk with a mesh size of 5 mm.

Cyclone screening with ultrasonic assistance

AZO cyclone screeners combine operationally safe technology with high performance and easy maintenance and cleaning. The screeners can easily be integrated into existing systems thanks to their compact design.

Safe products thanks to AZO cyclone screening technology: complies with IFS and HACCP; automatic elimination of foreign matter; clean and safe finished product.

End-to-end HACCP concepts in the food and dairy industries specify control screening and separation of metals as mandatory. This means any raw materials and semi-finished products are conveyed to the highly efficient, ultra-sensitive safety devices, such as metal receivers and control screeners, right upon delivery and in the production line immediately prior to filling into sacks, big bags or bulk tankers or silaging as semi-finished products. The networked control system notifies and logs incidents constantly at the critical checkpoints in the HACCP concept.

Easy to clean cyclone screener type DA 650 with extraction device

The patented cyclone screener type DA360 N with applications including control and protective screening, fractionation, separation of foreign matter, breaking up lumps and aerating products, does not required an additional dosing unit. This is why it has a low overall height and can thus be integrated into existing systems without any difficulties. Further advantages are easy opening of the machine without tools and the extraction and swiveling devices for the screen and the dosing screw, enabling easy inspection and cleaning of the screen basket and the screw. Dead space in the machine is kept to a minimum, which further improves simplicity of cleaning. The screen basket can be replaced quite simply with a "quick change" screening system.

The tried-and-tested, inexpensive cyclone screener type E is available both in painted version and in stainless steel

Typical areas of application include:

- control screening before and during processing to ensure that no impurities, e.g. bag fibres, lumps and scraps of paper, get into production.
- control screening together with a metal detector prior to filling and packaging to ensure that no foreign matter remains in the finished product.
- breaking up lumps and aeration of flours in the baking industry.
- breaking up agglomerates that can occur in bagged goods or hygroscopic bulk solids. The lumps are carefully broken up without any loss of product.
- separation of agglomerates following drying processes.
- screening out and returning fine particles, e.g. following granulation in the pharmaceuticals industry.
- fractionation of bulk solids in powder form into assorted fractions according to particle size.

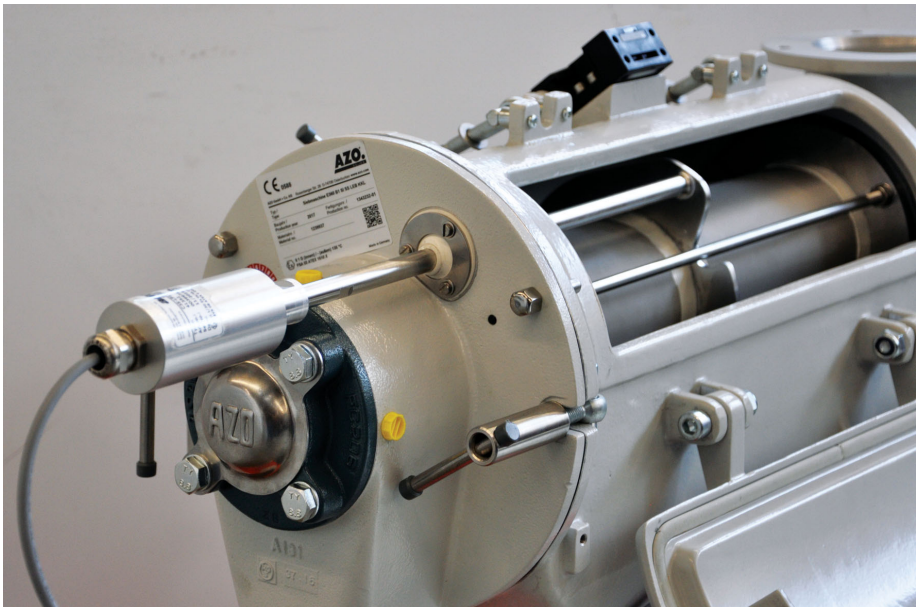
AZO cyclone screening with ultrasonic assistance

Sonic pulsing of the screen mesh can be used or fitted retroactively in the AZO type E, DA, FA and RA cyclone screeners.

Key advantages:

- Increase in screening capacity
- Improvement in selectivity
- Longer times between cleaning
- Straightforward retrofitting in existing machines
- Converter is outside the screener and hence outside the flow of powder.

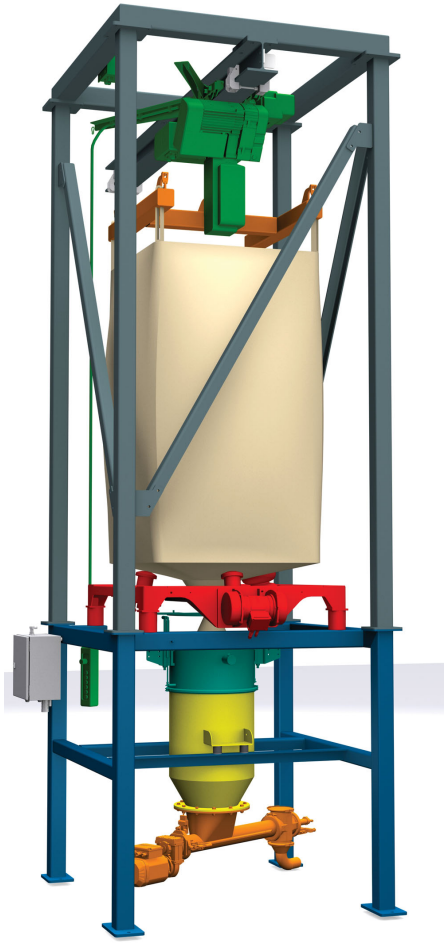
The use of ultrasound causes the stainless steel screen to vibrate at high frequency. These minute vibrations prevent near-size particles from sticking in the mesh of the screen fabric. The screen mesh stays clear for longer, which in turn noticeably improves selectivity. This may result in an increase in screen capacity. The screen basket needs to be removed for cleaning far less often and this significantly increases the useful life of the machine.



Cyclone screener type E360 with ultrasonic pulsing of screen mesh

Modular big bag discharge station – cost-effective and versatile

Flexible bulk materials receptacles such as big bags have become firmly established for handling powders in a variety of branches. They have clear advantages over sacks when it comes to transporting and storing bulk materials. They are environmentally friendly, require less operating staff and storage space and reduce costs for transport and processes.



The modular concept saves money and delivery time

AZO big bag discharge stations make it possible to discharge big bags without generating excess dust and to feed products reliably into the closed production plant. To improve efficiency and reduce costs even further, AZO has developed a modular concept for a big bag discharge station. The required components such as frame, support beams, chain hoist, discharging aids, big bag docking system, buffer bin and discharging unit can be chosen from a "construction set", depending on the requirements. The entire discharge station can be configured to suit needs without outlay for design, which has a very positive effect on the price and delivery time. They are comparable with equipment from series production, however the modular station covers a much broader range of uses than a standard model, which makes it very flexible. Modular technology makes it possible to adapt the stations in use to changing production conditions with minimum outlay.

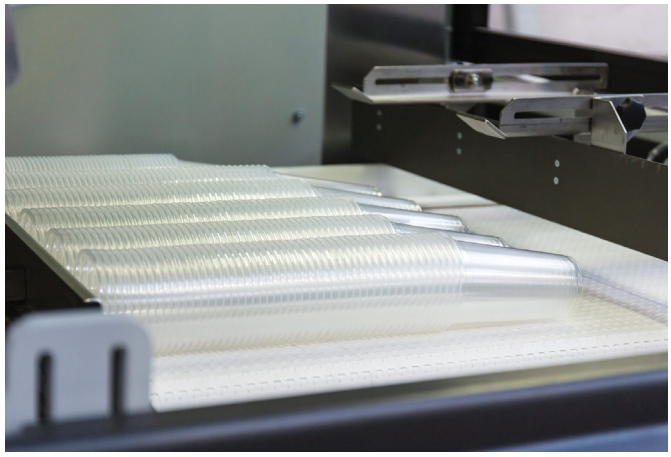
As part of a process for managing complexity, AZO will be optimising further equipment lines and meeting demand from customers for reductions in investment costs and shorter delivery times.

www.azo.com

AMUT COMI: Thermoforming machine AMP 850-GP

At the upcoming Interpack, trade show held in Düsseldorf, AMUT COMI has exhibited an off-line thermoforming machine, model AMP 850-GP, complete of a mould for vending coffee cups.

The technology applied is single station: simultaneously forming and trimming operation, with tilting mould.
AMP series is suitable to thermoform a wide range of plastics, such as PP, HIPS, PP and PET and to produce cups, round and square dairy containers. It is based on a modular concept and can be supplied in different configurations. In-line solutions are also available.
The machine shown in Germany will deliver 200 cc PP vending coffee cups (Ø 70 mm), with a weight of 1.6-2.2 g and a capacity of 200 ml.
The mould has an area of 850 x 560 mm and 55-cavities. Closing force for forming is around 700 kN. The output is 115.500 cups/hour with 35 cycles per minute.



The concept includes high-speed performances, energy saving solutions and in-line grinding of thermoformed scraps to avoid raw material losses.
An automatic system with electrical motors adjusts the rails length and V divarication to avoid sagging.
All AMUT COMI thermoforming machines are driven by EASY, the advanced-feature process management solutions. This is an intuitive software that provides users with optimized solutions once they set the process parameters combining an optimized diagnostics.
AMUT COMI is keeping up with advances in technology, complying with the smart manufacturing and Industry 4.0 trends.

www.amutgroup.com

Leak testing with patented Micro-Flow technology: E-PDQ

Pfeiffer Vacuum:

Leak testing solutions for a variety of applications

Leak testing plays a vital part in quality control in a wide range of applications. Reliable integrity of primary packaging is of crucial importance in the pharmaceutical industry to guarantee sterility and protect drugs from any microbiological substances, oxygen or moisture that may ingress. In the automotive industry, leak testing ensures that various components are operating perfectly, including parts guaranteeing the supply of gasoline. Pfeiffer Vacuum is one of the leading providers of vacuum technology and leak testing solutions. The corporation benefits from more than 50 years of experience in the field of leak detection. At the Interpack and Control fairs, Pfeiffer Vacuum presented test technologies that satisfy numerous leak detection and measuring method requirements: leak detection using air, leak detection with a tracer gas and optical emission spectroscopy.

Leak testing with air

At the trade fairs, Pfeiffer Vacuum presented products made by its new subsidiary Advanced Test Concepts, Inc. (ATC) from Indianapolis, USA. The leak detectors that were exhibited work on the basis of leading leak testing technology using air, and so do not require any special tracer gases.

The devices operate according to patented Micro-Flow technology. This technology consists of an integrated micro sensor that works on accelerated flow. A sensitivity of up to $5 \cdot 10^{-4}$ mbar l/s is achieved with this method. This technology is used in the automotive industry, such as for testing power trains and gearbox housings.

A specific use of the Micro-Flow sensor is the Mass Extraction technique, which works on the principle of rarefied gas flow. Testing takes place in vacuum conditions to attain higher sensitivity. This type of testing is particularly suitable for packaging or enclosed objects, such as pharmaceutical packaging and electronic components, that require to be test-

Pfeiffer Vacuum ASI 35 modular leak detector

ed for watertightness. Sensitivity of up to $5 \cdot 10^{-6}$ mbar l/s can be achieved with this method.
Micro-Flow and Mass Extraction technology offer a number of advantages over other leak testing methods that work with air. The speed of testing and their low susceptibility to ambient changes are notable examples of this. They also stand out due to their higher sensitivity and accuracy, and do not require calibration on a daily basis.

Leak detection with tracer gas

The ASI 35 leak detector delivers excellent performance in integral and localizing testing methods, as well as combinations of the two, using helium or hydrogen as a tracer gas. The device combines high performance, reliability and repeatability with extremely short cycle times. This leak detector is designed for demanding testing situations with minimal background signals and enables short overall cycle times. The robust iridium filaments also ensure long durability. Particular applications for this device are the automotive industry but also the field of electronic and mechanical components, and refrigeration and air conditioning.

Integrity testing of high-sensitivity medication packaging and sealed highly sophisticated parts using Pfeiffer Vacuum AMI

Optical emission spectroscopy

It is important that packaging preserves the stable condition of particularly moisture-sensitive medication such as dry powders for inhalation; at the same time, it must also prevent biological substances from the packaging from ingressing into parenteral drugs. This necessitates the use of high sensitivity integrity testing. The method used by the AMI measures leak tightness using a patented process that does not require a tracer gas. Instead, this method uses the existing gas mixture in the cavities inside the packaging to perform high-sensitivity testing over an extended measuring range. The procedure offers great flexibility: a variety of different packaging types such as blister packs, pouches, vials, plastic bottles, and sealed parts such as battery casings, can be tested in this way.
A big advantage of the AMI is its wide measuring range that also offers higher sensitivity than conventional tests. As a result, the AMI device can perform helium leak testing and rough leak testing with just one device. The procedure delivers deterministic test results with high repeatability, irrespective of the user, and with reliability and accuracy that comply with USP 1207.1.

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