

02/2018

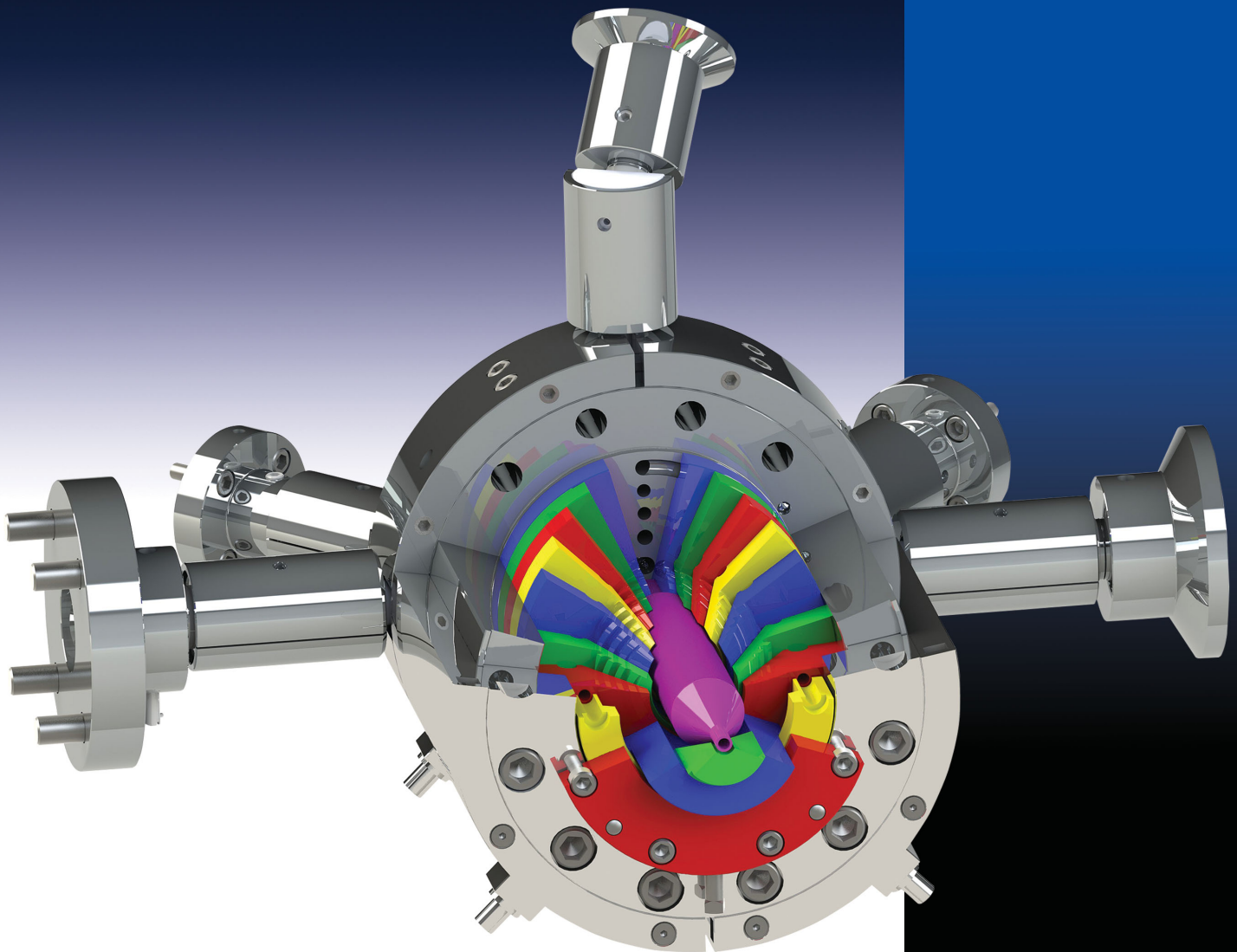
VVA VERLAG
Cologne / Germany



EXTRUSION

INTERNATIONAL

SPECIAL ISSUE



Guill
EXTRUSION TOOLING

The NEW generation of cutters for profiles



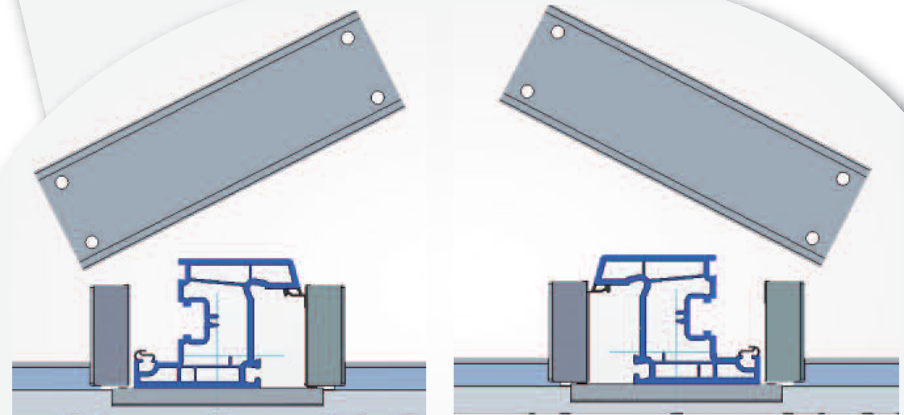
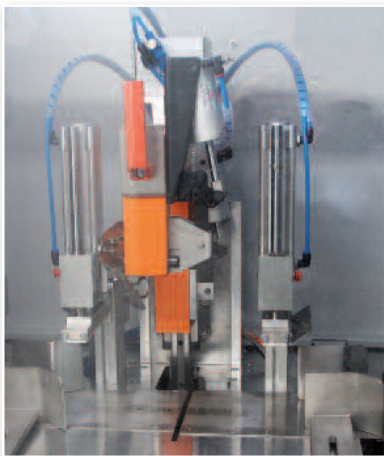
- Mirrored changing of the cutter angle during running production
- For optimised cutting of the respective profile
- Changing within 10 to 15 seconds, between two cuts
- Without loosening screws, by hand, with pneumatic clamping device using two retaining cylinders
- Sensational price thanks to increasing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



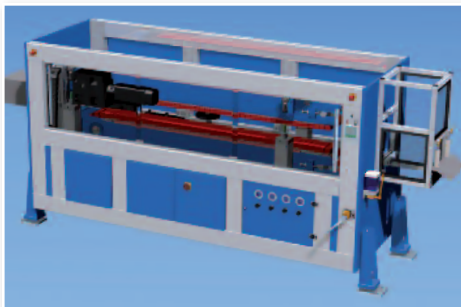
EQUIPMENT FOR EXTRUSION



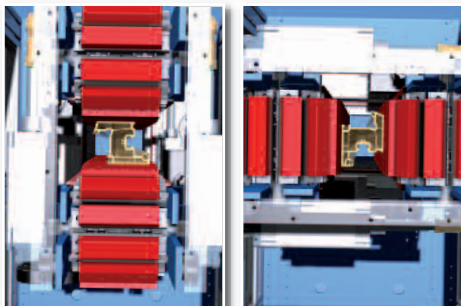
FOR PROFILE EXTRUSION LINES



Calibration table KTS 01,
rear



Caterpillar
Haul off

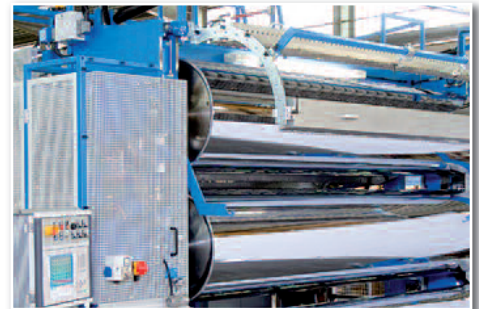


Haul off
rotating 90°



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

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stein@stein-maschinenbau.de ·
www.stein-maschinenbau.de

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Consent Plastic produces his own flakes out of collected PET bottles and uses these flakes to manufacture polyester strapping tapes with a high tensile strength. It was the avoidance of the time and energy intensive drying and crystallisation of the PET flakes which convinced Consent Plastic of the Gneuss MRS extruder.

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Ferrarini & Benelli will showcase at Plast 2018 in Milan innovative solutions for corona and plasma treatments and the EVO digital generators line.

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Water Bottles made of Polycarbonate – The BA 25 by BEKUM is a very marketable PC water bottles machine that combines high performance and efficiency.

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Milliken & Company will feature its extensive portfolio of additive technologies for improving the clarity, performance and processing of polyolefins at NPE 2018.

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Molecor stood out in the water sector for the first time in its history among its many and very experienced competitors just one year after its foundation twelve years ago.

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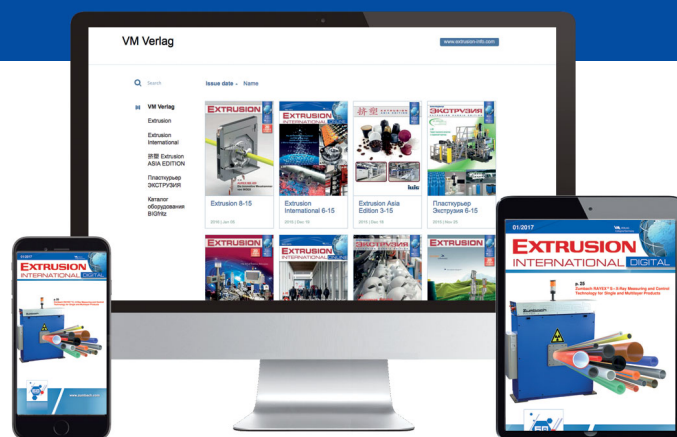


A new series of flexible PVC compounds formulated without ingredients listed under California Proposition 65 provide performance similar to that of standard compounds used in indoor and outdoor building product applications. Teknor Apex Company will introduce the series at NPE2018.

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CHINAPLAS 2018

International Exhibition on Plastics and Rubber Industries

24.-27.04.2018, Shanghai, PR China
www.chinaplasonline.com

NPE 2018

The Plastics Show

7.-11.05.2018, Orlando FL, USA
www.npe.org

PLAST 2018

International exhibition for plastics and rubber industries

29.05 - 01.06, Milano, Italy
www.plastonline.org

3D PRINT Congress & Exhibition

05. 05. - 07. 06. 2018
Lyon / France
www.3dprint-exhibition.com/en

PETnology Americas 2018

26. - 26. 06. 2018
Atlanta, Georgia / USA
www.petnologyamericas.com

Colombia Plast 2018

24. - 28. 09. 2018
Bogotá / Colombia
Acoplasticos
www.colombiaplast.org

Powtech India

11. - 13. 10. 2018
Mumbai / India
NuernbergMesse India Pvt. Ltd.
powtechindia.com

Fakuma 2018

16. - 20. 10. 2018
Friedrichshafen / Germany
P. E. Schall GmbH & Co. KG
www.fakuma-messe.de

Expo Plásticos

07. - 09. 11. 2018
Guadalajara / Mexico
Trade Show Factory
http://expoplasticos.com.mx/2018/en/

Largest BOPP line in Turkey will bring 40% increase



Contract signing for the future largest BOPP film production line in Turkey, from the left: Murat Derin (Sales Manager Brückner Maschinenbau), Johann Kreiling (Head of Sales Middle East, Subcontinent, Thailand, Brückner Maschinenbau), Polibak's Board Member Enver Bakioğlu, General Manager Ali Çalışkan

■ Polibak A.Ş., one of the leading plastic film producers in Turkey, has been producing BOPP and CPP film since 1994. The company has two facilities in İzmir which have a current annual production capacity of 130,000 tons of BOPP film, 25,000 tons of metallized BOPP film, and 3,000 tons of CPP films.

To further increase their production capacity, Polibak has now signed a contract for the future largest BOPP film production line in Turkey. With 10.4m line width and production speeds up to 525m/min, the Brückner line has an output of over 7,400kg 5-layer film per hour. This boosts Polibak's capacities by 40 percent.

Board member Enver Bakioğlu says: "The demand for packaging films and also different label types such as IMLs is constantly growing, in Turkey as well as abroad. With our new line we will be able to optimally serve our local and export markets. Our conscious decision for such a big line is an important element for our future strategy in respect to sustainable growth."

Polibak's previous joint project with Brückner was an 8.7m BOPP line with an output of 6.5 tons per hour. Up to now it is still the largest line of this kind in Turkey.



One of the reasons for Polibak's decision to team up with Brückner again: Perfectly working 8.7m BOPP line in İzmir

► Brückner Maschinenbau GmbH & Co. KG
www.brueckner.com

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hansweber.de

WEBER



NE 5.40

The NE 40 D series:

Maximum performance for polyolefin pipe extrusion

WEBER have been building grooved bush extruders for more than five decades. A unique High Performance range was developed especially for extrusion of HDPE and PP pipes.

Advantages

- // Long service life of grooved bush and processing unit through lower grooved bush pressure
- // Constant output across the entire speed range
- // Lowered melting temperature compared to older machine concepts
- // Output increase by up to 40 per cent
- // Reduction of energy consumption
- // Reduced water cooling of the grooved bush and new drive concept (WEBER GREEN TECHNOLOGY)
- // Torque motor optional



Scan code and
download data sheets
[extrudertechnologie.de/
en/pipe](http://extrudertechnologie.de/en/pipe)

New Records for Italian Manufacturers of Plastics and Rubber Processing Machinery

■ Amaplast (Italian trade association, member of CONFIN-DUSTRIA, bringing together about 170 manufacturers of plastics and rubber processing machinery, equipment and moulds), through its Statistical Studies Center, has completed its year-end balance sheet for 2017, incorporating foreign trade data from ISTAT (Italian Institute of Statistics).

Double digit increase over 2016 in all macroeconomic indicators means new all-time records for the sector. Lacking objective statistical surveys, Amaplast analyses show production sustained by excellent performance in exports, the destination for 70% of the Italian-made products in the sector, as well as by the domestic market, which is showing clear signs of recovery, probably explained by the measures implemented by the National Industry 4.0 Plan to support investment in capital equipment. The expansion of the domestic market is also signalled by quite positive performance in imports.

Regarding macro-areas, the geography of exportation has witnessed overall growth in European destinations, mainly within the EU, where the top two export markets, Germany and France, have grown by more than 20 percentage points since 2016.

However, impressive numbers are also seen much further down in the rankings, specifically in tenth place, where Romania records a whopping +69% with a surge in purchases during the last quarter that once again dislodged Russia from the top ten (by just one spot) after it had clawed its way back last September. Nevertheless, the Russian recovery still continues apace (+67%) with the value of Italian machinery exports nearly reaching 100 million euros.

The trend in sales to Asia has not been particularly brilliant due to a slowdown in exports to the Middle East (especially Saudi Arabia and Iran), and only modest growth (less than +5%) in sales to the Far East, where the two major markets have slipped somewhat: China (-2.5%) and India (-6%).

As regards the two major North American markets:

- Sales to the United States record final growth of 20%, following peaks as high as +30% during the year;
- Supplies to Mexico, on the other hand, have fallen by approximately 17%, which at least took some of the edge off the more than 20 point losses in previous months. No one expected the 2016 boom to last forever.

Italian market of machinery, equipment and moulds for plastics and rubber (million euros)			
	2016	2017	Δ 2017/2016
production	4,230	4,670	10%
exports	2,960	3,310	12%
imports	850	970	14%
domestic market	2,120	2,330	10%
trade balance	+2,110	+2,340	11%



Amaplast president, Alessandro Grassi: "The order portfolio horizon for Italian manufacturers, has been considerably extended: many companies are able to plan production at least to the end of the year, and there are quite a few that are actually having difficulty keeping up with customer requests."

The Trump administration's threat to impose import duties on various product categories is not expected to affect plastics and rubber processing machinery, equipment and moulds. U.S. production in this sector cannot meet demand from local manufacturers and the duties would only be counterproductive.

In South America, the recovery in the flow of supplies to Brazil continues unabated, approaching +40% with respect to 2016 for overall value once again over 50 million euros.

As regards goods categories, worth noting is the particularly positive trend in sales abroad of all the main types of machinery for primary processing and for moulds, which traditionally represent just under one third of Italian exports for the sector.

The entire range of plastics and rubber processing lines, machinery, and auxiliary equipment will be exhibited by hundreds of Italian and foreign companies—naturally along with raw materials, semi-finished products, finished products, and other articles – at PLAST 2018, taking place in Milan from 29 May to 1 June.

And it is precisely the figures regarding foreign participation – at the moment registering a growth exceeding 20% over the previous PLAST – that confirm the renewed interest in the Italian plastics and rubber processing industry, and also operators' interest in the Italian three yearly show, which thus reaffirms its international stature.

"Participants at PLAST 2018," says Alessandro Grassi, Amaplast president, "are particularly confident that they will be able to do significant amounts of business and expand their order books directly at the fair," adding that "several thousand operators have already pre-registered for their visit and our office is working to organize delegations of buyers from some thirty countries."

■ **AMAPLAST**
www.amaplast.org
www.plastonline.org

EUROMAP interfaces for Industry 4.0

■ The plastics industry is one step closer to a unified standard for communication between extrusion lines and MES systems. In a meeting held at the headquarters of Austrian automation specialist B&R, the EUROMAP 84 working group specified a new set of definitions for communication between extrusion lines and MES systems based on the open OPC UA standard.

As manufacturing machinery and processes grow ever more complex, the limitations of existing hardware interfaces become increasingly evident. The EUROMAP 84 working group is therefore developing new interfaces based on OPC UA. Standardized interfaces are a fundamental requirement for effective and efficient networking of machinery and plants. In the age of Industry 4.0, it is not enough to simply define OPC UA as the transmission technology. It is also necessary to develop information models that define



The EUROMAP 84 working group is currently working on a specification for communication between extrusion lines and MES systems based on the open OPC UA standard

which machine and process data is transferred and which functions are provided.

EUROMAP working groups will be presenting numerous new interfaces over the coming year. K 2019 is an important milestone for presenting their first batch of accomplishments.

► B&R Industrie Elektronik GmbH
www.br-automation.com

5th PLA World Congress

■ PLA is a versatile bioplastics raw material from renewable resources. It is being used for films and rigid packaging, for fibres in woven and non-woven applications. Automotive industry and consumer electronics are thoroughly investigating and even already applying PLA, PLA-blends and compounds.

New methods of polymerizing, compounding or blending of PLA have broadened the range of properties and thus the range of possible applications.

That's why bioplastics MAGAZINE is now organizing for the fifth time this congress.

Experts from all involved fields will share their knowledge and contribute to a comprehensive overview of today's opportunities and challenges and discuss the possibilities, limitations and future prospects of PLA for all kind of applications. Like the four congresses before this congress will also offer excellent networking opportunities for all delegates and speakers as well as exhibitors of the table-top exhibition.

The conference is being held on the 29th and 30th of May 2018 in Munich, Germany and will cover subjects such as:

- Latest developments
- Market overview
- Circular Economy
- High temperature behaviour
- High impact PLA
- Applications (packaging, bottles, automotive, electronics etc)
- Welding of PLA
- Foaming of PLA
- Reinforcing with PLA yarns
- Reactive extrusion
- Sustainability
- Recycling

More Information on the conference is available at:

► www.pla-world-congress.com

PETnology Americas 2018

■ 25-26 June 2018, Atlanta, Georgia, USA.

This new joint conference has been created to meet the needs of the PET industry for open discussion on innovation, technology and business opportunities. With the combined knowledge, industry experience and contacts, The Packaging Conference LLC and PETnology/tecPET GmbH are in the best position to collaborate on this new, premier PET event in the US. The one-and-a-half-day event will focus on technical, market and environmental presentations by top-level executives, insightful panel discussions along with a range of networking opportunities and exhibitions during the entire event.

The Packaging Conference: This annual event has been guided by its defining mission: "where business opportunities and technology meet". The Packaging Conference is material neutral and focuses on presentations, exhibitions, and attendees representing all forms of packaging, equipment, technology, processes and packaging materials.



► PETnology/tecPET GmbH
www.petnologyamericas.com

Distribution Agreement signed

■ VELOX GmbH, one of Europe’s leading solution providers of raw material specialities for the plastics, composites, additives and paint & coatings industries, announced a new distribution partnership with Life Material Technologies Limited (Thailand), a well-known manufacturer of antimicrobial additives and treatments for the plastics, coatings and textile industries. VELOX will be exclusive distributor in the DACH, Benelux and Nordics regions.

Stefan Rokitta, Product Manager at VELOX, comments: “With this new partnership, VELOX is extending its existing antimicrobial portfolio and is able to address new target markets for compounding, extrusion and injection moulding applications. We are looking forward to a very successful cooperation with Life Material Technologies.”

VELOX will be offering organic and inorganic antimicrobial additives and tailor-made masterbatches for different polymer processing requirements. Key markets for LIFE™ antimicrobial product protection are home appliance goods, bathware products and textiles where effective elimination or killing of bacteria, fungi, algae and other microorganisms is of great importance. “LIFE has price-competitive solutions with regard to



LIFE™ antimicrobials effectively eliminate bacteria and odour and are available as powder, liquid and masterbatch (Photo: © Life Material Technologies Limited)

the currently increasing demand for antimicrobial technologies delivering not only reliable inhibition of bacteria and odour but also colour as well as temperature stability”, highlights Rokitta. LIFE’s solutions comply with the European Union’s Biocidal Products Regulation (EU BPR 528/ 2012). Furthermore, free antimicrobial testing in accordance with ISO 22196 or JIS Z 2801 against bacteria and ISO 846 or ASTM G21 against fungi as well as testing in accordance with other special organisms are available upon request.

■ VELOX GmbH
www.velox.com

Specialized in pipe extrusion lines

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It's an idea of performance & energy efficiency.

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Energy efficiency criteria is a crucial issue across manufacturing industries. Pipe extrusion is an energy intensive process and optimisation of process energy usage while maintaining melt stability is necessary in order to produce good quality product at low unit cost. At Tecnomatic, since 1977, the idea behind any machine is to design according to performance and productivity principles. The goal to offer to the market the most efficient, economic and competitive solution for pipe production.

Tecnomatic Srl | Bergamo, Italy
Tel. +39 035 310375 | www.tecnomaticsrl.net

agenziap.it

Siemens SCADA/IPC Days 2018

■ From February 19-22, 2018, at the Riverwalk Westin in San Antonio, Texas, approximately 130 people gathered for four days of product presentations, emerging technology discussions and a market trend outlook at the Siemens Factory Automation SCADA/IPC Days 2018. Members of the Siemens management, sales and support team joined their Solution Partners and a diverse assortment of end user companies from various market segments to review new product offerings in the IPC segment of the Siemens portfolio, plus a number of new platforms in the SCADA segment. The event was hosted by the product marketing teams for Factory Automation, based in Norcross, Georgia. Following a welcome session on the first evening, a series of presentations were made on day two to the entire group by Siemens management and technical thought leaders, covering the digital factory strategy and the company's forward-thinking move to Digitalization, the current theme for the Siemens marketing message across its entire industrial platform. Key speakers were Kevin Lewis, Russell Barnes, Thorsten Julich, Bernd Raithel, Michael Steigberger, Bernd Staufer and Tom Elswick. The primary message takeaway for the group was that Digitalization will hallmark the factory of the future and SCADA will be the "digital doorway for data" in that rapid evolutionary process, as it impacts all industries, both discrete and process. There were also presentations on cloud computing and edge computing, the constituent ele-



Presenters at the event (starting from left): Russell Barnes, Johann Strobl, Bernd Staufer, Kevin Lewis, Michael Steigberger, Thorsten Julich, Bernd Raithel

ments of the Digitalization trend, comprising both hardware and software elements.

In addition to the technical presentations and market overviews, an interesting end user application was detailed by end user Derek Thoma of Hop Valley Brewing, a Miller/Coors company.

Day three began with a review of new IPC products and emerging technologies on the horizon from Siemens, followed by more intense product and software breakout workshops, tagged the Wisdom Series by the event coordinators. Finally, day four offered direct consultation from the Siemens product specialists gathered at the event. In addition, those interested in becoming a WinCC Specialist were offered the opportunity to take their certification test during the event.

► Siemens Digital Factory (DF)
usa.siemens.com/automation

Innovative Cast Line for the Production of CPP Film

■ At the beginning of this year AMUT GROUP presented one of the first cast film lines from ACP series for the production of CPP film. This line, 2100 mm width, has been specifically designed for the production of film with smooth surface for general purposes and for the production of film with embossed surface for stationery applications, such as folders for documents.



The chill roll group consists of main and secondary chill roll. In order to be able to produce both type of the CPP film surfaces, the line is equipped with two different chill rolls. The roll fast change system enables the exchange of the main chill roll from one to another type in extremely short time.

This line is considered a flagship project in this field also for having a 4-layer multi manifold die which allows an extremely accurate distribution of the layers by using 4 extruders.

Depression air blade Mod. DV™ is installed behind the extrusion die to change the position of the die towards chill roll as well as the film chill roll touching angle and to eliminate completely orange-peel defect. DV™ air blade unit has very small surface for air sucking, so smaller sucking surface on the same vacuum force increases the vacuum level, thus drastically reducing the quantity of waxes condensation on chill roll, for better refrigeration, haze and gloss of the film and cleaning action on the chill-roll.

The independent rotary arm type winder is equipped with an innovative in-line cutting system for the production of finished rolls without any reduction of maximum winding diameter even



Extruder 30mm – 28D

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www.pmh-extruder.com

pmh.gmbh@t-online.de

Plastic-Maschinen-Handelsges. mbH

Broichhausener Str. 4 · D-53773 Hennef
Tel. +49-2244-83041 · +49-(0)173 150 4512

when running multiple rolls in winding and with absolutely minimum tail.

Another innovative feature is the compact design: 2100-mm wide line is installed in no more than 120 m² of space.

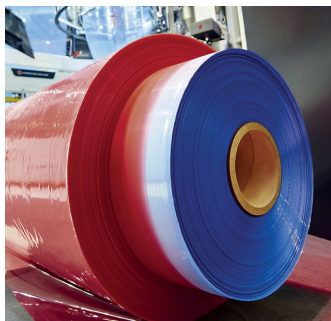
As a result of the never-ending efforts of R&D Department, AMUT embraces more and more a strategy oriented towards

an enhancement of internal study and designing of the main units in order to really supply 100% dedicated solutions on the basis of final applications.

AMUT GROUP
www.amutgroup.com

Retrofit Blown Film Lines with TURBOCLEAN

■ The W & H automation module for faster order changes TURBOCLEAN is now also available as a retrofit solution for existing blown film lines. So far, the module was only available as an integrated part of a new blown film line VAREX II. In film extrusion smaller order sizes and regularly job changes on a machine are common today. Due to the frequent changeover times, however, a lot of unusable film is produced and the productivity of the system decreases. Windmüller & Hölscher has therefore developed the automation module TURBOCLEAN, which can increase the productivity of an extrusion machine due to short flushing times and fast material changes. "Instead of up to 40 minutes, the order change time on a blown film machine with TURBOCLEAN can be as little as 12 minutes," explains Hendrik Steen, who is responsible for the retrofit business at W & H.



Live demonstration of TURBOCLEAN: product change in twelve minutes at K 2016



The W & H service team provides intensive support for customers, from advice to implementation of the retrofit solution

The automation module has been on the market since 2015. So far, however, only buyers of a new VAREX II system have benefited from the module's time and cost savings. From now on, existing W & H systems can also be retrofitted with TURBOCLEAN. "The conversion to machines from year of construction 2010 is particularly straightforward. Thanks to a compatible, 'plug & play solution', the modification of the machine only takes a maximum of 1 to 2 days per extruder," says Steen.

With the automation module, the extrusion system completes the material change nearly completely automatically. For the machine operator, this means that he no longer has to manually change the machine step by step for each job. Instead, the work steps are automated and parallel.

Windmüller & Hölscher
www.wuh-group.com

High-Efficiency Screen Changer to boost Productivity and Cut Costs in Extruding PET Strapping Tape

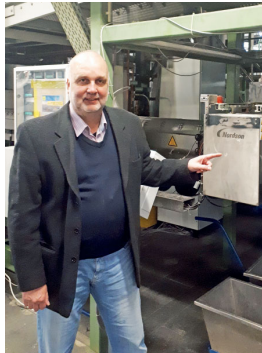
■ An advanced melt filtration system from Nordson Corporation has enabled Cyklop, an international supplier of industrial packaging systems for load securement, to increase productivity, reduce downtime, and cut material waste in the production of strapping tape from PET bottle flake. At its facility in Cologne, Germany, Cyklop GmbH replaced an older-model hydraulically powered backflush screen changer with the recently introduced BKG® HiCon™ V-Type 3G system. Cyklop reports that the new screen changer reduces operating costs because it needs 30% fewer backflushes and requires screen changes 40% less frequently. Employed in a production line at throughput rates of 450 to 550 kg/hr, the HiCon V-Type 3G system maintains flow and melt pressure at constant levels, ensuring uniform product quality, according to Bernd Causemann, plant manager.

In the BKG HiCon V-Type 3G screen changer, melt flow from the extruder is split at the entry side and guided to four screen cavities on two

screen-bearing pistons with screens in each cavity. Each pair of cavities is positioned so that they can filter their respective melt streams, until the piston removes one of the cavities from the process to remove contaminant buildup by means of backflushing. In normal operation, polymer is flowing through all four cavities. While one of the screens in the cavities is changed or flushed, the other three – or 75% – remain in the process so that throughput remains uninterrupted.

The backflushing cycle is automated. In addition to the two screen-bearing pistons, there is a single hydraulically actuated displacement piston that operates during backflushing. When the differential pressure across the screen changer increases to a pre-set level because of contaminant buildup, the backflush sequence for all cavities will be started automatically. For each cavity, the displacement piston retracts, creating a reservoir of filtered molten polymer. This material is then hydraulically compressed and discharged in reverse direction, back through the screen, carrying away contaminant for removal from the system. The sequence is performed for each cavity one after the other. “In comparison with the earlier V-Type system, the height of the new HiCon V-Type 3G screen changer has been reduced by 30%, permitting a lower extrusion height,” said Christian Schroeder, global product manager for BKG melt delivery products. “A single displacement piston is used for backflushing instead of having one for each screen cavity; and hydraulic piping has been optimized.”

Cyklop Plant Manager Bernd Causemann: “The BKG HiCon V-Type 3G screen changer requires less maintenance and operator supervision than either the older Nordson system or a backflush system from a competing supplier. The higher efficiency of the V-Type 3G screen changer means fewer backflushes and less material waste. The system is particularly good in dealing with contamination surges, since the filtration area is regenerated very effectively in a short amount of time.”



► Nordson Polymer Processing Systems
www.nordsonpolymerprocessing.com
 Cyklop International
www.cyklop.de

Markets in Spain and Portugal opened up

■ Masterflex is actively expanding its tubing and connector sales operations in Europe and will also begin the distribution of its product- and system-specific solutions made of special plastics and high quality textiles in Spain and Portugal.

“We consider that there is still considerable potential that we can exploit in Europe and by establishing our own agency in Spain we believe we are firmly on the road to enhancing our business prospects in that country,” explains Dr. Andreas Bastin, Chairman of the Masterflex Group. The group of companies based in Gelsenkirchen, Germany, is thus continuing to extend its international activities.

“Spain and Portugal are interesting markets exhibiting a good rate of economic growth in many production sectors that are of relevance to us,” adds Sergio Alvarez, the Masterflex Group Sales Manager Spain and Portugal. The group’s experience in product distribution will ensure that the products offered by Masterflex and

Novoplast Schlauchtechnik will find suitable niches in these strategically important markets.

According to Alvarez, there is considerable demand for these products in the aviation construction, glass and wind power sectors, not to mention the plastics, pharmaceutical and the bulk solids handling industries. Important potential applications would include use in cooling and air conditioning systems and in suction transport. This development of business undertakings on the Iberian Peninsula comes as a result of the expansion of the concern headquarters in Gelsenkirchen. Moreover, the group launched a new website in Spanish at the start of this year that will provide digital support to the sales activities.

► Masterflex Group
www.masterflex.de

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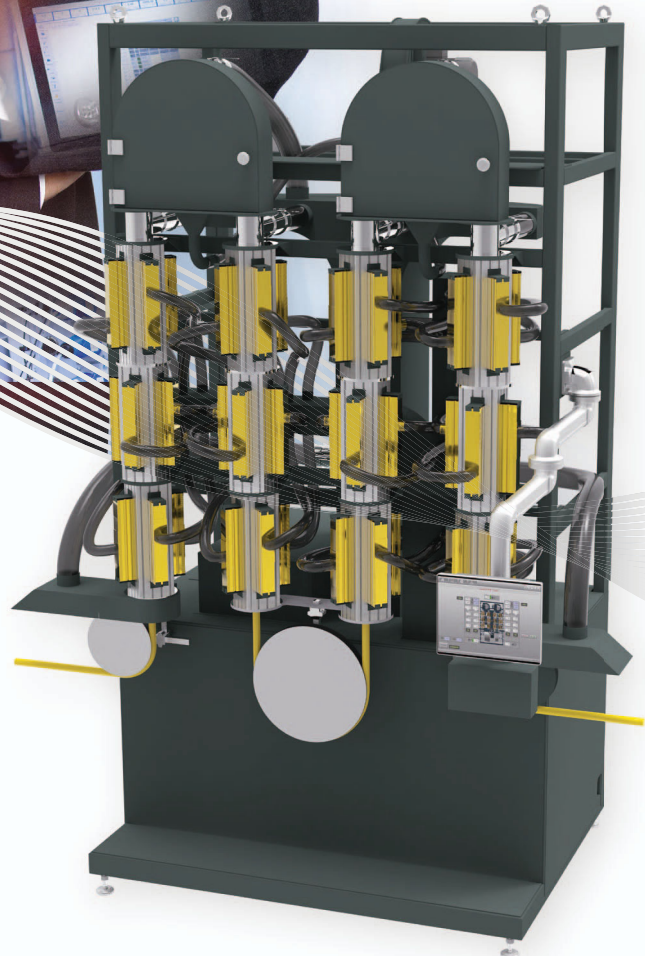
Martin Deters
Managing Director iBA GmbH
and developer of PEXLINK



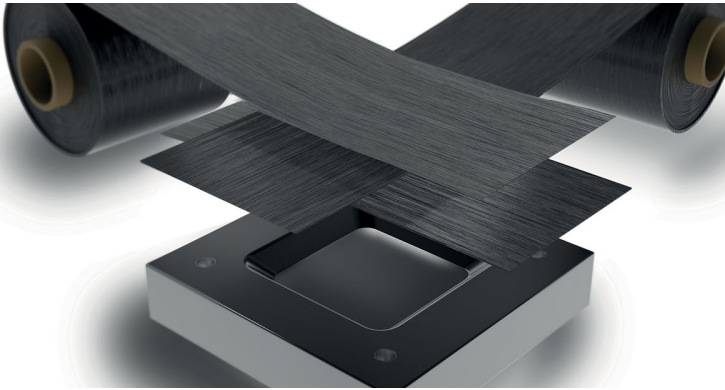
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PEXLINK is the answer to what the market was demanding and where many others previously failed: The system controls the one-stage PEXa pipe extrusion process which is run fully automated and precisely whilst taking into account all relevant variable parameters.

www.inoex-innovator.com



Commercial Production of Composites started



■ Covestro begins commercial production of a novel light-weight, high-strength and aesthetically powerful material. The continuous fibre-reinforced thermoplastic composite material (abbreviated to CFRTP) can be produced efficiently and is attracting interest from many customers and industries.

To leverage this market potential, Covestro has significantly expanded its production capacity and developed the Franco-German town of Markt Bibart into a location for high-tech materials. It is located in the vicinity of renowned universities that conduct intensive research into the further development of composite materials. Covestro now employs 50 people in Markt Bibart, and further expansion is planned. Overall, the company has invested a mid-double-digit million euro sum. The demand for strong and light materials is growing worldwide. Composite materials (composites) made of fiber-reinforced thermoplastics play an important role. They contrib-

ute to climate protection and resource conservation, by that reducing energy consumption and offering powerful sustainability opportunities.

The composite material of the future is based on continuous carbon or glass fibers impregnated with polycarbonate, thermoplastic polyurethane (TPU) or other thermoplastic resins. From this, Covestro produces uni-directional reinforced tapes and sheets for further processing by customers. These products can be tuned to infinite combinations, giving designers completely new creative opportunities. Another special feature of CFRTPs is that they feel and sound like metal, but offer the design freedom of plastics.

CFRTPs are attracting interest in such diverse segments as the electrical and electronics industry, the automotive business, household appliance manufacturers and furniture producers, medical technology, sports goods manufacturers, shoe producers and the luggage industry. The tapes and sheets products are delivered to customers all over the world for further processing.

As the demand for new materials increases, value chains are quickly adopting the skills and know-how required to work with composite materials. The Covestro composite team works across this broad range of industries and helps to transfer knowledge from one industry to another, for enabling faster growth in this exciting sector. Dr. Michael Schmidt and David Hartmann are leading the CFRTP business of Covestro as Co-CEOs.

► Covestro AG
www.covestro.com

Subsidiary in China established

■ Following the successful market entry of Evosys Laser GmbH in Germany, Europe and the USA, Evosys Laser GmbH was able to establish its own branch office in Asia. Managing Director Frank Brunnecker: "It was planned from the outset to provide our customers in China – mostly from the automotive and consumer electronics sectors – with on-site support. Due to the positive business development, this step has now been implemented together with our partner DCT Co. Ltd."

Under the leadership of GM Andreas Kraus and COO Frank Sun, the subsidiary was officially launched on January 1, 2018 as Evosys Suzhou Laser System Co. The team of five employees is mainly responsible for sales and service, while a laser plastic welding machine of next generation is available for sampling in the own on-site technical centre.



Evosys Erlangen, Evosys Suzhou and DCT celebrate the opening of the new premises of Evosys Suzhou Laser System Co. Ltd. together with customers and business partners

The new premises were opened on March, 13 as part of a small celebration ceremony.

► Evosys Laser GmbH
 Evosys Suzhou Laser System Co. Ltd.
www.evosys-laser.com

Recycling Lines put into Operation

■ Following the installation of the first of two recycling lines type recoSTAR dynamic 165 C-VAC in Houston, Texas, Avangard Innovative LP is now ready to start processing of post-consumer film at its new recycling plant. Depending on filtration fineness, the line achieves an output of up to 3,300 lb/hr. To ensure that the regranulate not only performs but smells like virgin material, both lines are equipped with Starlinger's odor reduction technology.

Avangard's material comes from retail packaging film that contains a high amount of paper labels. The initial goal of the test run at Starlinger's technology center was to remove as much paper contamination as possible with minimal melt loss. Processing went smoothly, but when the client inspected the material in the US, it was discovered that the pellets had taken on an unpleasant odor. An investigation showed that the smell had been caused by the exposure of paper residues to heat during the extrusion process. Consequently, Avangard asked an additional requirement of Starlinger's technology: production of odorless recyclate.

LDPE film was obviously not a challenge, but the high paper content called for an extension of the line with an extra process step: odor reduction. Through optimal preparation of the material in the SMART feeder and excellent degassing in the C-VAC module, this process already extracts a large part of the smell during extrusion, and the Smell Extraction Unit (SEU) further enhances the quality of the final pellet.

Avangard Innovative has a long history in trading LDPE film that it obtains from a variety of sources, and expanding into processing this film seemed like the next logical step. In March 2017, the company announced the opening of a brand-new LDPE film recycling plant for post-consumer waste at its existing facility in Houston. A major reason for venturing into film recycling is availability of input material – an evaluation of material streams showed PE film to be available in large quantities (up to 100 million pounds of film per year). Another reason is the advancement of recycling technology over the past years; due to cutting-edge extrusion and filtration systems, washing is no longer an absolute necessity for the recycling of post-consumer film. With a second Starlinger line being installed early this year, Avangard is all set to supply the US market with odorless, high-quality regranulate.

■ Starlinger & Co. Gesellschaft m.b.H.
www.starlinger.com

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NPE, West Hall Level 2, Hall A, Booth W403

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Forum, June 6–7, 2018, Munich

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“THE BULLET II” Extrusion Head

New extrusion head from market leader features NO hardware, for easy cleaning, plus quick-change tooling, as tips remove from the back, die from the front PLUS new CAM LOCK® deflector retaining system.

Guill Tool introduced The Bullet® in 2015, a new extrusion head with fixed center design, multi-port spiral flow design and gum space adjustment, plus the added feature of no fastening hardware, so cleaning and restart are easier and faster than any conventional head on the market currently, according to company sources. The company announces the next generation of this unique and patented tool, The Bullet II.

The Bullet II allows quick tooling changes, as the tips remove from the back and the die removes from the front of the unit. The absence of fastening hardware eliminates leaking, as does the taper body and deflector design pioneered by Guill. Additionally, the new patent pending CAM

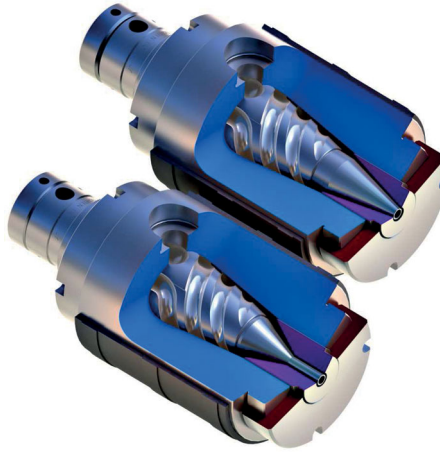


Photo of The Bullet II, showing the absence of hardware, i.e. nuts and bolts, so disassembly, cleaning and restart are made easier

LOCK® deflector retaining system offers these additional benefits to extruders and machine builders:

- It only takes ½ turn of the Cam Lock® to remove and install the Deflector and Tip
- No fastening hardware required
- Fast tool changes, threaded retaining ring for the die and threaded tip retainer

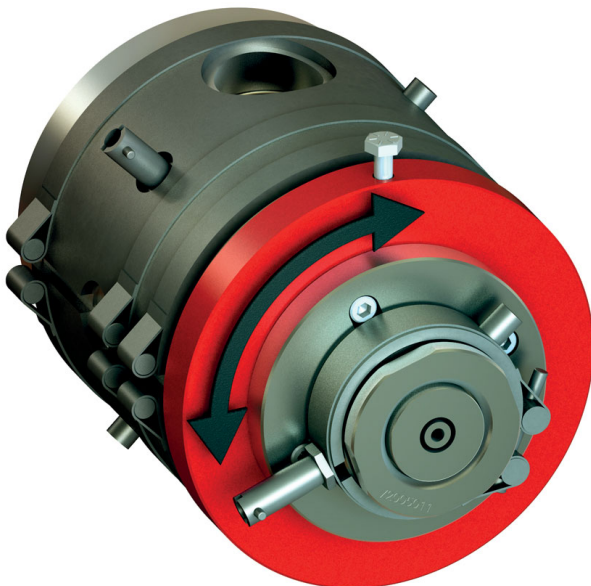


- Dies are removed from the front and tips from the rear
- Tooling retainers also provide gum space adjustment
- Hassle free air / vacuum connections
- Simplified cleaning
- Reduces downtime and lowers operating costs

High- and low-volume applications are suitable for this head and are accommodated with the simple, easy changing of just one component. A family of crosshead designs is available and users can specify the “caliber”, that is, the max. die ID.

A vacuum chamber and kit for assembly and disassembly are included with the unit. Optional keyed tooling capability offers machine designers and end users quick orientation, so the overall unit design enables faster disassembly, proper cleaning and restart, allowing the line to become more profitable, more quickly.

For a video demonstrating this new design, please visit: www.youtube.com/watch?v=MpEdmCRtaqg



Rendering

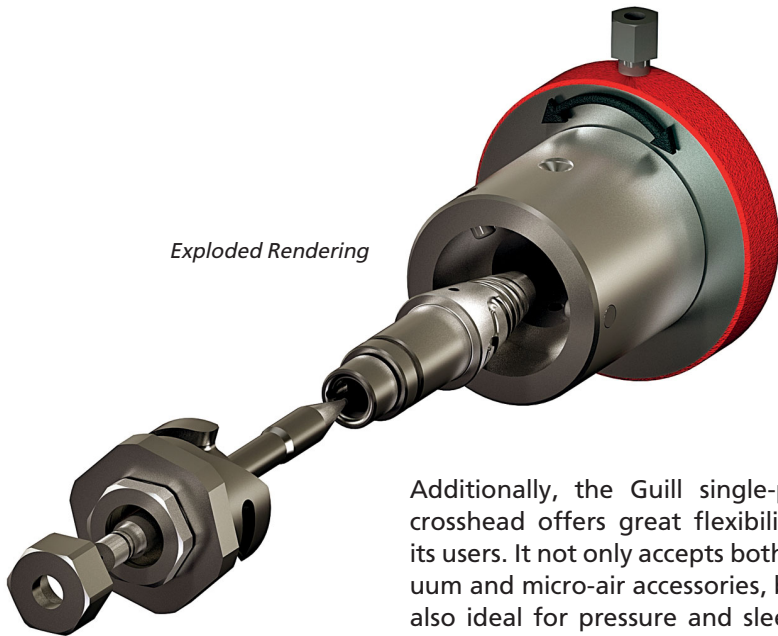
Guill at NPE2018:

Single-Point Concentricity Extrusion Tooling

New crosshead from market leader features patented single-point concentricity adjustment.

Guill Tool & Engineering introduces a new single-point concentricity extrusion crosshead that uses micro-fine adjustment screws for precise concentricity adjustment. The precision of concentricity reaches 0.008" or finer per revolution. This single point concentricity adjustment is a unique Guill innovation for the extrusion of thin-walled jacketing and precision ID/OD tubing. One adjustment bolt controls 360° of adjustment. Features of the single-point crosshead include a patented cam-lock

deflector for quick changeovers, with a residence time of one minute at .5 lb/hr material flow, optimized usage with extruders measuring ½" and ¾", and a max die ID of .250."



Exploded Rendering

Additionally, the Guill single-point crosshead offers great flexibility to its users. It not only accepts both vacuum and micro-air accessories, but is also ideal for pressure and sleeving applications. Fluoropolymer designs are available upon request.

Guill Tool & Extrusion Co., Inc.
 10 Pike Street West Warwick, RI 02893 USA
www.guill.com

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Whether it is inhouse, post-consumer or bottle recycling: you can only close loops in a precise and profitable way if machines are perfectly tuned for the respective application. Count on the number 1 technology from EREMA when doing so: over 5000 of our machines and systems produce around 14 million tonnes of high-quality pellets like this every year – in a highly efficient and energy-saving way. That's Careformance!

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Innovative Production of PET Strapping Tapes made of Bottle Flakes

CONSENT Plastic, a company of the Arabian CONSENT GROUP which was founded in 1975, is the leading producer of strapping tapes and PET flakes in the Middle East.

Consent Plastic produces his own flakes out of collected PET bottles and uses these flakes to manufacture polyester strapping tapes with a high tensile strength. These tapes are sold also to countries beyond the Middle East. A wide range of high-quality polyester tapes are offered under the trademark PETBAND®



PET tapes produced by Consent

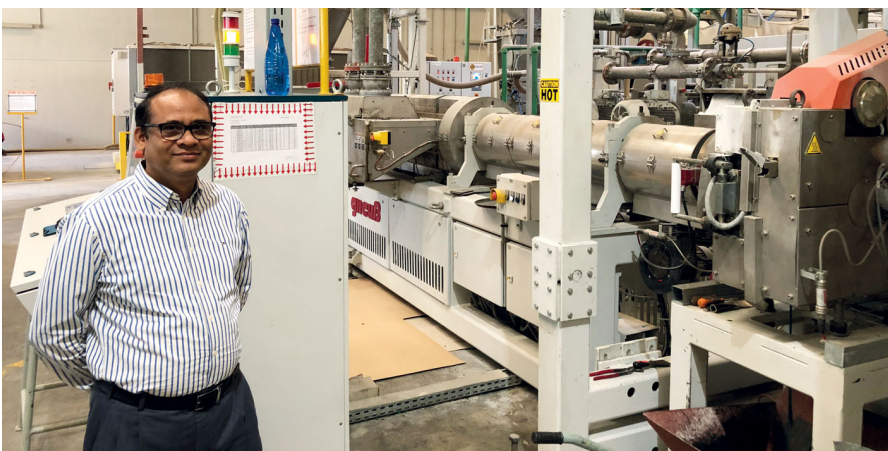
In the course of further capacity expansion, the Arabian company purchased a new production line for the

manufacture of PET strapping tapes made of 100 % non-dried post-consumer bottle flakes. Further, the line

can process shredded preforms and shredded straps or a mixture out of these materials.

It was the avoidance of the time and energy intensive drying and crystallisation of the PET flakes which convinced Consent Plastic of the Gneuss MRS extruder. Compared to Consent's previous production line including a single-screw extruder, crystallisation and drying processing steps, the footprint of the line could be reduced by 12 % and the energy requirement by 20 to 25 %. Further, the strapping tape produced with the MRS extrusion line is of much better quality in terms of tensile strength, stretch and splitting. This is a result of the intensive mixing effect of the MRS in the degassing section and the

Maheshwar Akkala standing in front of the new line



high degassing efficiency. Further, there is no need for work-intensive maintenance of the drying and/or crystallisation system, which was necessary with Consent's previous line, so that the resulting machine downtimes are avoided, too. Last but not least, the line reacts to the greatest possible extent automatically to quality fluctuations in the input material without causing production interruptions.

„Here in Dubai, we operate the world's first and only line for the production of PET tapes made of bottle flakes without a complicated pre-drying or crystallisation process“, explains Maheshwar Akkala, the Division Manager-Plastic Products at Consent. „This has already got around in this sector. Some of our competitors have already asked us about this technology.“

The throughput rate of the new Consent line amounts to max. 700 kg/h, the vacuum of the installed water ring pump is around 25 mbar. The pressure-constant and process-constant Rotary Filtration System uses filtration finenesses of down to 56 µm, to make sure that all foreign particles are removed which could cause breaking points later on during stretching.

The die group consists of 4 pumps, which can produce a total of 8 straps

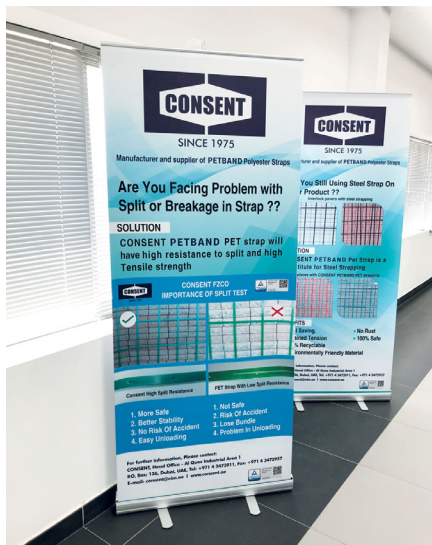
with a dimension of 9.5 x 0.6 up to 32 x 1 mm. The stretching ratio is around 1 to 8, the haul-off speed can be up to 160 m/min.

An embossing unit or a wax adding unit, as required, is used for manual or automatic packing. Further, an accumulator compensates the reduced haul-off speed when rolls are changed. Maheshwar Akkala is very satisfied: „We have been in a position to im-

prove our product qualities even more and reduce our costs with this new strapping tape line based on the Gneuss MRS Extrusion System.“

Gneuß Kunststofftechnik GmbH
 Mönichhusen 42,
 32549 Bad Oeynhausen, Germany
www.gneuss.com

Showroom at Consent





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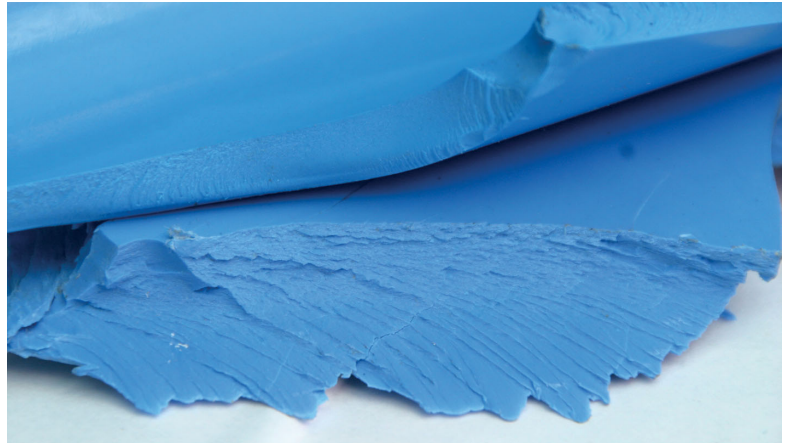


Hall 15, Booth D 82
29 May – 1 June 2018

Find more information about us online on www.reifenhauser.com
 You have questions?
info@reifenhauser.com

Twelve is the number of years that have passed since Molecor was founded. Molecor stood out in the water sector for the first time in its history among its many and very experienced competitors just one year after its foundation. The development of its exclusive Genuine Air System used for manufacturing PVC-O pipes, was the reason for this success

PVC-O laminar structure



TOM[®] Pipes and ecoFITTOM[®] – A Perfect Solution for the Conveyance of Water Under Pressure

The stir that this system caused in the industry was due to the fact that it showed an exclusive, novel and innovative way of applying the Molecular Orientation process to pipeline solutions. The use of air instead of boiling water is the main aspect that distinguishes and makes this technology more secure and cost-efficient in comparison to the rest of the existing manufacturing processes.

The incredible results obtained after applying the Molecors' Molecular Orientation process are obvious and have been demonstrated by the TOM[®] pipes and the ecoFITTOM[®] excellent mechanical properties. Thanks to their improved characteristics, both products present important benefits and advantages and have become the most efficient, safe and eco-friendly solutions currently existing on the market.

The increase in their hydraulic capacity, their excellent response to water hammer, complete resistance to corrosion, which guarantees that the quality of the conveyed water remains always unaltered, and therefore, that it is completely suitable for human consumption, their lower weight, and consequently easier

TOM[®] PVC-O pipes



installation in comparison to the solutions made of other materials, are some of the TOM[®] pipes and ecoFITTOM[®] advantages. Apart from this, their incredible resistance to impact and optimal behavior at low temperatures are two of the characteristics by which they are highly recognized, being the second one specially taken into account in cold countries.

PVC-O Class 500, material of which Molecors' products are made, remains completely unaltered at low temperatures in fact, the PVC-O Class 500 not only maintains its mechanical properties in optimal conditions at low temperatures, but it also experiences an improvement of those as the temperature becomes lower.

PVC-O strength increases as the service temperature is reduced. Hence, the ability of this material to withstand internal pressure is greater at temperatures below 20°C. Regarding expansion and contraction of PVC-O piping systems we could say that the potential consequences of larger expansion/contraction coefficients are offset by their lower stiffness as well as by their capacity to gradually reduce stress reactions through the phenomenon of stress-relaxation. This results in considerably lower ultimate reaction loads than those that result in metal piping for an equal temperature change.

The higher resistance to impact at low temperatures of TOM[®] pipes in comparison to that of the other solutions offered on the market has also been proved by tests such as the one carried out in Moscu by the Russian institute Mezhotraslevoy Institut Pere-rabotki Plastmass-NPO "Plastik". After submitting a DN200 mm TOM[®] pipe to an impact of 2 kg weight, thrown from a height of 2 m at a temperature of -40°C, it was observed that the pipe did not present absolutely any damage, complying satisfactorily with the requirements of the ISO 16422 Standard.

This result shows the effectiveness of the Molecors' exclusive Molecular Orientation process and justifies the fact that the TOM[®] pipes are currently presented as the best solution to be

used for the conveyance of water under pressure, especially in cold areas where the percentage of leakages in the unions reaches up to 70. The poor quality and obsolescence of the water networks together with the lack of investment in their rehabilitation and the extreme climate conditions are the main reasons that explain the high rate of total water loss in these areas. In response to these problems the Molecor technology offers, in addition to its exclusive Molecular Orientation process, both, the Integrated Socket System, which produces the socket at the same time than the rest of the pipe guaranteeing the same properties in all the parts of the pipe, and the Integrated Seal System (+ISS), which enables to insert a rubber gasket inside the pipe in a completely automatic way, ensuring a complete watertight in the unions and guaranteeing a much more efficient management of the water resources.

The high degree of adaptability of this technology has enabled the company to develop and offer to the market a wide range of products (TOM® PVC-O pipes from DN90 mm up to DN800 mm and PVC-O fittings: bends, couplers, sliding couplers and reducers in different diameters) remaining intact in each product the numerous benefits and advantages that it brings.

The development of the 3163 and 3180 M-OR-P Systems and of the ecoFITTOM® technology, have been fundamental for achieving this large range of products. Among them we must highlight the DN800 mm TOM® pipes, the biggest one never

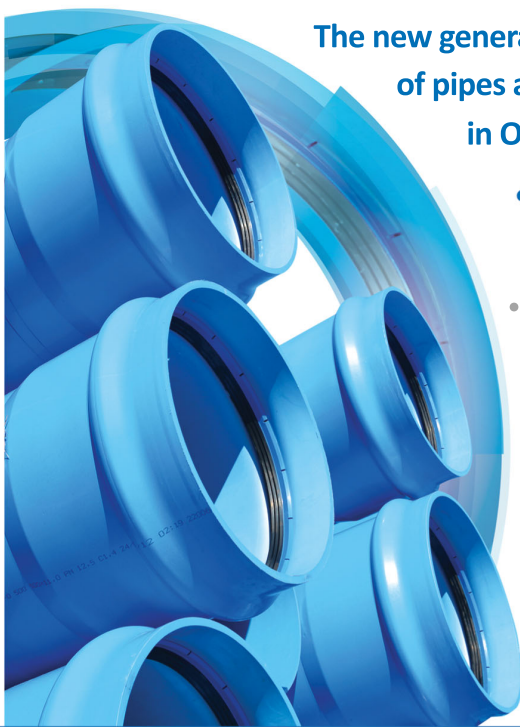


ecoFITTOM®
PVC-O fittings

ever manufactured before in PVC-O, and ecoFITTOM®, the first fittings in the world manufactured in this material.

Aware of the several problems and difficulties existing in the different regions of the world (obsolescence and precariousness of the water networks, lack of investment, adverse atmospheric phenomenon, extreme temperatures to which some areas are exposed, etc.), and conscious of the growing and more and more exigent demand of the water sector, Molecor bets on continuous improvement through an uninterrupted process of Research and Development with the aim of offering solutions increasingly adapted to the particularities of each market.

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www.molecor.com



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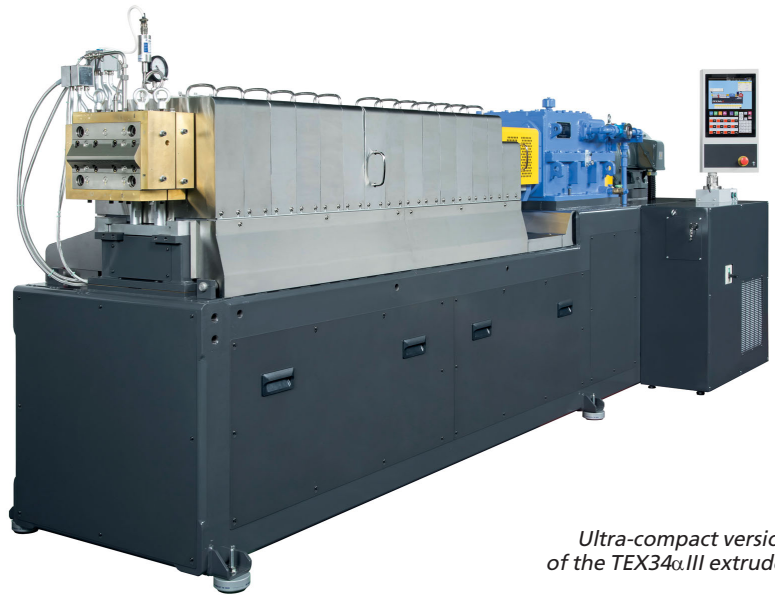
ecoFITTOM



The project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement n° 756698

www.molecor.com

Following introduction of its new compact TEX34 α III high-performance compounding extruder at the October 2017 IPF International Plastics Fair in Tokyo, JSW now announces the TEX34 α III debut in the European market too, as an extruder for various applications such as compounding, chemical reaction, dewatering, devolatilizing and so on



Ultra-compact version of the TEX34 α III extruder

European Debut of new TEX34 α III – Highest Performance Compact Twin-Screw Extruder

The TEX34 α III model replaces the slightly smaller TEX30 α small-lot extruder, and its screw diameter is 36 mm. The extruder's exceptionally high torque density (18.2 Nm/cm³) enables effective yet gentle compounding at low screw speed and optimally low temperature, but without detriment to throughput. Should torque rise to an unacceptably high level, a torque limiting function protects the machine by disengaging the drive motor and gearbox, so that the screw stops rotating.

Throughput typically reaches up to 500 kg/h in talc-filled polypropylene, 250 kg/h in masterbatch compounding and 150 kg/h with polymer blends such as ABS and ABS/PC, etc., a worldwide highest performance level for such a compact compounding extruder of this size.

The TEX34 α III also excels with its conventional yet convenient EZ easy-change tie-bar system, which makes changing barrels easier than in the past.

Depending on customer needs, JSW offers the TEX34 α III with a choice of the standard version model and an ultra-compact version with its control cabinet built-in within the footprint of the machine frame, saving space and installation time. The very small footprint TEX34 α III-52.5BW-2V model with its integrated control system has the following approximate dimensions and weight: 4,250 mm length, 1,250 mm width (incl. the inverter panel), 1,200 mm center height and 3,500 kg weight.

Although specifications and performance of both versions are identical, Jun Kakizaki, General Manager at JSW Europe GmbH in Düsseldorf says "The standard model has a sepa-

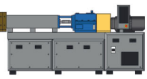
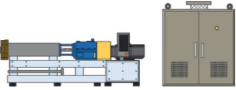
rate control cabinet, because sometimes customers prefer to have the control cabinet in a separate room in order to protect them from e.g. dust during heavy-duty operation. The ultra-compact model is however designed for laboratory applications, where space may be limited".

While the ultra-compact version does not easily lend itself to customization for individual needs, the standard model can be easily customized, e.g. by provision of a multiple number of vents, adjustment of L/D ratio with screws of different lengths and increasing screw speed by choosing to use one of three drive motors with different performance levels, or even modification to permit explosion-proof operation in hazardous environments.

JSW also has many lineups of original developed special devices to increase the capability of TEX34 α III. Customers can choose optimum devices from the lineup in order to improve their production and quality of product.

JSW's NIC (Nikko Intensive Cylinder) mixing barrels have longitudinal grooves on the inside of each barrel, which benefits mixing performance by allowing more polymer to pass through the larger gap between the depth of the grooves and the screw. The associated lower shear rate enables lower temperature mixing and avoids local heat build-up, to the benefit of compound quality and reducing energy consumption by 10 to 20% compared with standard non-grooved barrels.

The special JSW screw element is the TKD (Twist Kneading Disc), with twisted instead of conventional straight flights, which results in less pressure on the flights and achieves good

Basic specifications					
Model		Built-in model	Standard model		
Torque density	N/cm ³		18.2		
Torque	Nm		982		
Normical diameter	mm		34		
Screw diameter	mm		36		
Extruder					
Motor capacity	kW	37	37	55	75
Screw speed ¹	rpm	37~363~568	37~363~568	54~541~847	73~735~1,150
Heating / cooling ²		AW / BW	AW / BW / SW / (O)		
Screw configuration		Customizable			
Barrel configuration		Customizable			
Barrel connection		EZ-change tie-bar type			
L/D ratio		52.5	max. 77		
Construction		Box type	Single frame type		
					
Center height	mm	1,200	nominal 900 (customizable)		
Control & operation panel					
Control panel		Built-in ³	Separated		
Operation panel		Built-in	On-frame / Built-in control panel / Stand alone		
Others					
Explosion proof		N/A	Available		

TEX340.III extruder specifications

¹: Displayed min.-torque const.-power const.

²: A: aluminium cast heater, B: brass cast heater, S: steam heating, (O): oil heating, W: water cooling

³: For hazardous areas, the customized model may be applied.

dispersive mixing with low screw wear, which is an important attribute when compounding abrasive materials. The TKD elements can achieve either higher mixing capability or higher conveying capability, depending on the direction of their rotation. As mixing can take place at around 10% lower temperature than with conventional mixing elements and with less demand on the drive motor, there is corresponding 10% lower energy consumption with TKD elements.

Side feeding is usually applied to introduce fillers such as talc or carbon black or reinforcement fibers into the polymer melt in extruder mixing sections. It is here that JSW offers a SFD (Side Feed Deaerator) in its DGC (De-Gassing Cylinder) technology to exhaust volatile substances, air and moisture via a vacuum pump, so that throughput increases due to an improvement of conveying efficiency by densifying bulky powder material such as Talc, CaCO₃, fine polymer powder and so on.

The effectiveness of the SFD fitted on JSW extruders has been demonstrated in trials showing 57% throughput increase when compounding 30-wt% talc filled elastomer-modified PP, 31% increase with PPO/PS blend (80wt%/20wt%) and 58% increase with 30% carbon black filled PBT.

JSW also offers the software packages for simulation of process conditions, screw design, as well as for screw element management.

Improvements made to the JSW 64-bit EXANET control system's 15-inch color LCD control panel on both model versions have resulted in more comfortable and faster extruder operation, through for example better visibility of the touch-screen display and its icons, which enables easier triggering of specific functions. Aside from the extruder, the control system can integrate optional auxiliary equipment such as gravimetric feeders, side feeders, pelletizers. Customers can

however choose to use a PLC (programmable logical control) system of their own choice, instead of the JSW EXANET system.

Other detailed improvements to the control panel include enhanced I/O (input/output) capability for greater flexibility and easier integration of the extruder with the control system, as well as upgrading of the EXANET system's external interface by inclusion of operational conditions data management via USB connection. This is in addition to the existing Ethernet LAN (local area network) port, with its NET 100 data logging system allowing simultaneous monitoring of up to 100 extruders.

Monitoring can take place via a web browser on desktop PCs, from which processing conditions can be adjusted via the network. Data can be directly printed, or exported as CSV format files for opening with standard office spreadsheet software, typically involving one Gigabyte of data for 300 days operation. Screen shots can also be made of the control panel display screen and exported as PNG format images that can be read with standard image programs.

JSW also offers complete turnkey compounding plants, complete vacuum and gear pumps, various types of barrels, barrel cooling systems, strand cooling baths, pelletizers, screen changers, silos, packing and palletizing equipment.

ACHEMA 2018 exhibition, June 11-15 in Frankfurt/Main, Germany,
Compounding World Expo 2018, June 27-28 in Essen, Germany

Japan Steel Works Europe GmbH (JSW)
 Bonner Str. 243, 40589 Düsseldorf, Germany
www.jsw.de,
www.jsw.de/technical-info

Trending Worldwide – Water Bottles made of Polycarbonate, PC



Compact and powerful: BEKUM BA 25 high-performance blow molding machine for 5-gallon PC water bottle production

Thirsty on the go or at the office? Water dispensers are available today in many places. The containers, which were first developed to provide water for offices in the USA, have long since found a home in supermarkets, retail stores, medical practices and fitness studios all over the world. However, in places where the public drinking water supply is not enough, these containers supply precious water. As a result, the demand for PC (polycarbonate) water bottles is increasing worldwide

To this day polycarbonate (PC) is the most used material in the manufacturing of water bottle containers over 10 litres. This is due to the excellent material properties for stability, cleaning and transparency. Thanks to the transparency of the PC water bottle, with just a quick glance at the water level you can see when it is time to replace it. Replacing the water bottle is easy thanks to the practical cartridge system. The high-quality optics of the container also adds an appealing look to the water. The container size of 5 gallons (18.93 litres) is a widely used standard size with high quantities. It is designed in such a way that it fits all dispensers which are common in the market.

BA series with high market shares

Extrusion blow moulding plants for BEKUM's BA series have been firmly established in this market segment for years. The BA 25 by BEKUM is a very marketable PC water bottles machine that combines high performance and efficiency. With a clamping force of 200kN and its compact footprint, the BA 25 is the obvious choice for manufacturing water containers. It has a very stable clamping unit and is highly wear-resistant. The BA 25 machine has been designed for high durability as well as long production capability and has long provided a reliable and, above all, economic contribution to the drinking water supply via water dispensers worldwide.

Highly transparent PC container with handle on conveyor belt for directional article output



Clamping and plasticising unit impresses in production

The quality of the BA 25 from BEKUM is apparent: The BA 25 machine is designed for discontinuous accumulator operation as well as bottom calibration and uses parison spreaders with vertical adjustment. Modern controls and hydraulics allow the processor very accurate repeatable cycles for high efficiency production. The BA 25 system has also excellent plastification. BEKUM extruders use a special screw geometry for optimum homogenisation of the material. An energy-saving AC motor ensures that the material is melted gently at low rotational speeds. The patented spiral mandrel distributor head technology from BEKUM allows uniform wall thickness over 360° of the water bottle and offers reproducible product quality that is second to none. This in-house development by BEKUM practically excludes article thinning and flow marks, ensures a crystal-clear water bottle transparency with a cloud-free surface and, by doing so, enables products of high quality.

High efficiency at the forefront

The highly transparent PC containers are blown out in a special blow mould, which has multi-zone temperature control and magnetic quick-change inserts, with or without a handle. The BEKUM single-station blowers of the BA series achieve an undisputed output of over 160 containers / hour at a net weight of 750 g based on the reference article "Nestlé 5 Gallon Aqua Design without handle". This high output rate is possible without compromising the high article stability as well as the crystal-clear transparency, even at demoulding temperatures of over 85°C.

Sophisticated polycarbonate

PC containers are country-specific and made out of pure new materials (e.g. from Bayer Makrolon, Mitsubishi Novarex and other PC materials), a varying material mix of new material and recycled material, as well as 100% recycles. Processors know: When melting, polycarbonate is a sensitive material. This requires specially tailored material handling systems for material dry-



View into the open blow mould with multi-zone temperature control for the production of a water bottle container made of PC

ing and material inlet. After shaping, the cooled article material and flash are very hard, requiring coordinated cutting mills. For an optimally coordinated, high-performance periphery, BEKUM brings with it the experience gained from many installed user projects and relies on tried and tested, high-performance partners.

Practice-oriented automation to increase productivity

Last but not least, automation plays an important role for the user if efficiency should be increased. Especially for containers with an integrated handle, fully automatic and guided flash removal is important. Furthermore, the automated removal with removal grippers and alignment by a turning station for placing on an article production line, increases efficiency of the operation. With its convincing performance characteristics and the system design optimally aligned to PC water bottle production, the BA series is a reference in water bottle production.

**BEKUM at NPE 2018, Chicago (USA):
West Hall, Booth W2127**

**BEKUM at Chinaplas, Shanghai (China):
Hall 2 Booth 2J03**

► **BEKUM Maschinenfabrik GmbH**
Kitzingstr. 15/19, 12277 Berlin, Germany

INTRA receives the Georg-Menges Prize 2018

During the opening of the 29th IKV Colloquium, the Association of Plastics and Rubber Machinery Manufacturers in the VDMA (German Engineering Federation), along with PlasticsEurope Deutschland and the Association of Sponsors of the Institute of Plastics Processing (IKV) in Industry and the Skilled Crafts at RWTH Aachen University, awarded the Georg-Menges prize for the eleventh time. More than 800 plastics experts from throughout the world attended IKV's 29th International Colloquium Plastics Technology

The Georg-Menges prize 2018 was won by INTRA – the Interest Group of Innovative Enterprises for Plastics Engineering in the Aachen Region. The prize, which consists of a replica of a hand-made monocular Leitz microscope from 1899 built in Wetzlar, has been awarded since 1999 by IKV, VDMA and PlasticsEurope. This year is the first time an institution and not a person has received the award.

The Georg-Menges prize is awarded for outstanding application-related achievements in research and engineering in the field of plastics processing over the last decade. It aims to encourage dialogue

and cooperation between industry and research, and to create a communicative and cooperative climate between them. Against this background, the jury decided to award this year's Georg-Menges prize to INTRA.

The Interest Group of Innovative Enterprises for Plastics Engineering in the Aachen (Germany) Region (INTRA) is an association of companies founded predominantly as spin-offs from IKV. INTRA was established in 1999 to make the expertise in plastics that exists in the region of Aachen better known. Since it was founded, INTRA's aim has been to sup-

*From left to right:
Dr.-Ing. Herbert Müller, CEO of Surteco SE
and of IKV's Association of Sponsors,
Institute Director Prof. Dr.-Ing. Christian
Hopmann, Dr.-Ing. Erwin Baur, chairman of
INTRA and laudatory speaker Prof. Dr.-Ing.
Ernst Schmachtenberg, Principal of RWTH
Aachen University (photo: Fröls/IKV)*



port the courageous sense of entrepreneurship that is always behind a spin-off. INTRA pools the high concentration of know-how and creates synergies as a result. This strengthens not only the region but also each individual company. The INTRA companies operate in the following fields: consulting, design, measuring technology, software, PR services, research and development, materials technology, production and quality assurance. The Georg-Menges prize 2018 especially honours this start-up culture and the support of young companies by INTRA.

The laudatory speech was given by the Rector of RWTH Aachen University, Prof. Dr.-Ing. Ernst Schmachtenberg. On behalf of INTRA, Dr.-Ing. Erwin Baur, Managing Director of M-Base Engineering+Software GmbH and a member of the Board of INTRA, accepted the prize.

In his laudatory speech, Professor Schmachtenberg emphasised that, through investment in research and teaching, financial value is again generated if companies are founded on the basis of this research.

He is convinced that „innovation is only innovation if you can earn money with it.“

On behalf of all the member companies, Dr.-Ing. Erwin Baur thanked the jury, the Association of Sponsors and Professor Schmachtenberg for the award. He said he was also personally delighted that INTRA had been given so much publicity through the award of the Georg-Menges prize. After all, it was from Professor Menges that he had „learned everything about plastics.“ He added: „The idea of founding a company from IKV is the most effective form of technology transfer.“

► Institut für Kunststoffverarbeitung (IKV)
in Industrie und Handwerk a.d. RWTH Aachen
Seffenter Weg 201, 52074 Aachen, Germany
www.ikv-aachen.de

Interessengemeinschaft innovativer
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Ferrarini & Benelli will showcase at Plast 2018 in Milan innovative solutions for corona and plasma treatments and the EVO digital generators line



Bikappa

Innovative Solutions for Corona and Plasma Treatments

The company based in Romanengo (CR) Italy, which has been operating in the corona treatment since 1965, focuses on innovation and designs surface treatment systems for the actual demand of the packaging world. The solutions proposed by Ferrarini & Benelli are the result of many years collaboration with the world's leading manufacturers of extrusion and flexible packaging production lines and of in-house development and design.

Direct export is mainly in Europe, but Ferrarini & Benelli is also well known in Australia, South America and the Middle East. Sales are growing in Russia, The United States and China. More than 11,000 Ferrarini &

Benelli corona treatment stations are used all over the world on a daily basis. Ferrarini & Benelli will present at Plast 2018:

Corona treatment

Blown film extrusion: Bikappa Rotary – High-technology double-sided treatment station, particularly suitable for mounting on high-performance blown film extruders or on flexographic presses in line with extruders.

Printing and Converting: Polimetal is the high performance universal corona treatment line completely designed and manufactured in Italy. It is equipped with special ceramic electrodes and rollers. It is usable with all

types of materials, conductives and non-conductives: plastic and metalised films, paper and aluminium foils and also laminates.

EVO Line Generators: With integrated Corona Quality Control software to import corona treatment data from the generator to the PC in order to produce process quality certificates.

In Air Corona and In Air Plasma for conductive and non-conductive materials

Ferrarini & Benelli has developed two systems for treating 3D objects or small flat surfaces that can be integrated in-line, or used in the laboratory for testing. In Air Plasma and



EVO digital generator line

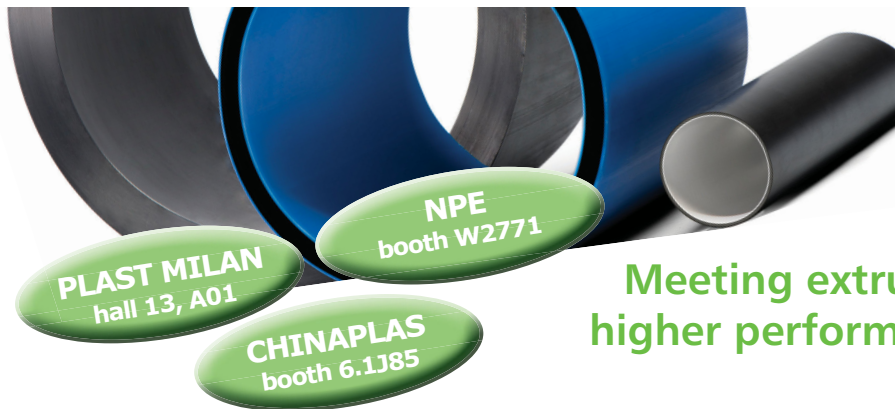
In AirCorona are composed of a high frequency digital generator with integrated transformer and one or more dispensing heads. Ferrarini & Benelli will showcase at Plast Milan in Hall 15, Stand C51, the section dedicated to extrusion of films and plates, flexographic printers, welders for bags, packaging machines, recovery and recycling machines, auxiliary equipment, parts and components.

Plasma Nozzle



In Air Plasma	In Air Corona
Focused energy (treatment area is about 10 mm wide)	More distributed energy (treatment area is about 40 mm wide)
Main applications: <ul style="list-style-type: none"> • Printing • Laminating • Cleaning 	Main applications: <ul style="list-style-type: none"> • Printing • Coding and marking lines • Label lines

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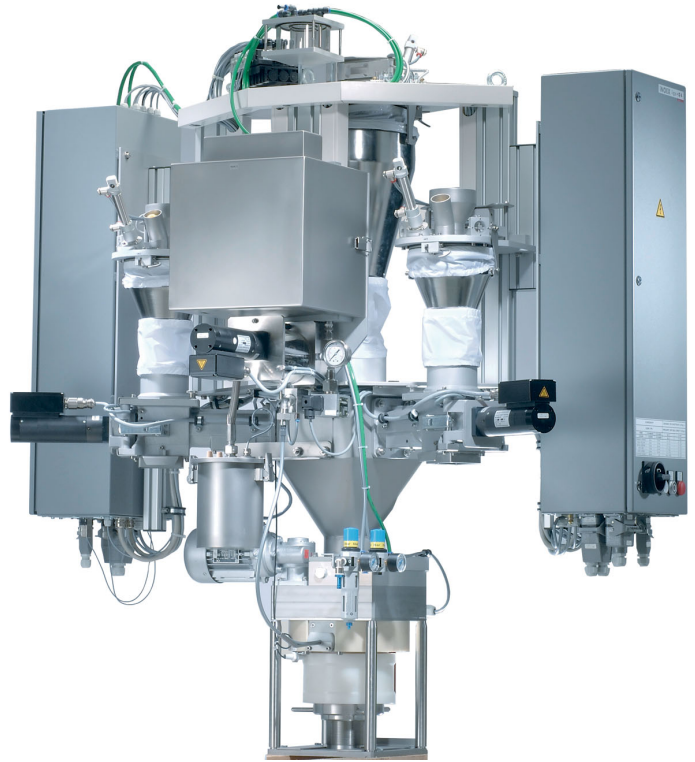
- Enlarged processing window through balanced energy input
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- Up to 20% energy savings through optimized processing



soLEX NG / single screw

- Up to 20% higher outputs
- Up to 15% less energy costs
- Up to 10°C lower melt temperature with excellent melt homogeneity and mixing quality

The multi-component dosing station guarantees the precise adherence to all set values for solid and liquid components contained in a recipe



PEXa-Pipe Extrusion – Strategic Foresight turns iBA into a Full-Range Supplier

iBA GmbH, founded in 1979, sees itself as a key pacesetter for the extrusion industry. iBA, headquartered in Melle (Germany), offers complete solutions from the analysis of the extrusion process to consultancy on process optimization including the development of new engineering concepts and technologies for the pipe extrusion

Since the end of the 1960s, PEX pipes in Europe have been produced with the proven but slow Engel-technique used for crosslinking polyethylene pipes. iBA is one of the foresighted companies which has recognized this trend towards crosslinking polyethylene pipes during the extrusion process and has since pushed forward the technical development in this field. After more than 15 years of ex-

perience, iBA today offers the fully-automated one-stage PEX-a pipe production under the brand name PEXLINK for pipe dimensions from 10 to 32 mm.

PEXLINK – one-stage PEXa pipe extrusion process

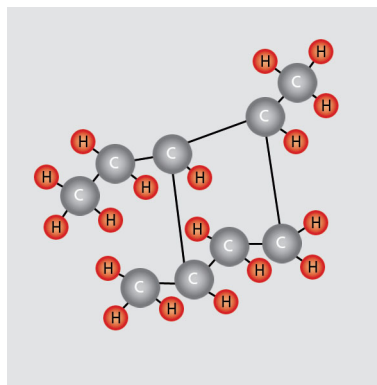
PEXa is a frequently used material for floor heating, heater connections and hot and cold water pipes. With PEXLINK on offer, iBA is the sole supplier being able to provide a complete extrusion line concept: starting with the explosion-protected external warehouse to the automated coiling of the end product. Included in the package are the material storage, material conveyance, gravimetric weighing (solid and liquid components), the extrusion process itself, the infrared oven for pipe crosslinking, the vacuum and cooling technology, measurement of crosslinking degrees, co-extrusion of function and barrier layers, measuring & control systems and the automated coiler.

Comprehensive know-how

The complex and demanding manufacture of PEXa pipes in a one-stage process involves a specific conveyance technology for peroxide. The SAVEOMAT conveyor station transports all required components to the production process at the correct time and subject to all safety regulations contained in the ATEX 95a. A complete leakage monitoring system and the encapsulation with inert gas provide safety at the highest level. The safety aspect, also in view of the safety of the operating personnel, is observed throughout and extends also to integrated aspiration devices which are mounted in all relevant places along the extrusion line. The SAVEOMAT multi-component dosing process which follows the static and dynamic mixing of all solid PE materials and the liquid peroxide mixture, assures that all components are homogeneously mixed which is in turn a prerequisite for a high-quality product. All of these features contribute substantially to avoiding complaints and claims for damages. A reduced consumption of raw materials, particularly of peroxide reduced by up to 10% and the creation, use and optimization of own recipes are further advantages of the continuously performing gravimetric SAVEOMAT multi-component dosing system. These benefits are supplemented by the long-standing expertise and the consultancy know-how offered by iBA on the optimum material composition and product recipes.

Reliable high-performance process

The perfect mixture of all process components is followed by their processing on a high-performance double-screw extruder L/D 27. A perfect combination of the extruder and the die offers a very good melt homogeneity at very low melt temperatures, a prerequisite for the crosslinking process which takes place only after the product has passed the extruder. The core element of the extrusion line is the unique 4 strand infrared oven which features a specific guidance of the pipe. Higher speeds and higher outputs become possible due to this innovative oven which is equipped with 12 infrared units. An optimum retention time in the oven is selectable for different pipe dimensions. In the infrared oven, the thermal heating of the pipe and the optimum wavelength distribution of the infrared radiation make the peroxide which is regularly distributed inside the pipe wall split into highly reactive components (radicals). These release hydrogen atoms from the polyethylene chains and new combinations of polyethylene chains take up their place, thus carrying out the crosslinking process (see Picture 2). The particular advantage of infrared heating is that this kind of heat penetrates the material on a deeper level than mere heat convection. The result are perfectly round pipes and optimum product geometries. Very tight tolerances and an ovalness of less than 0,3 mm become possible, a figure which is far below set stan-



Heat radiation in the infrared oven makes the peroxide disintegrate and form radicals. These radicals separate hydrogen atoms from the polyethylene chains. The resulting radicals in the polyethylene chain lead to a recombination with other polyethylene chains and thus the crosslinking process

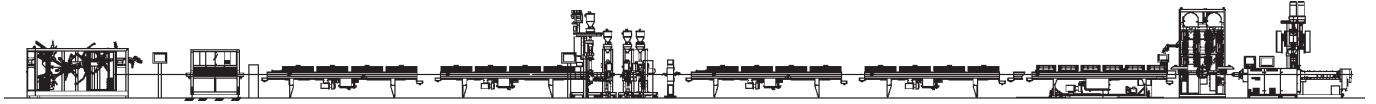
dards. Resulting gaseous reaction products are instantly eliminated from the oven and all surrounding machinery equipment by an integrated aspiration unit. A PEXa production process offers a thorough crosslinking of the pipe wall as the pipe is completely crosslinked during its hot state, i.e. above the melt temperature. This achieves a crosslinking degree of at least 70%. The high crosslinking degree assures that the required long-term properties for this kind of pipe are available already for small wall thickness sizes offering high flexibility and ease of installation. PEXLINK technology stands for a long-term



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iBA's extrusion lines are run at a speed of up to 35 m/min, outputs reach up to 200 kg/h

temperature stability and a proven lifetime of more than 50 years. These pipes are permanently durable for high (+95° C) and lower (-60° C) temperatures and they are extremely pressure-resistant.

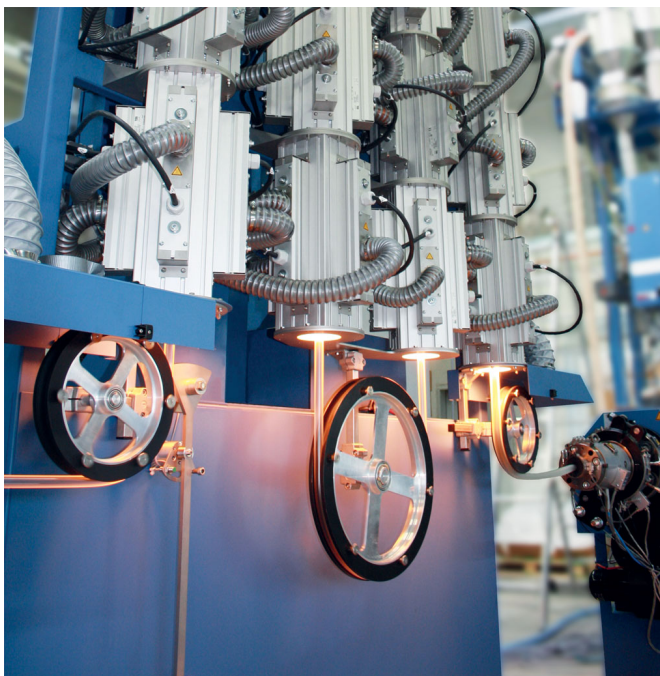
Inline monitoring of the process

A combined vacuum and cooling technology is part of the complete concept and ensures that a good pipe geometry is produced and an excellent cooling efficiency is achieved. The unique PEXLINK inline crosslinking degree measurement which operates at an accuracy of $\pm 2\%$ provides instant information on the pipe quality. Contrasting to this technique is the traditional and complex wet chemical method which supplies results only after approx. 12 hours. The inline inspection provides crosslinking data immediately, including the information whether the minimum crosslinking degree of 70% which is stipulated in DIN 16892 for PEXa-plastic pipes is adhered to.

Best performance

Additional function layers are added to the pipe at the co-extrusion station: an oxygen barrier layer (EVOH), an exterior protective layer (polyethylene) and the adhesive bonding agent layers. These layers ensure that the pipe becomes oxygen-impermeable, corrosion-proof and encrustation-

4-strand-conveyor oven with specific deflection rollers ensuring careful pipe handling. Higher speeds and higher outputs become possible based on longer dwell times for different pipe dimensions



free. Optionally, a preheater may be implemented into the extrusion line before the co-extrusion station. This device will preheat the pipe by infrared technology and will dry the material. The gravimetric dosing process is optimally adapted to the process and is carried out by SAVEOMAT mono-weighers or dosing stations and the SAVEOMAT SATELLITE conveyance technology made by iNOEX. Another particular feature is the revolutionary control unit: not the extruder speed and mass throughput rates can be set for each co-extruded layer, but the layer thickness as stipulated in the factory standards is entered directly. In accordance with set values, the output of the co-extruders is adjusted depending on line speed. This means that the control unit calculates and controls independently all machinery parameters for the current line speed and adapts these parameters if necessary. This is a fully automated process for line speeds up to 200 kg/h and it does not affect either the crosslinking quality or the pipe quality.

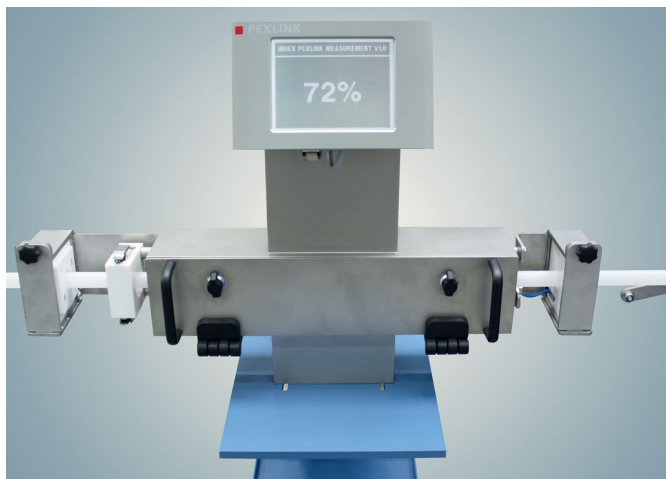
Proven measuring technique

The iNOEX Terahertz-wall thickness measuring system QUANTUM Tube and/or the iNOEX ultrasonic wall thickness measuring system AUREX MK 32 are able to precisely measure wall thickness sizes and diameters. The static measuring system QUANTUM Tube offers a 4-point measurement of the total wall thickness based on the innovative Terahertz sensor system and it is perfectly suitable for small pipes and tubes from 10 to 32 mm. The temperature-independent direct measurement is carried out without a coupling medium such as e.g. water. The AUREX MK 32 is installed inside a tank extension. The process-adapted measuring chamber supplies highly precise measuring results for pipe dimensions between 0,5 to 32 mm. Ultrasonic technology permits the measurement of wall thickness, ovalness and eccentricity, starting at 0,02 mm. Both systems log all measuring data and thus provide comprehensive quality evidence.

A proven solution for an optical 360° inspection of pipe surfaces on dots, dents, scratches, foreign bodies and glossy stripes is the AUREX OBF. Even minor surface flaws of up to 0,27 mm² are reliably detected at line speeds of up to 48 m/min.

Turnkey solution

iBA underlines its market position as a full-range supplier by offering not only comprehensive consultancy, process and parameter setting know-how, but also all other extrusion line components. This includes a fully automated coiler which is optionally available with an accumulator. The accumulator is specifically designed for high-performance lines or also in order to buffer make-ready times



Inline crosslinking degree measurement offering a measuring accuracy of ± 2 %. Instant information on the pipe quality

at the coiler. Part of the product portfolio are the storage options for the storage of dangerous goods such as peroxide: a fire-protected storage PEXLINK SR and the walk-in conveying chamber.

Control unit across all processes

The complete PEXLINK extrusion line is operated through a control unit which integrates all system components: material conveyance, gravimetry, extruder control, infrared oven, crosslinking degree measurement, co-extrusion including gravimetry, measuring technology and coiler. The line is equipped with three terminals, one on the main extruder, one on the co-extruder and one on the coiler. The oven is equipped with a separate terminal which is mirrored on all other terminals. All PEXLINK lines are available for left-handed or right-handed operation which permits the simultaneous operation of two lines by only one operator.

Fastest line in the market

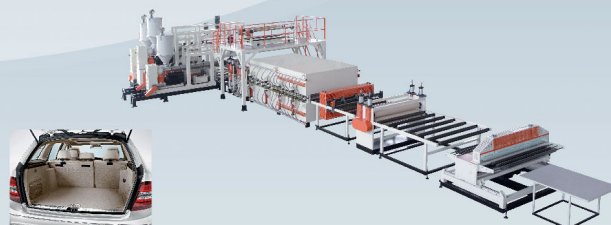
IBA's PEXLINK line is the fastest line available in the market for the one-stage PEXa-pipe extrusion process. It can be ordered as HSP (High Speed), MSP (Medium Speed) or LSP (Low Speed) extrusion line. All process values and quality data are logged on an SQL-server. The data are visualized and provided to the operator via an interface. The centralized recipe handing is another specific feature. Recipes can be stored and selected easily on the terminal, the superior control unit will precisely adapt all related line components.

Author:

Melanie Neumann, Leitung Marketing

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Co-rotating twin-screw compound extruder used in R&D facility to test material batches, recipes; pre-configured extrusion solution on control package monitors entire machine, providing "big data" for customer at attractive price point

Typical parts made from TPE at Kraiburg



Advanced Extruder Control Technology

KRAIBURG TPE Corporation in Duluth, Ga. is a manufacturer of custom-made thermoplastic elastomer (TPE) compounds for a variety of market applications in the automotive, medical, general industrial and myriad consumer sectors. At the Duluth facility, the product development department routinely evaluates material batches and new custom compounds for performance and customer specification viability. As an integral step in that process, KRAIBURG TPE engineers utilize sophisticated co-rotating, twin-screw extruder technology provided by KraussMaffei Berstorff, from its facility in Florence, Ky.

Owing to the substantial varieties of color, durometer and the wide-ranging performance properties required at KRAIBURG TPE, monitoring every aspect of the machine performance is critical. This includes all temperatures, speeds, pressures and torque on the extruder itself, plus an underwater pelletizer, gear pump and multiple loss-of-weight feeders used on the line.

For the latest machine installed at the KRAIBURG TPE facility, as senior application engineer at KraussMaffei Berstorff, David Frankenberg, explains: "The lab extrusion line is used for both process and product development assessment. A key requirement was the generation of all data in real time, as part of the management system to be used, as well as the condition monitoring system needed for predictive maintenance strategies being employed." In cooperation with the KRAIBURG TPE team and after evaluating the competitors for the control scheme, KraussMaffei turned to Siemens for assistance, as this supplier was able to bring a pre-configured and highly cost-effective solution to the requirements on this machine.

As Frankenberg and his electrical engineering associate Martin Gonzalez

detailed, the Siemens EXT3370 application package represented a blending of the current PLC technology and drives platform with an HMI capable of providing all graphics and multiple data screens on a single display. In addition, the system had the ability to feed the "big data" directly to the KRAIBURG TPE process data archival & analysis system, where it would reside for real-time and long-range performance evaluation by the product development, quality and process teams. All speeds, pressures, temperatures and other parameters can be instantly assessed, using set point and actual value data on the display, either at the machine HMI or a remote monitor within the KRAIBURG TPE network.

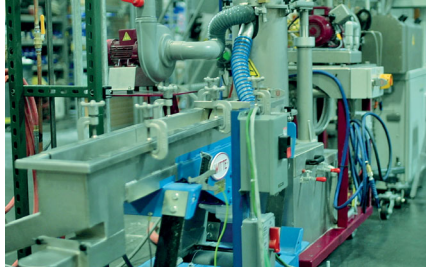
On the KraussMaffei Berstorff machine, the control system comprises the software solution, Siemens drives and motors, the ability to monitor up to 32 separate temperature zones, touch screen technology on a 15" HMI and scalability on the drives to accept the ancillary equipment being monitored at the KRAIBURG TPE facility. In this way, a truly customized solution was devised using an entirely standard and thus highly cost-effective array of components, according to Frankenberg. As an additional benefit, he noted, the training needed was minimal, owing to the plain language on the control with no need for knowledge of high-level programming skills. Finally, all compound recipes can be easily transferred via USB for portability and security.

Siemens temp zone control system monitors all aspects of extruder, providing "big data" to the host network



Allen Donn, product development engineer at KRAIBURG TPE, along with his team of engineers and tech specialists, evaluated the installation and commissioning of the machine at the Duluth facility. "The data transfer from the PLC into the same process data archival & analysis system that we use for our other lines at KRAIBURG TPE. A simple Excel file is generated with any parameters desired for analysis, plus we can easily exchange data between R&D and production here. The result is that our ability to utilize production machinery more efficiently has increased substantially with the use of the new KraussMaffei Berstorff machine in our test department, as the control system gives us real-time hard data we can use to make adjustments on new recipes and entirely new materials." KRAIBURG TPE performs extensive new compound property per-

At a glance, the operator sees the condition of the machine in real time and can make better on-the-fly adjustments



Extruder line built by KraussMaffei Berstorff in Florence, Kentucky for Kraiburg TPE

formance testing on its TPE formulae and the time compression realized by using the new extruder line in this "real world" R&D operation is providing substantial advantages for the compounder.

KRAIBURG TPE typically runs materials in the 20-80 Shore A hardness range and, as an example, might test out a variety of adhesion grades for over-molding onto polycarbonate, nylon, or other substrates, Donn explained. "When we can pull the data from any machine in the system, adjust it, run it on the R&D machine, and then feed that data back into production, it makes a huge difference in our efficiencies." In one instance, shortly after the KraussMaffei machine was installed, KRAIBURG TPE engineers were testing 15 compound varieties on the machine very quickly, com-



Various compounds are formulated at Kraiburg and test run on the KraussMaffei Berstorff extruder at the Kraiburg lab in Duluth, Georgia

pared to using production equipment to do that task. "I could look into the software to compare all set point and actual values, remotely, over the entire test period," Donn noted. He added that the substantial raw material cost savings of more tests, faster results and less waste all contribute to an improved profitability for the company, as well.

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KRAUSSMAFFEI GROUP USA
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Innovative Blow Molding, Sheet, and Extrusion Systems Powered with Intuitive Controls

On display at Graham Engineering Corporation's NPE2018 booth will be some of the company's flagship extrusion-based systems for blow molding, sheet, medical tubing, wire and cable, and other applications, each equipped with a proprietary Navigator® control system for live demonstration of its accuracy and ease of use.

"Graham Engineering Corporation's proprietary Navigator® control technology utilizes an industrial PC with a Windows® platform to enable intuitive, industrial, integrated extrusion process control," said Graham CEO David Schroeder.

"Real-time graphical display is a hallmark of Navigator. High visual correlation between the touchscreen and machine function ensures an intuitive user experience that enables both new and experienced operators a rapid learning curve and ease of use," said Graham vice president of engineering Justin Kilgore. "Powered by a friendly, open architecture that allows a high level of flexibility, Navigator is delivered via hardware designed to withstand harsh industrial environmental conditions such as vibration, electrical interference, temperature, and humidity. The ease and ability to integrate is boundless. From synchronized supervisory control of a line to its open architecture that supports connectivity for data collection systems to internet for remote support and trouble-shooting, Navigator offers integration without limits."

Plastics processing systems on display at the Graham Engineering Corp. booth will include:

- Mini Hercules® accumulator head blow molder. This system combines a small shot size and space-saving footprint with

one-hour color and material change and other advanced features available with the company's larger systems.

- Modular clamp station for Revolution MVP® rotary wheel blow molder. A key innovation in the Revolution MVP system is that each clamp station is independent of the others, with all forces self-contained within the clamp. Water manifolds through the platens to facilitate quick mold change, and individual clamps can be removed for offline maintenance to reduce downtime.

- Welex Evolution® sheet extrusion system, a complete production line for use in sheeting, winding, and in-line thermoforming applications and equipped with XSL Navigator control. While the equipment on display at NPE will be for thin-gauge polypropylene, the Evolution system can be customized for widths from 36 to 90 in. (90 to 230 cm), gauges from 0.008 to 0.125 in. (0.2 to 3.2 mm), and throughputs up to 10,000 lb./hr. (4,535 kg/hr.).

Originally developed for Graham Engineering extrusion blow molding systems and then adapted for Welex sheet extrusion lines, Navigator® controls are now available for American Kuhne extrusion systems such as those for medical tubing, profiles, and wire and cable. There are three levels of functionality: XC100 for stand-alone extruders, XC200 for one or more extruders in simultaneous operation, and XC300 for integrated production lines with the extruder and components such as a puller, water bath, or winder. At NPE2018, all three controls will be shown installed on American Kuhne extruders.

- American Kuhne ULTRA extruders with expanded features. On display will be a 2.5 in. (63.5 mm) unit equipped with XC100 Navigator control and a 3.5 in. (99 mm) machine with XC200 Navigator control.

- American Kuhne tri-layer medical tubing line, consisting of modular micro extruders and XC300 Navigator with integrated TwinCAT® Scope View high speed data-acquisition system.

- American Kuhne AKcent co-extruder. This versatile customized system is available in fixed horizontal versions or units that can be fully tilted from horizontal to vertical.

Graham Engineering
Mini Hercules® Blow
Molding Machine



Liquid Colours, Additives and Equipment for all Plastics

Located immediately over the Bottle Zone, REPI will be presenting the entire range of liquid colours, additives and equipment for all plastics and their disparate applications at NPE2018 (May 7th – 11th, Orlando, Florida, USA).

The portfolio comprises speciality additives for the packaging industry: injection moulding preforms, bottles and caps, as well as thermoformed trays and sheets or extrusion blow moulding containers.

REPI additives range from Anti Yellow and IV Enhancers for R-Pet processing, moving to UV-Additives and special barrier colours with UV additive inside, to Blowing agents, Process Aids, Anti-Block which improve the production process and protect containers (injection moulded and extruded) from scratches and damages.

Industrial applications are as well a target of REPI's liquid technology, with products dedicated to Polycarbonate, PMMA, PVC, HDPE, PP, ABS which donate excellent dispersion and respect the custom specific technical requirements. A special mention goes to REPI Xpansor, the Foaming Agent for PVC in liquid form, able to lighten the extruded sheet and make the surface perfectly smooth.

Among REPI ancillary equipment, the Dosing Unit U2011, successfully on the market for years, remains one of the favourite colour/additive dosing system, considered highly reliable both by extrusion and injection moulding processors. Light Meter Plus is the new entry for what analysis instrument for preforms and bottles is concerned. In the



perspective of offering an all-round solution rather than just a product, REPI has been working over the years next to its customers building ties with them as partners. In this scenario, not only is the colour and additive formulation important, but also the availability of accurate dosing and analysis instruments to rely on for measuring the real presence and properties of the colour/additive in the final product. This is what the Dosing Unit U2011 and the Light Meter are able to offer.

The bright white booth will be the meeting point where REPI "Colour Explorers" Team will welcome guests, to discuss new projects and perform live demonstrations of instruments and equipment.



South Hall S19103

REPI LLC
www.repi.com

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Innovations in Extrusion Technologies



A diverse cross-section of Davis-Standard's extrusion and converting technology along with company personnel from around the world will be at booth W5947 during NPE2108 in Orlando, Florida. Along with equipment developments, Davis-Standard will highlight its extended product line capabilities due to the addition of Maillefer and Gloucester Engineering Company, now part of the Davis-Standard family.

"NPE is always an exciting event in terms of industry trends, new product demonstrations, machinery and technology developments," said Jim Murphy, Davis-Standard President and CEO. "Davis-Standard has significantly expanded in terms of global reach and product offering since the last NPE. This year is poised to be strong for capital equipment investment and we look forward to a productive show."

Following are highlights of Davis-Standard's display:

- **Aftermarket capabilities:** Davis-Standard will promote global field services along with its extensive offering of feedscrews, spare parts, and rebuilds for controls, gearboxes and extruders. This includes technology drive upgrades for processors looking to boost their existing line with

new screw design technology, controls technology and consulting services.

- **A running TPE tubing line:** This high-speed line will feature Industrial Internet of Things (IIoT) or Industry 4.0 capability to provide real-time data to help operators and managers optimize their line operation and avoid unplanned downtime. Visitors will be able to witness this technology live at the show.

- **HPE extruder rebuilds:** Two HPE-A extruders will be on display to show how replacing the extruder barrel, feedsection, feedscrew and/or breaker plate can improve extruder efficiency.

- **Next generation groove feed extruder:** This design showcases Helibar® barrel and feedscrew technology for high outputs and excellent melt quality.

- **Control system upgrades:** Davis-Standard will exhibit upgrades to its EPIC III® control system, as well as its next generation DS-eTPC II touch-screen controller.

- **New spiral feedscrew design:** Engineered for groove feed applications, this design offers advantages such as higher regrind levels, improved pressure stability, a wider range of polymers, lower pressure and better energy efficiency.

- **Blown film die capabilities:** Visitors will be able to learn more about Davis-Standard's recently completed in-house machining center, which is home to innovative designs that deliver high outputs and reliable gauge control.

- **Maillefer technology:** Production advantages offered by Maillefer, the latest addition to Davis-Standard's equipment line, will be exhibited with a DUFID irrigation line driller and ECH extrusion head.

In addition, Davis-Standard will have computerized demonstrations, product samples representing all product lines, and product line videos.



Booth W5947

Davis-Standard, LLC
www.davis-standard.com

Intensive Cooling “Height-Adjustable” Twin-Stack for Blown Film



Addex will showcase its latest Intensive Cooling technology at the upcoming NPE2018. The company will launch its “Height-Adjustable” Intensive Cooling Twin-Stack system which is designed to optimize performance for both high- and low-melt processes.

Addex offers an enclosed, two-level, stacked, Intensive Cooling system featuring a lower Intensive Cooling element that mounts flat to the die and a second, height-adjustable Intensive Cooling element just below the air ring. The system is highly adaptable to changes in materials and supports fast changeovers.

The fully-enclosed Intensive Cooling Twin-Stack elements can be separated over a range of 1-in to 16-in, allowing the operator to change the height between the cooling elements to control the amount of cooling. For super low-melt materials, a short distance between the elements is ideal. For high-melt strength operation, the cooling zone can be extended to its maximum by the push of a button. The Height-Adjustable Twin-Stack system can be fine-tuned across a broad range of products without time-consuming equipment changes and while the line is running.

The original fixed-height Twin-Stack system is proven in the field to increase output by 15% to 20% for very low-melt strength materials, and up to 40% or even 50% for high-melt strength materials. The Height-Adjustable version of the Twin-Stack is expected to produce even greater increases. The system operates over a wide range of configurations and materials, while also enhancing bubble stability. These retrofits are aimed at blown film lines that have been designed for higher outputs and have sufficient extruder and blower capacity to handle the output gains of Intensive Cooling Twin-Stack. With the addition of Addex’s automatic external gauge control (EGC), customers are generating high-quality film at unprecedented output rates. The Height-Adjustable system is fully compatible with Addex’s

other cooling products including the Digital Internal Bubble Cooling Control, Manual Gauge Control, and Laminar Air Rings.

At NPE, Addex will also highlight its Intensive Cooling Dual-Flow Air Rings, available for retrofit since 2016. These replace the standard low-velocity lower lip with a single Intensive Cooling element, delivering a guaranteed 10% to 15% greater output and better bubble stability, with some processors reporting up to 40% gains in output rate versus the competition.



Booth W4773

Addex Inc.
www.addexinc.com



New Vacuum Dryer

At NPE2018, Maguire Products will exhibit a new, intermediate-range model in its VBD™ line of vacuum resin dryers, expanding the throughput capacity of these systems and introducing an energy-monitoring capability that will be available with all VBD models. The new Maguire® VBD-600 dryer achieves throughputs up to 600 pounds (275 kg) per hour. This capacity is suitable for the manufacture of sheet, large automotive parts, and many other extrusion and molding applications. With the new model, Maguire now offers vacuum drying systems with throughput capabilities ranging from 30 to 1,000 lb. (15 to 450 kg) per hour. The VBD-600 dryer on exhibit at NPE2018 will include a new controller display that monitors energy consumption and enables processors to track consumption over time. This is the latest addition to an intuitive control system which enables operators to manage all drying parameters simply by means of a touch screen.

“The new energy consumption display makes the radical energy efficiency of vacuum drying immediately measurable,” said Frank Kavanagh, vice president of sales and marketing. “Since drying polymer can account for as much as 15% of total process energy cost for a molding operation, the substantial reduction in energy consumption made possible by the vacuum dryer can yield a rapid return on investment for the equipment.”

In comparison with desiccant dryers, the VBD vacuum dryer consumes up to 80% less energy, dries resin in one-sixth the time, and substantially reduces the heat history to which polymer is exposed. The speed with which the VBD system removes moisture makes prop-

VBD™-600 vacuum dryer



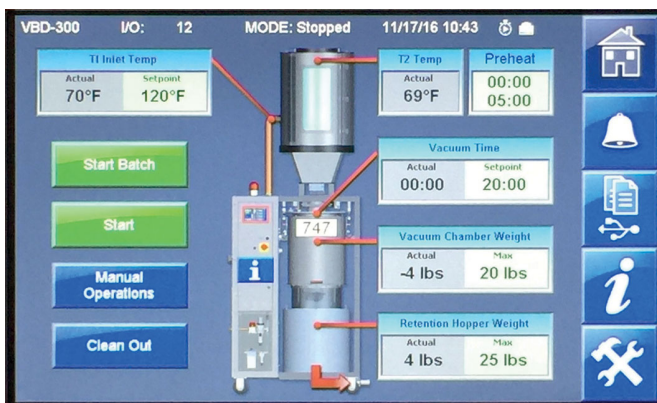
erly dried polymer available for production only 35 minutes after a cold start.

VBD vacuum dryers use gravity to move material through three vertically arranged stages of the drying process, with the discharge of material from one stage to the next controlled by high-speed slide-gate valves with an accuracy per dispense of +/- 4 grams. The vessels for the three stages are, from top to bottom: a heating hopper that brings resin to a target temperature; a vacuum vessel in which vacuum reduces the boiling point of water, causing moisture within the pellets to volatilize and be forced out of the pellet into the low-pressure environment surrounding it; and a heavy insulated material retention hopper with transparent shroud to protect dry material. For hygroscopic materials, a membrane purge option is available.

The vacuum vessel and retention hopper are mounted on load cells that monitor the weight of material at two critical points, making possible precise control over material consumption and documentation of process conditions for certification to customers.

Like all Maguire equipment, the new VBD-600 dryer comes with a five-year warranty.

Touchscreen controller interface



Booth W5747

MAGUIRE PRODUCTS, INC.
www.maguire.com

Systems for Quality Control, Process Optimization and Cost Savings

SIKORA, manufacturer and global supplier of innovative measuring, control, inspection, analysis and sorting devices, presents at NPE in Orlando a comprehensive portfolio of systems for quality control, process optimization and cost savings for the hose, tube, sheet and plastics industries. With the CENTERWAVE 6000, SIKORA showcases a system for the measurement of diameter, oval-

SIKORA presents at NPE the CENTERWAVE 6000 for online quality control of plastic pipes



ity, wall thickness and sagging of large plastic pipes during extrusion. The system is based on millimeter waves technology and measures pipes from 90 to 3,200 mm. The CENTERWAVE 6000 is available in a rotating version and thus offers the complete measurement of the wall thickness at 360 points of the entire circumference of the pipe. Alternatively, a multi-axial system is available with static sensors. The PLANOWAVE 6000, also based on millimeter waves technology, is used for thickness measurement of plastic sheets.

Another highlight is the PURITY SCANNER ADVANCED for online inspection, and sorting of plastic material. The combination of an X-ray camera with a flexible, optical camera system is the only technology at present that reliably detects contamination on the surface as well as inside of plastic pellets. Contaminated pellets are automatically sorted out. Depending on the type of contamination and application, optical high-speed cameras as well as X-ray, color and infrared cameras are used.

For smaller material throughputs and for applications where sampling analysis or incoming goods inspection are sufficient, SIKORA offers the PURITY CONCEPT Systems. Alternatively, these analysis devices can be equipped with X-ray technology, optical cameras or infrared sensors and detect contamination in pellets, flakes, films/tapes and crosshead parts.

SIKORA also shows a wide range of systems for online measurement of the diameter, ovality, wall thickness and eccentricity of products as well as for lump detection.

New Flexible PVC Compounds

A new series of flexible PVC compounds formulated without ingredients listed under California Proposition 65 provide performance similar to that of standard compounds used in indoor and outdoor building product applications. Teknor Apex Company will introduce the series at NPE2018.

The Apex® 2324A2 Series includes eight compounds with Shore A hardness ranging from 55 to 90. They are opaque grades that extrude well across a wide temperature range and in some cases are suitable for co-extrusion with rigid PVC. Teknor Apex can provide custom versions of these products that include UV protection and anti-fungal properties without compromising Proposition 65 compliance.

Examples of applications for the new compounds are gaskets, flexible glazing, weather-stripping, door sweeps, and other interior and exterior profiles.

"Teknor Apex developed Apex 2324A2 compounds as a proactive measure for customers that serve markets that are in California or are affected by regulations in that jurisdiction," said John Macaluso, industry manager for



building and construction applications. "Our goal is to help them address concerns among their own customers and to mitigate the risk of litigation."

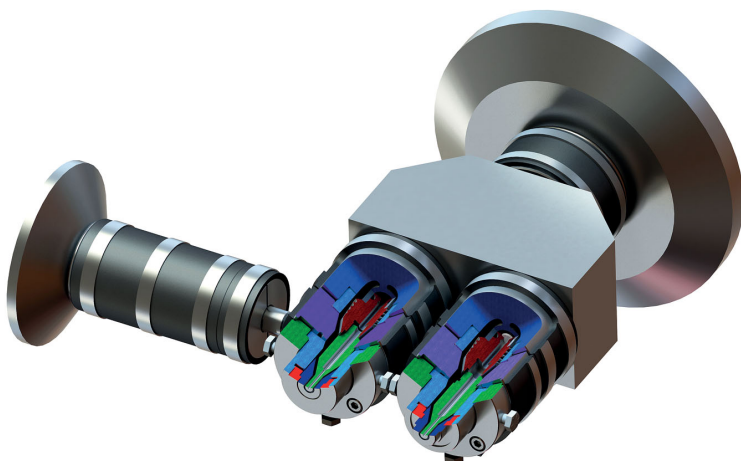


Booth S22045

Teknor Apex
www.teknorapex.com

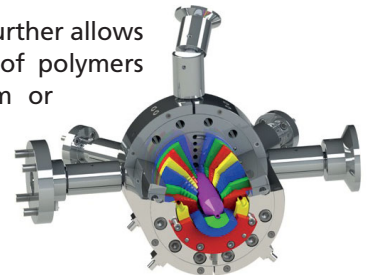
Extrusion Tooling

Guill introduces the latest generation of its Series 800, the 2-to-6 layer extrusion tooling designed to produce the highest quality, highest material-efficient 1/8" to 6" OD tubing for automotive, medical, appliance and industrial applications. The redesigned Series 800 produces flawlessly smooth extrusion and layer definition of Fluoropolymer and other materials for all multi-layer, multi-lumen medical tubing, as well as fuel line constructions, multi-layer PEX pipe and drip irrigation applications, among



others. The Guill design further allows thin layer combinations of polymers and adhesives to .02mm or less.

Guill offers its extensive line of crossheads and inline tubing dies in fixed and adjustable



center, for single or co-extrusion applications. The tooling is designed to process all compounds and features the company's patented, precision Feather Touch Concentricity adjustment, the Seal Right System, which combines with the Feather Touch system to eliminate polymer leaking. Guill also offers its unique spiral flow distribution system.

All Guill tooling is produced with rigorous computer simulation of the flow channels using Computational Fluid Dynamics (CFD) programs, resulting in optimum uniform flow with no weld lines.



Booth 4588

Guill Tool & Engineering
www.guill.com

Flexible Packaging and more

AMUT GROUP will participate in the upcoming NPE Show presenting the renovated Division AMUT DOLCI EXTRUSION, after the full merger of the company DOLCI BIELLONI in January.

The Division is dedicated to flexible packaging field, manufacturing plants for the production of stretch film (both cast and blown technology) and CPP film rolls. Also Converting lines for different applications are supplied.



Cast Lines for stretch film

In line thermoforming plant



The AMUT deep experience in the extrusion machinery has contributed to develop a customized technology, offering in-house engineering for these projects.

Compact design, high speed in winding and energy saving are the focus points that can make a difference. AMUT DOLCI EXTRUSION has already had a flying start mainly with the finalisation of several contracts for stretch film lines.

AMUT GROUP specialists will welcome you offering assistance also in the other divisions: Thermoforming machines (in-line and off-line solutions), Extrusion lines for rigid products (such as sheets, membranes, profiles, pipes) and Recycling – washing plants for PET and PE post-consumer items.



High-Speed Form/Cut/Stack Thermoformer

GN Thermoforming Equipment, a leading manufacturer of servo-driven, roll-fed thermoforming machines for the production of plastic packaging, will showcase its new GN800 Thermoformer for the first time in North America at the upcoming NPE2018.

Following a highly successful launch at K2016 in Dusseldorf, GN will highlight the unique capabilities of the GN800 Thermoformer at the largest plastics trade show event in the U.S.

The GN800 offers many standard features to ensure manufacturers' needs are met in today's changing marketplace. These include such benefits as forming capability of 5-in above and below the sheet line, in-mold-cut capability, auto-grease, heavy-duty bearings in the toggle system, and high-efficiency SOLAR heaters.

Among the top priorities of GN's customer-focused approach are improving productivity and ensuring that customers produce the most finished parts per pound of sheet. Over the years, GN has perfected common-edge-cut tooling technology for their contact-heat series of thermoformers. Common-edge tooling offers the ability to form a series of square or rectangular trays in a row or multiple rows while eliminating all web between the edges of the products.

Among their sustainability goals, Consumer Packaged Goods (CPG) companies are looking to their suppliers to reduce packaging weight. The GN800 is designed to work with minimal thicknesses of plastic materials and in combination with the common-edge system, it significantly increases finished part output per pound (kilo) of material.

At NPE2018, the company will demonstrate a common-edge-cut tool that was developed for the GN800 thermoformer in collaboration with Grivolab, a toolmaker from Romania. GN will run a meat tray in PET/PE laminate with a 12-cavity mold while maintaining a reduced scrap rate of 18%, said Jerome Romkey, GN's Business Development Manager.



Booth West 1283

GN Thermoforming Equipment
www.gncanada.com

New Electrical Motion Ultrasonic Welding Machine

Rinco Ultrasonics USA, a leading manufacturer of ultrasonic welding equipment, will launch its new Electrical Motion ultrasonic welding machine at NPE2018. The new machine, available in 20 kHz and 35 kHz frequencies, represents a move away from traditional pneumatic type press systems to electrically driven machines, according to Gordon Hull, managing director of Rinco Ultrasonics. "This is a high-value addition to our product line," said Hull. "It helps push the limits of what our customers can achieve in weld quality and repeatability."

The Electrical Motion welding system enables users to finely regulate the weld, using precise positioning of the horn, along with the applied welding force to the welding rate. This means considerably better results in welding, punching, cutting, and sealing of molded thermoplastic parts, nonwovens, and synthetic textiles. Another key feature of the Electrical Motion welding system is a high-performance, industry-type PC that can be easily operated via a 12-inch adjustable touchscreen, with the welding process triggered through an ergonomically designed two-hand operation.

The Electrical Motion Series is a next-generation product based on the company's Dynamic 3000 ultrasonic welding machine (also with a working frequency of 20 kHz and

35 kHz) which was designed for technically demanding welding operations for medium to large-sized thermoplastic parts.

Unlike the compressed air-driven design, in which the feed for the horn returns after every weld cycle to the mechanical home position in the pneumatic cylinder, the starting position with the Electrical Motion can be selected freely to any programmed position. As a result, the weld cycle can often be shortened, depending on the welded object's geometry. The Electrical Motion unit provides eight different welding modes from time, energy, and collapse distance to absolute distance, energy and time, energy or time, contact cut off, and melting rate. For all welding modes, the operator can adjust the ultrasonic trigger for force, distance, and time. Depending on the welding mode, the actual process can be subdivided into as many as 10 steps, a level of detail which delivers a more controlled welding process than with a pneumatic drive, according to Hull. Even parts that were previously almost impossible or very difficult to weld can now be joined reliably with a reproducible and uniform weld using Electrical Motion. The converter and booster are identical in construction to the pneumatic Dynamic 3000 series, so tooling already made for this machine can also be used with the new Electrical Motion.

The Electrical Motion system is operated using the graphic user interface of the software, whereby an individual user account with the relevant authorizations can be set up for each level of the employee hierarchy. The Linux Ubuntu operating system is logically structured, self-explanatory, and easy to use, enabling operators and maintenance personnel easy access, according to Hull.

Weld characteristics are shown clearly in the form of graphs on the Thin Film Transistor Liquid Crystal Display (TFT-LCD) monitor, and the results and parameter datasets can be exported on a data carrier. The system records and stores all results, including parameter changes, providing a non-erasable audit trail accessible only to authorized personnel.



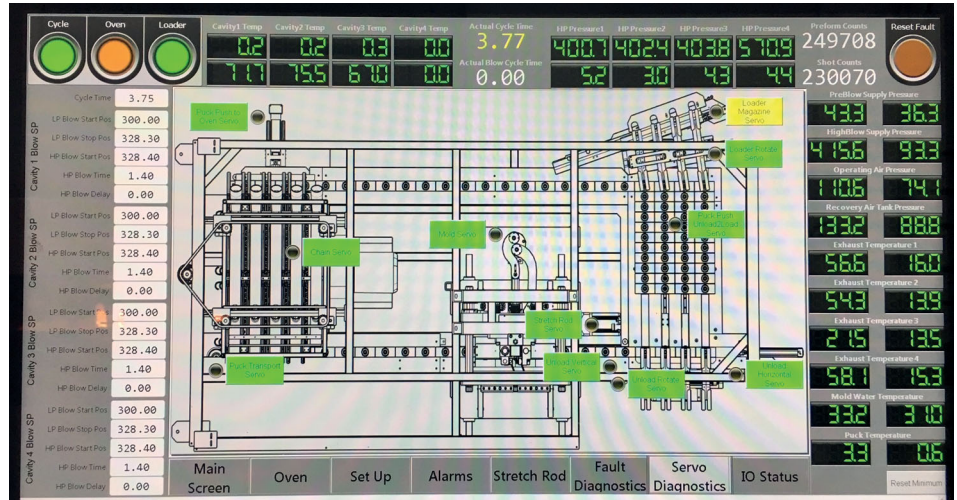
Next-Generation Four-Cavity Stretch Blow Machine

W. Amsler Equipment, a leading supplier of all-electric linear PET stretch blow molders, will introduce its next-generation four-cavity all-electric reheat stretch blow molder at the upcoming NPE2018. The company will also exhibit its newly-enhanced leak tester that inspects bottles from 10ml to 23 liters and its stand-alone spin trimmer for both stretch- and extrusion-blown containers.

The L42X all-electric reheat machine offers several new features including preferential heating, neck orientation, and hot-fill capabilities. "For custom blow molders, the next-generation four-cavity machine provides versatility to enable PET bottle production in a range of configurations and sizes," said Heidi Amsler, sales and marketing manager for W. Amsler.

The new machine makes up to 2-liter containers at a rate of 6500/hour in four cavities. It can also be used to run two-cavity molds for production of larger containers up to 5 liters. Neck finishes range from 18mm to 70mm.

The L42X reheat machine has four parallel heating ovens, one for each cavity. It comes equipped with 12 Bosch-Rexroth servo motors, compared to three servos for the previous model. The extra servos provide more repeatability, lower energy consumption, and require less wiring, resulting in easier troubleshooting, according to W. Amsler. The machine also has a 40-ton servo-driven mold clamping system. Servo systems are used to control preform loading, preform transportation through the machine, rotation through the ovens, stretch rod actuation, motion towards the molding station and clamp opening, closing, and bottle unloading.



Other key features include agitated preform in-feed to prevent bridging, preform temperature sensing prior to blow, pre-blow flow control for each cavity, water-cooled neck shields, and a large touchscreen operator interface. Servo-driven stretch rods are 14mm with 10mm and 12mm options.

The L42X comes equipped with a large touchscreen operator panel from Wonderware. It has a Windows-based human machine interface (HMI) with full access to assembly drawings, bills of materials (BOMs), set-up guides, troubleshooting, and training videos.

The four-cavity system is commercial and W. Amsler has already sold a machine to a custom blow molder.

Bottle machine

The success story of the innovative KBB series started with a live presentation of the first all-electric KBB machine for the North America market at NPE 2015. At this year's NPE show in Orlando, Kautex Maschinenbau will once again be placing the spotlight on its KBB series. A demo set-up at the booth will show the production of a 600-ml flat oval bottle for the personal care industry on a KBB40D machine with 2 x 5-fold production in three-layer ReCo execution, linked to a continuous weighing machine for automatic weight adjustment.

"Ever since the first all-electric KBB60D was launched on the North America market three years ago, demand for this series has grown at a considerable rate," says Bill Farrant, President of Kautex Machines Inc. Extremely short dry cycle times and low energy costs give the all-electric KBB series an edge in terms of saving resources and maximizing efficiency. In addition, quick-change systems enable by far the fastest product change-over in the extrusion blow molding machines segment.

Under the show slogan "Setting benchmarks for high production performance", Kautex Maschinenbau will be presenting another KBB model at NPE 2018. The KBB40D machine for the production of 600-ml flat oval bottles for the personal care industry has already been ordered by

Amcort, a customer who will also be represented at the Kautex stand in Orlando. The quick mold change features of the machine will also be demonstrated twice per day. The bottles are produced on the double-station machine with ten cavities in the three-layer ReCo process, whereby color is only added in the outer layer of the bottle. The inner layer uses virgin material to minimize the migration of impurities into the filled product. The middle layer uses regrind or PCR, i.e. recycled plastic, to save both costs and resources, in line with the circular economy ideal. Leak testing of the bottles is performed inside the blow molding machine.

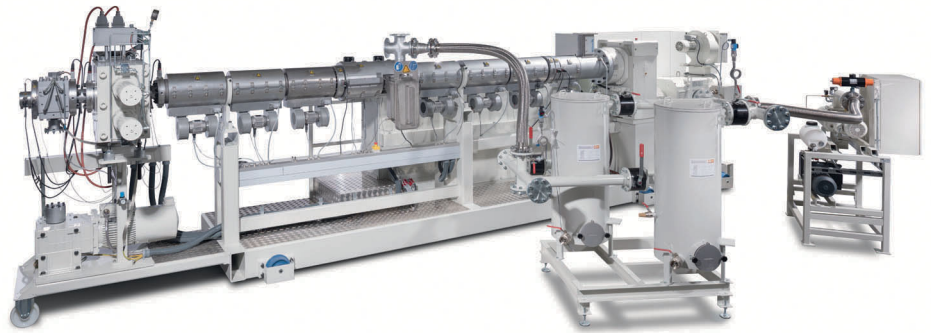
A continuous weighing machine linked to the blow molding machine will also be shown. It allows deviations in product weight to be identified immediately and adjusted automatically in the machine. This step reduces the number of rejects and increases machine efficiency. Another benefit of automatic weight adjustment is a saving in the cost of resin used. Visitors to the NPE show will be able to view the CPK parameters on a large screen in real time during the production process.

In keeping with the "Industry 4.0" smart factory trend, Kautex will be presenting the second generation of its virtual machine at NPE. This practical training tool enables the exact simulation of realistic production processes. The system comprising a compact workstation unit, two monitors, a projector and a real control panel allows machines of the KBS, KBB and the KCC series to be depicted in real time. The company will also be presenting a simple and reliable remote diagnostics solution at NPE: the Kautex Remote Service. This is based on a built-in firewall, which allows a technician to begin detailed troubleshooting without having to travel to the machine location. In the ideal scenario, the fault can be cleared online after the instant analysis. If not, either the faulty part will be identified and a replacement part sent out for self-installation, or a technician call-out will be arranged. This ensures that Kautex machines are up-and-running again as soon as possible, thus minimizing the costs of downtime.

Kautex Maschinenbau KBB 40D



*STARextruder: efficient degassing
for direct processing of PET*



STARextruders: extrusion of PET for food-grade thermoforming sheet

At booth number W2771 at NPE, battenfeld-cincinnati USA will showcase their proven STARextruder series. This system concept has been optimized particularly for processing PET and has recently received a letter of non-objection from the FDA for use in the production of food-grade thermoforming sheet.

High-grade food packaging such as thin-walled, resealable plastic containers or trays for convenience food are gaining in importance. Apart from polypropylene, PET is often used in these applications, as it is particularly suited due to its high transparency and good mechanical properties. The processing of PET poses a bit of a challenge, as a combination with water during processing can easily result in degradation reactions. An effective degassing in the extruder is therefore a must to reach good product quality.

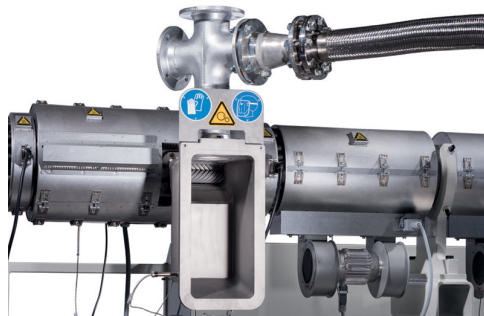
The STARextruder series was designed principally for the extrusion of PET. The processing unit consists of three sections: a single screw zone for plastification of the material, a planetary roller section for degassing under high vacuum and an optimally dimensioned discharge zone. Thanks to the planetary roller degassing zone, highly ef-

ficient degassing of the melt is possible. Because of the functionality of the degassing section, the melt is rolled out in very thin layers and an extremely large surface is created. Both effects counteract the degradation of the materials and significantly contribute to optimal product quality.

STARextruders save energy by significantly reducing drying costs. The operator has a variety of benefits due to the design principle of the machines. Because STARextruders are based on standard single screw extruders, their handling is similar as well. Maintenance costs are lower thanks to higher wear resistance of the planetary roller section. A changeover from PET to PP or PS processing is also possible without a screw change. The machines' proven concept enables the processing of PET bottle flakes with pre-conditioning. This process has recently been issued a letter of non-objection by the FDA (US Food and Drug Administration).

The STARextruders' available machine sizes of 90, 120 and 150 mm are perfectly suited for small and medium output ranges from 600-1,200 kg/h (1,300 to 2,600 lb/hr).

*Close-up view
of the planetary
roller zone
that ensures
highly efficient
degassing
of the melt*



Cost-effective Color Masterbatch Production in a Single Cycle

Using the unique liquid color compounding process, masterbatches of any color - whether green, blue, purple, pink or orange - can be produced in a single cycle without the intermediate mono-concentrate production step for maximum cost-effectiveness. And that is exactly the solution KraussMaffei Berstorff will present in a live demonstration at their booth during this year's NPE in Orlando: direct production of PE color masterbatches on a ZE 28 BluePower extruder. Visitors will be able to witness the unparalleled efficiency of the latest twin-screw extruder model in terms of melt homogeneity, color precision and flexibility.

Liquid Color Compounding Technology produced masterbatches with unique color precision:

The ZE 28 BluePower used in the NPE live demonstration with a length of 46 D is equipped with a liquid and solids metering system, so that color masterbatches can be produced of any type of starting material. Color masterbatches are usually based on mono-concentrates, which are produced on single-screw extruders in a separate process step, intermediately stored and then fed into the twin-screw extruder in a second step. With the liquid color compounding technology, the intermediate mono-concentrate production step is no longer required. The resulting color masterbatches stand out for unparalleled cost-effectiveness and unique color precision. As our twin-screw extruders are self-cleaning, changes from dark to bright colors can be made without any problems. KraussMaffei Berstorff offers customers adequate recipes stored in the proprietary Process Control ADVANCED system, which are automatically set for the complete line at the simple push of a button on the control panel. The compounding line exhibited at the fair is equipped with an Econ underwater pelletizer.

ZE 28 BluePower laboratory extruder with wide range of process tasks:

The BluePower series are a generation of trend-setting compounding extruders that perfectly meet the ever increasing requirements of compound processors in terms of high energy efficiency, cost-effectiveness, safety at work, simple use and low



ZE 28 BluePower laboratory extruder produces color masterbatches economical and in high quality


maintenance efforts. Thanks to the wide range of process tasks and processing materials, is the ZE 28 BluePower twin-screw extruder the ideally suited for research and development applications as well as for small-batch production. All extruders in the ZE BluePower series feature an OD/ID diameter ratio of 1.65, a specific torque from 13,6 up to 16

Nm/cm³ and high drive power and are rated for speeds from 900 rpm up to 1,200 rpm. The highlights of the ZE BluePower extruders are higher torque oval liners by simultaneously increased free volume, improved side feeders and degassing units as well as the optional energy management tool. The 4D and 6D barrel sections that can be combined with the extensive range of modular screw elements to bespoke machinery configurations for any application are simply unique in the market.



Hall West, Booth W403


KraussMaffei Berstorff GmbH
www.kraussmaffeiberstorff.com



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 Franz Messer GmbH
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 www.erge-elektrowaermetechnik.de

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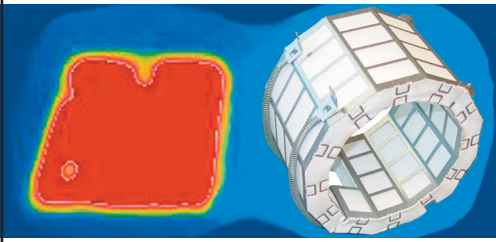
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High-performance Solutions that make Plastics clearer, better and faster

Milliken & Company will feature its extensive portfolio of additive technologies for improving the clarity, performance and processing of polyolefins at NPE 2018 in booth #S26023. The company will also launch two new products: a unique performance modifier for injection-molded polypropylene (PP) impact copolymers (ICPs), and the latest technology in its Hyperform® HPN family of nucleating agents, which is specifically designed to maximize stiffness in PP ICPs. Both of these novel technologies will significantly change the way PP ICPs perform, particularly regarding impact strength, stiffness and melt flow. Further, by improving the physical properties of post-consumer recycled resins, the new performance modifier allows converters to take greater advantage of their cost and sustainability benefits. Clearer, Better, Faster: Milliken will showcase advanced technologies that address the plastics industry's need for improvements in material clarity, performance and processing.

- **Clearer:** NX™ UltraClear PP, which is polypropylene clarified with Milliken's Millad® NX™ 8000 clarifier, enhances the aesthetics, clarity and quality of PP applications. This high-performance technology encourages the broader use of PP, which combines high temperature resistance with glass-like transparency, light weight and easy recyclability. Milliken's ClearTint® colorants, also to be featured at the booth, are FDA compliant and provide bright, rich and transparent colors to PP applications.
- **Better:** The new performance modifier improves the impact resistance and melt flow properties of PP ICPs, enhancing their strength and support for cost-effective downgauging, respectively. The new Hyperform HPN nucleator maximizes stiffness, which also enables thinner gauges. Milliken's other Hyperform HPN nucleating agents for PP and polyethylene (PE) will also be showcased at the event. These materials provide an excellent



(Photo © 2018 Milliken & Company, all rights reserved, MKPR181)
Milliken's Millad® NX™ 8000 Clarifier,
ClearTint® Colorants and NX™ UltraClear™ PP Enhance Beauty,
Visibility and Quality of a Variety of Plastics Applications

balance of impact resistance and stiffness performance, as well as improved shrinkage control to reduce warpage. Also on display, ClearShield® UV absorbers for polyethylene terephthalate (PET) provide exceptional UV protection and improved color stability to extend the shelf life of foods and beverages, personal care products and household cleaners.

- **Faster:** Millad NX 8000 clarifier enhances productivity by enabling broader use of PP, whose lower processing temperatures increase production speeds in injection molding. Similarly, Hyperform HPN nucleating agents' ability to create a unique crystal orientation in PP and PE shortens cooling times and contributes to higher productivity. The company's clarifying and nucleating agents will be featured in a wide range of plastic parts to be produced live on the show floor by leading manufacturers of thermoforming, injection molding, extrusion blow molding and compression blow forming machinery. Examples include pharma bottles and ice cream lids with in-mold labels.



Booth S26023

 **Milliken**
www.millikenchemical.com or www.milliken.com

The INTAREMA TVEplus with Laserfilter enables the highly efficient recycling of heavily contaminated materials with different bulk densities



Solutions for Quality Recycled Pellets in more Demand than ever before

From 24 to 27 April visitors to the EREMA trade fair stand 2B59 in Hall 2H at Chinaplas will find out how, using the right technology, they can process not only clean production waste but also even heavily contaminated post-consumer materials to make new raw material. In combination with EREMA's smart digital solutions, this sets a new standard in terms of quality and processes in plastics recycling.

The potential of plastics recycling in China can be tapped even further, says a confident James Qiu, CEO of EREMA China. To support this development from the technological side, EREMA counts on maximum quality in the production of recyclates. EREMA developed the INTAREMA TVEplus system especially for the processing of post-consumer materials which, with a market share of over 80 per cent in Europe, has secured a clear lead. "The unique combination of INTAREMA TVEplus and EREMA Laserfilter is particularly suitable for material with a high degree of contamination, when conventional melt filters can no longer offer the necessary cleaning efficiency. The amount of unwashed waste film with paper labels from commercial waste, HDPE from household waste or WEEE, for example, is high in China. This is why the current developments in terms of increased investment in the ex-

pansion of sorting and collection systems are encouraging," says Qiu.

For processors, EREMA offers the technical answer to the question of how the production waste which accumulates can be used as efficiently as possible. Interested attendees can see the production quality of the INTAREMA TVEplus 1007 for themselves at the EREMA booth. The system will be processing production waste from polypropylene big bag bulk containers (FIBCs) live to make high-quality recyclates – direct and without any pre-shredding. "Due to its wide variety of use you find large plastic fibre packaging in an increasing number of areas, such as food products, consumer durables and the construction industry. Plastic is too valuable to dismiss as waste. Thanks to the stable processing with our EREMA systems it is no trouble to put the recyclates back into the production process," states Qiu. Equipped with an EREMA Laserfilter, the INTAREMA TVEplus system can even recycle heavily contaminated or heavily printed post-consumer bulk bags.

EREMA's smart factory package represents another boost in quality. Recyclers and producers can equip their EREMA systems with online quality measuring equipment to record the MVR and colour values of the recyclates at the machine during processing – as opposed to later on in the laboratory. Additionally, the re360 Manufacturing Execution System (MES) enables you to transfer production and machine data from one, two or dozens of systems – also at different locations – directly to the computer in real time.

Heavily contaminated film can be processed with the recycling duo INTAREMA TVEplus and EREMA Laserfilter to make high-quality recyclates



Chinaplas® 2018 Booth 2B59, Hall 2H
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EREMA
www.erema.com

Innovative Filtration, Extrusion and Measurement Technology

The **Gneuss Processing Unit (GPU)** has been available for several years now and has proven itself for the reprocessing of bulky PET waste such as post-consumer bottle flake and industrial waste from fiber and film manufacture without pre-drying. A Gneuss Processing Unit consists of a Gneuss MRS extruder with its unmatched devolatilization and decontamination performance in combination with a highly-efficient Gneuss Rotary Filtration System and an online viscometer VIS for intelligent dynamic viscosity control.

Although originally developed specifically for PET, the MRS is now also running in polyolefin and nylon applications, and being tested on a range of other materials and applications. Thanks to the patented combination of single screw extruder with a multiple screw section, the extruder is very sturdy and particularly well suited for recycling applications.

The MRS extruder permits the processing of PET without pre-drying by using a simple water ring vacuum system to process the material directly to high quality end products. This is achieved by means of its unique and patented processing section. Based on a conventional single screw extruder, the Multi Rotation Section is a drum containing eight satellite single screws, driven by a ring gear and pinion transmission. The "barrels" cut into the drum are approximately 30 % open and provide optimum exposure of the melt.

Thanks to this design, the devolatilizing performance is approx. fifty (50) times greater than that of a conventional single screw extruder – and this at a vacuum of only 25 to 40 mbar. By avoiding the need for a deep vacuum system and pre-drying, the MRS is an economically efficient alternative to conventional technologies. Further arguments in its favor besides energy savings are the simple and rugged design, small footprint, its ease of operation and low maintenance,

MRS extrusion system with Multi Rotation Extruder MRS 130, Rotary Filtration System RSFgenius 150, Online Viscometer VIS and Gneuss pressure transducers



Sheet extrusion line with Multi Rotation Extruder MRS, Rotary Filtration System RSFgenius, Online Viscometer VIS and PET foam module

processing flexibility and last but not least its excellent melt quality and homogeneity. One area this technology has been especially successful in is PET sheet extrusion. Besides producing high quality rigid sheet, Gneuss now also offers the option for its PET sheet extrusion lines to quickly and flexibly switch to producing physically foamed PET sheet with the addition of Gneuss' new PET foam module. Foam sheet with a weight reduction of 50 % can be extruded (depending on the process) with a consistent foam structure and mechanical properties. And this from up to 100 % post-consumer material. Foamed PET sheet is an ideal material for economically manufacturing thermoformed containers for the food industry such as meat trays, egg cartons, cups or plates.

The patented **Rotary Filtration Systems** are characterized by the filter disk on which the screen cavities are located in a ring pattern and which is completely encapsulated by the two filter blocks. Screens can be inserted into the cavities by opening a small hatch door giving access to the cavities while the production process continues to run without any interruptions or disturbances.

All models have been completely revised in the last years. Modifications to the screen changer housings permit operation on a wider range of applications at higher pressures, whilst offering enlarged active filtration areas. Components and modules have been commonised in order to offer shorter delivery lead times and lower costs.

The SFXmagnus series operates automatically as well as process and pressure constant. It is suitable for a very wide range of applications. This series is characterized by an extra large active screen surface area, its compact design, as well as extremely easy operation. Screen changes do not have any influence on the product quality.

Gneuss' top model, the RSFgenius, operates with an integrated self cleaning system for very demanding applications and highest quality requirements. Screens can be automatically re-used up to 400 times and filtration finenesses below 10 microns/1200 mesh are available.

The KF range of continuous filtration systems is designed specifically for applications with frequent material type, grade or color changes as well as for high pressure applications like blown film. The KF screen changers are especially compact and offer excellent value for money while permitting simple and quick screen changes on the fly.

Gneuss Measurement Technology products: As a machinery manufacturer, Gneuss has the manufacturing capabilities to realize even unusual sensor requirements. The lean manufacturing structure at Gneuss makes this possible with shortest delivery times. Gneuss sensors are available to match regional or application – specific requirements such as Atex, Hart Communication or EAC.

In especially difficult process conditions with short pressure overloads, frequent pressure spikes as well as unmelts in the material, sensors are highly stressed. Gneuss builds a special heavy-duty design with a special membrane technology for these applications.

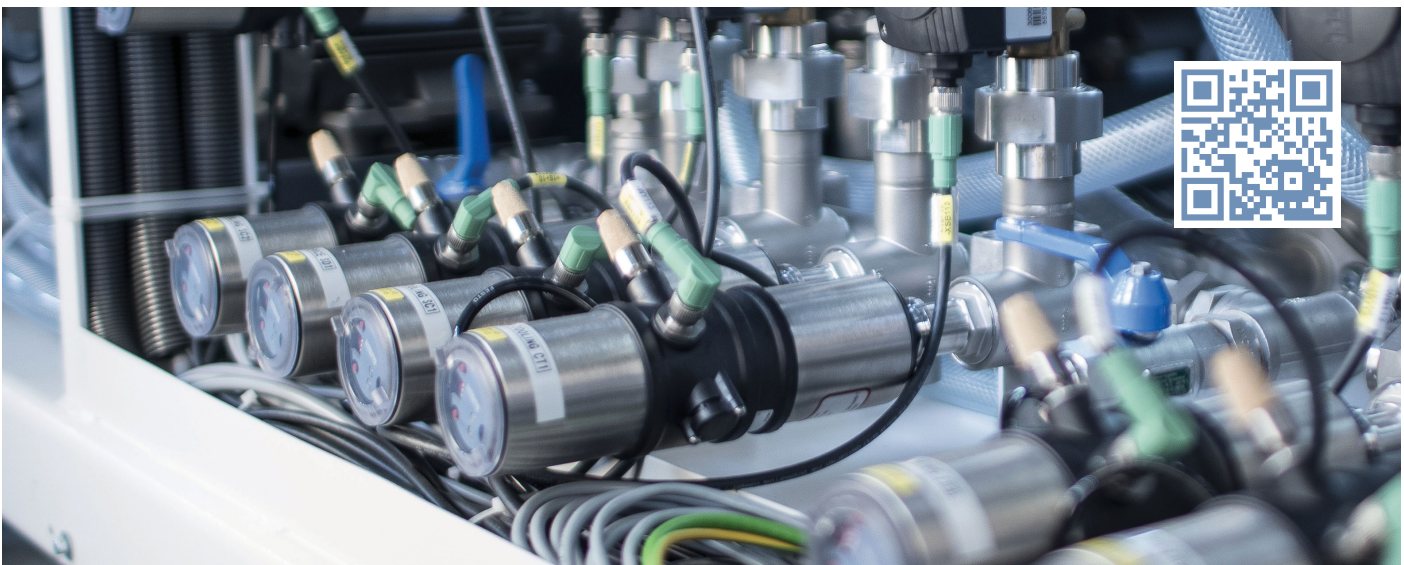


Continuous Rotary Filtration System KF 150 for frequent material changes

Also, Gneuss offers a special transducer for food applications, where regular cleaning of the machinery is necessary, so that sensors are often subject to steam or water jets. Gneuss has developed a special type of sensor for these applications, which remains waterproof even if its plug is removed.

Chinaplas® 2018 Hall 2, Booth 2J31
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Gneuss Kunststofftechnik GmbH
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FLUID CONTROL SYSTEMS

New Lab Stretcher Generation

At Chinaplas 2018 Brückner Maschinenbau will present their latest concepts for the production of added-value plastics films. Live at the booth will be demonstrated: New laboratory stretching machine KARO 5.0.

For any kind of oriented film development, it is essential to perform all trials on completely reliable and accurate lab-stretching equipment. With more than 40 installed units, Brückner's "KARO IV" has set a worldwide standard as the laboratory stretching machine. Whether for new packaging film recipes, optimized skin layers, high speed resins, and other applications such as capacitor film, battery separator film or optical films, the KARO IV has been an indispensable part of film development for many years.

Now the new "KARO 5.0" generation will come with a series of extended features which will be introduced for the first time at Chinaplas 2018. From mono-axial to bi-axial, sequential or simultaneous stretching, it offers enhanced possibilities, demonstrated live at the Brückner booth:

- Ergonomic machine design for a more comfortable and convenient operation
- New visualization system for an optimized, intuitive machine control
- Better process control

- Faster change of process settings and oven cooling function
- Clip cooling system for faster trial sequences
- Quieter machine operation
- Less energy consumption

At Chinaplas 2018 Brückner introduces two absolute world novelties:

- A 5.5 m line concept for the wet process – the most powerful and efficient battery separator film technology on the market
- The unique LISIM simultaneous process – applied to wet battery separator film production for the very first time

Chinese packaging film manufacturers ask for high output and low production costs. Brückner's film stretching lines are the widest, fastest and most productive within the industry. Chinaplas visitors will get to know:

- BOPET lines with 10.4m working width for enhanced productivity
- BOPP lines with significantly more than 60,000 tons/year of output

Combined with increased energy and raw material efficiency as well as the new operating concept "Easy Operation" Brückner's packaging film lines significantly lower film producers' total cost of ownership.

At the Brückner Group booth, besides Brückner Maschinenbau, visitors will also meet Brückner Servtec with their solutions for the profitable operation of film stretching lines, Kiefel, showing the latest developments for the packaging, automotive, medical & appliance industry, and PackSys Global, presenting advanced packaging equipment.

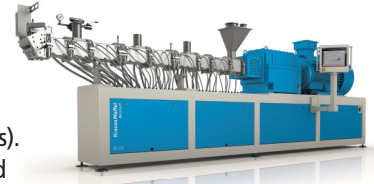
Latest Simultaneous Stretching Technology



 **Chinaplas® 2018** Booth 2L91
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Brückner Maschinenbau
www.brueckner.com

New ZE-CN Generation of Twin-Screw Extruders for enhanced Compounding Performance



At this year's Chinaplas KraussMaffei Berstorff will exhibit the new ZE-CN twin-screw extruder series. This new extruder generation stands out for substantially enhanced performance and uncompromising flexibility. Through state-of-the-art technology, this series has been further upgraded and adapted to higher productivity requirements. It is aimed specifically at Chinese compounders with exacting quality standards.

"Offering unparalleled productivity and maximum availability, KraussMaffei Berstorff twin-screw extruders have earned an excellent reputation in China," says Bengt Schmidt, Vice President at KraussMaffei Berstorff in the People's Republic. "We are highly motivated to continue this promising success story and offer our customers a decisive performance increase in compounding with the new series."

As compared to the previous ZE Performance series, the ZE-CN features 15 per cent higher output rates and up to 20 per cent more flexibility in process applications, boosting the performance of Chinese customers to new heights. The state-of-the-art control software can be seamlessly integrated into the digital factory, ready for

Industry 4.0 (Internet of Things).

All components are produced either directly by KraussMaffei Berstorff or by renowned Chinese and international suppliers in compliance with KraussMaffei Berstorff's specifications.

The series is characterized a constant level of excellent product quality, easy operation and uncompromising reliability. Its high productivity makes it a safe investment with a short payback period. The new series is completely assembled at the company's Chinese site in Haiyan, which works also as service hub for their Chinese and Asian customers.

In addition to the new twin-screw extruder, KraussMaffei Berstorff offers compounding companies an extensive portfolio of technical and engineering services and consulting.


Chinaplas® 2018 Hall 2H, booth 2T01
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KraussMaffei Berstorff GmbH
www.kraussmaffeiberstorff.com

Innovations at the Chinaplas 2018

At the 32nd Chinaplas, the German machine manufacturer Windmöller & Hölscher will be presenting innovations from its extensive portfolio for manufacturing flexible packaging. W&H experts in the areas of extrusion, printing and conversion will be at the 150 m² booth in Hall 2, Stand L 43, ready and waiting to provide comprehensive advice to trade visitors. A special highlight is TURBOCLEAN for the automatic material changeover on VAREX II blown film lines, which will be demonstrated using, by way of example, a 5-layer POD blown film for lamination and collation shrink film.

In the area of film manufacturing the complete machine range with innovative solutions for the most varied applications will be presented.

"The need for new innovative quality forms for special fields of application is increasing and with their developments, Windmöller & Hölscher take these into account", said Michael Fischer, CEO W&H Asia Pacific. This applies for, e.g., the production of breathable diaper film. With the 3-layer system VAREX II with Inline-MDO stretching unit, W&H offers a machine configuration for the production of a particularly thin breathable diaper

back sheet film of only 12 g/m² - a product that is predominantly produced in cast film extrusion and with a higher basis weight. However, the focus will also be on the manufacture of surface protection films, FFS films, barrier films with up to 11 layers and nanolayer stretch films with up to 55 layers, as they can be produced on the FILMEX cast film extrusion line. The SQUAREX upside-down line for the production of films for infusion bags should also attract considerable interest.

W&H also demonstrates competence in the field of flexographic and gravure printing presses with a special focus on VOC reduction (reduction of volatile organic compounds) and the fastest changeover times, as well as in the area of industrial sacks made from paper, plastic and woven plastic materials. A prime example here is the new AD proFilm MP film valve sack, which is characterized by a particularly high level of moisture protection. Alongside the paper bag machine range of the W&H subsidiary GARANT, W&H will present the bag machine range of the German company B&B Verpackungstechnik. B&B is a global market leader for the manufacture of reclosable side-gusseted bags as well as stand-up pouches with inline spout insertion and optional leak detection. W&H operates as a sales and service organization for B&B Verpackungstechnik in Asia, thus advantageously supplementing the W&H portfolio of machines for the manufacture of flexible packaging.

FILMEX II – cast film extrusion line for stretch, CPP and barrier applications




Chinaplas® 2018 Hall 2, Stand L43
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WINDMÖLLER & HÖLSCHER KG
www.wuh-group.com

Recently developed and advanced Pelletizers for the Plastic Processing Industry

For Chinaplas 2018 in Shanghai, Maag is highlighting pelletizing systems for plastic producers, compounders and recyclers. Chinaplas is also Maag's first joint appearance with Ettliger, a manufacturer of high-performance melt filters for recycling applications belongs to Maag since the beginning of the year.

The pelletizing systems presented at booth P38 in hall 2 – with the largest area ever for Maag at a trade fair in China – focus on the ZHULI®, PEARLO®, BAOLI® and M-USG series.

- Maag's ZHULI® underwater pelletizing system was expanded with the new ZHULI® MAP, building upon the ZHULI® SLC (SLC stands for Spring Loaded Cutters) which was introduced in 2017 and is the cost-effective basic system for numerous standard applications with low to medium throughput. While the knives in the SLC type are pressed against the die with a permanently selected spring pressure, the pressure of the knives against the die in the new MAP type (Manual Adjustable Pelletizer) is variably adjustable. This option significantly extends the application range by making it possible to adapt to the relevant process parameters. All key components are manufactured in the USA and Germany, as they are for the entire ZHULI® product family.

- PEARLO® is the high-performance underwater pelletizing system from Maag for making spherical pellets. It combines technologies from the previously independent companies Gala and Automatik for efficient and flexible use in challenging applications with throughput of up to 36,000 kg/h. Compact and modularly designed, it requires only a very small footprint in production. Electronically controlled EAC technology guarantees precise feed of the pelletizing knives during operation, thereby ensuring long runtimes free of interruptions with consistently high pellet quality.

- BAOLI® dry-cut pelletizers from Maag for compounding and recycling hard and soft materials are available at Chinaplas in the 3rd, completely revised generation. With working widths up to 300 mm, they are designed for processing up to 75 polymer strands into cylindrical pellets from 1.5 mm to 5 mm in length. Their advantages compared to previously available versions include the more compact design and good accessibility for cleaning as well as variable height adjustment and control elements optionally positioned on the left or right side for added

*Maag M-USG
Underwater Strand
Pelletizer*



operational flexibility. The key components of BAOLI® systems are manufactured in Germany and all versions meet the requirements of applicable safety standards in Germany. Noise emission, which is already reduced, can be further diminished with the optionally available sound insulating hood.

- The M-USG underwater strand pelletizers are the flagship of Maag pelletizers and the market leading systems worldwide for making raw plastic materials such as PET, PA and PC. With throughput of up to 20,000 kg/h, they stand for outstanding, consistent pellet quality, high system availability due to the quick-change cutting head, a high level of automation, long service life of the extremely wear-resistant cutting tools and excellent accessibility for convenient operation and maintenance.

For the first time under the Maag umbrella, Ettliger is presenting the performance-enhanced melt filter type ERF350 at Chinaplas, just recently introduced to the market at the end of 2017. It reliably filters plastic melts with impurities and separates foreign materials such as paper, aluminum, wood, elastomers or plastics which fuse at a higher temperature with impurity levels up to 18 % – all with extremely low melt losses. Designed for especially high efficiency, it achieves a maximum throughput of 3800 kg/h, depending on the type of melt and degree of impurities as well as the selected filtration rating. It is suitable for all commonly used polyolefins and polystyrenes as well as a large number of technical plastics such as styrene copolymers, TPE and TPU.

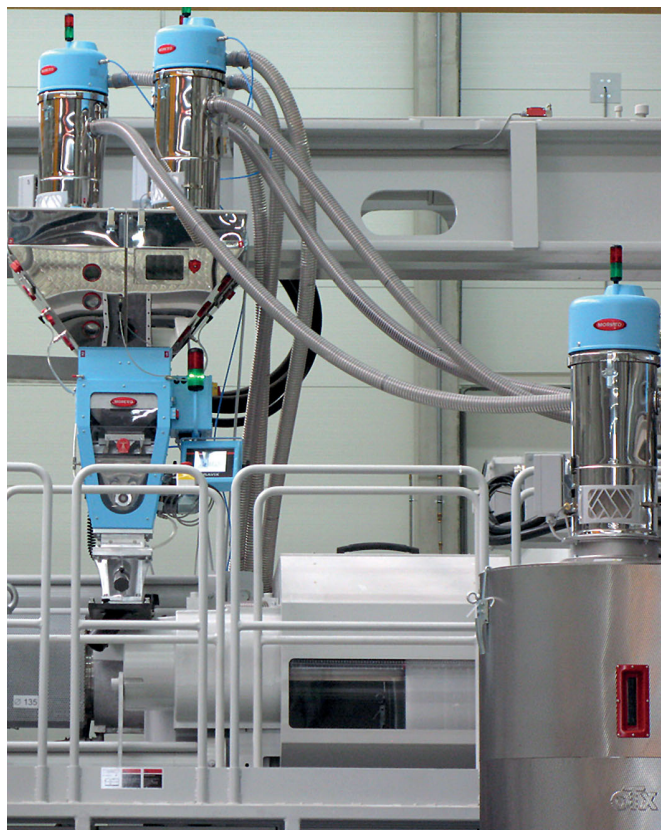
 **Chinaplas® 2018** Hall 2, booth P38
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► Maag Pump Systems AG
www.maag.com

Moretto, a leading Italian provider of wide range of automations and technologies for Material Handling, Drying, Blending, Heat Transfer and Size Reduction equipment, will attend this years Chinaplas in Shanghai.

Since 1980, Moretto has been providing plastic processors with integrated systems and auxiliary equipment solutions, enabling process automation and optimization, particularly for the high precision requirements of the injection molding of PET preforms. Today Moretto is projected towards the global market. In addition to its headquarters in Italy, the group boasts a global presence with 7 sales branches including China.

The Chinese plastic industry market has huge potential and is increasingly sensitive to new technologies. With its local branch Moretto enters in the market offering excellent solutions, know-how, pre-during and after sale service, able to promptly respond to the needs of Chinese customers and establish long-term relationships



Automations at CHINAPLAS 2018

Drying:

At Chinaplas the spotlight will be focused on EUREKA PLUS and MOISTURE METER MANAGER. Eureka Plus is a Modular, Energy-Saving, Resin Drying system, claimed to be "the most advanced low consumption drying system available on the market". A project born from over 15 years of studies, simulations and experiments and which continues to evolve including new tools and applications. Eureka Plus is comprised of four Moretto-patented technologies:

X MAX high performance, modular multi-bed dryer with consistent dew point, combined

with FLOWMATIK, a dynamic air-flow management device, OTX drying hoppers with superior mass flow drying characteristics and now MOISTURE METER MANAGER, a revolutionary In-real and real-time moisture ana-lyzer. Moisture Meter Manager measures In-line the actual residual moisture content in the granule and checks that the polymer is adequately dehumidified immediately prior the transformation process. The delta measurement between the initial and final moisture content of the pellet, at the hopper inlet and outlet, allows Moisture Meter Manager to automatically manage the dryer working conditions and to adapt the process on the fly defining process parameters for proper drying and maximum energy efficiency. This process allows the dryer to operate based on the condition of the polymer at any given time, providing a real "drying on demand". By acquiring the initial data of the material and knowing the final moisture requested, Moisture Meter Manager holds a complete control over the process and manages all the process variables (type of material, final moisture set, hourly production, treatment temperature, specific Airflow). To complete the drying offer Moretto presents its X Dry Air mini-dryer and X Comb range, high performance



machinery for the drying of small quantities of technical materials. X Comb has been specifically designed for satisfy strict requirements of the medical sector. This dryer is composed by the OTX hopper which, thanks to its unique geometry, allows a flow of material and uniform air ensuring unmatched performance. The technological heart of X Comb consists of the integrated Dew Point equalizer which allows to maintain a stable dew point up to -52°C and high-efficiency turbo-compressors. In addition, an adaptive variable airflow and anti-stress control ensure an optimal treatment and protection against over-drying. The regeneration of the exhaust air makes X Comb dryer the perfect solution for medical and optical sector and technical applications that require cleanroom.

Kasko is the range of feeders developed by Moretto for the conveying in depression of plastic material. Kasko is a robust device, suitable for the most demanding jobs. Different models are proposed with capacity from 30 kg/h to 80 kg/h, for single applications or complex centralized systems.

The gravimetric dosing units of DGM GRAVIX series and the continuous loss-in-weight batch blender GRAMIXO, are Moretto's perfect dosing solutions. The DGM GRAVIX series gravimetric dosing units are high-tech machines, conceived by Moretto not only for ensuring incomparable precision levels (0.001%) but also for interchanging data with the possibility to be networked, for remotely managing the machine parameters and performing statistics on production, consumption and costs. GRAMIXO inherits dosage accuracy of the Gravix series, its available in various specific models for different sectors applications (medical, flakes, high temperature, powder, micro-dosing, corrosion-proof). These dosers are characterized by a double eyelid system, a free weighing hopper, vibration immunity system, a super easy Touch View interface and a connection to the Mowis supervision system.



TE-KO is Moretto's temperature control series, available in pressurized water and oil versions, designed to ensure efficiency and absolute precision in automatic temperature control even in the most difficult conditions, whether they are dedicated to injection molds, or cylinders or rollers of extruders.

MOWIS (Moretto Object Windows Integrated Supervisor) is the integrated self-configurable supervision system with intuitive object programming, developed by Moretto for the machine's connection and the control of the whole automation chain in the plastics processing plants. Mowis overcomes the barriers of traditional supervision by adapting to the needs and the qualitative, productive and managerial objectives of every customer. A modular software with unique, auto-configurable and user friendly interface which allows immediate display of the system status.

The Moretto's Smart Factory is where machines are interconnected with each other and with the company management software, a system that is able to acquire large amounts of data from all the actors of the production process, elaborate, share and use them to achieve higher levels of efficiency. The project aims to combine technological leadership with the digital one in order to obtain plants that are able to automatically adapt output to the market needs, predict breakages or machine stops in advance and have a real-time remote support. Today's challenge is to move from fragmented services to an interconnected supply chain model.

PLAST 2018

PLAST 2018 (29 May to 1 June 2018, Milan, Italy) will be the preeminent European event this year for the plastics and rubber industry, embracing the whole chain from raw materials to semi-finished and finished products, from machinery and equipment to support services. And, quite rightly, once again this year the fair enjoys the sponsorship of the Italian Ministry of Economic Development.

The international scope of this triennial tradeshow, now in its eighteenth edition, is confirmed by the impressive numbers of foreign exhibitors and visitors. With three months to go before opening day, a total of 1,100 exhibitors have registered for PLAST 2018. Of these, 870 are direct exhibitors (one third of them foreign, representing more than forty countries and growth of 21% in number and 24% in space allocation) and 230 are represented. A total of 52,000 square metres of exhibition space has been assigned.

PLAST reflects the preeminent global position of the Italian plastics and rubber processing machinery, equipment and moulds industry, which forms the core of the exhibition. Over 70% of national production – which hit a new all-time record value of 4.5 billion euros in 2017 according to figures from the trade association AMAPLAST, produced by 900 manufacturers employing some 14,000 people – is exported.

Italian technology (as well as that produced in Germany, Italy's main global competitor in the sector – indeed Germany tops the list in terms of both foreign exhibitors and foreign visitors at PLAST) is purchased by converters all over the world who require high-tech capabilities to produce large volumes of quality products with optimal precision.

PLAST 2018 thus offers economic operators a full-spectrum technological showcase addressing all the various production processes (from extrusion to blow-moulding, from thermoforming to injection moulding) and applications (packaging, automotive, medical, construction, etc.).

Given the excellent performance of Italian exports in the industry and recovery in the domestic market, participants have every right to expect rewarding business opportunities at PLAST 2018, with their order books swelling significantly directly at the fair.

Again this year, PLAST will feature satellite fairs dedicated to three sub-sectors of excellence: RUBBER (in its third edition), 3D PLAST (focusing on additive manufacturing and related technologies, now in its second edition) and PLAST-MAT (first edition, dedicated to innovative plastics).

A jam-packed schedule of technical seminars and company meetings is in the works, providing a full-spectrum view of the latest in materials, processes, machinery and services. These conferences, combined with the breadth of the exhibits, will draw in not only professionals working in the field but also young people seeking a place in the job market.

But that's not all. In keeping with tradition, the Art & Plastics area of PLAST 2018 will feature a splash of colour, with artists



Alessandro Grassi, President of Promaplast srl: "Exhibitor expectations are quite positive, with growth particularly in the number of foreign exhibitors, providing further confirmation of the growing international stature of the exhibition, which will be Europe's most important tradeshow for the sector in 2018, as underscored by the continuing sponsorship of the Italian Ministry of Economic Development."

exhibiting works they have created using plastic, providing a further demonstration of the versatility of this material.



Booth 2L91

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SIMPLY THE BEST

» We had the choice between several suppliers for our PET bottle to bottle plastics recycling plant. We decided to purchase our equipment from HERBOLD in Germany. The excellent after-sales team was the deciding reason we chose to work with HERBOLD. They bridged a distance of more than 5,000 miles and helped my staff get moving quickly and helped us start production and maintain the system. HERBOLD offers simply the best technology for size reduction, washing, separation, and drying of PET bottles.«

prs EUROPE prs Europe
24.04. - 25.04.2018
Booth A5 Amsterdam

NPE 2018
07.05. - 11.05.2018
Booth W7545 Orlando

IFAT IFAT 2018 Messe München
14.05. - 18.05.2018
Hall B5.117 Germany

George Gatlin, General Director
INVEMA San Pedro Sula, Honduras

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Growing Beyond Extrusion

Tecno System Srl chooses PLAST 2018 as the first important event to officially present the acquisition of B-TEC and at the same time the restyling of its logo and extrusion lines.

Tecno System has been working for several decades closely with B-TEC Srl, a world leader in design and construction of high quality extrusion dies and calibrators for the extrusion of thermoplastic profiles. B-TEC specialized in dies and calibrators for profiles for window frames, roller shutters (2x10 m/min), panels, cable management ducts, gutters and rainwater pipes, etc. B-TEC's skills, combined with Tecno System's experience in roll-forming, punching, "fly-cut" at high production speeds are perfectly integrated, and give as result a high level of customer satisfaction, the quality achieved on the finished product, together with the renown strength and durability of the B-TEC tooling.

Among the most important and innovative common projects resulting from the synergy between Tecno System and B-TEC, it is worth mentioning the one concerning the reinforcement of profiles by means of coextrusion with fiberglass wires in window profiles. This technology makes it possible to keep the traditional construction of the line unchanged, the extruder is the same, as no abrasive material goes through the cylinder and screws. The downstream of the line is also the usual window profile line, as well as the die and calibrator, making it possible to produce profiles without and with reinforcement with the same set of tooling. The window profiles present almost no retraction, the frames made with this profiles don't need a metal reinforcement for most of the common dimensions of windows.

Another recent project has been realized for an important Russian client, concerning the construction of a complete line for the production of SIDING panels in coextruded foamed PVC, with a pigmented surface layer on which a wood grain is embossed by a particularly relevant calender.

Further intriguing projects that require the expertise of both brands are already under study while the main objective remains to implement the intuitions and ideas of the final customers for the creation of innovative products with a strong impact on national and international market.

"The strengths of Tecno System are versatility and flexibility," as pointed out by Marco Rubbi, Commercial Manager, "fundamental characteristics to face a market characterized by a growing variety of extrusions made with different thermoplastic materials. This merger will help us bring our already excellent positions to a higher level, driving us to concentrate on projects with higher added value.

So the 2018 year represents for Tecno System a decisive year of strong growth, already consolidated in the previous year in which the TPV Division Mechanical Division, part of Tecno System, celebrated 60 years of activity and successes. Supported by a growing demand in the field of extrusion lines as "turnkey project", Tecno System strengthens its position on the national and international markets.



Pavilion 13, booth 136

Tecno System S.r.l.
www.tecnosystemfe.it

INTAREMA® T Recycling System Quality Check

Visitors to the Plast Milan show will be able to see the recycling quality of the INTAREMA® 1108 T for themselves. Reject rolls from PE packaging film production will be processed live at the EREMA trade fair stand to make quality recyclates. The new EREMA business unit POWERFIL will provide information on the latest filtration solutions from the post-consumer and PET sector for interested attendees.

"Reducing material costs by recycling production waste and then putting it back into the production process is an established standard in the manufacturing of packaging," states Andreas Dirnberger, Business Development Manager for the Inhouse Recycling sector at the EREMA Group. "Easy operation, a high degree of automation, high machine availability and above all stable recyclate quality are decisive criteria in making a purchase." PE film waste will be processed live, directly and without any pre-shredding to make high-quality pellets at the EREMA trade fair stand. "The INTAREMA® 1108 T on show at Plast Milan can, depending on configuration, handle up to 600 kg per hour when processing edge trim," says Andreas Dirnberger.

Trade fair attendees will receive information about the EREMA melt filters directly from the EREMA business unit POWERFIL which will be represented at Plast Milan for the first time. In line with the motto "Plug in Performance" POWERFIL now offers both the SW RTF partial surface backflush filter system and the Laserfilter as individual components. "Many of our customers advertise with the high quality of their recyclates. In order to



The INTAREMA® T – designed for inline recycling – is ideally suitable for the processing of unprinted edge trim and reject rolls

maintain this level of quality despite input materials becoming increasingly contaminated we offer a working concept which brings together high quality requirements and stable, affordable operating costs," says Robert Obermayr, head of POWERFIL. An original EREMA Laserfilter will be exhibited at the show.



Hall 15, booth 121

EREMA Engineering Recycling Maschinen und Anlagen Ges.m.b.H.
www.erema.com

King Midas Golden Touch at Plast Milan 2018

Gold is the foremost symbol of wealth and power, of success and achievement, while being optimistic and positive, a color that illuminates and enhances other things around it. At PLAST 2018 WM Thermoforming Machines will make its thermoformer FC 780 E IM2 Plus produce plates in this shiny color.

Foods, perfumes, cosmetics, fine wines and spirits, coffee and so on, when "dressed up" in gold are perceived as more desirable and precious. It is known that in business and mar-



keting the usage of golden color has the psychological power of conveying a higher perceived value, and it's used by many brands for their packaging, suggesting that a product or service is outstanding, exclusive and expensive.

WM Thermoforming Machines will use its King Midas golden touch and dress up in the shiny material, to present its thermoforming machine model FC 780 E IM2 Plus in function, with an extra touch of elegance and glamour.

The wide range of WM Thermoforming Machines models includes versions with forming and cutting in the same station, in line punching, etc.. The machine on display at the PLAST 2018 is the model FC 780 E IM2 Plus, with a forming area of 780 x 570 mm to allow the forming and cutting of the product in the same forming station and/or allow the cutting in a second inline station with subsequent stacking and discharging of the piles of counted products on a conveyor belt.



Booth 13C/D

WM Thermoforming Machines
www.wm-thermoforming.com

Products and Processes for the Plastics Industry

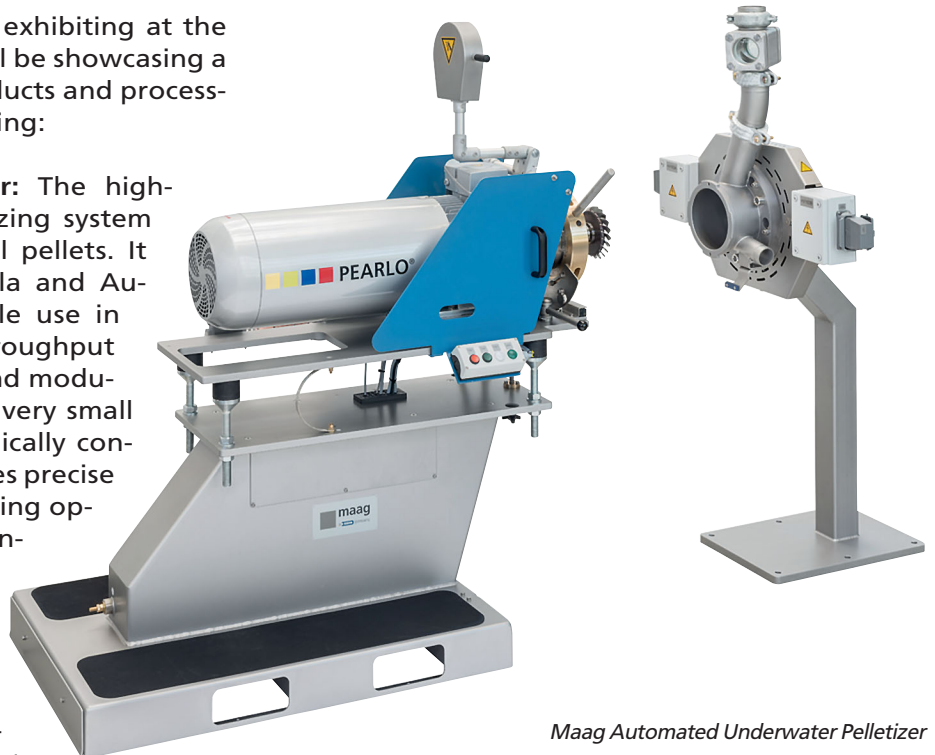
Maag announced that it will be exhibiting at the upcoming PLAST Milan. Maag will be showcasing a variety of its market-leading products and processes for the plastics industry, including:

PEARLO® Underwater Pelletizer: The high-performance underwater pelletizing system from Maag for making spherical pellets. It combines technologies from Gala and Automatik for efficient and flexible use in challenging applications with throughput of up to 36,000 kg/h. Compact and modularly designed, it requires only a very small footprint in production. Electronically controlled EAC technology guarantees precise feed of the pelletizing knives during operation, thereby ensuring long run-times free of interruptions with consistently high pellet quality.

extrex® x6 class Gear Pump: This new and unique melt pump design delivers the needed volumetric efficiency at the highest counter pressures and with the lowest amount of shear stress. This results in a reliable and gentle transfer, boosting and metering for a wide range of thermoplastic polymers, with no adverse effects on product quality.

EBG Belt Conveyor Pelletizing System: The belt conveyor pelletizing system EBG is specifically designed for the compounding of water-sensitive or highly filled (>60%) or fragile products. One of its advantages is the easy handling for start up and line cleaning because of lightweight design and mesh belt quick exchange. It is perfectly dedicated for production of brittle highly filled compounds because of reduced stretching and stress on strands and active conveying from extrusion die to pelletizer intake. The belt system prevents strand breakages by continuous take up without any strand deflection.

Claudio Bonafede, General Manager: "We are happy to show our recently developed and advanced pelletizers for the plastic processing industry during Plast Milan. In addition to our Maag products,



Maag Automated Underwater Pelletizer

in hall 15, booth C32, Ettliger who recently joined the Maag family, will be displaying performance-enhanced melt filter type ERF350, introduced to the market at the end of 2017. It reliably filters plastic melts with impurities such as paper, aluminium, wood and elastomers or plastics that do not melt. Impurity levels as high as 18% can be removed with extremely low melt losses. Designed for high efficiency, it achieves a maximum throughput of 3800 kg/h, depending on the type of melt and degree of impurities as well as the selected filtration rating. It is suitable for all commonly used Polyolefins and polystyrenes as well as a large number of engineered plastics such as styrene copolymers, TPE and TPU."



Hall 13, booth B31

Maag Pump Systems AG
www.maag.com



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2018

6th INTERNATIONAL POLYMER TECHNOLOGY FORUM

June, 7-8, 2018
AZIMUT Hotel
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Russia

PLASTICS PROCESSING: PRACTICAL SOLUTIONS



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KEY TOPICS

- Optimization of each production process (transportation, dozing, mixing, heating-cooling, extrusion or molding, quality contro, etc) – best way to increase profit
- Low self cost not equal high profit?
- Know-how from market leaders (machines and equipment supplier, raw materials and additives producer, converters) – cases and presentations

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TERMS and CONDITIONS

REGISTRATION FEE

Registration fee includes	Before April,16, 2018	After April,16, 2018
Access to conference panels Coffee breaks Printed materials Lunches Buffet reception Excursion tour	265 EUR for each delegate	300 EUR for each delegate

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Including advertizing materials into delegates bags	450 EUR	+	+
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