

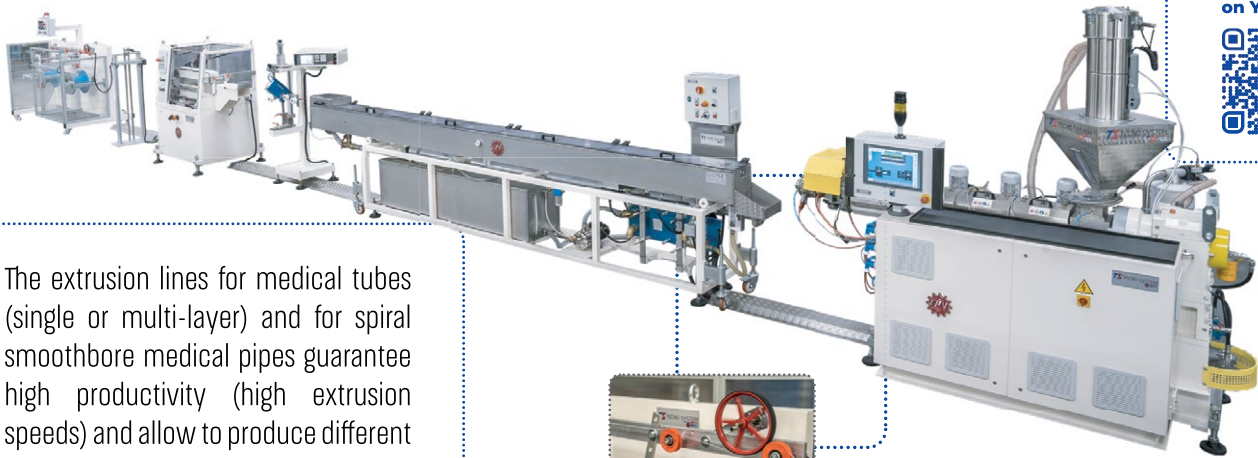


EXTRUSION INTERNATIONAL

TS TECNO SYSTEM



Extrusion lines for medical tubes



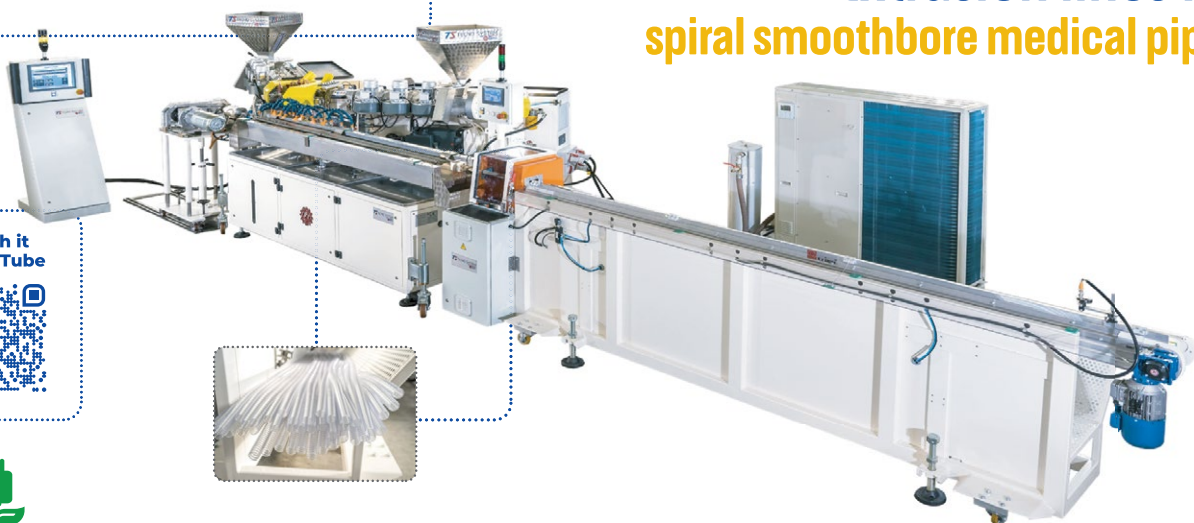
watch it
on YouTube



The extrusion lines for medical tubes (single or multi-layer) and for spiral smoothbore medical pipes guarantee high productivity (high extrusion speeds) and allow to produce different diameters (even micro-tubes) with a wide variety of medical grade materials.



Extrusion lines for spiral smoothbore medical pipes



watch it
on YouTube



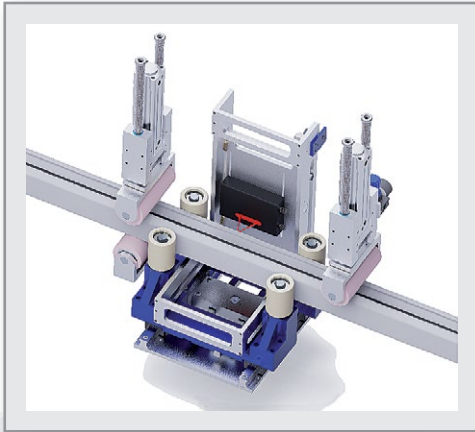
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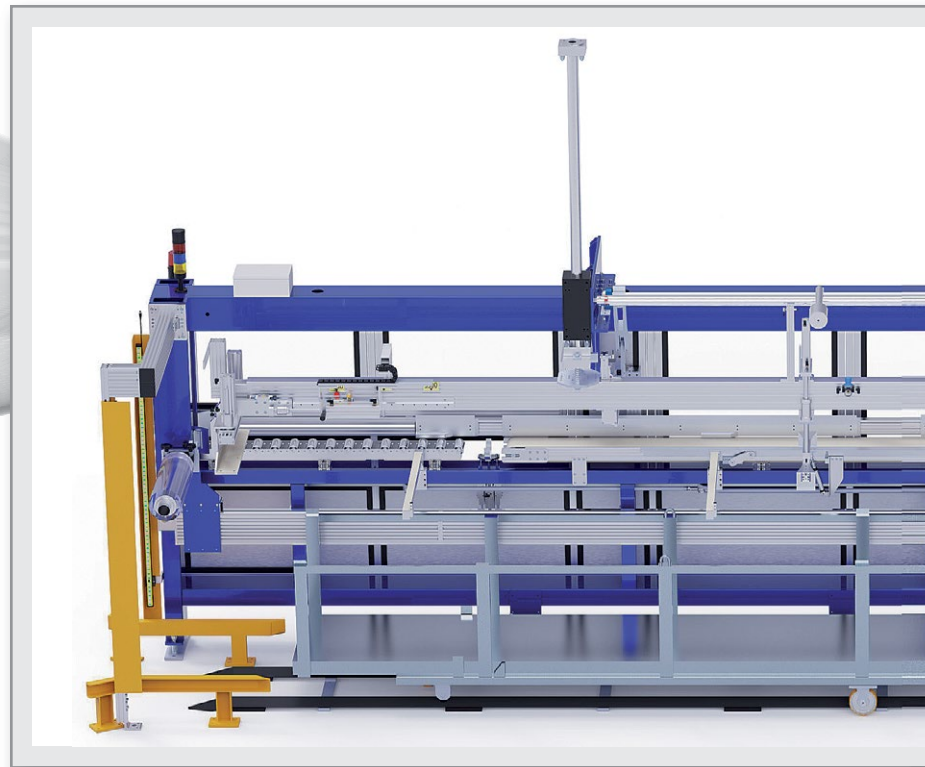
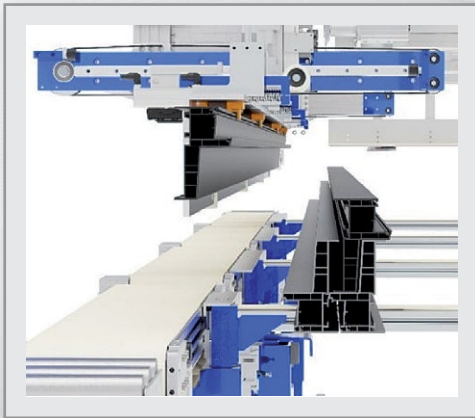
Stein Profile Stacker



Profile length measurement during extrusion

Measuring sensors are used to determine the length of individual profiles before a profile layer is formed.

The measured length can be used to check and correct the cutting device of the extrusion line or for documentation (quality assurance) of the produced profile lengths.



Stacking of special profiles

Stein Maschinenbau offers technical solutions for stacking of heavy and large monoblock profiles.

Based on decades of experience, we can unusual profile geometries or special layer can be evaluated for their automated stacking.

Cassette spreader

With the help of a cassette spreader it is possible to realise the same packing density of the manual packaging.



Stein Profile Stacker



Weight determination during extrusion

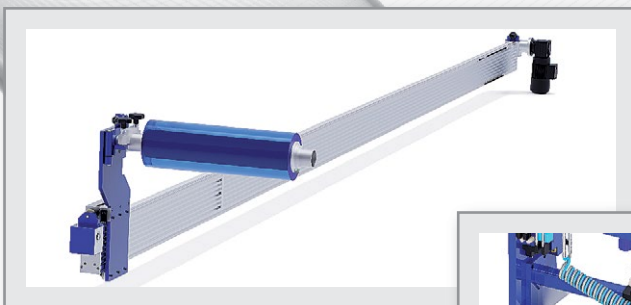
With the help of special weighing units, individual profiles can be weighed before a profile layer is formed. The determined weight can be used to optimise the extrusion.

As a specialist in the field of special machine construction, we always find a solution!



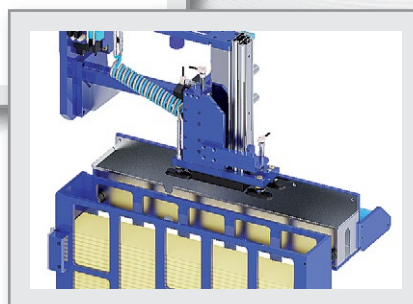
Cassette handling

The handling system allows empty cassettes to be fed into the automatic stacker and the filled cassettes to be pushed out.



Profile interlayer

Endlessly laid as a foil between the profile layers or with individual strips laid on the layer.



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GmbH & Co. KG**

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FIMIC's melt filters are recognized as one of the best filtration technologies dedicated to contaminated post-consumer plastics; to reach high quality recycled plastics from more contaminated waste streams, automatic technologies are needed to filter out impurities and contaminations from the melt flow



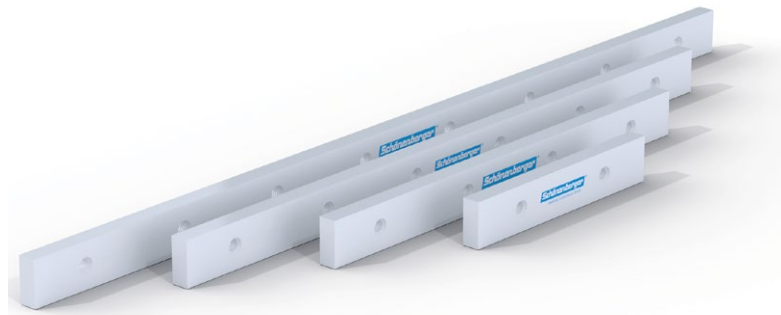
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The plastics industry has been developing new materials and optimizing its manufacturing processes to reduce its carbon footprint for years. Molecor has implemented these values in its work philosophy and this has allowed the development of unique and revolutionary technology for PVC orientation using air instead of water



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Polymer extrusion is an energy-intensive process. In the last decades, many efforts have been directed towards improving the energy efficiency of SML extrusion lines. Especially in times of rising energy prices and a growing environmental awareness, the topic of saving energy is now attracting more attention than ever



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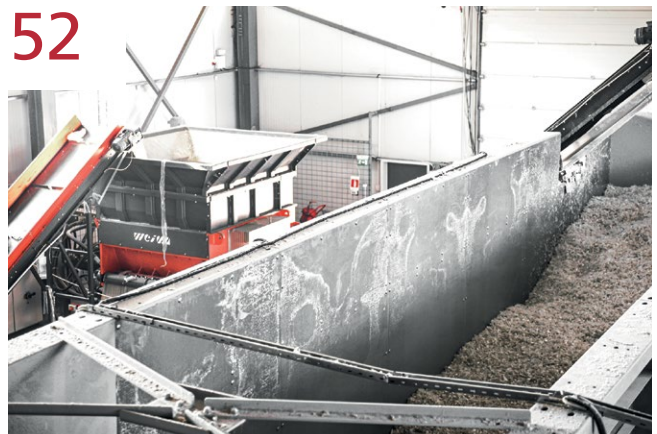
Schoenberger has expanded its product range and now offers high-performance ceramics in addition to the proven premium carbide cutting blades and Stellite cutting blades. These new, innovative ceramic cutting blade complement the existing range and offer a powerful extension for demanding applications

DUYTAN Plastic Recycling is the first plastics recycler in Vietnam to produce recycled PET for beverage bottle production. The company is about to install its third Starlinger PET bottle-to-bottle recycling line which is scheduled to take up production by end of 2023

Expert Recycling offers numerous services around the disposal and recycling of post-consumer and post-industrial plastic waste. A single-shaft shredder from WEIMA is used for processing PET, PP, PS, PE, DHPE and PELD material streams. With its help, the company produces high-quality regranulates, films, and waste bags, which it then sells itself



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04/2023

VM VERLAG
Cologne / Germany

EXTRUSION INTERNATIONAL



The Extrusion International Magazine is published bimonthly by VM Verlag GmbH. P.O.Box 501812, D- 50879 Cologne, Germany

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28th Fakuma International trade fair for plastics processing

 **17.-21. Oct. 2023**
 **Friedrichshafen**

digital
meets
circular
economy


- Injection molding technology
- Thermoforming and forming technology
- Extrusion technology
- Additive manufacturing / 3D printing technology
- Tools, materials, process engineering and services

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 #fakuma2023

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05 - 08 September 2023
Milan / Italy
www.plastonline.org

SCHWEISSEN & SCHNEIDEN

11 - 15 September 2023
Essen / Germany
www.schweissen-schneiden.com

T-PLAS

20 - 23 September 2023
Bangkok / Thailand
www.tplas.com

Chemical Recycling Europe (CRE)

21 - 22 September 2023
Brussels / Belgium
www.polymercomplyeurope.eu

wire Southeast Asia

Tube Southeast Asia
20 - 22 September 2023
Bangkok / Thailand
www.wire-southeastasia.com
www.tube-southeastasia.com

POWTECH

26 - 28 September 2023
Nuremberg / Germany
www.powtech.de

Interplas

26 - 28 September 2023
Birmingham / UK
interplasuk.com

Central Asia Plast World

28 - 30 September 2023
Almaty / Kasachstan
www.k-globalgate.com/en/Global_Portfolio/Central_Asia_Plast_World/

Fakuma 2023

17 - 21 October 2023
Friedrichshafen / Germany
www.fakuma-messe.de

SPE Thermoforming Conference 2023

24 - 26 October 2023
Cleveland, Ohio / USA
<https://thermoformingdivision.com>

K 2025 Kick-Off



The first meeting of the Exhibitors' Council is also the kick-off meeting for K 2025, which will take place from 8 until 15 October, 2025 in Düsseldorf. The panel of experts assembled to discuss the plans concerning the most important fair for the international plastics and rubber industry. The Exhibitors' Council assists Messe Düsseldorf with its preparations in the run-up to K 2025 and provides consultancy on basic conceptual and organisational matters. Comprised of representatives from exhibiting industrial segments and from important industrial associations, the council covers the entire range of products and services presented at K 2025 – machine and plant engineering, plastics and rubber raw material and auxiliary production as well as the production of semi-finished products and industrial components made from plastics and rubber.

Ulrich Reifenhäuser, Chairman of the Management Board of the Reifenhäuser Group and Chairman of the VDMA plastics and rubber machinery association, will retain his position as Chairman of the Exhibitors' Council. Thorsten Kühmann, Director of the VDMA plastics and rubber machinery association, will retain his position as head of the communication committee.

The Exhibitors' Council K 2025 Düsseldorf is comprised of the following other members:

From left: Ulrich Reifenhäuser (Chairman of the K 2025 Exhibitors' Council), Petra Cullmann (Executive Director Messe Düsseldorf), Erhard Wienkamp (Managing Director Messe Düsseldorf), Thomas Franken (Projekt Director Messe Düsseldorf)

Marc Gregor Baier (BBP Kunststoffwerk Marbach Baier GmbH), Ingemar Bühler (PlasticsEurope Deutschland e.V.), Siamak Djafarian (Röhm GmbH), Boris Engelhardt (wdk – Wirtschaftsverband der deutschen Kautschukindustrie e.V.), Dr. Stefan Engleder (ENGEL AUSTRIA GmbH), Dr. Guiscard Glück (BASF SE), Manfred Hackl (EREMA Engineering Recycling), Dr. Christian Haessler (COVESTRO Deutschland AG), Juliane Hehl (Arburg GmbH & Co. KG), Matthias Lesch (Pöppelmann GmbH & Co. KG), Gerd Liebig (Sumitomo Demag), Dr. Oliver Möllenstädt (GKV Gesamtverband Kunststoffverarbeitende Industrie e.V.), Eric Schönell (SIMONA AG), Peter Steinbeck (Windmüller & Hölscher KG), Dr. Axel Tuchlenski (Envalior), Dr. Axel von Wiedersperg (Brückner Group SE), Michael Wittmann (Wittmann Technology GmbH).

For a review of K 2022 with Highlight Tours, videos featuring the Specials and exhibitor interviews click here:

www.k-online.com/review



motan

Fakuma 2023 – *Plastics for the Future*



Remaining booth locations are filling up in the exhibition halls in Friedrichshafen for the 28th Fakuma international trade fair for plastics processing. All involved parties are eagerly awaiting new impetus. With great innovative strength and dynamics, combined with a practice-oriented trade fair format, the premium event for the fields of extrusion technology, thermoforming and 3D printing will focus above all on circular economy. The entire industry has saved the trade fair dates from the 17th through the 21st of October, 2023.

Fakuma is regarded around the world as the leading trade fair highlight in the field of injection moulding. It's the industry and technology barometer in the fields of extrusion technology, thermoforming and 3D printing, and this year's event will once again focus on the issues of digitalisation, process automation and energy efficiency. "Above all for our industry sectors, circular economy and sustainability are not just buzzwords," notes Annemarie Schur, Fakuma project manager at trade fair promoters P. E. Schall. "It has become plainly apparent that manufacturers and users are focusing on making plastics production and processing as sustainable as possible. Companies are concentrating on top-quality, durable high-tech solutions which are used in a broad range of industries where they're indispensable, for example in solar modules, e-mobility, construction and technical components, as well as in the consumer and furnishing sectors. None of it can be done without plastics," points out the project manager. "Fakuma will once again demonstrate that the highly complex subject of plastics can be incorporated into climate protection

and circular economy, and that it's forward-looking in a very special way."

Energy efficiency, sustainability, recyclable design and AI-based solutions will be addressed extensively at the

trade fair. Another important objective of Fakuma involves the presentation of plastics processing in the intelligently networked factory of tomorrow.

Countless sustainable solutions and products are simply not possible without plastics. The significance of plastics, their importance for everyday life and future demands will be on the agenda at Fakuma. As a result, the trade fair is an ideal platform for the presentation of new products and technological solutions, and for expert discussions regarding current and future challenges. Advanced machines, optimised processes, new products and forward-looking business models will also be in focus.

"Fakuma 2023, with its practice-oriented format and informal atmosphere, will once again be an exciting and essential milestone for discussing solutions to the demanding tasks currently faced by the industry sector," emphasises Annemarie Schur. "Fakuma has long since established itself as a meeting place for an international expert audience. We expect that more than 40% of the exhibitors will come from outside of Germany again in 2023. The high levels of internationalism, the intrinsic quality of the expert discussions and, of course, the exciting subject of plastics with its relevance for the future make Fakuma a unique business meet – not least of all for maintaining customer relations, acquiring new customers and for an exchange of ideas with business partners, students and institutes. The exhibitor forum with world-class expert presentations will also deliver inspiring impetus for all relevant topics."

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Parts Competition Call for Entries – And Addition of Two New Categories

The Society of Plastics Engineers (SPE) Thermoforming Division has announced a call for entries in its biennial Parts Competition, including two new categories that will feature innovations in the use of Sustainable Thermoforming, and also innovations in applications for electric vehicles (EV's) and batteries. The submission deadline is September 23, 2023.

Competition entries will be displayed on the exhibit hall floor during the 29th SPE Thermoforming Conference®, which will be held October 23-26 at the Huntington Convention Center in Cleveland, Ohio. Awards for winning parts will be presented during the SPE Thermoforming Awards Dinner on October 24, at the Cleveland Marriott Downtown at Key Tower.

Competition entrants may submit parts in seven categories:

- Roll-fed categories are Industrial, Medical, or Food.
- Heavy-gauge categories are Vacuum Form, Pressure Form, and Twin Sheet.
- Parts Produced with Recycled/Sustainable Materials.
- Production Parts from 3D-Printed Tooling.
- New this year: Parts Produced with Sustainable Thermoforming.
- New this year: Parts Produced for Electric Vehicle (EV's) and Battery Applications.

“At our last conference in 2021, we introduced 3D printing as a new category for our parts competition,” said Travis Kieffer, 2023 SPE Thermoforming Conference

Parts Competition Chair. “This year we’re pleased to open the competition to two new categories that are especially timely: bioplastics, and EV/battery applications. We are seeking part entries that show innovative use of the thermoforming process for parts production.”

Guidelines for Competition entrants and the required product entry form are posted online at <https://thermoformingdivision.com/parts-competition/guidelines-entry-form/>

All product images and descriptions must be emailed to Travis Kieffer at travisk@plasticsunlimited.com by the September 23 deadline.

POWTECH to Rebrand as POWTECH TECHNOPHARM from 2025

POWTECH, the International Processing Trade Fair for Powder, Bulk Solids, Fluids and Liquids, is expanding its importance as the technology platform for the processing sector, and will in future operate under a new branding as POWTECH TECHNOPHARM. POWTECH 2023 will take place under its known name; POWTECH TECHNOPHARM will follow from 23 to 25 September 2025 at the Exhibition Centre Nuremberg, where it will be co-located with PARTEC 2025 and FACHPACK 2025.

POWTECH is consistently fine-tuning its efforts to promote the process engineering sector and adopting the current trends of de-globalization and re-Europeanization, all of which underlay its decision to rebrand.

Heike Slotta, Executive Director Exhibitions at NürnbergMesse, explains the motivation behind the new strategy: “The combined POWTECH TECHNOPHARM brand offers a home for the providers of process engineering and also for their customers. It is a three-day working trade fair for talking shop and finding solutions, with hands-on technology and a European focus. And an important new development for the community is the fact that the strategy is being relaunched and adapted to meet current requirements.”

In a survey, two-thirds of the POWTECH exhibitors stated to be in favour of a permanent autumn schedule for the event. This results in the co-location with FACH-

Nürnberg, Germany

23.-25.9.2025

**POWTECH
TECHNOPHARM**

PACK every third year, followed each time by POWTECH TECHNOPHARM on its own, and then a planned gap year. September is a free month in the trade fair calendar for the processing industry, and offers a fixed date outside the European summer holidays that will be easy for trade visitors in particular to remember.

www.powtech.de

www.smart-extrusion.com

CHINAPLAS Full of Business Opportunities in the Fairground

The largest ever CHINAPLAS was successfully concluded at the Shenzhen World Exhibition & Convention Center, PR China on April 20. The show results were impressively indicating a great surge with 3,905 exhibitors from 38 countries and regions around the world. The show occupied 380,000sqm and recorded an attendance of 248,222 visitors from 149 countries and regions. 28,429 visitors came from Hong Kong, Macao, Taiwan region and overseas, accounting for 11.45% of the total. Compared with the 2019 Guangzhou Exhibition, the total number of visitors increased by 51.99%, and compared with the 2021 Shenzhen Exhibition, it increased by 63.16%.

"The results of the exhibition exceeded expectations in terms of popularity, innovation level of exhibits, and the number and quality of visitors. The record high number



of visitors reached about 250,000, including overseas visitors who had not attended the show for three years due to travel restrictions. Comparing with CHINAPLAS held in 2021, the number of overseas visitors has surged considerably this year, injecting infinite vitality into the exhibition," said Ada Leung, General Manager of Adsale Exhibition Services Ltd., the organizer of CHINAPLAS. "The success can be attributed to the right timing, location and participants. The exhibition unleashed enthusiasm and strong demand for face-to-face communication between the upstream and downstream of the industry, with



robust purchasing power from both local and overseas buyers. They have been actively placing purchase orders for materials and machinery. An exhibitor even claimed that it has received the largest amount of order in the past 30 years at the exhibition. The satisfaction on the exhibition of both exhibitors and visitors has soared. The plastics and rubber industries are showing more signs of recovery and the confidence of enterprises in the market has increased, creating a vibrant and promising outlook."

CHINAPLAS is held in Shenzhen every odd-year and in Shanghai every even-year. The next exhibition will return to the National Exhibition and Convention Center, Hongqiao, Shanghai, PR China, on April 23-26, 2024.



Event Highlights for the Company's 40th Anniversary

There was plenty for the guests to admire at the EREMA Discovery Day, which was held by plastics recycling machine manufacturer EREMA in Ansfelden on the 1st of June. The invitation was accepted by around 400 customers and partners, mainly from Europe, to find out about the wide range of recycling technologies for PO and PET plastic waste. The technology that was presented and explained by EREMA experts and guest speakers during lectures in the morning, could then be seen live in-action in the afternoon when the recycling machines were demonstrated in operation. A total of six innovative recycling technologies were on display: INTAREMA® TVE-plus® DuaFil® Compact, INTAREMA® TVEplus® Re grindPro® + ReFresher, the COREMA® cascade extrusion system, a VACUREMA® Inline Sheet line equipped with new EcoGentle technology, the new INTAREMA® FibrePro:IV machine, and the PCU-Twin-Screw. These allowed visitors to witness their performance and the high quality of recycled pellets that they produce. "This wide range of technologies is necessary because the recycling process each of our customers choose depends on the type of plastic, the level of contamination of the input material, and which product will be made using the recycled pellets. Following the expansion of our Ansfelden site and with the new site nearby in St. Marien, we can now demonstrate all these processes, carry out test runs with customers' material and focus on development work independently of our Customer Centre," says EREMA's Managing Director Markus Huber-Lindinger.

EREMA is driving forward research and development work in the company's new R&D Centre. Two halls with a total area of 1,550 square metres and a new office building offering space for 50 workplaces has been built. Here, the company bundles cross-departmental test machines and laboratory facilities for post consumer and inhouse recycling applications. R&D is decentralised at EREMA. Employees from different departments



Manfred Hackl, CEO EREMA Group and Markus Huber-Lindinger, Managing Director EREMA, open the EREMA Discovery Day 2023 (© EREMA)

handle process engineering challenges, innovations in mechanical engineering and automation technology – all with the aim of meeting customer requirements and achieving the highest possible quality of recycled pellets. "This is how we make it possible to implement a circular economy for plastics", says Huber-Lindinger. "With the new R&D centre, we have laid the foundation for further important plastics recycling milestones from EREMA. This innovative strength is what has made us stand out over the past 40 years, and we will continue to play this pioneering role."

On the evening before Discovery Day, EREMA celebrated its 40th anniversary together with customers and partners. An entertaining review covered the company's successful history – from the first workshop in a garage in 1983, to its position today as the innovation pioneer and world market leader that has made plastics recycling for specific applications possible in the first place.

EREMA Group

► www.erema.com

Market Study: Plastic Films

Plastic films get stronger and more transparent if they are stretched longitudinally and crosswise during production. The "biaxially oriented" plastics polypropylene (BOPP), polyethylene (BOPE) and polyester (BOPET) are processed into packaging, bags and sacks, shrink and stretch films, but also, for example, agricultural films, insulation material and industrial films. According to the latest Ceresana study on the global market for flexible plastic films, which is already the third edition, the revenues generated with these films will increase to around USD 339 billion by 2032.

The study in brief

Chapter 1 analyzes the global market for plastic films with forecasts up to 2032: production and demand volumes in tonnes, as well as revenues in USD and EUR are provided globally and for individual regions.

Global demand is broken down for the different types of plastics: polyethylene (PE); polypropylene (unoriented CPP, BOPP, other PP); BOPET < 50 µm; BOPET > 50 µm; PVC; other plastics.

In Chapter 2, the 18 most significant countries for plastic films are considered individually. Country-specific demand, revenues, and

production volume per film type are presented: LDPE; LLDPE; HDPE; PP; BOPET; PVC; other plastics.

The demand is further analyzed for the individual application areas. Packaging Films; Bags & Sacks; Shrink & Stretch Films; Agricultural Films; other Applications.

Chapter 3 provides company profiles of the most important plastic film producers, clearly arranged by contact details, revenues, profit, product range, production facilities and brief profile. Detailed profiles are provided by 99 manufacturers

► <https://ceresana.com/en/produkt/plastic-films-market-report-world>

Certification Achieved

Continuing with company-wide sustainability efforts, Davis-Standard's subsidiary in Germany, ER-WE-PA, recently attained ISO 14001 certification. This certification illustrates a commitment to customer service and environmental sustainability, essential to Davis-Standard's pursuit of operational excellence, safety practices, and process improvement. This is the fourth Davis-Standard location to become ISO 14001 certified in recent months, joining facilities in Fulton, N.Y., Vantaa, Finland, and Ecublens, Switzerland. All of Davis-Standard's global manufacturing sites are slated to become ISO 14001 certified by 2025.

"We congratulate our employees in Germany for achieving ISO 14001 certification. Establishing and applying an environmental management system for manufacturing practices at each facility is part of our ongoing journey toward a more sustainable future," said Giovanni Spitale, Davis-Standard CEO. "It also ensures consistent practices across the board, with equipment development and manufacturing efforts focused on reducing waste and improving energy efficiency and recyclability."

At the core of ISO certification is the ability to consistently provide products and services that meet customer and applicable statutory and regulatory requirements. This is achieved by enhancing customer fulfillment



through an effective quality management system (www.iso.org). All issues are addressed at the source to support best practices.

Davis-Standard, LLC
ER-WE-PA GmbH

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Presence in China Expanded

The MAAG Group is further expanding its presence in China creating the prerequisites for continued growth in the People's Republic. Particular focus is being placed on creating incremental production capacity and on the introduction of new products specifically for the Chinese market.

The internationally operating MAAG Group, headquartered in Oberglatt, Switzerland, has been stepping up its localization strategy in China since 2022 and currently has 103 employees. One recent example: the assembly shop at the site in Jiading, a district of Shanghai, has recently doubled in size.

"With this expansion, MAAG is now well positioned for the further expansion of its localization activities in China," explains Ueli Thürig, President of the MAAG Group. "Made

*MAAG Group employees
in Jiading/Shanghai, China*



*MAAG Group production shop
in Jiading/Shanghai, China*

in China for China' is one of the key strategies our company has been focusing on in recent years; more than 90 percent of the equipment assembled in our Shanghai plant is intended for the Chinese market."

MAAG has already been producing GA series extrusion pumps, BAOLI strand pelletizers, and ZHULI

underwater pelletizers in China. A similarly adapted version of the proven M-USG underwater strand pelletizing system will now expand the market-specific portfolio as the C-USG. The original German design will form the basis for this new version. While some key components will be supplied from Germany, the majority of parts will come from local production. The first C-USG systems will be delivered to customers at the end of 2023.

In addition, the added space will accommodate a new service center for the Maag/Ettlinger recycling filter to enable MAAG to serve local customers more quickly. MAAG is responding to the increased number of continuous melt filters installed across Asia.



MAAG Group
www.maag.com

www.smart-extrusion.com

Acquisition

Borealis announced that it has signed an agreement to acquire Rialti S.p.A., an Italian polypropylene compounder and recycler. Closing of this transaction is subject to customary regulatory approvals.

Based in the area of Varese, Italy, Rialti is one of the European market leaders specialized in production of sustainable polypropylene (PP) compounds with a focus on mechanically recycled PP feedstock from post-industrial and post-consumer waste. With over thirty years of experience, Rialti utilizes its annual capacity of 50,000 tonnes to make injection moulding and extrusion PP compounds with applications in different industries, including automotive, appliances and construction.

“During the past decade we’ve made steady progress in our circularity journey. The addition of Rialti to our portfolio will expand our circular offering and strength-



Rialti aerial view

en our ability to serve our customers in meeting their sustainability ambitions. As such we continue reinventing essentials for sustainable living” says Lucrece Foufopoulos, Borealis Executive Vice President Polyolefins, Innovation & Technology and Circular Economy Solutions.

Borealis Group
www.borealisgroup.com

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Plastic Recycling Paves the Way to Combatting Pollution

Plastic recyclers are the frontrunners in improving waste management and the quality of recycled plastics. Being one of the most environmentally sound waste management options – plastic recycling has also proven to work in practice and on an industrial scale. By saving up to 90% of CO₂ emissions compared to the use of virgin plastics, recycling is also an important contributor to mitigating climate change.

However, today, globally still over 90% of plastic waste is not recycled. Therefore, incentivising plastic recycling paired with increased collection must remain high on the agenda in the context of the discussion of the UN Global Treaty taking place at the end of May in Paris. This will allow the replacement of virgin

plastic production, while also diverting plastic waste from landfills and incineration.

With the EU having one of the most robust legislations European recyclers are pioneers in meeting the highest quality requirements. In practice, to ensure compliance with food contact legislation, for example, recycled plastics are subject to monitoring of substances implemented at recycling facilities.

Additionally, over the past decades, the plastics recycling industry has been working towards developing and implementing measures ahead of legislation to increase the environmentally sound processes, transparency and safety of recycled materials across the whole value chain. One such, example is setting

a certification scheme to prevent the release of microplastics into the environment¹ which has been adopted by many recycling companies across Europe.

Since plastic pollution is transboundary, strengthening international cooperation and setting legally binding targets to make plastic value chains more circular is a must. EU's efforts have a crucial role to play here – with a holistic approach that effectively addresses the whole life cycle of plastic including their production in line with the design for recycling principles, increasing collection and sorting.

Plastics Recyclers Europe
www.plasticsrecyclers.eu

¹ RecyClass Recycling Process Certification:

<https://recyclclass.eu/get-certified/recycling-process/#1>

Commercial Availability of DURACON® POM PM Series for Medical Industry Announced

The Polyplastics Group announced the commercial availability of its DURACON® POM (Polyoxymethylene/Acetal) PM Series for medical applications. The company will supply materials to all global regions including Asia such as China and India, and Europe and the U.S.

In the medical device marketplace, manufacturers and end users demand high-quality materials from reliable suppliers. Polyplastics has served the medical and healthcare field for decades with its high-purity TOPAS® COC (cyclic olefin copolymer). As the world's leading POM manufacturer, Polyplastics now adds the PM Series to its medical grade portfolio and plans to expand material supply to the medical and healthcare market.

Polyplastics' two acetal grades include a standard viscosity grade, PM09S01N, which delivers the reliable mechanical properties and moldability expected from POM. In addition, a high-flow grade, PM27S01N, will enable wall-

thinning, miniaturization, and lightweighting of medical devices that are becoming more complex and highly functional.

These grades meet medical device manufacturers' key requirements and are targeted for a wide range of applications such as drug contact and delivery. Both grades offer global market regulatory compliance including ISO 10993 and USP Class VI biocompatibility/cytotoxicity, FDA Drug Master File (DMF) and Device Master File (MAF), and EU 10/2011 and FDA food contact 21 CFR 177.2470. The materials can be sterilized under hot steam and ethylene oxide (EtO) sterilization conditions.

The PM series adheres to strict quality management systems including conformity to the VDI 2017 medical-grade plastics standard. They also provide full traceability of processes and products, and production management based on GMP principles.

(Source: Polyplastics Co., Ltd.)



Polyplastics Co., Ltd.
www.polyplastics-global.com/en/

Offline Quality Control of Plastic Pellets

Offline sample inspections are nowadays used as standard during the quality control of plastic pellets. With the PURITY CONCEPT V SIKORA offers a semi-automated innovative laboratory testing device, which convinces especially by its intuitive operation and fast, precise analysis.

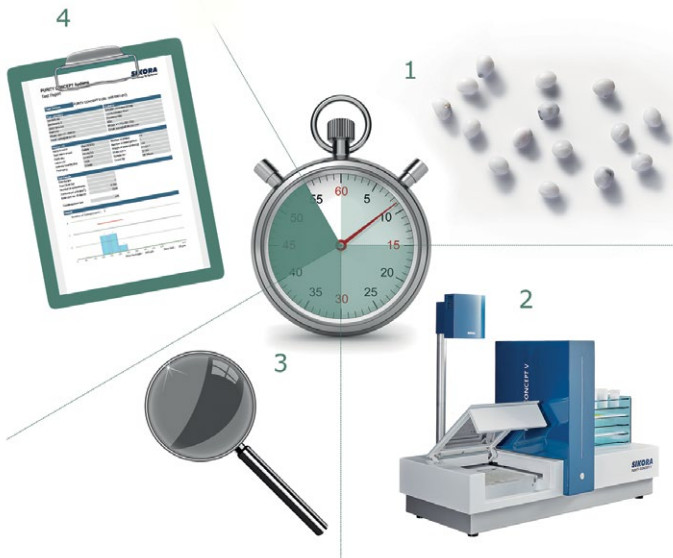
1 minute, the PURITY CONCEPT V does not need longer to generate a complete evaluation including test certificate. The operator places the sample material to be tested on the sample tray and presses the start button. It doesn't matter whether plastic pellets, flakes or test plates as well as black specks, color contamination, white spots or discolorations shall be examined.

The system does the rest by itself: The material is scanned, analyzed and contaminants as small as 50 µm are detected. The test certificate, generated by mouse click, contains all information about size, number and type of contamination, as well as an image gallery of all detected contaminants. Documentation and material release have never been so easy.

All detected impurities are marked on the scan image and highlighted in parallel on the sample tray. The operator can zoom in and out of the monitor image as desired and click on individual contaminants. These are localized on the sample tray by crosshairs so that contamination can be separated easily, e.g. for further examination. Even afterwards, the operator can re-read the data material and repeat the analysis as often as he wishes with changing parameters. This ensures reliable results.

SIKORA AG
www.sikora.net

Quality control with the PURITY CONCEPT V in 1 minute: 15 seconds placing the material on the sample tray (1), 15 seconds material inspection (2), 5 to 10 seconds analysis and detection of contamination (3), 15 seconds report generation (4)



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MDO PE Films for Sustainable and Recyclable Flexible Packaging

Fully recyclable packaging: RKW Horizon® is the new generation of sustainable PE plastic films based on state-of-the-art MDO technology.

Especially when it comes to plastic packaging for consumer goods, consumers are demanding more sustainability, as this is the only way they will be accepted in the long term. Therefore, the RKW ECORE® sustainability portfolio has been expanded to include mono-axially stretched PE films (MDO PE), which are marketed under the brand name RKW Horizon®. The RKW Horizon® product portfolio of MDO films is unique worldwide and includes highly transparent MDO films and print carriers, with oxygen barrier if desired, as well as white opaque variants.

When MDO PE films are laminated with a functional PE sealing film, the result is packaging made from a single raw material: polyethylene. Unlike many conventional pouch packaging, these are single-grade and therefore fully recyclable.

"Especially as a manufacturer of high-quality plastic films, we are aware of our responsibility. That's why we have bundled our develop-

ment resources and created a product portfolio that provides optimum protection for food," explains Luc Hermans, Director Sales Consumer Packaging, adding, "We are developing materials that meet the requirements for a smaller carbon footprint, improved recyclability and increased use of recycled plastics."

The RKW Horizon® films meet the high requirements of flexible packaging manufacturers in terms of tear resistance, transparency, gloss, printability and good processability. In addition, the films feature excellent machinability on conventional packaging equipment.

MDO films can be used for a wide variety of packaging forms, such as stand-up pouches, gusseted pouches, pillow pouches and sachets or as lid films. Areas of application are mainly the packaging of confectionery and snacks, coffee and tea as well as frozen foods, but MDO films can also be used in the non-



food sector for the packaging of pet food, personal care products or cleaning and detergents.

At the RKW site Petersaurach, one of the largest investments in new multilayer blown film lines was made for this purpose. A new five-layer extrusion film line and a new nine-layer extrusion line significantly expand the production capacities for high-quality sealing films and MDO-PE films.

The Petersaurach site is ISCC+ certified and offers sustainable MDO films as well as bio-based films and films with a high recycled content (PIR and PCR) for a wide range of applications.

RKW-Group

► <https://rkw-group.com>

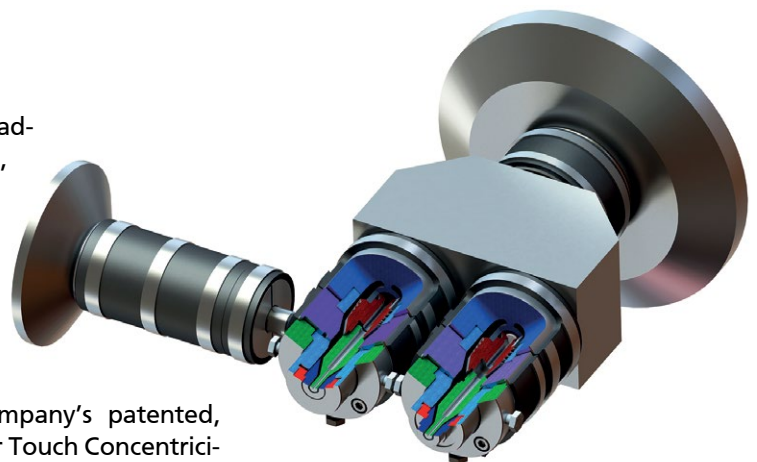
Extrusion Tooling

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.

Guill Tool & Engineering
Bill Conley: bconley@guill.com,
► www.guill.com

Sustainable Barrier Coating Boosts Food Packaging Recyclability

Melodea, a leading sustainable barrier coatings producer for packaging, introduces its newest innovation, MelOx NGen™. MelOx NGen is a high-performance barrier product specifically engineered to allow for the recyclability of plastic food packaging and beyond. In addition to its excellent eco-profile, the new barrier has proven superior in its key role of maintaining food freshness and substantially reducing plastic waste.

MelOx NGen is a water-based, plant-sourced coating designed to line the inside surface of numerous forms of plastic food packaging such as films, pouches, bags, lidding, and blister packs used to house CPG products and is currently being rolled out to the global plastic industry. Approved by FDA and BfR as compatible for food contact, the coating helps protect and extend the shelf-life of foods such as snacks, confectionary, nutrition bars, meats, and dairy products as well as pharmaceuticals.

Melox NGen is a new iteration of Melodea's award-winning bio-based and renewable material MelOx for paper packaging but designed specifically for use on plastic. Used to line packaging as a transparent layer, it offers a sustainable and cost-effective alternative to petroleum-based Ethyl Vinyl Alcohol copolymers; – EVOH which are currently widely used in packaging for its food preservation properties as well met-PET plastic materials commonly used to produce lids.

MelOx NGen, could help expand the scope of plastic food packaging eligible for recycling. It can empower food packagers to fulfill their sustainability goals and align themselves with government regulations aimed at reducing the utilization of single-use plastics.

As a part of a long-term strategy for reducing plastic consumption and waste, the EU has implemented the Plastic Waste Directive. This directive sets targets for the recycling and reuse of plastic packaging waste. It established a minimum recycling target of 50% for plastic packaging by 2025, increasing to 55% by 2030. Moreover, in 2021 the EU approved a tax of €800 per tonne of non-recycled plastic containers and packaging produced in member states' markets. The tax aims to incentivize the adoption of recycling practices and discourage the use of non-recyclable materials.

"The global collective effort to drastically curb plastic use is a long and complex process," asserts Shaul Lapidot, Ph.D., CEO and co-founder of Melodea. "Our holistic solution can help ease the pressure by boosting the integration of plastic packaging into the circular economy, immediately."

"The majority of plastic packaging available today cannot be recycled due to its multi-structure composition," explains Cee Azerraf PhD, VP of Sales & Marketing of Melodea. "EVOH, which is typically infused into the thin plastic films of the food packaging to serve as an oxygen barrier, is non-recyclable preventing the entire package from being recyclable. MelOx NGen pres-



ents an eco-friendly and cost-effective solution by being applicable to various forms of plastics, including mono-structure plastics that possess exceptional performance properties and are recyclable. Our solution will also relieve the current bottleneck in the supply of EVOH."

Since the outbreak of COVID-19, there has been a global surge in demand for EVOH, resulting in a significant spike in prices. These prices climbed from \$5.5 per kg in 2019 to anywhere between \$11 and \$14 per kilo at the end of 2022 and are expected to rise further. This surge has prompted food packagers to seek alternative solutions and channels.

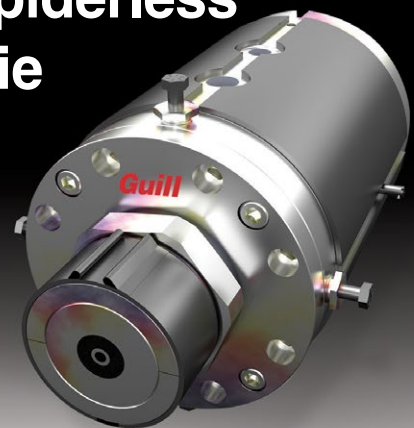
"Melox NGen can be effortlessly applied as a thin layer directly to the plastic without the need for primers," adds Azerraf.

The product has been selected as a finalist in the prestigious Sustainability Awards 2023, specifically within the sustainability in packaging category, organized by Packaging Europe.

Melodea Ltd.

www.melodea.eu

New Spiderless Pipe Die



Guill just launched its **Spiderless Pipe Die**, a new offering in extrusion. Capable of providing a finished extrusion with **OD** from **2"-15"** and available in 4140 steel or stainless with heat treating, it's ideal for tube and pipe producers for large diameter capabilities.

With its focus on precision tooling thanks to extensive experience in medical tubing, flow analysis and **Guill's ISO 9001** and **AS9100** (Aerospace) quality systems, this new design offers increased material savings.

Guill
EXTRUSION TOOLING

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For more information, visit www.guill.com/series/900-series

International Exhibitions a Smashing Success

ILLIG Maschinenbau was able to win important new orders for thermoforming and packaging systems worth double-digit millions of euros within just a few weeks between March and May of this year. The technology specialist will be delivering several thermoforming lines to customers in Brazil and China. Some orders will also include molds and packaging development consulting services. In addition, the first machines of the XLU series, a PLU 40 (Pulp Lamination Unit) and a CLU 40 (Cardboard Lamination Unit) for laminating pulp and cardboard trays, which were presented for the first time at Interpack, were sold to customers from France.

"The pleasing exhibition results are an encouraging sign that the expansion of our product portfolio in this direction was a good strate-



The ILLIG team at the ILLIG booth at interpack 2023

gic decision. We analyzed the markets well, anticipating the needs of our customers worldwide to deliver the right products that met all their needs," explains Jürgen Lochner, CSO/CTO at ILLIG.

The German technology leader impressed the Asian audience at the CHINAPLAS plastics trade show in April with its new RDF 85 thermoforming system, which was shown in production for the first time. On the very first day of the trade show, an RDF 85 was sold to a Chinese customer. The ChinaPlas exhibition was high-

lighted by the sale agreement of 12 RDM 75Kc thermoforming systems to the Chinese Zhink Group.

"CHINAPLAS was a big success for us. We had many promising conversations on the possible delivery of thermoforming and packaging systems to other Chinese and Asian buyers. We could sense a real atmosphere of optimism in China and in the entire Asian market," relates Robert Zhang, Managing Director of ILLIG China.

In early May, ILLIG presented a new machine concept for the first time at interpack: the XLU series, which will be available as PLU (Pulp Lamination Unit), CLU (Cardboard Lamination Unit) and the TLU (Tray Labeling Unit). The solutions for lamination and labeling of pulp, cardboard and plastic packaging are designed primarily for the food and cosmetics industries. The technology company developed the new product family prioritizing the efficient use of resources and an optimized price/performance ratio. The sale of the first machine to French customer Écofeutre as well



Pulp packaging laminated with a PLU 40



The new Pulp Lamination Unit (PLU 40) from ILLIG, presented for the first time at interpack 2023

as the positive feedback received at the trade fair are clear confirmation that ILLIG has done a good job in analyzing the market demands and customers' needs.

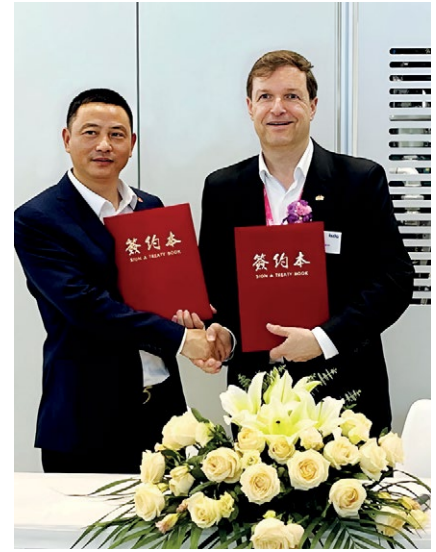
The end of March, ILLIG was off to Brazil's Plástico Brasil, where the company showcased its products and services and technical know-how to a large number of customers and potential new buyers from all over South America. The

Contract signing ceremony with the Zhink Group at CHINAPLAS 2023



importance of the South American market was once again on full display: ILLIG is currently delivering new machines to Brazil that were already ordered back in 2022. At Plástico Brasil, a successful packaging company from Brazil decided to purchase several ILLIG thermoforming lines including tools to significantly expand production capacity.

Jürgen Lochner: "ILLIG has a strong reputation in South America, China and around the world. Many long-time and also new customers rely on ILLIG's proven high-performance thermoforming and packaging systems. Again and again, customers report to us that their main reasons for choosing ILLIG are ILLIG's superior technology, the quality and performance of ILLIG machines, tools, and service, and their confidence in the ILLIG brand."



Jürgen Lochner, ILLIG CSO/CTO and Wang Bing-Kui, Zhink Group signing the contract at CHINAPLAS 2023

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Third Extrusion Line for PET Recycling Team (PRT) Radomsko

Packaging specialist ALPLA is securing the long-term supply of food-grade PET recycling material (rPET) by expanding the recycling plant in Radomsko. The internationally active company is investing around eight million euros in a state-of-the-art extrusion line. Ten years after its opening, the PET Recycling Team (PRT) Radomsko is one of the largest recycling plants for this material in Europe with a production capacity of 54,000 tonnes of food-grade rPET pellets per year.

"ALPLA stands for sustainable packaging solutions made of plastic. As a system provider, we develop products optimised for recycling,

ALPLA is expanding the PET Recycling Team (PRT) Radomsko in Poland with a third extrusion line. With an annual production capacity of 54,000 tonnes, the recycling plant is one of the largest plants of its kind in Europe (All pictures, Copyright: ALPLA)

and process high proportions of recyclate in production and take care of efficient recycling. With our global focus on recycling and our commitment in Central and Eastern Europe, we make a significant contribution to the regional bottle-to-bottle cycle," explains Dietmar Marin, ALPLA Managing Director Recycling Division.

By 2025, all PET beverage bottles in the EU should contain at least 25 per cent post-consumer recycled (PCR) material. With the expansion of the site in Poland, ALPLA is creating the basis for meeting the EU requirements in the regional markets. "We actively work with customers to create closed loops for PET packaging and accompany them on their sustainability path. To this end, we are taking care of meeting tomorrow's needs today and already have some excellent examples in reality," emphasises Mariusz Musiał, ALPLA



Packaging and recycling specialist ALPLA processes used PET bottles into food-grade PET recycling material at the PET Recycling Team (PRT) Radomsko

Country Manager Poland. "With this investment we are targeting the Polish market in particular and ensuring that sufficient rPET is available to our customers", adds Beata Szykiewicz-Razik, Commercial Director of PRT Radomsko.

The installation of the third extrusion line in Radomsko will create twelve additional jobs and expand the team to more than 100 employees. "PRT Radomsko has stood for top quality and excellent operational performance for over ten years. The expansion of the site is a confirmation of our highly motivated team and strengthens our position in the market," says Plant Manager Marcin Jabłoński.

ALPLA Group
www.alpla.com



Significant Feedstock Agreements for Molecular Recycling Facility in France Secured

Eastman announced it has secured a significant amount of feedstock needed for its planned molecular recycling facility in Port Jerome sur Seine, Normandy, France. With an investment of \$1 billion, the planned facility will become the

world's largest material-to-material molecular recycling plant.

"We began the year with roughly half of our feedstock needs secured for phase 1 of the project, and with these important additional agreements in place we are moving closer

to the more than 80 percent we expect to secure by year-end," said Brad Lich, executive vice president and chief commercial officer. "This strong progress is a testament to the complementary nature of Eastman's innovative molecular recycling

cling technology to the current mechanical technologies in the market and to the growing need to enable circularity for more waste streams going back to high-quality contact-sensitive output."

Citeo, the leading Producer Responsible Organization (PRO) in France, recently announced that Eastman, in a commercial partnership with Paprec, France's leading integrated waste management company, has been selected to receive a significant amount of feedstock for the methanolysis facility in Normandy. The Citeo agreement to secure French household waste has provided Eastman with a strong foundation for securing French-sourced waste for its project in France.

Eastman also shared it has reached an additional agreement with Interzero, an innovation leader in plastics recycling with the largest sorting capacity in Europe, for an additional 25,000 metric tonnes of waste in addition to the 20,000 metric tonnes from a previous agreement announced last year.

Another agreement with a leading company in the waste management and recycling eco-system was reached at the end of last year. This agreement, adding approximately 30,000 metric tonnes of waste, allows geographic coverage in strategic waste supplies.

Eastman recently shared the decision to build the facility in two



phases which will allow the facility to recycle over 200,000 metric tonnes of hard-to-recycle polyester waste annually, most of which is currently landfilled or incinerated today. Due to the updated plans, the company now expects phase 1 of the project to be mechanically complete in 2026 and process 100,000 metric tonnes.

Eastman will use its proven Polyester Renewal Technology (PRT) in France to recycle hard-to-recycle plastic waste that remains in a linear economy today. The company's recycling technology allows this hard-to-recycle waste to be broken down into its molecular building blocks and then reassembled to become like new material without any compromise in quality and performance. Eastman's PRT enables the potentially infinite val-

ue of materials by keeping them in production, lifecycle after lifecycle. With the technology's highly efficient yield and the renewable energy sources available at the Normandy location, Eastman can transform waste plastic into like new food contact polyesters with lower greenhouse gas emissions than traditional methods.

In addition to this announced plant in France, Eastman is investing in two other molecular recycling plants in the U.S. - Kingsport, Tennessee, and another U.S site to be announced later this year with an expected combined global investment of approximately \$2.25 billion for all three facilities.

Eastman
www.eastman.com

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Innovative Combined and Integrated Stretch Wrapping Solutions Developed

Bizerba, a globally leading manufacturer of weighing solutions for the industrial and retail sectors, and Fabbri Group, the international specialist in automatic food packaging systems, have announced the start of a new strategic cooperation. Its goal is to provide a comprehensive solution for the weighing, pricing, packaging, and labeling processes. Both companies operate worldwide and enjoy an excellent reputation in their respective fields.

The CEOs of Bizerba and Fabbri Group, Andreas W. Kraut and Stefano Pellegatta, met at Bizerba's headquarters to sign a partnership agreement. This takes the existing cooperation between the two companies, which has been ongoing for many years, to a new level. Together, they are developing innovative solutions for the food sector, creating real added value for retailers worldwide.

The focus of the operation is the development of a new range of combined and integrated packaging machines, that will be offered in combination with high-quality packaging materials, as well as comprehensive technical support and spare parts services, all from a single source.

By joining the expertise of both companies, groundbreaking solutions are being created for the food retail sector: for example, hybrid stretch wrappers based on the use of recyclable monomaterial films, all produced by Fabbri Group itself,



make packaging more sustainable. Bizerba complements the packaging machine based on stretch film wrapping technology with solutions for slicing, weighing, labeling, and cashing activities that can be seamlessly combined.

Stefano Pellegatta, CEO of Fabbri Group, is excited about the partnership: "With Bizerba, we have found an outstanding partner who is a perfect fit for us and already has a strong presence in the retail world. After intensive discussions and a great initial exchange, we can now move on to the operational part to soon provide retailers worldwide with real added value through our joint solutions."

Andreas W. Kraut, CEO & Shareholder of Bizerba, also emphasizes the importance of the cooperation: "Bizerba aims to make processes in retail smarter and more efficient. Through the collaboration with Fab-

The Executive Board of Bizerba meets with Fabbri Group's CEO Stefano Pellegatta in Balingen, Germany for the contract signing (© Bizerba)

bri Group, first-class and worldwide recognized brand, we are taking another big step in this direction: we minimize the effort required for data maintenance by retailers and enable seamless integration of retail systems and packaging solutions."

The first joint solutions will be available in select countries in Autumn 2023. The official launch in the Italian and European markets will take place during the Cibus Tec trade show, which will be held in Parma (Italy) at the end of October 2023.

Bizerba

➔ www.bizerba.com

Fabbri Group

➔ www.gruppofabbri.com

HDPE for Bottle Production made from 100% LVP for the First Time

Interzero has patented a procedure that significantly improves the recycling of HDPE plastics, following years of development work.

This recycling procedure eliminates previously required efforts in the final sorting stage of polyethylene lightweight packaging waste as it is retrieved from the yellow

bin, as well as the need for adding primary plastics to the so-called PPC (post consumer commercial) or PIR (post industrial) classes.

The patent relates to the production of a prepared plastic material made of lightweight packaging with a minimum 95 percent HDPE share. It refers to a mechanical recycling

process with a chemically controlled rheology modification to produce blow moulded products made of 100 percent lightweight packaging post-consumer material, which has to date only been qualitatively suitable for extrusion processes.

The process was developed in our own Competence Centre for recy-

cling of plastics at Interzero Plastics Innovations in Maribor, Slovenia. The Centre of Competence is the only state-accredited research institute in the EU based on the laboratory standard ISO/IEC 17025:2017, which has specialised in the development and analysis of recycled plastics.

"We can look back on long-term experience and competency in plastic development and analytics", claims Markus Müller-Drexel, CEO of Interseroh+, the recycling alliance for Europe's leading supplier of recycling solutions, Interzero.

The laboratory has consistently developed in the past few years and is now entering the market with a further range of services. In five laboratories equipped with state-of-the-art technical devices for analysing material quality - from the mechanical, thermal, and rheological properties to sensor technology and colour - there are also machines for processing materials as well as an NIR separator for simulating the behaviour of packaging in the sorting process.

The new performance is also reflected in the HDPE patent. "With



(Picture: Interzero)

this process we gain significant savings in raw material, energy, CO₂ emissions and effort invested in the sorting of lightweight packaging waste, when generating recycled plastics." outlines Dr. Manica Ulcnik-Krump, Managing Director of Interzero Plastics Innovations. "These savings mean that the sustainability balance is leading on a global scale compared to conventional procedures. Taking us a very large step closer to our vision of a world without waste."

The Slovenian company Rupar Plastika is one of the first to use the

new process. They produce moulded plastic parts from bottles to closures for well-known manufacturers and offer a range of different plastic processing technologies, such as extrusion blow moulding, injection stretch blow moulding, injection blow moulding and injection moulding.

Interzero GmbH & Co. KG
www.interzero.de

Newly Designed, Information-packed Website Released

Guill Tool & Engineering just rolled out a new website. The new site offers a detailed look at the company's entire product line, which offers a wide-range of standard and custom designed extru-

sion tooling, including crossheads, in-line heads, rotary heads and extrusion tips & dies.

The site includes a full listing of all product and specifications with calculation tools to compute annual

cost of lengthy concentricity adjustments and crosshead replacement analysis, plus calculators to compute draw-down, feet per minute and pounds per hour. The website includes charts and tables with detailed data and a full library of downloadable literature organized by industry. Guill markets its equipment worldwide and is currently seeking new representatives in select countries.

The Guill website is mobile phone friendly and offers the convenience of allowing users to request a quote online.

The new website has already been awarded the 2018 American Web Design Award from Graphic Design USA.

Guill Tool & Engineering
www.guill.com

Joint Venture to Create Norway's First Dedicated Sorting Plant to Enable Circularity of Plastic Packaging Signed

TOMRA has signed a majority ownership agreement with Plastretur, the Norwegian producer responsibility organization responsible for recycling plastic packaging. The companies will pair up to create a plastic packaging sorting plant located in Norway. The 50M EUR (~600MNOK) joint venture will be split 65 percent TOMRA and 35 percent Plastretur.

In 2020, Plastretur initiated the ambitions to set up sorting infrastructure within Norway, as plastic packaging waste from Norway is currently being sent to Central Europe. Since TOMRA is an expert in the design of advanced sorting facilities and has a broad knowledge of creating circular solutions to enable recycling, Plastretur considered TOMRA as the obvious partner to support them in their vision to contribute to the Norwegian circular economy for plastics and to help achieve future recycling targets.

The investment is part of TOMRA's strategy to build profitable businesses adjacent to the core divisions focused on solving problems our planet is facing using TOMRA's extensive core knowledge and technology. This TOMRA investment will specifically seek to close the gap in plastics recycling where there is a strong and growing demand from recyclers for high-quality plastic fractions. "I am thrilled to be working on this initiative, which will play a key role in transitioning Norway's plastic packaging into a circular economy," says Joachim N. Amland, SVP TOMRA Feedstock. "We are recovering material that would have been lost to incineration, and using our existing TOMRA technology, providing it to the market at very high quality, which has been missing until now."

This will be the first dedicated plastic packaging sorting plant in Norway, accepting municipal-sourced separated and mechanically recovered mixed plastic waste. The plastics will be sorted into 7 types of plastic which will be processed into high-quality fractions that are ready to be used to produce new packaging and other



high-quality products. In the new venture, Plastretur will continue to take responsibility for sourcing plastic packaging waste from Norwegian municipalities, trade and industry, and deliver this to the plant as input. TOMRA will be responsible for grading the fractions based on type and selling the plastic output.

"On behalf of Plastretur, I am proud that our initiative to build a Norwegian plastic sorting plant, is being realized," states CEO of Plastretur, Karl Johan Ingvaldsen. "The plant will be the cornerstone in building the national infrastructure needed to reach future recycling targets. With this plant we are taking a major part in building a Norwegian plastic recycling industry and reducing the cross-border transport of waste."

The total sorting capacity planned for the new site will be 90,000 tons of plastics per year and it will be built in Holtskogen Næringspark, Indre Østfold Holtskogen, Norway (near Oslo). The capital investment consists primarily of machinery and equipment. The plant is scheduled to be commissioned in Q4 2024 and to be fully operational by Q1 2025.

TOMRA

www.tomra.com

On Expansion Course with Customised Solutions for the Compounding and Packaging Industry

Tosaf Fusion, developer and manufacturer of customised solutions for compounders and packaging producers, is clearly on course for expansion. The small but dynamic company was founded in 2017 as a subsidiary of Tosaf Compounds Ltd. It now holds a leading position in innovative products such as modifiers for PA, compatibilizers for PP and HFFR cable compounds, as well as tie layers for PE applications in agriculture and packaging. These products com-

plement Tosaf Compounds' comprehensive portfolio, making the company the only one in the world today that can produce both masterbatches and grafted polymers. Due to steadily increasing demand, Tosaf Fusion is currently relocating its production to a larger facility in Israel's Alon Tavor industrial area.

An operating area of 7000 m², additional production lines and the support of Tosaf's enormous production capacities, logistics and

inventory will create optimal conditions there to further expand the broad product portfolio, to continuously supply customers, to supply them efficiently and at the same time to ensure high product quality. This will enable Tosaf Fusion to continue to provide innovative solutions to the highly competitive world of polymer compounding and packaging that improve product performance and help meet industry standards.

As a specialist in grafted polymers, the company uses advanced chemical processes to create completely new polymers with improved properties by incorporating functional molecules. Compounders use these as coupling agents in the production of material composites, such as glass-fibre reinforced plastics, wood-plastic composites (WPC) or aluminium-polymer bonding. Beyond, Tosaf Fusion has extensive expertise in the impact modification of polyamides and tie layers for multilayer films.

To increase sustainability, the company has also developed compatibilizers that improve the properties of recycled materials and support the effective use of waste materials. A collaboration with Tosaf

Fusion opens doors to a range of additional products from Tosaf's comprehensive offering. Accordingly, the company's customer base ranges from compounders to flexible and rigid packaging manufacturers to film producers.

A particular strength of Tosaf Fusion lies in the possibility of tailoring, for example, the flow properties or the binder concentration specifically and individually for the respective requirements. This and the personal support ensure a seamless integration of these products into existing processes, combined with high efficiency and optimised results.

Tosaf Fusion, Tosaf Compounds Ltd.
www.tosaf.com



Tosaf Fusion understands the chemistry of polymers, enabling the development of materials with tailored properties (© Explode // Shutterstock)

Spiderless Pipe Die for Extrusion Introduced

Guill Tool recently announced the availability of its Spiderless Pipe Die. This new offering utilizes precision tooling to provide increased material savings compared to conventional basket dies for pipe extrusions.

In the coming years, the global market for pipes used in irrigation/sewage systems and industrial applications is expected to grow. This increased demand for pipes is driven by the increasing need for water and waste-

water infrastructure, as well as the growth of industrialization and urbanization. These factors are expected to drive demand for pipes in emerging economies such as China, India and Brazil, as well as in developed markets including the U.S. and Europe.

Used by tube and pipe producers for larger diameter capabilities, this new pipe die is capable of providing a finished extrusion with OD from 2"-15". It's offered in 4140 steel or stainless with heat treating.

The company's Spiderless Pipe Die design differentiates itself from a basket die with its focus on precision tooling gained from decades of experience in medical tubing, flow analysis and Guill's ISO 9001 and AS9100 (Aerospace) quality systems. The significance of the Guill Spiderless Pipe Die becomes evident when considering material savings.

In general, the cost of the polymer material can range from 50% to 70% of the total cost of producing polymer pipes. The cost of other materials such as additives, fillers

and reinforcements, as well as the cost of energy, labor, equipment and overhead also contribute to the total production cost.

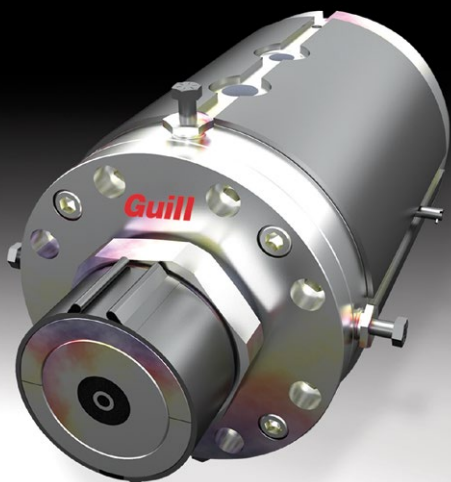
In some cases, the cost of energy, particularly electricity and natural gas, can be a significant part of the total cost of production, especially for large-scale production facilities. In other cases, labor costs in regions with high labor costs, can significantly impact the cost of production.

Also a factor is that the cost of the raw polymer can be affected by market fluctuations in the price of oil, impacting the cost of petrochemicals used in the production of polymers. Additionally, the cost can also be influenced by supply and demand factors and global trade dynamics.

Guill's Spiderless Pipe Die is now available to meet the needs of its customers as they consider all the factors needed to remain competitive in pipe production. This product was entirely conceived, designed, engineered, manufactured and tested at the Guill factory in West Warwick, Rhode Island.



Guill Spiderless Pipe Die



Guill Tool & Engineering, Co., Inc.
www.guill.com/series/900-series/

Investment in Startup

BASF Venture Capital GmbH (BVC), the corporate venture company of the BASF Group, announced an investment in the Swiss startup DePoly SA (DePoly), a sustainable plastic solutions provider developing a unique chemical recycling technology. Founded in 2020, the company has developed a chemical recycling technology that converts mixed post-consumer and post-industrial polyester plastic waste streams, as well as polyester-containing fabrics and fibers, back into their precursors at virgin-grade quality. This process is energy efficient – operating at room temperature and standard pressure, without the need for pre-sorting, pre-washing, or removal of contaminant materials. For BVC this investment

underlines BASF's ongoing commitment to developing sustainable solutions for a circular economy.

Plastics are an essential part of everyday life. But only about 10 percent are recycled, with the majority going to incineration or landfill. As brand owners increasingly aim for higher recycled content rates in their products, the demand for advanced recycling technologies is expected to grow. DePoly offers a unique solution to address this need. "Our technology has the potential to fundamentally change the lifecycle of PET plastics and reinforce the global efforts in tackling the climate challenge. We are thrilled to have BASF Venture Capital and other strategic investors in this round supporting us in imple-

menting our solution on a larger scale," said Samantha Anderson, CEO and co-founder of DePoly.

BASF aims to move toward a more Circular Economy by increasingly using recycled and renewable feedstocks, shaping new material cycles and creating new business models. BASF is therefore running a Circular Economy Program. By the year 2030, the company aims to double its sales generated with solutions for the circular economy to €17 billion. One example for these efforts is BASF's ChemCycling® business. The investment in DePoly is another commitment towards supporting this goal.

BASF Venture Capital GmbH (BVC)
www.basf-vc.de

Further Managing Director Appointed

With immediate effect, Wilfried Jobst was appointed Managing Director of K.D. Feddersen GmbH & Co. KG.

Jobst will assume responsibility for the activities of the Plastics Distribution business segment in Asia, which he has already managed for many years as Managing Director of K.D.F. Distribution (Shanghai) Co., Ltd. Together with Dr. Stephan Schnell, he will ensure that the regions of Asia and Europe, which have so far operated largely independently in terms of external presentation, will in future present themselves uniformly on the market and thus strengthen the perception of K.D. Feddersen Distribution as an international brand extending beyond the respective region.

In addition to his role as Managing Director of K.D. Feddersen GmbH & Co. KG, Jobst will continue to act as authorised signatory of BIO-FED, branch of AKRO-PLASTIC GmbH.

Dr. Schnell will continue to be responsible for the activities of the Plastics Distribution business area in Europe.



Dr. Stephan Schnell (left) and Wilfried Jobst (right)

K. D. Feddersen Holding GmbH
www.feddersen.group, www.kdfeddersen.com

Sadness at the Death of Wilfried Ensinger

Wilfried Ensinger, who established the family-run plastics processing company that bears his name, passed away on 23 May at the age of 87. The employees of the

Ensinger Group mourn together with his family members.

With the loss of its founder, the company says farewell to a passionate engineer, creative inven-

tor and dedicated entrepreneur who – even in the decades following his retirement from the Management Board – was fully committed to the welfare of the company

and its employees. Originating in a garage in Ehningen, the small company founded by Wilfried Ensinger in 1966 has grown into an international corporate group that is one of the global leaders in the processing of high-performance plastics.

At the beginning of his career, Wilfried Ensinger completed an apprenticeship to become a toolmaker and took his master craftsman's examination. Subsequently he worked as an operations and factory manager in different companies that specialised in mechanical engineering, precision mechanics and the plastics processing industry. He completed a part-time course of study with the degrees Industrial Engineer and Diploma Engineer.

With the aim of producing quality stock shapes and machine components from the engineering plastics that were emerging in the sixties, Wilfried Ensinger launched his own company in Ehningen. Transferring the company headquarters to Nufringen allowed the company to expand its production capacities. A short



time later, the production of components through the machining of stock shapes began. A second production plant built in Cham in 1980 enabled the series manufacture of profiles and other product lines. What today is the corporate group's biggest subsidiary was established in the USA in 1986. In the years that followed, numerous additional overseas branches were set up in Europe, South America and Asia.

Wilfried Ensinger never rested on his laurels. Constant development of products and production

processes and the cultivation of employee potential were his guiding principles right from the start. In 1997 he handed over the operational management to the second generation and increased his involvement in community and social projects. The Wilfried and Martha Ensinger Foundation, which he and his wife created, sponsors social, cultural and scientific institutions at home and abroad.

In his capacity as president and later honorary president of the Böblingen District Chamber of Commerce and Industry he provided key impetus for committee reform and for improving in-company training. The University of Stuttgart conferred the title of honorary senator on the father of four. In 2005, Wilfried Ensinger was awarded Germany's Federal Cross of Merit and two years ago, the town of Rottenburg am Neckar made him an honorary citizen.

Ensinger GmbH

ensingerplastics.com

Change in the Management

After almost 40 years with the company, 19 of them as chief sales officer for the company's three divisions, Hermann Adrigan took his retirement on March 31, 2023. He is succeeded, on April 1, 2023, by Harald Neumüller, who has been working in the Starlinger sales department since 2013.

"We would like to thank Hermann Adrigan for his services to our company. He played a key role in the success of our business in the last two decades," says Starlinger owner and Managing Partner Angelika Huemer, expressing her appreciation for him. "With Harald Neumüller, the next generation takes over now. He will take on the current challenges and bring in new ideas."

"A key topic that Starlinger has taken up and promoted in the last years is sustainable plastic packag-

ing and the corresponding recycling solutions for a functioning circular economy. I would like to push this even further," said Harald Neumüller, specifying one of his goals. "In many areas, plastics are simply the best solution. Unfortunately, what is only slowly gaining momentum is the responsible usage of plastics. We incorporate our long-standing experience in plastics recycling into the development of our packaging solutions to make them sustainable and easy to recycle. Our customers know that they are not just buying a Starlinger machine – they are investing in European technology, concepts and overall solutions for resource-saving production in the future."



As of April 2023, Harald Neumüller is the new CSO of Starlinger & Co Gesellschaft m.b.H. (©Starlinger)

Starlinger & Co Ges.m.b.H.

www.starlinger.com

PLAST 2023 – *Sustainability in Focus*



The major issues that are driving the entire plastics and rubber industry market will be the focus of PLAST 2023, which will be held from 5 to 8 September at the Fiera Milano exhibition centre in Rho-Pero. The focus will be on innovation and the development possibilities of production patterns in terms of circular economy criteria, which, together with sustainability and energy efficiency, are key themes of PLAST 2023.

Topics that are not only of central importance in the exhibition programme; the event itself also holds out the prospect of better results in terms of sustainability this year. This approach is made possible in part by Fiera Milano, which adopts a sustainable event management system, focusing on controlling logistics, waste and catering to reduce the environmental impact associated with organising and running events and avoid CO₂ emissions.

As the organiser of PLAST, Promaplast therefore wants to set a good example by respecting the basic rules of sustainability, which today are increasingly seen as an obligation that cannot be postponed. Among the aspects underlying this approach are the provision of exhibition stands that comply with eco-design and services related to catering such as those offered by the Fondazione Banco Alimentare (Food Bank Foundation).

But that's not all: for the first time, Promaplast will offer the opportunity to carry out a carbon footprint assessment and timely announcement of the first corporate

After all, the calculation of the carbon footprint is currently the most direct and widely accepted way of presenting and reporting on an organisation's environmental impact. The project adopts the parameters

reported by the IPCC (Intergovernmental Panel on Climate Change, working under the umbrella of the United Nations) using internationally recognised standards (GHG Protocol and ISO 14064). Converting one's own corporate activities into carbon dioxide equivalents is a sign of environmental awareness and represents a commitment to respecting the fundamental rules of sustainability, which today is an added value.

Just as present as technological innovation, the theme of sustainability will be present in the 6 halls of this showcase, which, from materials to manufacturing processes, from end products to services, will present the most advanced solutions developed by manufacturers of machinery, equipment, tools and moulds for plastics and rubber processing.

Following the launch in May 2022 of the GREENPLAST congress fair – focusing on the sustainability of materials, technologies and processing in the plastics and rubber industry – PLAST 2023 will also present successful innovation in green: from increasingly sustainable and environmentally friendly materials to energy-efficient machinery for processing bio-based or recycled plastics, as well as processes that use fewer raw materials without any loss of performance, and sorting and recycling systems.

The programme of accompanying trade fair events will then provide an opportunity for reflection and exchange on the state of the art and the challenges for the development towards an increasingly sustainable economic model.

► www.plastonline.org

Blow Moulding Technology at PLAST 2023

After the forced stop due to the pandemic, ST BlowMoulding is ready to come back to PLAST exhibition at Fiera Milano Rho from the 5th to the 8th of September. PLAST is an important showcase for the Swiss/Italian company to present its latest novelties and technologies.

For over 40 years, ST BlowMoulding has proven to be the most reliable supplier of large blow moulding equipment. From cutting-edge suction blow moulding technology to the production of large packaging containers up to 6000 L, it always provides the best solution tailored to the customers' needs.

ST BlowMoulding combines Italian passionate engineering with Swiss-like precision and attention to

details. With locations in both Italy and Switzerland and a new branch in North America, it offers great flexibility in terms of worldwide blowmoulding machines shipping, sales and service.

The company's core technology lies in manufacturing the machines for large blow moulded items, starting from 30L. Over the years, it has developed an impressive portfolio with high-level expertise in markets such as:

- Industrial Packaging: L-Ring and Open Top drums, IBC tanks, large jerrycans.
- Automotive products: including fuel tanks, water tanks, HVAC, Under the Hood components, coolant pipes, hydrogen pressure vessels, etc.

- Specialties: such as solar floating docks, CPV and LPG tanks, gardening supplies, flower pots, toys and more.

ST BlowMoulding is also a leader in Suction Blow Moulding technology, which is used to produce complicated 3D-shaped objects with no flash on the sides, even starting from very small diameters.

ST machines are designed for maximum efficiency and profitability for the customer:

- The lowest energy consumption category based on Euromap 46.1 testing procedure guarantees cost-efficient production, even during periods of high energy costs.

- The variety of multilayer options keeps the client's blow moulding equipment up to date with modern requirements for "green" materials – PCR/PIR resins, fully regrind layers, thin outside layers with particular properties, etc.

- Unmatched process repeatability allows reducing raw material consumption while maintaining stable product characteristics in terms of weight, surface quality and thickness.

- The intuitive control system provides operators with maximum comfort during the working process.

Depending on production needs, ST BlowMoulding offers a vast range of engineering solutions: ac-



cumulator head or continuous extrusion, single layer or multilayer, fully electric machines or advanced hydraulics, special proprietary systems for automatic die tool changeover and more.

ST BlowMoulding SA
www.st-blowmoulding.com
 PLAST 2023: Hall 22, Booth C 102

Your Profile

Our Business



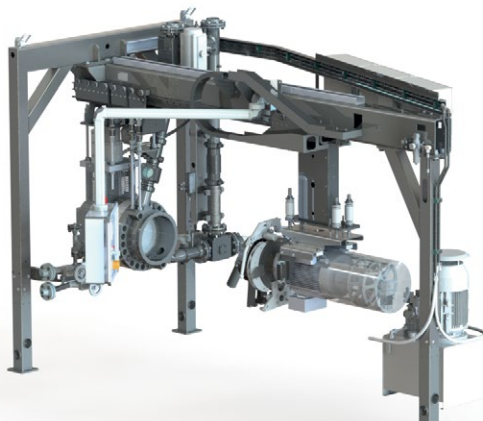
Pump & Filtration Systems, Pelletizing & Pulverizing Systems, Recycling Systems and Digital Solutions at PLAST 2023

At Plast in Milan (September 5-8) MAAG Group shows integrated solutions for the processing of polymers in the recycling process in hall 13, booth B31, in particular the ECO 500 high-performance melt filter from ETTLINGER.

MAAG ETTLINGERs ECO 500 is a high performance melt filter for the filtration of heavily contaminated polymer feedstock. For chemical recycling, this technology is outstanding for filtering low viscosity polymers. The filter is self-cleaning with a rotating, perforated drum, through which there is a continuous flow of melt from the outside to the inside. A scraper removes the contaminants that are held back on the surface and feeds them to the discharge system. This enables the filter to be used fully automatically and without any disruptions over long periods without having to replace the screen. The advantages: Reliable melt filtration, ultra-low melt losses constant pressure curve, fast spreading of the contamination and short residence time of the melt in the filter.

PEARLO® 350 EAC with liquid-heated die plate for high capacities: The underwater pelletizing system PEARLO® 350 EAC is especially designed for high throughputs of like 18.000 kg/h of Virgin Polymer production. The unique cutting blade design and optimum water and material flow conditions within the cutting chamber provide not only ideal and homogeneous cooling effects but also outstanding pellet quality. Another innovative design feature of the PEARLO is the cutting blade advance system, which permits axial movement of the cutter shaft resulting in a precise blade advance

MAAG Ettlenger's ECO 500 high performance melt filter



MAAG Group PEARLO® 350 Underwater Pelletizer

as well as a regrinding of the blades during production. This allows higher equipment availability, elongated production runs and thus saves costs.

Under the name EBG, MAAG is presenting a strand pelletizing system for highly filled, hydroscopic and water-sensitive compounds. EBG scores with a high degree of automation, gentle material processing and excellent product quality. From the die head to the granulator, the pelletizing system forms a unit that, despite its compact design, has features of a large compounding system. Automatic feeding in case of strand breaks, removal of melt residues on the die plate by the patented Hot-Air-Knife and synchronization between conveyor belt and strand granulator to name a few. Also, in this machine the control system has been revised and now allows the operator to read out the machine status live via Bluetooth.

All MAAG Group extrex® gear pumps in x6 class design are completely re-engineered and have redesigned components, from the shafts through to the bearings and seals, and optimized the interaction of the components. Specially developed gear teeth with low compression allow very high pressures to be achieved with low shear rates. The result is a further increase in achievable product quality, volumetric efficiency, as well as production consistency and safety.

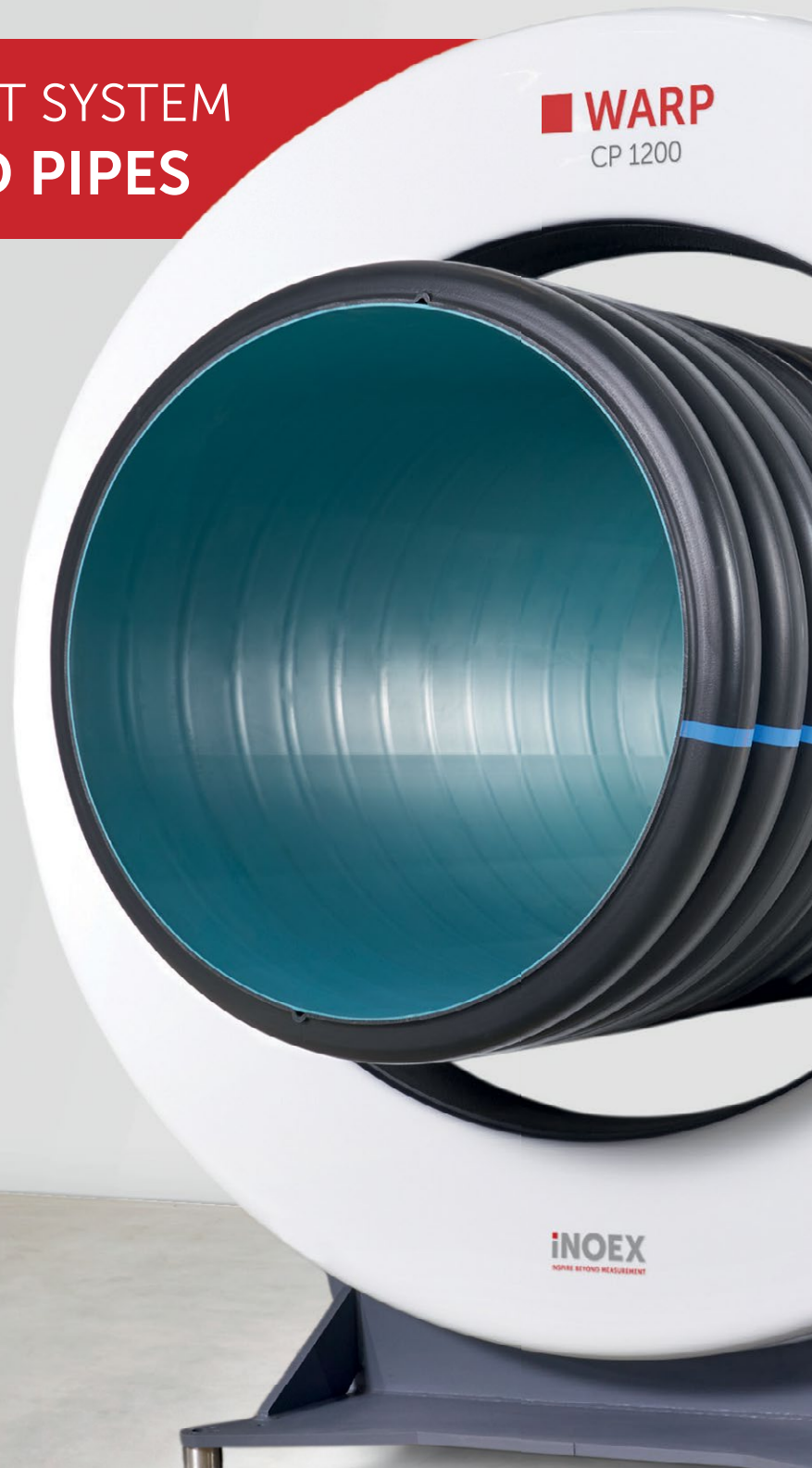
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RADAR MEASUREMENT SYSTEM FOR CORRUGATED PIPES

- Patented measuring method
- Non-destructive, contactless and automated inline measurement of all relevant structures of the corrugated pipe
- Repair of critical thick and thin spots
- Operator-independent measurement
- For wall thicknesses from 2 mm (0.07 in)
- For pipe sizes from 300-1000 mm (inner diameter)

Scan the QR code
for further information.



www.inoex.com

INOEX
INSPIRE BEYOND MEASUREMENT

An Ode to the Green Factory of the Future

Bausano will be present at PLAST in Milan with an exclusive exhibition that perfectly interprets its three distinctive values: tradition, innovation and respect for the environment, for a journey that celebrates sustainable extrusion in all its forms. The stand design concept is a combination of noble materials and multimedia contributions, in which outdoor and indoor spaces merge to guide visitors into a green factory, where nature and industry coexist.

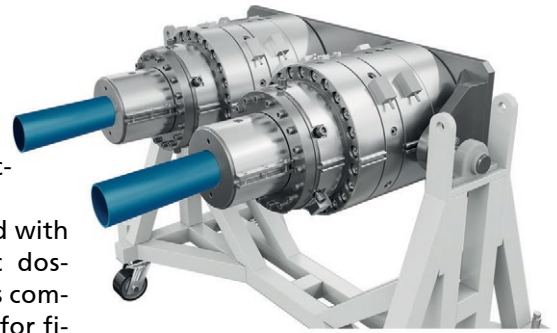
"The birch tree symbolises resilience, versatility, perseverance, adaptability and tenacity. These are all characteristics that distinguish us," says Bausano Vice President Clemente, who continues, "A symbol that is perfectly in line with our sustainable growth strategy, which sees the company actively engaged in quantifying the environmental footprint of its processes, products and services, in order to reduce emissions and promote a more rational use of natural resources such as water and energy, for the benefit of future generations."

A four-day event in which Bausano will present the following technologies: the E-GO 60/37 extruder for PP/PE pipes, equipped with a head for the production of single-layer 250 mm diameter pipes, with IPC (Internal Pipe Air Cooling) included, and the MD118/30 series with induction system and dual

outlet head for the production of PVC pipes.

The E-GO 60/37 is equipped with a loss-in-weight gravimetric dosing system: a plus that allows complete control of production, for final outputs of excellent standards. Compared to a standard volumeter, it is self-calibrating and allows the weight of material processed by the extruder to be measured in real time, sending continuous feedback to the Digital Extruder Control 4.0 (PLC). The latter determines the rotational speed of the screw, depending on the changes in the material flow and the mass detected, while keeping the weight/metre of the pipe constant. In this way, Bausano lines allow each metre of pipe to be extruded to predefined specifications. Further distinguishing features of the EGO 60/37 are the IP23-rated, three-phase asynchronous, low power consumption AC motor, directly coupled to the three-stage gearbox with ground helical gears, bimetallic screws and rifled mouth cylinder, guaranteeing maximum resistance to wear. The innovative extruder is also characterised by its screw geometries, specifically designed according to the customer's requirements and the variety of polymers processed, for high output in terms of Kg/h, without excessive mechanical stress.

The E-GO 60/37 extruder is equipped with a 250 single-layer head with Internal Pipe Air Cooling (IPC). A technology that, thanks to air flows in the opposite direction to the extrusion, cools the pipes intensively, uniformly and all round, directly in the extrusion head, for superior productivity, finished product quality and energy efficiency. With its compact design, it requires little space in the line installation process and, thanks to the IPC, is also reduced in length.



A highlight among Bausano's innovations is the MD118/30 Nextmover in which the patent-pending Smart Energy System technology meets the need for more sustainable and efficient plastic extrusion processes. It is an induction system for heating the cylinder, without contact and by means of an alternating electromagnetic field, which not only significantly reduces component wear for a longer machine life cycle, but also cuts energy consumption by 35%.

Made of carbon steel and chrome-plated surfaces, the double outlet head on display, fully thermoregulating both externally and internally, completes the extrusion line for PVC pipes, based on the MD Nextmover range of extruders offered by Bausano.

Thanks to the optimisation of internal head volumes and compression ratios, a high throughput of up to 2000kg/h can be achieved, with temperatures and melt pressures significantly lower than standard.

Bausano

► www.bausano.com

PLAST 2023: Hall 13, Booth 41/42



SMART EXTRUSION

**THE SPECIALIZED WEBPORTAL
ON EXTRUSION
FOR EVERY MODERN NEED**



VM Verlag GmbH
Cologne, Germany



www.smart-extrusion.com

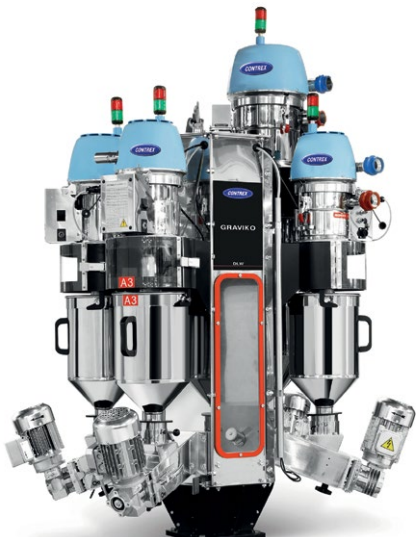
Extrusion Processes

Contrex is an Italian company of the Moretto group. It is specialized in the design, development and production of extrusion control systems, focusing on cooling rings with thermal modulation and integrated thickness control, supervision systems with OPC-UA communication protocols for blown film extrusion processes.

Contrex has a strong experience based on over 40 years of international experience and it is the ideal partner for all flexible packaging producers. The company counts on a highly qualified professional team who offers application and process consultancy in all transformation phases – from storage logistics to distribution of raw materials within the production department – recommending the best solutions for each extrusion process.

PLAST fair will be the occasion to present the best solutions for blown film extrusion to the international market. First of all, Gramixo, continuous loss-in-weight batch blender, able to handle up to six components. The free weighing inclined mixer ensures proper mixing of all ingredients. Extreme dosing precision is guaranteed by the exclusive double eyelid shutter device that allows dosing control in just 25 milliseconds; a reaction time ten times faster than

GRAVIKO, continuous loss-in-weight multicomponent dosing system



traditional systems on the market. Thanks to the VIS (Vibration Immunity System), a special control algorithm that identifies and smooths out dosing peaks caused by system vibrations, Gramixo can be installed directly on the extruder with the certainty of keeping the weight per meter ratio set constant throughout the process. The supplied 10" touch view control with icon-based interface allows an easy and intuitive management of the dosing process.

Exposed also Graviko, continuous loss-in-weight multicomponent dosing system with automatic weight/meter adjustment that can be installed in all 24/7 production plants (films, tubes, profiles or sheets in mono and co-extrusion). An accurate, self-adaptive dosing system designed to handle up to six components allowing a large number of configurations. It can dose and keep constant over time even the lowest weights thanks to specifically designed dosing units. It is easy to program thanks to the 22-inch touch view control that allows fully automatic management of the production parameters at all stages of the production process. Graviko verifies that the doser adapts to the performance and the result of the finished product. It controls the extrusion process and acts on its speed through the thickness and/or dimensional control of the extruder. A real synchronism between doser, extruder, haul-off and finished product.

Graviko is equipped with stainless steel hoppers and it is immune to vibrations.

Gramixo and Graviko are reliable, modular and user-friendly machines.

In addition to dosing systems, the Contrex range includes also the efficient Discovery cooling rings available in two versions: the one with a cooling insert and the second one with fully automatic sectoral thermal modulation that allows precise thickness adjustment thanks to its unique design. Discovery generates different air flows to ensure the right point-to-point



GRAMIXO, continuous loss-in-weight batch blender

thickness adjustment and increases cooling efficiency with reduced energy consumption. The cooling flows in combination with the thermoregulated sectors enable proper blown support and consistent gauge control along the entire circumference, offering a substantial increase in productivity.

Navigator 9000 allows an easy management of the discovery cooling rings. It is a control system that supervises the production parameters through a simple, intuitive and user-friendly interface, speeding up the creation of new recipes and material changes, while reducing start-up and production changes.

Contrex srl

➔ www.contrex.it

PLAST 2023: Hall 22, Stand A81/B82

Cooling ring DISCOVERY



Energy Efficiency such as an Engine Development

One of Moretto's strategic development drivers is energy efficiency guaranteed through its products. A long journey in which the awareness of customer needs, the company's commitment and the development of the necessary technology have combined perfectly to create a virtuous path that has led to innovative solutions, in line with the needs of the current economic context. The manufacturing industry sector has among its highest costs the electricity, and equipping itself with solutions capable of significantly reducing these costs is an indispensable competitive advantage.

The OTX hopper is the result of sophisticated mathematical simulations that allows the analysis of the geometry, fluid dynamics, thermodynamics and material flow of the plastic granule with the support of the super computer Leonardo, an exceptional computer capable of 22 trillion operations per second. OTX ensures a regular material flow, guaranteeing correct drying of each individual granule being processed. In addition, the optimisation of the process parameters has enabled the hopper size, technological airflow and treatment time to be reduced by 40% for the same hourly output. The reduction of hopper size has been possible by the energy efficiency of OTX, which improved by 66% at the same production capacity. Because OTX is not a simple hopper but a concentrate of 7 patents that ensures a perfect execution of the drying process with full control of all working parameters. OTX can be considered a 'Hopper Machine' in its own right by virtue of its features.

The use of a smaller hopper allows the application of a smaller dryer. Moretto has developed the HYPER FLOW turbo project capable of generating up to 2,400 mc/h of technological air with the aim of creating a machine capable of using as little energy as possible. As an example, the HYPER FLOW version, available on 17

models, is a revolution of dryer project on the 800 series and the entire X Dryer 20 series range. A 1,200 mc/h generator with side channel pumps in continuous operation consumes 16.5 kW/h. A HYPER FLOW turbo-compressor for the same performance consumes 4.8 kW/h, guaranteeing energy savings of 11.7 kW/h and economic savings of € 35,800 per year. This is just the last part of a project development and innovation that have covered over 32 years which can be summed up: XTechnology; No water for cooling; Electrical movement of the exchange valves; Total energy recovery; OTX Hopper; Moisture Meter; Hyper Flow Turbo-compressor.

Leonardo Cluster has contributed to this energy efficiency challenge by enabling us to offer customers' solutions that are indispensable for all companies. Tangible energy efficiency that frees up significant resources for development and growth.

The Human at the Centre

Following the signals of the market, Moretto has oriented its business model, investing in the Human-Machine relationship, one of the most important levers to be always competitive and innovative. This has allowed the Veneto-based company to consider the centrality of man within its reality for the transition towards the so-called 'Industry 5.0'. With the previous model of 'Industry 4.0', the focus was on digitalization and the interconnection of systems, while now the focus is on the development of technologies that simplify the interaction between human and machine. Humans improve their skills and the effectiveness of their actions by technology, reducing the repetitiveness of operations and improving the user experience. The human being maintains an essential role in planning, organizing and managing production activities with the sup-



The revolutionary OTX hopper (Original Thermal eXchanger) developed by Moretto

port of automated machinery and state-of-the-art robots. The full integration of human talent and technology enables the company to produce innovative, state-of-the-art products that meet customers' needs in terms of quality and reliability.

The central role of human is at the base of Moretto's philosophy, which for years has endowed its most technologically advanced products with the ethical OMS&P trademark, whose symbol is represented by Leonardo da Vinci's Vitruvian man, an expression of the values of creativity and genius that also characterize the activity of the Massanzago-based company. These values guided Moretto towards the development of an offer that enhances the creativity and intelligence of human capital, which has always been the driving force behind the company's innovation and success.

The Digitalization that Improves the After-Sales Service

In addition to the central role of man, the digitalization of processes and services is another cornerstone



The digitalization process started by Moretto is bringing enormous benefits to the after-sales service

of Moretto's business strategy. The continuous evolutions of the modern world, combined with the need to provide customers with a quick response, have accelerated the need to possess digital tools to further improve the service. The after-sales service is a real commitment to customers for Moretto and this is why the company guarantees it worldwide, through trained technicians and specialists. A high level of service is also guaranteed by the use of automated warehouses, management software and online platforms that allow a real-time resolution of ongoing issues.

Part of the process of digital evolution and service improvement is QR Code project, which aims to provide customers with some useful information by supporting them from the very first stages of their purchase. Its functioning is simple and intuitive: using the mobile phone and framing the QR Code on the machine, the user can access a series of services with high added value, such as useful information on the machine, tutorial videos, the list of recommended spare parts and much more.

Sustainability as a Strategic Driver of Development

The adoption of a production approach based on circular economy

principles has steered the activities of the Moretto group over the years. Sustainability and energy saving are an established part of the company philosophy and are developed through technologies that take into account the needs of customers, but also the environment and the community in which we live.

With the aim of reduce its environmental impact, the company has chosen to use only energy from renewable sources in its plants, as evidenced by its participation in Dolomiti Energia's '100% clean energy' project.

The growing interest around these issues has led Governments and Institutions around the world to rethink the use of plastics, promoting practices and regulations that allow their reuse within a new production process. The plastics sector is making important steps forward on this issue, and Moretto also

The themes of sustainability and respect for the environment have always been two distinctive elements that characterize Moretto's modus operandi



makes its contribution every day by trying to provide solutions that reduce the use of raw materials from exhaustible resources. The development of equipments suitable for recycling is not only a duty for plastics processors, but also a necessity for customers who demand solutions suitable for both virgin materials and those with high percentages of recycled material.

Some of the Innovations at PLAST

On the occasion of Plast 2023, Moretto will participate with a stand of 400 sqm. The Plast exhibition will be an opportunity to showcase some of the most innovative solutions dedicated to plastics processing in the world.

Dehumidification is one of Moretto's strategic segments, thanks to solutions that over the years have satisfied the most demanding customers by combining high technical performance with low energy consumption.

These requirements find their maximum expression in X COMB, the latest addition to the range of dehumidifiers that immediately met the needs of processors thanks to its compact dimensions, which make it suitable for treating small quantities of highly hygroscopic technical polymers. A highly energy-efficient product that is an ideal solution for production-intensive sectors such as medical, optics and electronics.

Very often small details can determine the success of a dehumidification process, where even a small amount of no-dried polymer can compromise the quality of the final moulding. Moisture Meter was created with the intention to completely eliminate this problem, thanks to its ability to detect the percentage of residual moisture in the polymer without the need for off-line sampling. Moisture Meter is able to provide the operator in real time with the moisture value of the plastic granule after drying, allowing the operator to fix the situation if the resin has not been properly treated, "saving" the transformation process. Different versions are

available depending on the type of installation and the hourly output of the polymer to be treated.

Another process that requires great precision to achieve a quality product from a technical and aesthetic point of view is dosing. Moretto has a wide and comprehensive range of blenders, including the DGM Gravix 20, the new gravimetric batch blender developed specifically for high-precision dosing of small percentages of material. The 20 series is built on the model of the Gravix series, but features a renewed design that improves granule flow.

Configurable through a easy touch view and equipped with Modbus RS485, USB and Ethernet connections, it maintains the technical features that have distinguished the Gravix line.

Raw material procurement is a crucial step in plastics processing, which is why storage solutions will play a prominent role on the Plast stand. Oktobag meets the requirements of processors who want an automatic system for emptying octabins and big bags. The bag is attached by means of 4 gravity grippers which, with a wave-like movement, bring the plastic granule to the centre where a suction probe will take it. The storage line also includes SILCONTROL, the system designed and developed to control the loading of plastic granules into storage silos. The material, identified via a special barcode reader, is matched to the correct silo by interrogating the database. Thanks to this procedure, SILCONTROL aims to avoid errors, even human errors, in the material loading phase.

The interconnection of machines and the management of large amount of data generated within the plants prompted Moretto to develop MOWIS, the software platform developed in-house for the control and management of processes within the production plant. A modular and self-configurable tool, usable on-site or remotely, which via OPC UA protocol achieves total connectivity between ma-

chines, processes, departments and plants and allows the management of highly complex in an optimized and intuitive manner.

Moretto will address many themes at the next edition of Plast, from innovations which aim to enhance the value of man and his work to a digitalization process that has involved all branches of the company, improving the efficiency and response times of customer service.

The solutions shown at the exhibition will embrace all the company's

product lines, from conveying to drying, from dosing to grinding, from thermoregulation and refrigeration to storage. Solutions that must combine customer needs on the one hand, and sustainability goals on the other, which are fundamental for reducing production costs and safeguarding the environment in which we live.

Moretto S.p.A.

www.moretto.com

PLAST 2023: Hall 22, Stand A81/B82

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Extrusion Technologies for Medical Tubing Production

Italian Tecno System is one of the leading brands in Italy about extrusion technologies for thermoplastic materials, involved in the manufacturing of customized turnkey systems such as extrusion lines complete with molds and integrated on-line or off-line solutions appositively designed to face any customer need. The company offers its customers a high level of experience, specific and consolidated know-how and constant R&D efforts combined with the professionalism of high-skilled team, in order to give clients the smartest solutions possible coupled with the top quality standard for after-sale services.



A crucial business for the company is represented today by the manufacturing of complete extrusion lines for medical tubes and medical pipes (single or multi-layer and radiopaco) exploited in pharmaceutical and hospital industries: thanks to constant efforts in quality control and rigid standards about internal and external processes, in facts, our plants result totally conform to any national and international regulation about the matter.

These extrusion lines are characterized by single screw extruders equipped with special screws appositively designed for medical

grade raw material such as Soft-PVC, EVA, TPU, TPE, PEBAX, etc. and they are suitable for a wide range of medical tubes and purposes.

The basic medical extrusion line is usually equipped with extruders model TM 60-25 with 15" Touch Panel and a medical extrusion head model HD 2-12. About downstream, there are a vacuum/cooling unit model R 50/5,5, a belt haul-off unit model TT800 and an appropriate diameter gauge system (ODAC 14 x/y/j) that is entitled to ensure accuracy of the entire tube before being rolled up by a

semi-automatic double winding station model TS2600 endowed with electronic ultra-sonic dancer. Obviously, there are alternative configurations available for the customer, for example relying on extruder series TM 75-25 or rolls haul-off unit, as well as the possibility to opt for numerous options like frosty kit, wall thickness monitoring systems, and many others.

On this regard, it must be specified that Tecno System extrusion lines are perfectly suitable also for spiral smoothbore medical tubes with rigid or semi-rigid spiral and also combining different polymers.

These lines are powered by two extruders (TM45-25 and TM60-25 series) with a 15" digital touchscreen and a 1.2316 steel medical extrusion die-head ensures high quality standards for this type of thermoplastic tubing extrusion, while a spindle trolley CM 50 series can be easily handled by operators to move and set up dies with diameters from 12 to 50 mm.

A perfect internal calibration through spindle, in the downstream units, is guaranteed by calibrating systems located in a special stainless steel water tank with closed loop water circuit to prevent any type of contamination. Water can be maintained constantly cooled by a dedicated chiller that can be installed as optional on the line side and a dedicated tube drying system allows to automatically dry the pipes from the water in excess after the cooling processes.

Obviously, all the lines are totally customizable by the customers in order to answer in the best tailored way to their needs. Potential options about the line configuration are, for example, the possibility to implement double hopper loaders, different screws for different thermoplastic materials as well as maximum levels of customization for what concern the unloading bench. Another very interesting plug-in appreciated by current clients is represented by the so-called GF-Connect system for remote assistance which enable to reduce waste of time and costs connected to assistance services.

In addition, It must be said that every Tecno System's extrusion line can be suited to the 4.0 industry standards with an appropriate OPC-UA communication protocol to increase exponentially the potential opportunities through digitization of the processes: real-time informa-

tion, remote control of the line and hyperconnectivity between machineries themselves are some examples among the practical implications of this innovative approach.

By opting for Tecno System's turn-key solutions the customer will be supported in each stage in order to simplify as much as possible the investment project. Every product, indeed, is completely designed, manufactured and tested within the historic production plant located in Consandolo (FE – Italy), enabling the company to directly supervise every single phase in the supply chain and ensuring, so, the best qualitative standards for the final product and the possibility for the customer to rely on a unique referent for any type of issue.

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New Standards in the Production of Plastic-Metal Composite Pipes

Technological Cooperation and Customer Service are Continuously Expanded

battenfeld-cincinnati and Templet Deutschland have been setting standards in the production of complex plastic-metal composite pipes for over 20 years. Through their close cooperation and the know-how, both companies have established themselves as leading market players and innovation drivers in extrusion and aluminum jacket technology.

Thanks to many advantages, plastic-metal composite pipes are becoming increasingly important in the fields of hot and cold-water installation, drinking water supply and gas supply, among others. The production of these pipes, which usually have a five-layer structure with a diffusion-tight oxygen barrier made of aluminum, requires high-precision coordination between the plastic extrusion and metal jacket system.

The two technology leaders offer demanding customers world-

wide tailor-made solutions for precisely this purpose. Thanks to modular production systems, even highly individual requirements can be fulfilled flexibly. At the same time, energy and production costs are reduced and plant availability is increased. Manual interventions in the production process which were previously necessary as well as operating errors and accidents at work are effectively avoided thanks to clever detail solutions.

With success: Since 2001, numerous production lines for aluminum

composite pipes have been successfully established. Advanced lines with laser welding technology in particular are becoming increasingly popular and now account for around 80% of the lines delivered.

A decisive advantage of the system technology from Templet Deutschland lies in the fully automatic strip guiding system, which ensures optimum positioning of the aluminum strip during the welding process without manual intervention. Side guide rollers are no longer necessary, and there is



also no longer any damage to the strip edges. In addition to other innovative solutions such as the Fault Control System "FCS", this intelligent technology in particular offers decisive added value in contrast to other available systems in the market. In addition, the laser welding systems from Templet Deutschland convince with their precise welding results and high process reliability.

To ensure process reliability even at high speeds, not only the forming and welding process itself is enormously important, but also the feeding and preparation of the aluminum strip. With the newly developed and fully automatic laser transverse seam welding system, Templet Deutschland sets new standards in this area as well. High-precision linear robots guide the new aluminum strip into the production level and weld it without operator intervention. Thus, operator errors caused by humans are eliminated for all time.

battenfeld-cincinnati, in turn, has just recently introduced a significant innovation in the field of plas-

tics processing with its latest generation of extruder technology, the "NG" and "XNG" series. The highly advanced processes provide energy savings of up to 15% compared to earlier models. In addition, they reduce the axial pressure curve and thus the load on the overall system.

The patented VSI die head design from battenfeld-cincinnati offers additional advantages in aluminum composite pipe production, especially when processing PE-RT materials. The helix II VSI die series sets new standards in terms of end product quality, throughput and handling. The sophisticated three-stage distribution system ensures excellent melt homogeneity, outstanding layer distribution and, as a result, creates almost perfect pipe surfaces. The compact, lightweight and modular design makes fast color changes and rinsing times possible, as well as short heat-up times. This ensures considerable savings in material and energy costs as well as significantly reduced maintenance and setup times.

All production-relevant data can be recorded and documented in real time for the control and constant monitoring of pipe quality. Individual Industry 4.0 solutions can thus be realized at profitable product costs.

Continuous investments in research and development will ensure the highest availability and process reliability of the machines in the future as well. battenfeld-cincinnati and Templet Deutschland also offer their customers comprehensive customer service far beyond the warranty period: In this way, machines already in operation continue to be kept at the latest technical level. The worldwide service network of the two companies is available to customers around the clock for this purpose – on the phone as well as via video chat and, of course, directly at the machine.

battenfeld-cincinnati
 ► www.battenfeld-cincinnati.com

Templet Deutschland GmbH
 ► www.templet.de

At the Cutting Edge – SawControl Module

Measurement technology specialist PIXARGUS has taken the next step in network-based, integrated production. The new PIXARGUS-developed SawControl module makes profile cutting an integrated element of quality control, minimizing waste as a result.

Networking of data plays a key role in achieving Industry 4.0 in production, a fact that measurement technology expert PIXARGUS, specialized in digital in-line inspection systems, is also well aware of. This was reason enough for PIXARGUS to further enhance its intelligent profile inspection systems' capability to communicate with the cutting unit in the extrusion line. The new SawControl software module uses the results provided by PIXARGUS' ProfilControl 7 inspection systems to optimize profile cutting. SawControl ensures that all profiles cut to the lengths specified by a customer are free of defects and any profile sections that contain flaws are cut out at minimized lengths.

One control for all: PIXARGUS system plays pivotal role

Even in its standard version, the ProfilControl 7 inspection system can send defect signals to the cutting saw to ensure that all flaw-containing profile parts are cut out. However, with the new SawControl module, PIXARGUS has taken this capability to a new level: The new software 'tells' the saw at what spacing the cuts for a customer order have to be made. "We have integrated all inspection and defect detection activities, such as defect marking and the spacing within the cuts, into one control loop," explains a PIXARGUS Product Manager. "Therefore, the PIXARGUS system now plays a pivotal role for this process step."

Profile cutting done the clever way achieves profiles ready to pack and reduces waste

The new SawControl software makes for more intelligent profile cutting. It tells the saw to continuously cut the profile at a specific interval, let's say one meter. "Inspected, defect-free sealing or window profiles will thus

The operator can follow the cutting process on the display: Lines of different colour visualize the current sawing position, the standard cutting length and any short lengths in real time



The new SawControl module, developed by PIXARGUS, makes profile cutting an integrated element of quality control. The software module performs two control functions for the cutting device: It sets the regular spacing for the continuous cutting process and cuts out defective profile portions at short lengths (Picture © COOPER Standard)

leave the extrusion line virtually ready to be packed," describes a PIXARGUS expert the process. If ProfilControl 7 detects a flaw in the product, SawControl will instantly cause the saw to make an extra cut in real time at a shorter spacing. After this part has been cut out, the saw will resume cutting at the regular interval. This minimizes waste and saves time. As all out-of-spec portions of the profiles come in short lengths, they can be more easily recognized and sorted out.

SawControl successfully in use at COOPER Standard

COOPER Standard, a US-based supplier to the automotive industry, is already using the new module at its location in Lindau, Germany, where the company produces sealings for body shells. "The PIXARGUS module integrates the profile cutting process into our quality control system. This provides a number of benefits," explains Dr. Dominik Schramm, Senior Manager Global Center of Competence – Sealing Extrusion at COOPER Standard. "With the module, we can establish a straightforward link to the sawing unit control, even in existing lines using older models." COOPER Standard relies on efficient, automated processes. Therefore, the digital measuring technology from PIXARGUS fits in here seamlessly. Defective portions of the profiles are cut out with the highest precision in an automated in-line process. "This helps us reduce waste to an absolute minimum," summarizes Schramm. "We are very impressed with the performance of SawControl."

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Filtration Technology for PET Recycling

PolyEthyleneTerephthalate or simply PET, is one of the most recyclable plastics, widely used world-wide in many different applications. Light, strong, durable and safe, PET offers a number of advantages being almost uniquely among plastics. Because of PET's incredible performance and recyclability it is one of the most sustainable packaging materials. It is in fact approved as safe for use in direct food contact all over EU, as well as many other Countries, both in virgin or recycled form. Its uses vary from food, beverage, pharmaceutical and medical sectors, clothing, automotives, outperforming other plastic packaging. 70% of carbonated soft drinks, fruit juices, dilutable drinks and bottled water are made of PET.

PET is near-ininitely recyclable and because it can be made into new products, lowers the need for virgin PET, reducing CO₂ emissions and helping to achieve a fully circular economy. Recycled PET products show a drop of up to 90% in CO₂ emissions compared to virgin PET.

Most major brands using plastics in their supply chains have started to evaluate their carbon footprint and take mitigating actions like packaging redesign and light-weighting, reducing the use for virgin plastics, increasing reusability, and setting targets for minimum recycled plastic content. As brands strive to meet their targets, they are collectively expanding demand and increasingly competing for available rPET. Another factor driving the demand for and supply of rPET are the new regulations and taxes on packaging made from virgin plastics / single-use plastics packaging.

Rising rPET demand and prices are incentivizing investments in new recycling capacity – Europe has seen a 21% increase in the installed capacity for PET recycling – according to a report by Plastics Recyclers Europe, PET-CORE Europe, Natural Mineral Water Europe (NMWE), and UNESDA Soft Drinks Europe – at the same time global rPET capacity is forecast to boom over the next five years.

This “run” towards ever increasingly demand for rPET, has led producers of PET packaging products (both food grade and non-food grade applications) to look for more contaminated sources of PET waste.

FIMIC's melt filters are recognized as one of the best filtration technologies dedi-



cated to contaminated post-consumer plastics; to reach high quality recycled plastics from more contaminated waste streams, automatic technologies are needed to filter out impurities and contaminations from the melt flow. FIMIC has been working many years now on im-



proving its filtration technologies in order to meet and satisfy the needs (ever increasing quality needs, different materials characteristics) of recyclers, and expanding its technology to applications that previously did not require the use of continuous scraping melt filters such as, precisely, PET.

FIMIC has already installed two units (RAS-type filters) on PET recycling lines to work with more contaminated PET waste streams, i.e. not coming from hot-washed bottle flakes only, such as for example PET lumps from petrochemical waste or from strapping production, waste fibers as well as PET straps. In these cases the contamination of the input material was way higher than the typical "ppm" contaminations used for food grade applications, reaching levels as high as 5%. The benefits and the advantages of a continuous scraping filtration were significant. Dedicated to different end applications, these filter units are working with an excellent

performance and great quality results in both cases: as a pre-filter in the first project (applied filtration is 150 or 120 micron on laser screen) and as the only filtration step in the second one (applied filtration is 80 micron on laser screen). The respective output performances are 2.000 kg/h and 700 kg/h, at very different and sometimes inconsistent IV levels.

At the same time, FIMIC has increased the amount of units installed for the recycling of soft PVC and, also in this case FIMIC melt filters are confirmed to be a winning choice due to the sensitivity of the PVC during the recycling process, as it allows the material to flow without stagnating and therefore without degrading. Most recently, FIMIC has been testing an alternative solution to be applied to hard PVC which we know is one of the most degradation-sensitive as well as the stiffest material in the recycling market.

The continuous research for innovation and passion for improvement keep FIMIC constantly growing and developing innovative technologies and tailored solutions in an increasingly demanding market to achieve its mission worldwide: the protection of the environment through the proper recycling of plastic and its optimal reuse.

FIMIC SRL

Via Ospitale, 44, 35010 Carmignano di Brenta (PD), Italy

www.fimic.it



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PVC-O Pipes and Fittings – *A More Sustainable Life Cycle for Water Piping Systems*

Nowadays, there is a global concern about the depletion of resources that human activity is creating on the planet. Among the objectives to avoid a climate disaster is to achieve a completely sustainable society by 2030, and to achieve this, the implementation of a strategy that promotes the Circular Economy is key. In the fulfillment of this objective, in addition to citizens, companies and government entities must also participate, joining this change of management model to contribute to the correct sustainable development of the planet and ensure the future of the next generations.

Contrary to the demonization to which they are subjected in society, plastic materials have been considered as one of the priority and strategic products in the achievement of the objectives of a more sustainable development in multiple sectors. Their implementation has brought about a revolution that has improved manufacturing performance while reducing emissions and creating longer-lasting products that do not damage the ecosystem through deterioration.

The plastics industry has been developing new materials and optimizing its manufacturing processes to reduce its carbon footprint for years. Molecor has implemented these values in its work philosophy since its conception and this has allowed the development of unique and revolutionary technology for PVC orientation using air instead of water, a new solution for the creation of more resistant and sustainable piping networks.

Molecor in the form of SDGs

One of the ways to show how the company's efforts help achieve a greener future is through its actions to achieve several of the Sustainable Development Goals set forth by the United Nations, a universal call to protect the planet and ensure that by 2030 all people enjoy peace and prosperity.

The company's most direct contribution is related to SDG 6 "Ensure availability and sustainable management of clean water and sanitation for all". TOM® pipes and ecoFIT TOM® fittings always guarantee the quality of water channeled for different uses, making water resources available to many impoverished societies and ensuring that not a single drop is lost during transport. In addition, their improved characteristics make it possible to create the necessary infrastructures for water supply faster and guarantee a service life of more than 100 years.

It is also noteworthy that, both in the manufacture and in the use of the products, an active contribution is made to SDG 7 "Energy", due to the very high energy efficiency of the production process and the use of renewable energies. Molecor maintains a strong commitment to the



consumption and responsible use of energy, thanks both to its highly energy-efficient production process and to the recent increase in the percentage of energy use from renewable resources. During the production of TOM® pipes and ecoFIT TOM® fittings, energy from photovoltaic systems is used, supplying one of the company's production plants with more than 1,400,000 kWh per year.

The development and introduction to the market of new products, such as TOM® PVC-O pipes with a nominal diameter of 1200 mm, which help to bring water to where it is needed, also contributes to the fulfillment of SDG 9 "Industry and Innovation" and SDG 12 "Responsible Production and Consumption" with the application of Circular Economy criteria in manufacturing, such as, for example, the continuous reuse of materials. Since Molecor reprocesses practically all the rejected material and by-products of the production process (internal recycling or reprocessing) in the manufacture of new pipes and fittings.

Additionally, due to the lower CO₂ emissions to the atmosphere, the environmental footprint is reduced, and the implementation of the Operation Clean Sweep voluntary program, which aims to avoid the involuntary loss of pellets to the environment, the company contributes effectively to the goals: SDG 13 "Climate Action", SDG 14 "Life below water" and SDG 15 "Life on land".



For Molecor, the preservation of the environment is an issue of great importance, proof of which is the award of the Sustainable Spanish Plastics Industry seal granted by ANAIP (Spanish Association of Plastics Industrialists). This is a European certification mark that recognizes the efforts of companies in the sector to achieve sustainability and to maintain their production in Spain. This certification mark, born with a vocation of reliability, rigor and reference, recognizes that Molecor complies with the environmental and socioeconomic criteria necessary to manufacture and be sustainable at the same time.

Creating more sustainable supply networks

The environmental benefits of TOM® pipes and ecoFITTOM® fittings go beyond the production process. Thanks to their improved characteristics, they also reduce the impact that the installation of piping networks has on the ecosystem.

An example of this is the creation of a field irrigation system using pressurized pipes for more than 500 hectares of almond orchards in the Georgian region of Kakheti. For this project, which began in early 2023, more than 25,000 meters of TOM® oriented PVC pipes are being installed to supply a total of more than 115,000 trees.

The light weight, ductility and high resistance of the laminated structure of TOM® PVC-O pipes allows for a faster installation that requires less use of heavy machinery (up to DN315 mm can be installed manually). Thanks to these characteristics it has been possible to install pipes with diameters between 90 and 630 mm in record time, reducing to a minimum the damage to the ecosystem.

In addition, the total watertightness of its elastomeric jointing system and resistance to breakage allow the loss of water transported from its source in the Iori River to be minimal. For these and other reasons, more and more projects around the world are choosing to use Molecor PVC-O pipes and fittings for their pressurized water pipelines.

Betting on a greener future

It is clear that in today's society there is great concern for the preservation of the planet, climate change is already a reality and therefore the management and use of

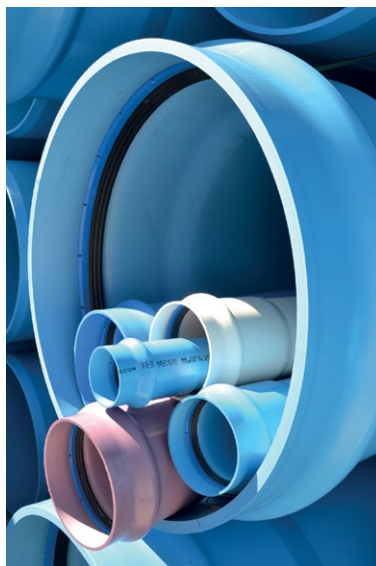
water is something that must be taken care of so that water resources can be maintained or even increased (a very complex challenge) in the coming years and decades. This is where the concept of "Circular Economy" comes into play.

Making the most of all the resources at our disposal and minimizing the emissions produced during their use are part of the way forward to reverse the effects of global warming. Reducing waste, recycling or reusing it must be part of the culture of all companies and institutions.

In the construction sector, 55% of production are products made of PVC and more than 64% of long-term uses (between 15 and 100 years) also choose this plastic material. But only 0.7% of urban waste are PVC products, demonstrating the benefits of this polymer for a more sustainable future. For this reason, Molecor continues its expansion to offer the widest range of pipes and fittings for water canalization, but always with a responsible production that takes care of the environment and the preservation of nature.

The objective is to achieve a better management of water resources, increasingly scarce, as well as a more sustainable, profitable and forward-looking production in an increasingly competitive market. To this end, Molecor is committed to new technologies, digitalization and innovation as fundamental elements to develop new solutions that optimize production, reduce resource consumption and reduce its footprint on the ecosystem.

A lower use of petroleum than other polymers (only 43% of its composition, the rest comes from common salt), extended useful life and no use of heavy metals as stabilizers are some of the characteristics of Molecor's PVC-O products. In addition, the company develops digital tools such as geoTOM® (App for the digitization and geolocation of pipeline networks) to facilitate maintenance while reducing the time and resources required to do so, with the aim of helping all stakeholders involved in the transport of fresh water to facilitate their work.



Energy-Efficient Extrusion – How Can We Lower Energy Costs?

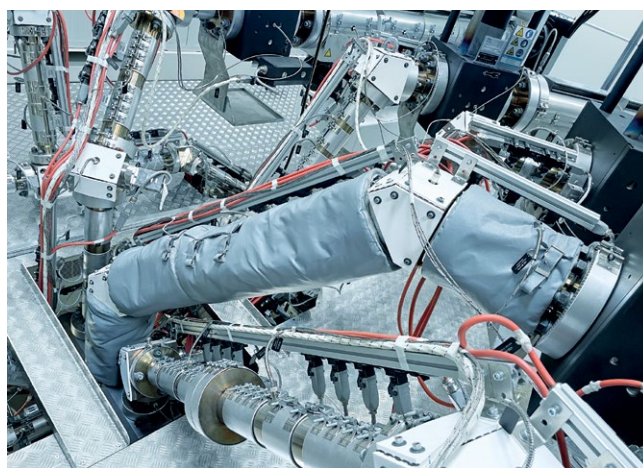
Polymer extrusion is an energy-intensive process. In the last decades, many efforts have been directed towards improving the energy efficiency of SML extrusion lines. Especially in times of rising energy prices and a growing environmental awareness, the topic of saving energy is now attracting more attention than ever.

Extruder configuration

“A major contribution towards energy savings can be made when configuring an extrusion line. Most of the energy is consumed in the extrusion process when melting the polymer and so the choice of the extruder size and the design is crucial”, Hans-Jürgen Luger, Head of Research & Development at SML, clarifies. Extruders are generally efficient when operating with ideal drive and screw configurations. This applies in particular to SML’s High Speed Extruders with diameters of 75 mm and 90 mm, which are designed to deliver up to 1,200 kg/h for PP, LDPE, LLDPE and PS. Compared to extruders with a larger diameter, a HSE requires up to 80 % less heating power with the same throughput. Another example is SML’s HO-LT extruder for sensitive polymers like EVOH or tie materials, which enables high output rates with low melt temperatures. By using a 35 mm HO-LT extruder instead of a 75 mm standard extruder for EVOH with the same maximum throughput, the specific energy input (SEI) is reduced from 250 Wh/kg to 200 Wh/kg.

Factory: efficient cooling water treatment

Apart from the heating and melting of the polymer, the cooling process is also something which deserves consideration. Firstly, the water quality in the cooling circuits is crucial to achieve a high cooling efficiency and process reliability. The heat transfer deteriorates as a result of deposits and cooling circuit contamination and, thus, the cooling water temperature has to be lowered



Insulation on melt adapter: a very effective method to cut heat loss

to achieve the same cooling capacity. In general, the temperature level required for the cooling water should not be lower as necessary. Secondly, the system for cooling water generation offers the opportunity to save energy. For example, SML uses an advanced system of water wells on the premises, geothermal pumps (which can also be solar-powered) and a rooftop chiller in the headquarters in Redlham. Additionally, heat dissipated from the extrusion lines in operation is used to heat the building in winter.

Line configuration: efficient reduction of edge trims

Another key-topic is the amount of edge trims ground, re-fed into the process and re-melted. In principle, the portion of refeeding decreases as the film width of an extrusion line increases. Thus, wide extrusion lines with a larger film width can be assumed to be more efficient. Comparing SML’s MiniCast stretch film line (1,500 mm net width) with SML’s PowerCast XL line (4,500 mm net width) as exhibited at K’2022, the portion of edge trim is decreased from 27 % to 17 %. This means, that the additional power consumption due to refeeding per kg/h net output of the line is 50 Wh/kg



for the PowerCast XL line compared to 90 Wh/kg for the MiniCast.

Decreasing heat emissions

Insulating hot surfaces, which are subject to heat loss due to radiation, is a very effective and inexpensive method to cut energy costs. Furthermore, insulation, for example on melt adapters, can be easily retrofitted. Measurements have shown that the power consumption per 1 m length to maintain the set temperature of an adapter can be decreased from 8 kWh without any insulation to 6 kWh with insulation (- 25 %). SML has also modified the heating/cooling-unit for the extruder barrel in order to reduce radiation losses in the heating mode by up to 30 %.

Detecting hidden energy consumption in peripheral equipment

Pump drives or blowers frequently operate at full speed, regardless of the line speed and output. By installing frequency converters and modifying the machine control, the drive speeds and, thus, the power required can be adjusted to demand without affecting the output of the line. A further step is to use bitWise, SML's data generation and analysing tool to optimise the machine parameters to exploit the full savings potential.

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High-Performance Ceramic Cutting Blade „CE20S“ for Strand Pelletizers

Schoenberger has expanded its product range and now offers high-performance ceramics in addition to the proven premium carbide cutting blades and Stellite cutting blades. These new, innovative ceramic cutting blade complement the existing range and offer a powerful extension for demanding applications.

The use of ceramic cutting blades in strand pelletizers is not new and has been used for decades. New is, that Schöenberger has developed the new high-performance ceramic „CE20S“ together with a renowned ceramic manufacturer.

This technical ceramic has excellent wear and abrasion resistance, which means that „CE20S“ cutting blade can have a longer life time than comparable ceramic materials.

Moreover, the „CE20S“ has an excellent chemical stability which makes it resistant to many chemicals including acids, alkalis and aggressive process water.

Characteristic for the „CE20S“ is the high hardness, achieved by a higher density of the technical ceramic, as well as the extended high fracture toughness (elasticity), which is redefined by the addition of stabilisers.

In the manufacture of the technical high-performance ceramics, the company attach great importance to precise dimensional accuracy. This means that each cutting blade conforms exactly to the given specifications.

The thread is directly inserted into the „CE20S“, so there are no threaded metal bushings, which can lead to corrosion.

In summary, the new „CE20S“ cutting blade is a technological advancement that is convincingly wear-resistant and extremely corrosion-resistant thanks to its extraordinary properties. The fine-grained structure and the addition of stabilizers increase the fracture toughness and the stability of the cutting edges.

The „CE20S“ is available for all renowned strand pelletizer manufacturers. Special dimensions can also be produced on request.

H. Schöenberger GmbH
Ploching Str. 36, 73779 Deizisau, Germany
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New Extrusion Lines

Oerlemans Plastics, with production plants in Genderen and Giessen, Netherlands, is part of OPACKGROUP. Its main business is the manufacture of flexible packaging film and foil for a variety of uses and it has a customer portfolio that stretches around the world in the food, non-food, wholesale, agriculture, and horticulture sectors.

The company, which celebrated its 50th anniversary in 2022, originally began life in 1960s with Sinus Oerlemans supplying foil for agricultural use – but the international oil crisis of the early 1970s gave the company reason to establish the extrusion business for which is it best known, and today the Group boasts seven separate but integrated enterprises: Oerlemans Plastics, which itself has two locations in Genderen and Giessen, Plasthill, Perfon, Oosterwolde Plastic Industrie, Fardem Packaging, Flexpak and Stempheer.

The Group employs 760 people, has 88 extruders, 35 flexo presses and more than 100 converting machines that all contribute to a total annual production of 80m kg of customer-specific, high-quality film, foil, and paper packaging. Heading up Oerlemans Plastics at the Genderen and Giessen plants is Managing Director Johan Kranenbroek, who explained: “The company philosophy has always been one of top quality both in product and customer service and this is borne out by the variety of work we do for such a cross section of industry. The products we manufacture have, in many cases, very specific requirements that demand tight tolerance in production.”

With surface treatment such an inherent part of the extrusion process, Oerlemans was keen to ensure top specification corona stations were fitted to its two new Alpine lines at Giessen.

“Although we have some legacy Vetaphone units within the Group, Oerlemans Plastics’ experience had always been with another brand, and it was only after lengthy discussions with Dirk den Haese of Vetaphone Benelux, that we began to investigate the alternative technology available,” he added.



Managing Director of the Genderen and Giessen plants, Johan Kranenbroek, says that availability of spare parts and a good support service were key elements in choosing Vetaphone corona treaters

Part of the problem with the existing corona treaters was the poor access for cleaning and maintenance, which was having a knock-on effect on production efficiency. “The design of the Vetaphone corona unit, with its slide-in slide-out cassette makes inspection and cleaning easy – in fact it can be done offline without stopping the extruder. This ease of use, combined with the consistent quality of treatment and reliability have made a significant difference to our operation.”

Extruding at the Giessen plant only began in 2022, but the size and scope of the site will allow Oerlemans to develop its potential to the maximum, with the new extrusion lines producing innovative barrier films. The Vetaphone corona units play an important role in this process with their unique and efficient features and long working life. “The quick availability of spare parts and good support service were key elements in Oer-

The 2.6m wide Vetaphone corona stations fitted to the new Hosokawa Alpine extruders at Oerlemans are VE2C-A models with a 2 x 10KW capacity for treating both sides of the web independently, and with different power settings

lemans’ decision to choose Vetaphone as a supplier,” he added.

If high-quality has always been a mantra at Oerlemans, the company also views sustainability as crucial to the future-proofing of the industry, while being aware that development is moving fast in a complex landscape. “Oerlemans Packaging Group is actively involved as a knowledge partner in various management positions both within and outside the industry. With the significant investment in R&D and our production facilities we believe that we take our slogan ‘The sustainable innovator’ very seriously,” he said.

Sustainability and environmental management go hand-in-hand, so while ISO 14001 certified since 2007, Oerlemans goes above and beyond to limit the Group’s impact. “We strive to minimise the use of environmentally unfriendly substances as much as possible, and follow the safety standards for these substances meticulously,” he added. Oerlemans Plastics is also certified

by EcoVadis, a cooperation of leading companies that gives sustainability high priority by improving the environmental and social practices of companies.

In a Group that places such a high priority on quality and the environment, it is essential that all elements of production reflect a ‘best possible’ approach. The list of technology manufacturers chosen by Oerlemans is a statement of intent, and Vetaphone is proud to be a partner in this process.

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Vietnam’s Bottle-to-Bottle Recycling Pioneer

DUYTAN Plastic Recycling is the first plastics recycler in Vietnam to produce recycled PET for beverage bottle production. The company is about to install its third Starlinger PET bottle-to-bottle recycling line which is scheduled to take up production by end of 2023.



DUYTAN Plastic Recycling is the first PET bottle-to-bottle recycler in Vietnam. The company currently produces 30,000 tons of food-grade rPET per year and aims to expand its production capacity to 100,000 tons per year (©DUYTAN)

“We want to promote a closed loop for plastic bottles in order to reduce plastic waste and the use of fossil resources in our country”, said Lê Anh, Sustainability Director at DUYTAN Plastic Recycling. “After spending many years researching recycling technology, DUYTAN Plastic Recycling found that Austria has a lot of experience with the circular economy. Therefore, in order to produce food-grade recycled PET for the production of high-quality PET bottle preforms, DUYTAN

Plastic Recycling decided to choose recycling lines supplied by the leading PET bottle-to-bottle recycling machine manufacturer in Austria, Starlinger.”

Located at the Duc Hoa Ha Plastic Industrial Zone in Long An Province, DUYTAN Plastic Recycling has been the first recycling enterprise in Vietnam to engage in PET bottle-to-bottle recycling. The new high-end PET bottle-to-bottle recycling line from machinery supplier Starlinger recycling technology, a recoSTAR PET 330 HC iV+, will be deliv-



ered and installed during the third quarter of 2023 and is planned to take up production by the end of the year. Like all Starlinger plastics recycling systems, this bottle-to-bottle recycling line is characterised by very energy-efficient operation, also due to the use of an underwater pelletising system. Compared to strand pelletisers, underwater pelletisers consume considerably less energy, especially when used in combination with a downstream SSP process. Furthermore, the investment costs and operational expenses for the recycling company are lower.

With the additional production capacity, DUYTAN Plastic Recycling will increase its reprocessing capacity to 60,000 tons of plastics per year, which equals about 4 billion post-consumer plastic bottles.

Currently, DUYTAN Plastic Recycling operates two PET recycling lines from Starlinger with a yearly production capacity of 30,000 tons of food-contact rPET pellets. The Starlinger PET recycling process meets the standards of the US Food and Drug Administration (FDA) and the European Food Safety Authority (EFSA). The produced rPET can be used at shares of up to 100 % for high-quality

The first two Starlinger recoSTAR PET bottle-to-bottle recycling lines are in operation since 2021 and produce rPET that meets the standards for food-contact packaging of the US FDA and European EFSA (©DUYTAN)

ity PET bottle preform production. To ensure a continuous supply of input material, DUYTAN Plastic Recycling has created a plastic waste collection network with more than 100 collection points all over the country. In 2022, the facility recycled over 1.3 billion domestically collected plastic bottles. DUYTAN Plastic Recycling supplies the produced rPET not only to large FMCG companies in Vietnam, but also exported 4,200 tons to Europe and the US in the past year.

DUYTAN Plastic Recycling Co. Ltd.

► www.duytanrecycling.com

Starlinger recycling technology

Furtherstr. 47a, 2564 Weissenbach, Austria

► www.recycling.starlinger.com

The Future Needs Experts – *Plastics Recycling in Romania*

The Romanian recycling business Expert Recycling offers numerous services around the disposal and recycling of post-consumer and post-industrial plastic waste. A W5.18 single-shaft shredder from WEIMA is used for processing PET, PP, PS, PE, DHPE and PELD material streams. With its help, the company produces high-quality regranulates, films, and waste bags, which it then sells itself.

Nowhere else in the European Union is so little waste produced annually per capita as in Romania. Also true is that the country's recycling rate is only just ahead of Malta, which is in last place. Expert Recycling, located two hours north of Bucharest, has recognized this need to catch up since it was founded in 2007 and, according to its own figures, has processed over 7,000 tons of waste to date.

Achieving the Zero Waste goal with strong partners

The circular economy is the focus for Expert Recycling. Together with strong partners, the Zero Waste ideal goal for Romania is to be achieved. Owner Dan Ana explains how:

"We want to make an important contribution on the way to a circular economy. One person's waste



WEIMA W5.18 with wide inspection flap for the maintenance or removal of any impurities



First step: The plastic shredder processes a wide range of materials into homogeneous flake sizes

should be another person's raw material. Expert Recycling wants to support a society focused on sustainability with state-of-the-art technology that is not only safer but also more efficient than before. Ultimately, we need to significantly increase the recycling rate."

To achieve these ambitious goals, Expert Recycling relies on shredding technology from WEIMA in Germany – distributed by the Romanian dealer Chorus Engineering from Bucharest and co-financed by funds from the European Union.

In the first step of the recycling process, the WEIMA W5.18 plastic shredder W5.18 processes a wide variety of films, packaging and more to a homogeneous flake size, which is ideal for further processing.

WEIMA shredder as the central component

The WEIMA shredder as the central component of the recycling line has a working width of approx. 1,800 mm, with a rotor diameter of approx. 500 mm. It is driven directly by a Hågglunds Bosch Rexroth hydraulic power drive train, without gearbox or frequency converter, which allows consistently high throughput rates to be achieved. The drive is extremely robust with regard to foreign objects and features variably

adjustable rotor speeds with constantly high torque – even under full load.

The material is fed via infeed conveyor belt. The compact swing-arm ram installed inside the shredder presses the material to be shredded against the rotor in a load-dependent and fully automated manner. Due to the wide opening of the inspection flap, the removal of any impurities or the maintenance of the cutting geometry is conveniently possible at any time.

After shredding, the flakes are washed, followed by extrusion using a solution from Erema. The products, various regranulates and film products, are of the highest quality, confirms Dan Ana: "We collect or buy post-consumer as well as post-industrial plastic waste from our numerous partners. All our products, granules, household waste bags and films, are made of 100 percent recycled material and comply with all EU regulations, including CE marking for full transparency in national and international markets. At Expert Recycling, we have a comprehensive technology park for end-to-end recycling. This includes sorting, separating, washing, shredding, baling and extruding. And we're pretty proud of that!"

WEIMA Maschinenbau GmbH
Bustadt 6-10, 74360 Ilsfeld, Germany
weima.com

High-quality regranulates at the end of the recycling line



*Shredding technology from WEIMA:
Simple condition of the shredder*



Keep on Trailblazing

The Lindner family business has been active in the recycling market for many decades and is known for innovative shredding technology, system solutions and washing systems. Of all the sectors, plastics recycling is the most dynamic. To provide the industry with recyclates of the required quality, in the necessary quantities and at low production costs, strategic partnerships and an optimised all-in-one process will be needed in the future, Lindner is certain. Michael Lackner, Managing Director at Lindner, explains this in the following interview:

Plastics recycling is more in demand than ever. Recycling quotas, however, are often not met. Where do you see the challenges and what will a solution look like, Mr Lackner?

Michael Lackner: For years, our focus has been on processing material flows in the best possible way to recycle as many potential raw materials as possible. We have been quite successful in plastics recycling. Our Lindner Washtech washing facilities are modular in design and can therefore be optimally adapted to the requirements of the respective plastic or recycling process. The NTCP, National Test Centre for Plastics Recycling, in the Netherlands selected a washing facility from us primarily for this reason. But even if the individual components of our facilities are perfectly matched, it is still necessary to broaden our perspective.

In what way?

Lackner: To advance plastics recycling, the entire process chain from preparing the material and washing to the finished recyclate must be considered. Only when we succeed in taking into account the requirements of the downstream processes, such as extrusion including filtration, compounding and odour optimisation, and when we manage to perfectly coordinate all process steps, will it be possible to achieve optimisations and create new industry standards for our clients – as a recycling pioneer, this is also our declared goal.



The future lies in optimising and fine tuning the entire process?

Lackner: Absolutely. That's where we see our future, and that's where we want to advance plastics recycling. In the future, we want to offer our clients all-in-one solutions that cover the entire spectrum from sorting, washing and drying to extrusion and the finished recyclate. This will be possible soon thanks to a strategic partnership with an extrusion industry leader. By fine tuning all process steps, we will be able to process plastics with our solutions in such a way that they can be used again in the food industry and other highly demanding areas.

The future of plastics recycling lies in optimising and fine tuning the entire process. By fine tuning the entire value chain, the company aims to set new industry standards and offer clients perfectly coordinated all-in-one solutions in the future. On the picture: Manuel Lindner (right), Owner & Managing Director at Lindner, and Michael Lackner (left), Managing Director at Lindner (Copyright © Lindner Recyclingtech)

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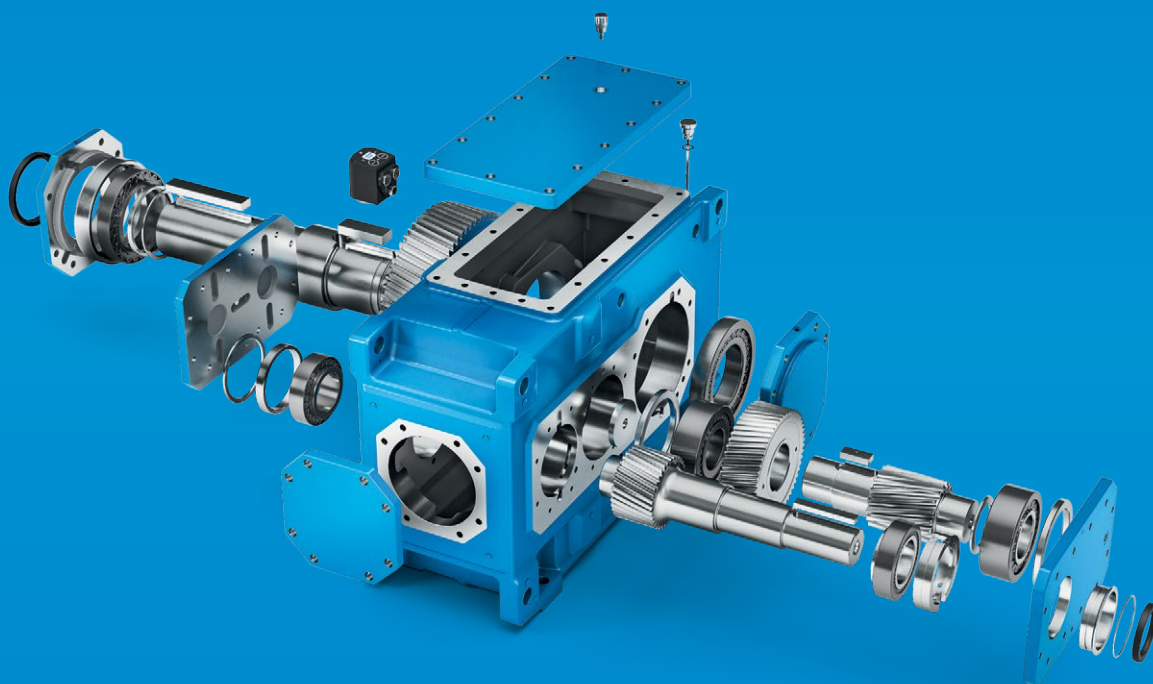
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