06/2025

VM VERLAG
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EXTRUSION INTERNATIONAL

Regular RECYCLING Section ..... p. 53

STEIN BLUE-LINE
for a sustainable future

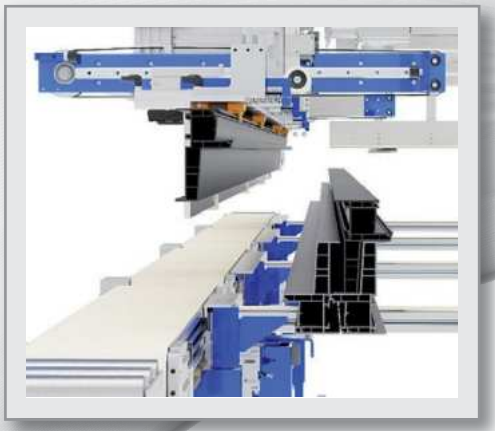
EXPERTS IN DOWNSTREAM

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.

Made in Germany

STEIN BLUE-LINE
for a sustainable future

EQUIPMENT FOR EXTRUSION

Stein Profile Stacker

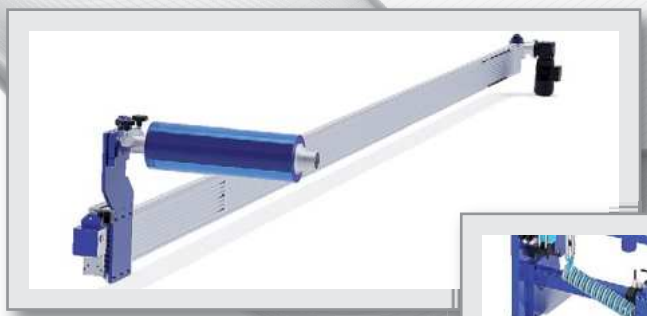
Weight determination during extrusion

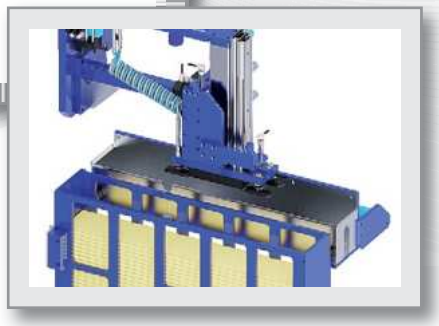
With the help of special weighing units, individual profiles can be weighed before a profile layer is formed.
The determined weight can be used to optimise the extrusion.

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.

STEIN

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K 2025 drew to a successful close on 15 October 2025 after 8 days. In view of the current difficult economic climate, many companies in the plastics and rubber industry travelled to Düsseldorf with rather subdued expectations. But the mood prevailing across the fully occupied exhibition grounds proved outstanding on all trade fair days

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One of the leading manufacturers of extrusion lines for PE-Xa (peroxide cross-linked polyethylene) pipes, Intelligent Extrusion Systems (iES), has successfully integrated advanced measurement and control systems from Zumbach Electronic into their production lines

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To ensure maximum efficiency of both its extruders and the entire production process in the long run, masterbatch manufacturer colorplasticchemie Albert Schleberger has enhanced its ZSK twin screw extruders with the Coperion C-BEYOND digital platform

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Coming Clean On Ozone: What Vetaphone is now offering is 'Ozone Filters – Direct to your Door', a convenient delivery agreement that saves money, offers more consistent treatment and helps the environment

LyondellBasell is enhancing its high-quality standards for mechanically recycled materials through investments in their R&D capabilities. One example is at the innovation Center in Frankfurt where LYB is strengthening its efforts in the development of advanced sorting, decontamination and compounding technologies

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A traditional company is partly responsible for the previous peak in the seventies, as well as for the modern boom: Record Industry. To ensure that not a single gram of the precious PVC plastic is wasted, Record Industry recycles production waste directly on site using shredding technology from WEIMA and Wanner

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Swiss Plastics Expo
20 - 22 January 2026
Luzern / Switzerland
www.swissplastics-expo.ch

Future of Chemical Recycling
28 - 29 January 2026
Düsseldorf / Germany
www.wlpgroup.com/aci/event/future-of-chemical-recycling/

14. Euopean Thermoforming Conference
3 -5 March 2026
Strasbourg / France
www.thermoforming-europe.org

SOLIDS & RECYCLING–TECHNIK
Dortmund 2026
18 - 19 March 2026
Dortmund / Germany
www.solids-recycling-technik.de

RePlast Eurasia
26 – 28 March 2026
Istanbul / Turkey
www.replasteurasia.com

World of Cables
13 - 17 April 2026
Düsseldorf / Germany
www.wire.de/weltderkabel

interpack 2026
07 - 13 May 2026
Düsseldorf / Germany
www.interpack.de

Interplas 2026
02 - 04 June 2026
Birmingham / United Kingdom
www.interplasuk.com

Equiplast
02 – 05 June 2026
Barcelona / Spain
www.equiplast.com

PLAST Milan
9 – 12 June 2026
Milan / Italy
www.plastonline.org

interpack 2026

Anticipation is growing as interpack reaches the next milestone on the way to its 2026 edition, which will take place from 7 to 13 May. Around 2,800 exhibitors from all over the world are preparing to showcase their latest innovations in Düsseldorf, setting important trends for the future of a globally connected industry.

"interpack 2026 is more important than ever," says interpack director Thomas Dohse. "Against the backdrop of profound transformation across many sectors, a wide range of topics are on the agenda, including AI, automation, new regulations, the need for future skills, and innovative materials. Now is the time to take action together."

Due to population growth, rapid urbanisation, rising incomes and changing consumer behaviour, the processing and packaging industry is in high demand now and will continue to be so in the future. At the same time, however, companies face major challenges: raw materials are limited and expensive; regulations are becoming increasingly complex, creating an enormous administrative burden; supply chains are uncertain; skilled labour is scarce; and the pace of innovation is high. Added to this are geopolitical risks.

"In such a dynamic market situation, a global summit like interpack is a central source of impetus and therefore of particular value," says Richard Clemens, Managing Director of the Food Processing and Packaging Machinery Association within the VDMA. "Here, solutions are presented that contribute to conserving resources, making processes more efficient, and securing long-term competitiveness along the entire value chain. Those who want to actively shape change need innovative technologies and a smart strategic orientation because only in this way can ecological and economic challenges be successfully overcome."

The outlook is positive, particularly in the core markets of food and pharma. In 2024, global sales of packaged food reached 872 million tonnes, and this figure is expected to rise by 11.1 % to 968 million tonnes by 2029. The pharmaceutical market is also growing, with an increase in production value from €1.9 trillion in 2024 to €2.4 trillion projected by 2029.

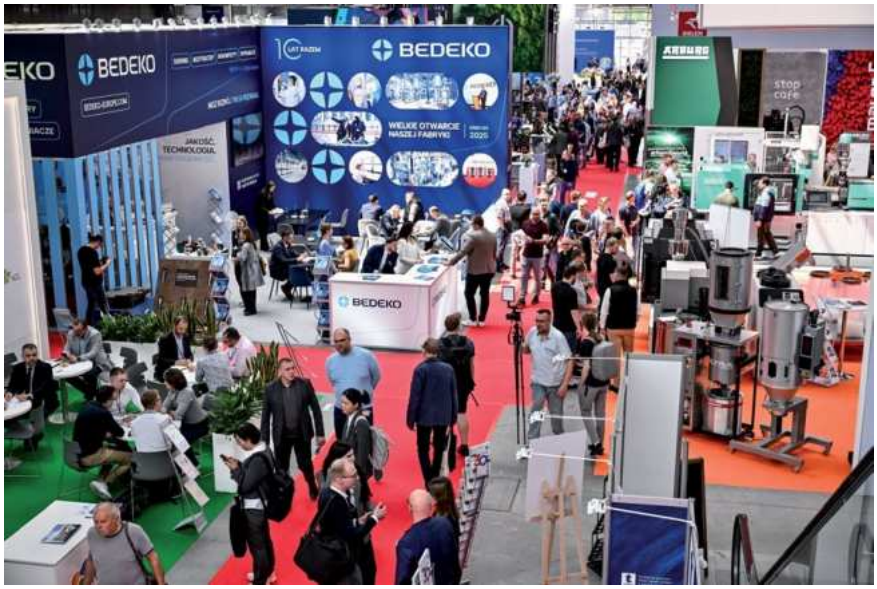
The ticket shop has also been open since 1 October. Visitors to the website will find comprehensive information on preparing for the trade fair, as well as travel and accommodation options. The new hotel service provides a clear overview of accommodation options for interpack, making comparisons easier.

Messe Düsseldorf GmbH
www.interpack.com

Plastpol Expo – *Central and Eastern Europe's Solid Pillar for the Plastics Industry*

The International Fair of Plastics and Rubber Processing in Poland is one of the most important industry events in this part of Europe. The 30th anniversary event will take place at Targi Kielce from May 19 to 22, 2026, confirming Plastpol's role as a global business and technology platform. Companies can already join the group of exhibitors and reserve exhibition space.

„For three decades, we have been building Plastpol's position as a meeting place for the global plastics industry. Thanks to the participation of companies from different parts of the world, the event has become a catalyst for investments, relationships, knowledge, and commercial contracts," emphasizes Dr. Andrzej Mochoń, President of Targi Kielce.



The Plastpol success story means the transformation – from a national event in the 1990s to one of the key industry meetings in Europe. In recent years, it has gathered around 600 exhibitors from more than 30 countries, including Germany, Austria, Switzerland, Italy, Turkey, China, India, and the USA. Visitors come from all over Europe and Asia.

The first edition in 1997 brought together 50 companies. Among them were organizations and enterprises that can be regarded as the very founders of Plastpol.

Over the decades, the priority has been the continuous internationalization of the event and the involvement of industry representatives from an increasing number of countries. Solutions such as injection molding machines, extruders, blow molding machines, recycling lines, and depalletizers, as well as raw materials including granulates, colorants, additives, and regranulates, are brought from all over the world.

Thanks to the participation of so many countries, Plastpol fosters the creation of supply chains – from raw material and machinery manufacturers to recyclers and industries using plastics: packaging, automotive, electronics, medical, construction, household appliances, as well as the manufacture of toys and children's products.

Conversations at the stands lead to real contracts. At the 2025 edition, agreements were signed for the purchase of injection molding machines, recycling lines, and raw materials. A key role is played by live technology demonstrations – machines showcasing their capabilities in conditions close to industrial practice.

The 2026 edition will be an opportunity to look into Plastpol's future. Visitors will see the new Targi Kielce hall, scheduled for completion in the summer of 2026. Its ground floor, with an area of 15,500 m² and a height of 15 meters, will enable presentations in modern, comfortable conditions. The mezzanine (3,000 m²) will house conference rooms and restaurants.

plastpol.com

Plastics for Packaging Films – Basics for Flexible Packaging Films, part A

16. March 2026, Online

This crash course aims at newcomers and those who are just starting in manufacturing, processing and in the packaging film industry (with a focus on food). You will gain a basic knowledge on film technology and related material science. The focus is on a sound foundation. Part A deals with the fundamentals of polymers used for plastics films. The focus is on making the link between polymer architecture (how polymers are built) and the real optical and mechanical properties. For example, the degree of crystallinity provides information about the transparency and density of a semi-crystalline plastic. In addition, simple chemical facts about plastics are also explained to beginners so that they can later understand many phenomena theoretically in practice. An ideal basis for all those involved in film production, development and sales.

www.innoform-coaching.de

New wire & Cable FORUM to Become a Hotspot for Innovation and Exchange

The international wire and cable industry can look forward to another highlight in 2026: the new wire & Cable FORUM will be presented for the first time in hall 13 at Düsseldorf Fairgrounds. Under the motto come & connect, Messe Düsseldorf will bring together leading minds, thought leaders and decision-makers from the industry here from 13 to 17 April 2026.

Following the success of the Tube FORUM 2024, wire is thus sending another strong signal for knowledge transfer and networking. The new wire & Cable FORUM will be a central meeting place for everyone who wants to actively shape the future of the wire and cable industry. International industry experts will give exciting presentations providing insights into current developments – from digitalisation and automation to sustainability and new materials and production processes. The programme will be complemented by panel discussions and a wide range of networking opportunities that promote direct exchange between speakers, exhibitors and trade visitors. Admission to the forum is free for all trade fair visitors.

"With the new wire & Cable FORUM, we are creating a place where innovation and networking come together in a unique way," says Daniel Ryfisch, Director wire & Tube at Messe Düsseldorf. "Our goal is to offer the global wire and cable industry an even stronger platform for knowledge transfer and partnership-based exchange – right in the middle of the lively trade fair action. For exhibitors and visitors, this means even more visibility and business potential."

www.wire.de

Royal Visit Reinforces Strategic Partnership in the Middle East

His Royal Highness Prince Saud Turki Al-Faisal Al Saud, Chairman of the Riyadh Exhibitions Company (REC), together with Wolfram N. Diener, Chairman of the Management Board of Messe Düsseldorf, set another milestone in the close cooperation between the two partners. At K 2025, the World's Leading Trade Fair for Plastics & Rubber, both sides confirmed their strategic cooperation with an official handshake.

The handshake marks another milestone in the international expansion of the world's leading trade fairs K, interpack and drupa into Saudi Arabia. There, the dynamic and multifaceted development of the Middle East economy can currently be observed in an impressive manner. The Riyadh Exhibitions Company is organising the Saudi Plastics & Petrochem and Saudi Print & Pack trade fairs there from 12 to 15 April 2026, with over 500 exhibiting companies from the petrochemical, plastics, printing and packaging industries. This rapidly growing quartet of trade fairs, whose number of exhibitors has risen by around 70 per cent since 2018, offers ideal opportunities for Messe Düsseldorf.

The new presence in Riyadh perfectly complements Messe Düsseldorf's existing international portfolio – in the plastics and rubber sector with 'K Alliance', in the processing and packaging segment with 'interpack alliance' and in the print technologies sector with 'drupa alliance'. The aim of the partnership is to actively participate in the growing economic momentum in the Middle East. Both partners had already officially documented their strategic cooperation in a memorandum of understanding in spring 2025.

(Picture: Messe Düsseldorf GmbH)

Wolfram N. Diener emphasises the significance of this decision: 'We are in the right place at the right time. With our commitment to the world's fastest-growing trade fair market, we are strengthening our position as one of the most successful international trade fair companies. Saudi Arabia and the United Arab Emirates are diversifying their economies, which opens up numerous points of contact for our broad trade fair portfolio and new potential for our customers.' The fact that the economic transformation of the region is attracting increasing international attention was also demonstrated by a high-ranking visitor: His

Excellency Bandar bin Ibrahim Al-Khorayef, Saudi Arabia's Minister of Industry and Mineral Resources, is currently visiting K 2025. Last year, he already got an impression of the international trade fair scene in Düsseldorf at drupa 2024.

This is reflected in the economic data of the Gulf Cooperation Council (GCC) countries. According to the consulting firm jwc, their annual growth rate of six percent until 2029 exceeds both that of the EU (3%) and the global average (5%).

The current new business activities are not Messe Düsseldorf's first steps in the region. Since 2007, K has had a successful partnership with ArabPlast in Dubai. Since 2019, Messe Düsseldorf has been driving its business forward with, among other things, the interpack alliance trade fairs pacprocess MEA and Food Africa Cairo in Egypt – the link between the Middle East and Africa. Since 2024, a new subsidiary has also been complementing Messe Düsseldorf's global network – in Turkey, which bridges the gap between Europe and the Middle East. The offensive in Saudi Arabia is now the next logical step.

www.k-online.com
www.interpack.com
www.drupa.com

Bosch Global Supplier Award Received

Syensqo has been honored with the 2025 Bosch Global Supplier Award in the Materials and Components category.

The award acknowledges Syensqo's contribution to building resilient supply chains through innovation in material science, operational excellence, and strong supplier relationship with Bosch. Out of approximately 35,000 suppliers worldwide, Bosch recognized 49 suppliers from 14 countries for outstanding performance in quality, costs, sustainability, and innovation.

The theme of the 2025 Bosch Global Supplier Award, "Challenge accepted: resilient partnerships, sustainable future", highlights the importance of collaboration between Bosch and its global supplier network to drive joint success in times of global challenges.

Syensqo
www.syensqo.com

Dr. Ilham Kadri, Peter Browning and Carine Van Wonterghem received the 2025 Bosch Global Supplier Award on behalf of Syensqo. In the picture, from left: Kun Zhao (Head of Raw Materials and Components Purchasing at Bosch); Peter Browning (President GBU Specialty Polymers at Syensq)o; Carine Van Wonterghem (Executive Key Account Manager for Bosch at Syensqo); Ilham Kadri (CEO of Syensqo); and Arne Flemming (Head of Supply Chain Management at Bosch) (Photo: Syensqo, PR091)

10–Day Extrusion Tooling Program

Guill Tool announced its 10-Day Program. This program applies to eligible tips and dies that will be shipped within 10 business days of receiving the purchase order from the customer.

Guill high-quality precision tips and dies have been manufactured in the U.S. for over 65 years. All Guill extrusion tools are produced using certified and documented quality steel material, specifically qualified for the polymer to be extruded. Furthermore, Guill designs tips and dies for any application the customer requires. These feature multi-lumen, stripe, multiple stripe, wire and cable, hose, pipe, tube, fiber optic, blown film, corrugated tube and profile. Dies include face seal, shouldered, snap-together, floating, die plate, interchangeable die plate and custom dies. Available tips include single and multi-lumen, threaded style, snap-together, fixed-center shoulder, profile, tapered style and custom.

Tooling cell

Close-up of tips and dies

To learn which tools are eligible for the program, check with the company or local Guill sales representative. For all other parts, company personnel will review the customer's drawing to determine eligibility for the program.

Eligible tips and dies for this program must have a diameter less than 1.5" and a length less than 4.75."

Guill proudly manufactures its products in the U.S. under the quality standards of ISO 9001:2015 and AS9100:2016.

For more information:

Guill Tool & Engineering
Tom Baldock, Sales Manager, Extrusion
tbaldock@guill.com

Subsidiary in Thailand Established

Hosokawa Alpine, one of the leading suppliers in the field of powder and particle processing and blown film extrusion, is further expanding its gobal sales network and strengthening its local presence in Thailand with the newly founded Hosokawa Alpine Asia Pacific.

The company baded near Bangkok commenced operations on 1 October 2025 and will focus on sales and service in the blown film extrusion business area. "With the newly established sales office, we are specifically stregthening our sales growth in the Asia region," says Martin Schorbach, Senior Vice President Blown Film Extrusion at Hosokawa Alpine AG.

"Thanks to the continuous expansion of sales and service capacities, our customers worldwide benefit from fast and competent advice that covers the entire range of services offered by Hosokawa Alpine's blown film extrusion division," emphasises Schorbach.

Christian Kistinger, Managing Director of Hosokawa Alpine Asia Pacific, is looking forward to this new field of activity and helping to build up the newly founded location. "We guarantee our customers comprehensive services at the highest level as well as a first-class product portfolio in the film sector," says Kistinger.

Hosokawa Alpine AG
Hosokawa Alpine Asia Pacific
www.hosokawa-alpine.com

Sales and Service in Australia and New Zealand Strengthened

ILLIG packaging solutions GmbH appoints Tasman Machinery, based in Melbourne and Auckland, as its new representative for sales and service in Australia and New Zealand. The partnership takes effect immediately and covers the full range of ILLIG thermoforming systems.

With this new collaboration, ILLIG is reinforcing its presence in the Asia-Pacific region and offering customers direct local access to consultation, spare parts, and technical support. Tasman Machinery brings decades of experience in plastics processing and is a well-established provider of equipment for packaging manufacturers in the region.

"With Tasman Machinery, we are gaining a competent local partner who will professionally support our customers and carry forward our promise of quality,"says Jochen Butz, Area Sales Manager at ILLIG. "Australia and New Zealand are highly developed markets with a strong packaging industry – this new partnership is a consistent step for us to strategically expand our international presence in the Asia-Pacific region. Together, we want to achieve long-term growth in the region and combine customer proximity with technical excellence."

"We are very much looking forward to working with ILLIG. As one of the world's leading providers of thermoforming solutions, ILLIG brings exactly the innovation, precision and reliability that our customers in Australia and New Zealand expect. Our goal is to introduce ILLIG's technologies to the Australian and New Zealand markets in a targeted way and to build long-term partnerships", adds Dermid McKinley, Managing Director at Tasman Machinery.

ILLIG packaging solutions GmbH
www.illig.com

Change of Company Name

Atlas Converting Equipment Ltd., a leading provider of machinery solutions for the film and packaging industry based in Bedford, United Kingdom, announces that the company will operate under the new name "Kampf Machinery UK Ltd." as of September 1, 2025.

This renaming marks another milestone in the successful integration of the Bedford site into Kampf Global underlining the shared commitment to delivering innovative solutions under the unified and strong Kampf brand.

Under the new company name "Kampf Machinery UK Ltd.", the Bedford site will continue to operate without any changes to your usual contacts or the full range of services offered. All existing contracts, agreements, and business relationships will remain fully valid.

With this renaming, Kampf is reinforcing its strong and unified market presence and its long-term commitment to customers worldwide.

Kampf GmbH
www.kampf.de

Update on New Capacity Expansions for COC, POM, and LCP at K Show Announced

Polyplastics provided an update on new capacity expansions for its polyoxymethylene (POM), liquid crystal polymer (LCP), and cyclic olefin copolymer (COC) materials at the K 2025 exhibition. The company has made significant investments to meet the supply needs of its customers throughout the world.

TOPAS COC Plant Nears Completion in Germany

Construction of a new COC production facility in Leuna, Germany, is nearly complete. Commercial start-up of the new 25,000-ton/yr plant is expected by second quarter 2026. The new plant will more than double the company's current output and meet the growing global demand for Polyplastics' TOPAS® COC products. It will be operated by local Polyplastics subsidiary TOPAS Advanced Polymers GmbH.

"This expansion is a major step forward in the long-term growth track of TOPAS® COC," said Hidekazu Kitayama, managing director of Polyplastics Europe GmbH. "The new plant will continue to position us as a reliable supplier for the packaging and healthcare sectors while establishing sustainable solutions for a truly circular economy."

The Leuna facility is situated on a 30,000-sq-meter site which provides ample space for future capacity expansions. Initially, it will produce several low-Tg grades for supply to all global regions.

Polyplastics' existing COC production plant is located in Oberhausen, Germany, about 400 kilometers west of Leuna. Since the opening of the Oberhausen plant in September 2000, a broad range of applications for TOPAS® COC has been developed. The material has become a critical component in many medical devices based on its outstanding purity and glass-like properties.

The new capacity will play a key role in meeting increased demand for such applications as insulin pumps and diagnostic components while also enabling sustainable packaging solutions. In packaging products, TOPAS® COC raises the performance of commodity polyolefins (polyethylene for example), enabling the development of simpler, more recyclable and sustainable solutions. Mono-material film structures based on PE and enhanced with TOPAS® COC are recyclable as PE, unlike multi-material solutions using layers of PET or other PE-incompatible plastics. TOPAS® COC has been certified as a recyclable material by a number of European independent testing labs, e.g. Institute cyclos-HTP, and in the US has received APR recognition for use in films and HDPE bottle applications.

Expansion of DURACON® POM Production Capacity in China

In November 2024, Polyplastics commenced commercial operations at its newly established DURACON® POM manufacturing plant in Nantong, Jiangsu Province, China (Phase 1: annual capacity of 90,000 tons). This marks a major step toward meeting the strong domestic demand in China. As of March 2026, the plant is expected to be operating at full capacity, supplemented by continued shipments from Malaysia and the Fuji Plant in Japan.

To support the Chinese market's annual growth rate of 3-4%, plans for a Phase 2 expansion are underway, aiming to further increase the local production ratio. In fiscal year 2027, Phase 2 of the Nantong plant (with an additional annual capacity of 60,000 tons) is scheduled to begin operations, bringing the total POM production capacity in China to 150,000 tons per year. This expansion will allow Malaysia-produced POM, previously supplied to China, to be redirected to markets in India, ASEAN, and the West. Polyplastics is also investing in energy-efficient production facilities and conducting research into environmentally conscious raw materials and fuels, contributing to a more sustainable society.

Establishing Integrated LAPEROS® LCP Production in Taiwan

Meanwhile, a new LAPEROS® LCP plant with an annual capacity of 5,000 tons began operations in Taiwan in February 2025. With demand recovering – particularly in the electronics devices sector – Polyplastics plans to increase LCP sales volume by approximately 15% in fiscal year 2026. The plant is scheduled to reach full operation within the first quarter of fiscal year 2026, enabling an integrated production system with compounding in Taiwan. This setup is expected to shorten lead times and reduce inventory levels.

In fiscal year 2027, Polyplastics plans to introduce new polymers for high-performance electronic devices that support faster data transmission. Through enhanced performance and expanded applications of LCP, the company aims to contribute to the advancement of next-generation communication technologies.

The Polyplastics Group,
www.polyplastics-global.com

TOPAS Advanced Polymers GmbH
topas.com

Revolution in Clip and Chain Refurbishment

Brückner Servtec has significantly expanded its refurbishment capabilities for clip and chain systems used in film stretching lines. At Brückner Slovakia – a new, fully automated cleaning system has been commissioned, setting new standards in efficiency, sustainability, and service quality.

Smart Technology for Sustainable Maintenance

The new cleaning system enables thorough and gentle cleaning of nearly all types of chain, roller and sliding systems – automatically, economically, and user-friendly. Used clips and chains pass through several process stages: pre-cleaning, fine cleaning, drying, and preservation, while each phase is individually adjustable, allowing even components up to 40 years old, to be reliably reused. This not only conserves resources but also significantly reduces costs compared to regular replacement of worn out parts.

Technical Highlights

The system measures 20 meters in length, nearly 6 meters in height and is designed to handle a wide variety of component geometries. It features:

- Robot-guided rotating high-pressure nozzles for heavy contamination
- Multiple immersion tanks using injection pressure flooding and ultrasound
- Integrated drying and preservation modules
- Closed-loop water treatment system for efficient water reuse
- H_2O vacuum distillation unit offers an efficient solution for reducing liquid waste disposal

Brückner Servtec_Grand opening by the management of Brückner Servtec and Brückner Slovakia (from left to right: Sebastian Lange, CEO Brückner Servtec, Marcela Barborikova, CFO Brückner Slovakia, Roman Skvarek, CEO Brückner Slovakia, Stefan Kugler, Director Global Parts & Refurbishments Brückner Servtec)

Faster Turnaround, Customized Refurbishments

Thanks to full automation, cleaning speed can be increased by 700%, depending on the chain type and number of clips. In addition, manual cleaning is almost completely (99%) eliminated, opening the way for more effective personnel management and allowing more customized reconditioning services for film manufacturers.

Central Service for European Customers

Brückner Servtec provides refurbishment services for film stretching line operators. Customer components are sent to Brückner Slovakia, where the new cleaning system ensures professional, fast, and sustainable processing – forming the basis for long-lasting performance and optimized production. Together, Brückner has set a new benchmark for sustainable maintenance and technological advancement in the plastics industry.

Brückner Servtec GmbH
www.brueckner.com

Online Shop for Swift Units and Spare Parts in Europe Opened

As of now, the motan online shop is also available for the European market. Customers can order auxiliary equipment from motan's swift series and spare parts for existing motan systems quickly and easily.

swift products stand for precise, robust technology with state-of-the-art control systems. They have been specially developed for companies that value efficiency, reliability, and ease of use despite increasing cost pressures.The range includes hopper loaders, dryers, dosing and mixing units for stand-alone solutions for injection molding, extrusion, and blow molding applications.

Highlights of the swift series in the shop:

- sDRY 250: 250 m³/h dry air dryer for standard applications for the drying of granules.
- sCONVAC: Blower station for simple central conveying applications.
- sCONVEY HOS: Cost-effective and efficient material loaders.
- sCOMPACT: Dry air dryers with integrated conveying and colour touch display that also controls dosing and mixing units.
- sCOLOR V: Additive dosing and mixing unit: ideal for masterbatch and regrind applications, with fast availability and high cost efficiency

The online shop supports users with intuitive search and filter functions, allowing them to find the solution they need in just a few steps. From wear parts and DIN components to control components: in addition to swift units and accessories, spare parts for existing motan systems are also available.

Customers continue to benefit from the usual motan services such as application consulting, implementation, and maintenance.

The motan online shop for units and spare parts from the "swift" series and for spare parts for motan systems is convenient and self-explanatory (Source: motan)

"Our goal is to make purchasing as easy as possible for our customers: direct access to units and spare parts, fast delivery, and transparent selection. With our shop, we are taking a step in exactly this direction," says Carl Litherland (CMO motan Group).

With the expansion of its online shop, motan offers companies throughout Europe direct, efficient, and flexible access to high-quality auxiliary equipment and spare parts around the clock and at the touch of a button.

https://shop.motan.com/en/

80 Years of Pioneering Co-Kneader Technology Celebrated

BUSS is the original inventor of the co-kneader technology and is celebrating the 80th anniversary of its first patent at the K trade fair. In the Lifetime Lounge at the booth, BUSS showcased the history of the continuous development of its co-kneader technology.

To consistently enforce its intellectual property rights in more than 20 countries and to ensure fair market conditions, BUSS has initiated legal proceedings in Brazil against a Chinese machine manufacturer, as well as in Turkey against a major cable manufacturer using that manufacturer's machines.

Philip Nising, BUSS President & CEO: "For 80 years, we have made significant investments in research and development to provide our customers with world-leading solutions. Innovation is the foundation of our success. Patent infringements in our industry not only undermine our innovative strength but also jeopardize the integrity of the market. Therefore, we will pursue our rights in key markets worldwide with full determination and keep our partners informed about relevant developments.

Given the evidence collected, BUSS is confident that the pending proceedings will help clarify and strengthen the protection of its technology in various jurisdictions."

Philip Nising, BUSS President & CEO

BUSS AG
www.busscorp.com

Strategic New Course Set in South America

In founding the new company "BYK do Brasil" and appointing Carlos Roberto C. Duarte Coelho as local Managing Director, BYK is sending out a clear signal on the growing importance of the South American market in the global context.

With immediate effect, the new company with headquarters in São Paulo will be assuming local functions in marketing, sales, and technical service, and it will effectively be the direct point of contact for customers in Brazil and beyond. These measures represent a clear strategic focus: The economic dynamics of the region – especially in the paints and coatings, plastics applications, and cosmetics segments – are recognized as a key driver of growth and are being specifically fostered. Besides which, these moves lay the foundations for a more intensive development of the market, swifter response times, and even closer cooperation with customers and partners at the local level.

"By establishing BYK do Brasil and putting Carlos Coelho in charge, we at BYK are underlining our ambitions in South America. There is a steady upwards trend in developments in the region, and they offer potential for further growth and an even more intensive proximity to customers. Carlos Coelho will thus be encountering excellent overall conditions for building on the successful work of recent years and generating fresh momentum," says Dr. Stefan Mößmer, Managing Director Marketing & Commercial at BYK.

Carlos Roberto C. Duarte Coelho, new Managing Director of BYK do Brasil, and Dr. Stefan Mößmer, Managing Director Marketing & Commercial at BYK

BYK-Chemie GmbH
byk.com

New Branch in Mexico

Moretto de Mexico

Moretto takes another step forward in its growth and internationalisation strategy, and announce the opening of the new "Moretto de Mexico" branch in Querétaro. This key addition joins the 5 production plants, the 9 commercial offices, and further strengthens Moretto's widespread presence in over 70 countries around the world.

Having operated in Mexico since 1998, this new opening represents a significant step for the company, which aims to be closer to the local market, providing an even more effective support and service to customers of the plastics sector. The subsidiary will be a modern technological platform and a showcase for Moretto's innovations, designed to provide commercial support and qualified services in a demanding and rapidly changing market.

"The launch of our new Mexican branch reflects our commitment to be closer to our customers and to fulfil their needs with solutions that truly match their requirements. We are excited about strengthening our presence in a dynamic, opportunity-rich market, delivering value to our local customers and improving support with an ever-more efficient service," said Renato Moretto, president of the company.

Mexico is a growing market for machinery, equipment and moulds for plastics and rubber sectors. The Mexican plastics industry, with more than 4,000 companies, forecasts a growth of around 3.5% in 2025, according to the Mexican association Anipac. The driving sectors include automotive, packaging, construction and recycling. The benefits of nearshoring, together with the favourable environment created by "Plan Mexico", are propelling the sector towards further positive growth expected in the coming years.

In 2024, the Mexican market delivered a positive performance for Moretto, with a 15 % increase in sales over the previous year. This result confirms the confidence which customers have in the company's full range of products: solutions for feeding and conveying, dosing and blending, drying, granulation, temperature control, process cooling and storage, all integrated and managed via MOWIS, an in-house-developed, integrated monitoring system that controls the entire production chain.

This internationalisation process will enable the company to seize new business opportunities in strategic areas, establishing new technical and commercial relationships based on more than 45 years' experience.

Moretto S.p.A.
www.moretto.com

Practical Course Content for Everyday Working Life

There is a noticeable increase in demand for training courses on welding and laying polyethylene (PE 80, PE 100 and PE-Xa) pipes and fittings for gas and water lines. The SKZ Plastics Centre is responding to this with an expanded range of in-house training courses for skilled workers – particularly in the context of current infrastructure projects related to the energy transition.

The training courses focus on proven methods such as heating coil and heating element butt welding of PE pipes and fittings. These methods are used in gas and water supply systems and in the laying of cable protection pipes, among other things. Participants learn not only how to carry out the work professionally, but also the relevant standard requirements and measures for quality assurance and documentation.

In addition to practical training on modern welding equipment, there is a special focus on process-reliable ex-

Increasing demand for company training courses on 'Welding and laying pipes and pipe fittings made of polyethylene (PE 80, PE 100 and PE-Xa) for gas and water pipes' (Photo: SKZ)

ecution, error minimisation through systematic working and understanding the material-specific properties of PE 80, PE 100 and PE-Xa.

A key driver of the rising demand is large-scale projects such as the SuedLink route. During the construction of the underground power line, numerous supply lines must be laid or protected – with a correspondingly high demand for qualified specialists. The proper processing of PE pipe systems is of crucial importance here.

"In view of the increasing shortage of skilled workers in the construction and supply sector, practice-oriented training courses are becoming increasingly important. With our tailor-made in-house training courses, we offer an effective solution for providing targeted further training for employees and keeping in-house expertise up to date with the latest technology," says Andreas Grzeskowiak, site manager at SKZ in Peine.

In-house training courses enable companies to train several employees at the same time – either on site or at a location of their choice. The content is individually tailored to the respective operational requirements. On request, the training courses can also be conducted in English or with interpreter support – ideal for internationally active companies or teams with a multilingual workforce.

The SKZ Plastics Centre
Andreas Grzeskowiak
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Strategic Intensification to Strengthen Market Presence

Sesotec is intensifying its cooperation with its long-standing distribution partner POPGRO in Hungary and Slovakia. The aim of the expanded partnership is to further expand its presence in both markets and to provide customers in the plastics industry with even more targeted support in the form of solutions for product inspection and sorting. The intensification of the cooperation is part of Sesotec's international growth strategy, which focuses on the continuous expansion of global partnerships and market share under the motto #NextLevelSesotec.

POPGRO brings comprehensive expertise and many years of sales experience in the plastics industry to the table. As a regional contact, POPGRO will support customers in the selection and implementation of Sesotec solutions for foreign object detection, material analysis, and sorting. "In POPGRO, we have gained a partner who shares our values and understands our mission. Together, we are developing solutions that not only increase quality and productivity, but above all create the conditions for realizing a true circular economy in the plastics industry," explains Joachim Schulz, CEO of Sesotec GmbH.

Daniel Wellisch, Sesotec Director PI East, Joachim Schulz, Sesotec CEO, and Peter Pospíšil, POPGRO owner, (from left to right) show their colors for the future – WE ARE SESOTEC and #NextLevelSesotec (Photo: Sesotec GmbH)

POPGRO is expanding its product portfolio with the following Sesotec systems:

- FLAKE SCAN – analysis system for quality assessment of plastic flakes and regrind
- Metal separators for free-fall applications, material columns, and pneumatic conveyor lines
- Tunnel and surface metal detectors for conveyor belts and chutes
- Magnets for free-fall sections and stationary material columns
- RE-SORT – Unit for recovering separated materials
- PRE-SORT – System for sorting and processing regrind

POPGRO distributes the entire Sesotec product portfolio for the plastics industry – from metal detectors and separators to magnets and sorting and analysis systems – for maximum process reliability and profitability in the plastics cycle (Graphic: Sesotec GmbH)

POPGRO is currently investing in the expansion of its location in Komárno. The plan is to create a modern showroom where customers can experience the full range of services live – with a special focus on Sesotec devices for metal detection and separation for the plastics industry.

Peter Pospíšil, owner of POPGRO, emphasizes: "The partnership with Sesotec is a logical step for us. The systems stand for quality, innovation, and reliability. In the future, our customers will benefit from an expanded range of products and direct access to state-of-the-art technology for process optimization and recycling management. In this way, we are actively supporting the transition to a resource-efficient, sustainable plastics industry."

Sesotec GmbH
www.sesotec.com

Activities in the Field of Recycling Systems Intensified

MAAG Group is driving the strategic expansion of its Recycling Systems business unit. In spite of the industry's current challenges, MAAG's management remains committed to its course and is investing in the future of its successful recycling components and systems.

MAAG Group is intensifying its activities in this market segment. Effective October 1, 2025, Michael Heitzinger assumed the position of Manager Business Development Recycling Systems at MAAG. He is well known within the industry. During the last 25 years, Michael Heitzinger held executive positions in mechanical and plant engineering. Most recently, he was responsible for supporting OEMs worldwide in the field of plastic recycling for another player in the market.

"With Michael Heitzinger, we are gaining an internationally experienced manager who brings not only in-depth industry knowledge and technical know-how, but also the personal qualities needed to further develop Recycling Systems", says Uwe Kellner, VP Sales EMEIA at MAAG.

Uwe Kellner (left), VP Sales EMEIA MAAG Group, welcomes Michael Heitzinger (right), new Manager Business Development Recycling Systems at MAAG Group

MAAG Group
www.maag.com

Foamed PP Coffee Cup – *The Lightweight and Recyclable Alternative*

The significantly growing market for both disposable and reusable cups in the field of hot-fill applications, such as coffee cups, is facing increasing demands that require innovative and economical solutions in order to be prepared for the future. In addition to good thermal properties and health safety, regulations such as the Packaging and Packaging Waste Regulation (PPWR) must be complied with.

To meet these requirements and offer a cost-effective solution, SML has collaborated with its partner KGL S.A., a Polish specialist in the manufacturing and development of plastic packaging products. Together, we have developed an innovative coffee cup that meets all legal standards and delivers exceptional performance.

The outcome in detail

The newly developed coffee cup is thermoformed from a 3-layer PP film with a foamed core layer encapsulated by two rigid outer layers. The fine microcells of the foamed layer provide good insulation properties and give the cup a heat resistance of up to 100°C. Additionally, the foam cell structure decreases density, thus saving material during production. A simple preheating process of the film ensures excellent thermoformability.

(Photo credit: MSFotogroup)

100 % recyclable solution

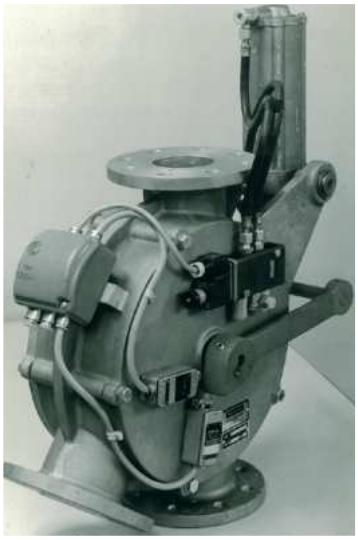
Since the cup is made entirely from recyclable monomaterial, it fully complies with the PPWR and can be sorted in regular waste sorting facilities, making it a sustainable alternative to PS or paper-coated cups.

SML Maschinengesellschaft mbH
www.sml.at

280 Years of Material Handling Leadership

Coperion celebrates a remarkable series of anniversaries this year that highlight its long-standing commitment to innovation, expertise, and customer success. The company's material handling business in Weingarten, Germany, and its feeder and conveying manufacturing facility in Niederlenz, Switzerland, both reach an impressive 125 years of operation, while Coperion Ideal in Noida, India, marks its 30th anniversary. Together, these milestones total an extraordinary 280 years of combined experience, know-how, and dedication to advancing the industry.

For 125 years, Coperion's material handling business in Weingarten, Germany, has been a recognized leader in the bulk material handling markets. Like many companies at the turn of the last century, Coperion's predecessor Waeschle initially ventured into the food industry, specializing in pneumatic conveying of grain and flour. It was only with the rise of plastics in the 1950s that new opportunities emerged, expanding the company's horizons.



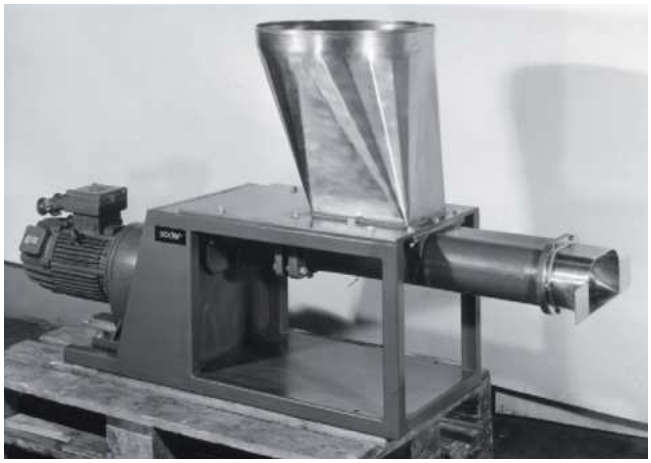
Historical and new diverter valves for bulk material handling. Photo: Coperion, Weingarten/Germany

Today Coperion's portfolio extends beyond its historical roots to include extensive process know-how and expertise in handling over 20,000 bulk materials and various methods for their efficient conveying, homogenizing, separating, heating and cooling methods. Plant engineering and design for large petrochemical installations as well as turnkey systems for the compounding industry are at the core of the company. Another key aspect of the company's offerings is the design and manufacture of essential components such as rotary valves, diverter valves, and slide-gate valves, tailored for various industries. Complementing these products are Coperion's process knowledge, engineering excellence, and project management capabilities, which allow the company's experts to develop and deliver state-of-the-art bulk material handling systems for clients worldwide.

Coperion K-Tron in Niederlenz, Switzerland, was established around the same time as Coperion Weingarten, also in the bakery industry, originally manufacturing grain milling equipment under the name J. Soder Company. Over the past 125 years, the company expanded its expertise and product portfolio and has consistently set industry standards in feeding technology, pioneering numerous advances and playing a significant role in the development of material handling and weighing systems. Today, Coperion K-Tron is renowned for providing sophisticated, state-of-the-art process equipment across a variety of industries and applications. Its innovative know-how is reflected not only in its advanced feeding and pneumatic conveying components but also in comprehensive material handling systems tailored to meet diverse customer needs worldwide.

Coperion K-Tron's history is distinguished by numerous industry firsts, including the development of the first volumetric feeder in the early 20th century, the introduction of the first twin screw feeder in the 1950s, the creation of highly accurate digital weighing technology in the 1970s, and the launch of the revolutionary SmartConnex control system in 2003, among other innovations. These milestones have helped shape the feeding technology industry and have

Coperion K-Tron Twin Screw Feeder 1966 and today. Photo: Coperion K-Tron, Niederlenz, Switzerland



established Coperion K-Tron's reputation as a trusted partner for companies worldwide.

Coperion Ideal, India, marks its 30th anniversary this year. Founded in 1995 as a joint venture in Noida to support the growing Indian petrochemical industry with plants, systems and components, the company exemplifies the philosophy of "we are where our customers are". Today, Coperion Ideal is a complete solution provider for bulk material handling as well as additive unloading and feeding svstems with in-house capabilities including design, engineering, project management, manufacturing, supply chain and service. Serving the Indian and Southeast Asian markets, the company plays a vital role in Coperion's global organization. 30 years ago Managing Director Umesh Verma joined hands with Coperion's predecessor Waeschle to create a manufacturing facility in Noida, India, to produce components such as slide gate valves, diverter valves and pressure vessels.

Over the years, the company has significantly enhanced its capabilities, building lsting trust and strong relationships across the industry. Committed to its strategic vision of making a meaningful difference, Coperion Ideal has continually expanded its product portfolio. The company now offers a comprehensive range of bulk material handling solutions.

Coperion GmbH
www.coperion.com

Innovative Ultrasonic Monitoring of Dosing

The company WOYWOD, with its PLASTICOLOR brand, offers precise real-time ultrasonic monitoring for granulate dosing – both for new systems and for retrofitting existing PLASTICOLOR mixing stations. This technology provides significantly improved process control and helps to sustainably prevent production errors as well as material and secondary costs.

View of the ultrasonic sensor

The firmware, developed jointly – and primarily by WOYWOD – with a Swiss sensor manufacturer, utilizes state-of-the-art ultrasonic sensor technology to precisely monitor the material flow after dosing at the output of the dosing unit.

Especially in volumetric mixing stations, where no actual values for dosing are recorded, the system enables reliable real-time control of the material supply. Gravimetric systems also benefit: here, the ultrasonic monitoring shortens the reaction time when measured values are delayed in adjusting to setpoint specifications (kg/h).

The system operates with a simple 0/1 signal (material present: Yes/No). Intelligent evaluation software allows the user to define which materials are critical and how the system should react in the event of a malfunction. If, for example, no material flow is detected – due to bridging, for instance – an alarm or a stop signal can be triggered automatically. The consequences can be flexibly adapted to the respective process situation.

With this innovative ultrasonic monitoring system, WOYWOD increases process reliability and reduces downtime, defective batches, and customer complaints – a crucial step towards greater efficiency and quality in plastics processing.

Woywod Kunststoffmaschinen GmbH & Co. Vertriebs-KG
woywod.de/en

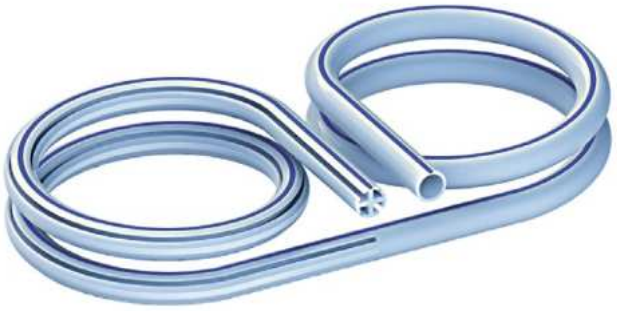
Detailed view of the installed sensor

Detailed view of the installed sensor

Reciprocating Head for Medical Tubing Introduced

Guill Tool, a global manufacturer of extrusion tooling, has released its new reciprocating head. The traditional tip and die assembly is replaced with a linear reciprocating assembly that changes the tube's profile within a given length. This process is repeated throughout a single extrusion run without interruptions. Cutting capability, in association with the extrusion speed, cuts the finished product to length.

While cost and value stream activities are reduced, quality is improved. Only one extrusion run is needed to produce a finished product, as opposed to multiple extrusion runs with tooling changes along with a manual assembly operation to connect different tubing shapes. Guill's new reciprocating head eliminates an entire assembly operation. It also eliminates in-process inventory. Thus, there is no need for storage of various tubing shapes and connectors needed for assembly, fulfillment of orders and replenishment of finished goods.



Furthermore, the reciprocating head eliminates a connecting piece, allows JIT production and products made-to-order. Lastly, it reduces total run time from receiving the order to shipping.

Such tubing is typically used in wound drain operations and other medical applications.

Labs Offer Materials and Extrusion Testing

Guill Tool has expanded its lab capabilities to better serve the global extrusion market with the creation of Guill Labs. The labs include the company's state-of-the-art rheology lab and a facility focused entirely on the extrusion process.

Close-up of the IM-8000 Series, a dimensional measurement system

Guill's existing rheology lab measures the flow characteristics of plastics and rubber to predict how a customer's material will flow through the company's extrusion dies before production. Tooling geometry is virtually optimized, and the project can be viewed in 3D CAD. Machines used include a rotational rheometer, scanning calorimeter, thermal conductivity meter and a new CT scanner.

The rotational rheometer quickly generates visco-elastic data for polymer melts, precisely capturing polymer melt properties. Test temperature ranges between ambient and 300°C. The lab's scanning calorimeter characterizes the thermal properties of a polymer sample, such as crystallization temperature, glass transition temperature and head capacity of the sample. Knowing these thermal properties permits the simulation of shear heating and hot and cold spots in the flow area. The thermal conductivity meter is used to determine the thermal conductivity of the polymer sample across a range of temperatures.

The rheology lab's scanning calorimeter

This in-house lab provides faster turnaround on test results, reducing delays during the design process and offering better control over the testing parameters. The result is a high-quality part delivered on time.

The new test extrusion facility features various pieces of equipment including two Killion 1.25" extruders, an RDN 2.0 PVS vacuum tank, one Keyence LS9000 dual axis laser gauge, two Dri Air ARID-X 10 30lb capacity driers, a custom-built tubing puller and an Accurate Thermal Systems FTBLL47 fluidized bath. In

Design Engineer Jacob Marcure working in the rheology lab

Fluidized bath in the test extrusion facility

addition, the test lab permits single and co-extrusion capabilities with its tried-and-true die designs. Access to exotic extrusion processes such as rotary die extrusion of filament and tubular end-products are also available.

Supporting extrusion trials, the test lab also offers extrusion training, die cleaning services, sample inspection, and end-product testing. Guill's fluidized bath has a 50°C-605°C temperature range and a working volume of 15.7" x 47."

Customers can test materials, dies and actual extrusion run time – all on Guill premises.

Guill Tool & Engineering, Co., Inc.
Tom Baldock, Sales Manager, Extrusion
www.guill.com

New Duration Cutting Blade for Strand Granulators

During strand pelletizing of fiber-reinforced plastics (FRP compounds), abrasive polymer strands put extreme stress on the bed knife with its cutting blade. MAAG has responded to this challenge with its new Duration cutting blade, which was developed specifically for this application.

Until today, cutting blades for MAAG strand pelletizers have been available with three different blade designs: tungsten carbide (HM), ceramic (CE), or with a diamond-coated surface (PCD). However, when processing high-strength, fiber-filled and highly abrasive polymer strands for FRP compounds, all three material variants have not only characteristic strengths but also weaknesses.

For example, the cutting edge of HM and CE blades have a life of 100 operating hours due to the high abrasiveness of fiber-reinforced plastics. Ceramic blades are susceptible to fracture; and as a result, the cutting edge or even the entire blade must be replaced frequently. This not only affects productivity, but also the quality of the pellets produced.

Cutting blade

This is why diamond-tipped PCD blades are often used in FRP applications. Their hard surface gives them a significantly longer service life. However, they are up to five times more expensive than carbide or cemented carbide tools.

MAAG PRIMO 200E strand pelletiser with cutting blade

MAAG responded to this challenge with its new Duration cutting edge, which expands the existing range of solutions today: The development features a new material called VS23 which increases the hardness of the surface by up to 70 percent, thereby reducing wear rate. This extends the service life by a factor of 5 to 9 compared to conventional carbide tools. VS23 represents a cost-effective alternative especially with its four cutting edges to the use of PCD blades with diamond segments on one edge only. The performance of the new blades has already been comprehensively validated in the laboratory and in practice.

MAAG Group
www.maag.com

End-to-End Transformation Redefining Customer Experience

Davis-Standard is in the midst of a comprehensive business transformation that is redefining our overall customer experience. From dynamic issue resolution and intelligent, predictable manufacturing to reinvesting in R&D, Davis-Standard is implementing a cultural and structural shift that centers around the customer. Customers will benefit from one of the most intelligent, connected, and capable customer care platforms in the industry.

"We understand our customers' pain points and we're committed to solving them," said Juan Araujo, President of Davis-Standard. "Every decision, every process, and every change happening within the company is driven by our clear purpose of serving our customers faster and more efficiently."

Araujo has consistently prioritized the reengineering of all critical business processes in customer touchpoints across Davis-Standard – from engineering, manufacturing, and customer service – creating a model that drives better and faster decision-making. In manufacturing, Davis-Standard has developed an integrated digital system that synchronizes workflows, provides digital work instructions, manages materials, and offers dynamic engineering support. Fully integrated systems now make it simple to execute even the most complex processes. For customers, this means faster deliveries, improved quality, and more dependable service.

At the heart of this transformation is the new Customer Response Center (CRC), a central hub designed to ensure every customer request is addressed, prioritized, and resolved. Every request is tracked through real-time dashboards, giving customers transparency from inquiry to resolution.

"When a customer needs us, we want them to experience a world-class service and support. Customers will see that we are dependable and efficient in solving their problems," explained Araujo. "We expect 100% of calls to be answered promptly and 100% of issues to be resolved."

A case number will be assigned to each customer's call to track the specific need and ensure a final resolution. A digitally integrated solution will manage each case throughout every stage of the process.

Another cornerstone of this initiative is a major reinvestment in Davis-Standard's Extrusion Center of

Excellence. "We've reinvested more than $5 million in equipment that harnesses next-generation extrusion and automation to increase efficiency, reliability, speed, and safety. Our goal is to accelerate sustainable innovation through advanced R&D, smart monitoring, and customer-focused trials," said Araujo.

Customers will benefit from faster trials and the ability to test advanced materials such as biopolymers and recycled plastics. They will benefit from access to multimarket solutions across packaging, medical, construction, and coating. Trials are already being scheduled for the fourth quarter of 2025. Araujo views this transformation as a series of building blocks that will enhance the value proposition and the overall customer experience.

Davis-Standard
davis-standard.com

What the Eye Cannot See...
Quality Control of Plastic Products

Geometric measurements are an important component of modern quality assurance for plastic products. Inline measurement of the layer thickness of pipes or analysis of multi-layer composite systems enables dimensional accuracy to be checked and, if necessary, corrected. To this end, the SKZ Plastics Centre uses terahertz (THz) and radar technology, which is opening up an increasing number of areas of application in cooperation with industry as a result of increasing automation and Industry 4.0.

Two aspects are particularly important in the manufacture of plastic products: correct dimensional accuracy and the absence of manufacturing defects. Since plastics often have opaque properties and measuring geometry by eye only allows for inaccurate analysis, specific methods are used to analyse these properties. This ensures that the quality of the products meets high standards. However, these methods often fail due to factors such as one-sided access, the need for non-contact measurements, foamed structures, high costs of the measuring system and insufficient penetration depth. Despite these challenges, two measuring methods have become established: THz and radar technology. The SKZ uses these measurement methods to determine the optimal solution in cooperation with industry and taking into account its specific challenges. Challenges such as the identification of manufacturing defects in production, the minimisation of tolerances to save material, and seamless documentation and verification can be solved by using THz and radar technology. This enables continuous progress towards networked working environments in the course of digitalisation. Since both measurement technologies do not require radiation protection and are also flexible in their application, they can be easily used in existing production facilities to accompany processes. The SKZ is happy to support companies in integrating measurement technology into their production facilities.

Possible geometric measurement of a complex profile using THz or radar technology (Source: SKZ/Copilot)

SKZ Plastics Centre
Marcel Mayr
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High response. Good mood. Strong K. – *K 2025 confirms its pole position as global No. 1 trade fair for the plastics and rubber industry*

K2025, the most relevant trade fair for the plastics and rubber industry worldwide, drew to a successful close on 15 October 2025 after 8 days. In view of the current difficult economic climate, many companies in the plastics and rubber industry travelled to Düsseldorf with rather subdued expectations. But the mood prevailing across the fully occupied exhibition grounds proved outstanding on all trade fair days. The plastics and rubber industry presented itself as more innovative, international and determined than ever to actively shape the transition to more sustainability, digitalisation and social responsibility.

"K has demonstrated once again just how much innovative power and dynamism this sector holds. The enormous international interest, the high demand for information and the multitude of concrete investment conversations all the way to many contracts concluded right on site underline the importance of this trade fair as a global platform for pioneering solutions and partnership-based exchange," emphasises Marius Berlemann, Chief Operating Officer at Messe Düsseldorf, and adds: "K is an indispensable compass in uncertain times and once again succeeded in confirming its role as the most important impulse provider and launch platform for the global plastics and rubber industry, where numerous companies have unveiled their innovations to the global public for the first time."

Under the strapline "The Power of Plastics! Green – Smart – Responsible" 3,275 exhibitors from 66 nations presented forward-looking technologies, products and processes along their entire value chain across 18 exhibition halls and outdoor areas. Over 175,000 trade visitors from around 160 countries travelled to Düsseldorf meaning that K attendance remained stable. K provided impressive proof of its position as the industry's most global trade fair: 73% of all visitors came from abroad and over one third of these from overseas. A particularly strong representation was seen from China (6,300 visitors) and India (6,400 visitors). A total of 10,000 visitors travelled from the US and Brazil to K 2025. The trade fair again stood out with an above-average ratio of decision-makers (67%).

"The environment we currently have to navigate remains enormously challenging," explained Ulrich Reifenhäuser, Chairman of the K 2025 Exhibitor Advisory Board. "But it is especially in such times that the strength of our industry becomes visible. Every three years the global plastics sector comes together here – and for good reason: K is the place where innovations are launched, partnerships are forged, and visions turn into reality. Plastics have been – and will remain – the most important material of our time. They fuse lightweight design, utility, energy efficiency with versatility serving as pioneers of progress in many applications – from medical technology to mobility and energy supply. With improved recycling solutions and circular concepts, they will increasingly become the most sustainable material of our times."

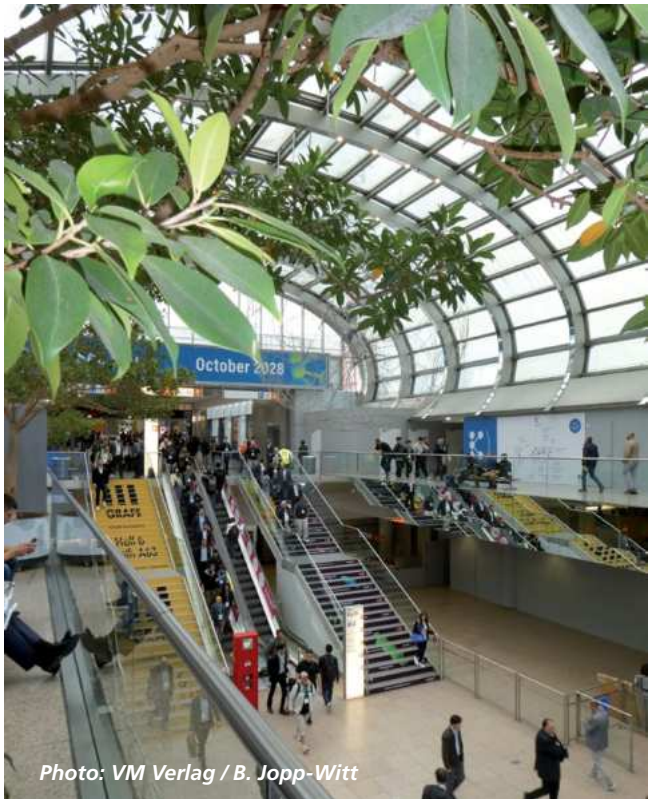


Photo: VM Verlag / B. Jopp-Witt

With its three central key topics "Shaping the Circular Economy", "Embracing Digitalisation" and "Caring about People" K 2025 struck exactly the right chord with the spirit of the times. Machine and plant builders impressively showed how efficiency, precision and resource savings can be linked through their ultra-modern manufacturing systems and live demos. The segment of raw and auxiliary materials also convinced the audience with its innovations: from bio-based materials to recycled compounds to new additives that fuse functionality with sustainability, the exhibitors showcased an impressive panoply of solutions for tomorrow's material de-

velopment. From highly advanced recycling plants and alternative raw materials to data-driven manufacturing systems to strategies for talent promotion and resource savings – it was palpable in all halls: the sector has taken up the challenges and works determinedly on solutions.

Visitors from throughout the world came hungry for information: alongside recycling, resource savings and topics related to circularity, conversations also centred on digitalisation, automation, artificial intelligence, and efficiency increases, in particular.

This year's event was characterised by high satisfaction levels. According to preliminary survey results, 95% of visitors stated that they had achieved their objectives at the trade fair. 98 per cent of trade visitors rated the range of products and services on offer as excellent or were very satisfied with it. Visitors were especially impressed with the strong presence of market leaders and the multitude of innovators.

The numerous Specials at K 2025 also proved very popular with the international audience. Especially the official Special Show "Plastics Shape the Future" organised jointly by Plastics Europe Deutschland and Messe Düsseldorf inspired with Expert Talks, panel discussions and Start-up Pitches on various themed days. Just as compelling was the VDMA Forum "The Power of Plastics", which presented the technical implementation of circular processes in plastic production with live demos and expert talks. This programme was complemented by the Start-up Zone and Science Campus bringing together innovation and research. By presenting Rubberstreet under the patronage of wdk, K once again provided a showcase for the innovative power of the elastomer industry. With the debut of "Women in Plastics" K sent out an inspiring signal for more diversity, responsibility and a future-oriented industry. Guided Tours for a wide variety of target groups rounded off the package.

The next K will be held in Düsseldorf from 18 to 25 October 2028.

www.k-online.com

Posirtive Conclusion from K 2025 – *High visitor numbers, successful sales and strong interest in proven technologies*

Gneuss Kunststofftechnik GmbH looks back on a highly successful participation at K 2025 in Düsseldorf. This leading trade fair for the plastics and recycling industries once again provided an ideal platform on which to present innovative and proven solutions to an international audience of professionals.

The Gneuss stand attracted a large number of visitors. There was strong interest in energy-efficient and process-reliable technologies – several machines were sold directly at the fair, and numerous additional orders were placed. This confirms the company's positive growth trend in Europe and international markets.

At the trade fair, Gneuss presented the continuous development of its comprehensive system portfolio, covering everything from extrusion and filtration to control and sensor technology. The goal is to ensure top quality, energy efficiency and sustainability at every stage of the process.

The focus of the presentation was the MRS extrusion technology (Multi Rotation Section). Thanks to its integrated multi-screw section, the technology achieves an exceptionally high level of decontamination, enabling it to be used in food-contact recycling processes approved by the U.S. Food and Drug Administration (FDA), the European Food Safety Authority (EFSA) and other national authorities. The processed melt impresses with its high optical and mechanical quality, while maintaining minimal thermal stress.

Gneuss MRS Extruder at the K 2025 booth

There was also significant interest in the RSF*genius* rotary filtration system, which ensures consistent pro-

duction reliability thanks to its automatic self-cleaning and high process stability.

Several open house events were held at the company's headquarters in Bad Oeynhausen in parallel with the trade fair, which drew significant interest. Various recycling processes were demonstrated, including odour reduction for polyolefins and processing PET materials using OMNI recycling systems. Many international visitors took the opportunity to see the technologies in action.

With positive feedback, successful sales and strong visitor interest, Gneuss can draw a very positive conclusion from its participation in K 2025.

Gneuß Kunststofftechnik GmbH
www.gneuss.de

Open House event at Gneuss in Bad Oeynhausen

High-Performance Extruder Series Extended

The solEX NG 105 model, which completes the series of the most powerful single-screw extruders from battenfeld-cincinnati and provides a further optimally matched size level, celebrated its premiere at this year's K show. The series comprised the 45, 60, 75, 90 and 120 models. The solEX 105 fills the performance gap between the two large extruders perfectly. Naturally, the 105 machine with a length of 40 D, which covers a performance range from 1,680 to 2,100 kg/h, offers all the familiar features of the previous models and also includes valuable new innovations.

The machine is also equipped with a newly developed water supply. The solEX NG 105 has its own internal water supply, which is filled once with water including corrosion protection. Previously, the extruder was usually supplied with water for cooling the processing unit, gearbox and motor via the service water pipe in the processing plant. This can have two main disadvantages: Firstly, the impurities contained in the water, e.g. sand, can cause cooling channels to become clogged. Secondly, the cooling water reaches the components at a constant, usually low temperature. While cold water is advantageous for cooling the processing unit, it increases the lifespan of the engine and gearbox if the cooling water is at a low temperature. These requirements are met by the own water supply, which is mounted on the extruder. "The extruder's own water circuit is so convincing that we will be providing it for all our models in future," promises Heinrich Dohmann, Director Mechanical Engineering.

All solEX extruders of the New Generation (NG) have a processing unit consisting of an internally grooved barrel in combination with a matching screw and grooved bush geometry, resulting in technical process advantages:

a reduced axial pressure profile reduces machine wear. In addition, high specific output rates at low screw speeds ensure high efficiency and gentle, but very effective and homogeneous melting performance reduce the melt temperatures by around 10°C. This enhances the quality of the end product and results in energy savings. Compared to the predecessor model in the solEX series, the NG models achieve around 25% higher output when processing HDPE and even up to 40% higher output with PP.

High-performance extruder solEX NG 105 (©battenfeld-cincinnati

Belt Haul-Off Impresses with Smart Control Concept

At this year's K trade show, extrusion specialist battenfeld-cincinnati introded the new pullStream B63-1000 WS belt haul-off. It fits perfectly into the award-winning World Solution Design introduced a few years ago and impresses with its unique accessibility. This greatly simplifies operation. Further advantages result from the globally applicable manufacturing standards and the revised cross adjustment for consistent pipe quality.

The line design introduced in the last K-year is based on the following principles: optimum accessibility and operation, as well as easy maintenance. "An angled flap allows the belt haul-off to be opened completely, similar to a modern kitchen cabinet, so that the machine operator can carry out maintenance and process adjustments while standing upright," says Heinrich Dohmann, Director of Mechanical Engineering, describing the unique selling point of the new belt haul-off, which ensures ergonomics in the workplace. The pullStream B63-1000 WS is designed for small pipes with a diameter between 5 and 63 mm. "The concept is so convincing that we are already revising the sister model for pipes up to 125 mm in the same way," promises Heinrich Dohmann.

Technically, battenfeld-cincinnati belt haul-offs are known for their finely adjustable speed control. The new belt haul-offs also offers the option of adjusting the upper belt transversely – by 0.5° in each direction. "The inclined position allows us to actively counteract any twisting of the pipe, which guarantees precise labeling at the same pipe position, even at high speeds of up to 300 m/min," Heinrich Dohmann continues.

pullStream B63-1000 WS belt haul-off (©battenfeld-cincinnati)

In addition, the belt haul-off is equipped with a modern 10" touch display installed on an interactive support arm at the inlet of the haul-off. The operating concept is based on the proven BCtouch DS from battenfeld-cincinnati and enables intuitive operation of the line components.

battenfeld-cincinnati
www.battenfeld-cincinnati.com

Integrating Global Innovation

At this year's K PiovanGroup presented innovations such as:

• SmartForesight: a predictive maintenance solution that detects anomalies before failures occur. With real-time notifications, customized reports, and direct technical support, the service maximizes customers' profitable uptime.

• VOC Minder: an inline tool for monitoring volatile organic compounds in processes using recycled materials, ensuring quality compliance and reducing waste.

• Permanent Vacuum: a complete material distribution solution built around a single vacuum line, parallel modular pumps, central filtration, and a dedicated coupling station, Multilink, that automatically sets up source-to-destination connections. It maintains a constant vacuum, optimizes investments and system resilience, enables simultaneous conveying and modulates pumps to match demand – increasing efficiency.

• GN³: top-notch three-stage system based on the GenesysNext platform for gentle dehumidification that completes cycles in just 5 hours while preserving optimal material integrity. Enables rapid resin changeovers within 2.5 hours, a 68% reduction versus conventional systems, boosting operational continuity and flexibility.

• Quantum Med: a compact, hygienic gravimetric dosing solution for medical environments, featuring quick changeover and materials compliant with the industry's demanding standards (GMPs).

• Downstream Extrusion: Precision-engineered solutions for the medical industry, featuring the MedVac® Vacuum Sizing Tank and MedLine® Puller/Cutter with servo-controlled cutting accuracy

(±0.1 ms). Built on the market's extensive experience in medical extrusion, these products ensure maximum performance.

• Grado Adroit 8: a batch gravimetric blender with integrated extrusion control handling up to 8 components. Thanks to its fully modular architecture, users can independently change the number of ingredients at any time.

• Vento: an automatic film cooling and thickness control system based on a triple-flow ring that delivers a threefold effect – cooling, stability, and control. "Double chimney" and "lifting system" options further boost line productivity.

• GDS9-2000: a new high-throughput gravimetric feeder (up to 2,000 kg/h) designed to precisely handle pellets, regrind, and powders—even in complex extrusion and compounding plants.

• AryaDew: an innovative mold-enclosure dehumidification system with closed-loop technology that delivers up to 70% energy savings and stable processing conditions.

• PETChiller+: a new PET mold-cooling system that cuts cycle times by up to 30% and optimizes energy consumption with modulating compressors and inverter-driven pumps.

PiovanGroup
www.piovan.com

Innovative e-Forming Thermoforming Series Launched

CANNON unveiled its new and patented e-Forming thermoforming range of machines at K 2025.

CANNON e-Forming is designed to set a new benchmark to lower energy usage, introducing new concepts in optimized machine geometries, intelligent power management, and AI-driven automatic parameter setting. The footprint of the machine is the smallest available on the market, based on CANNON's patented "Triplo", the most compact and widest adjustable tool change system that guarantees the maximum standard in safety and compatibility.

"Sustainability is a top priority in our industry, and energy efficiency remains a cornerstone of our innovation," said Giuseppe Dall'Ora, Thermoforming Sales Manager at CANNON. "Our new e-Forming machines confirm CANNON's legacy of solid performance while introducing smart automation, intuitive operation, and enhanced flexibility – key factors in meeting the evolving demands of small-batch production."

The e-Forming series is ideal for manufacturers of large, thermoformed parts. Its intuitive interface supports operators by recommending optimal processing parameters during setup and operation. At the heart of the system is "Easy Power Mapping," a revolutionary, AI-powered, and patented innovation that intelligently configures machine initial settings to enhance process stability, optimize material distribution, lower sheet thickness, and drastically reduce energy use.

CANNON e-Forming was designed and developed to provide customers with increased sustainability and efficiency. The concept offers a compact footprint and intelligent power management, meeting the industry's growing demand for greener, more efficient and flexible production systems (Photo: The Cannon Group)

Among its standout features is CANNON's renowned "Easy Tool Change" system, which enables fast, safe, and complete tool changes – an essential advantage for high-mix, low-volume manufacturing. The redesigned mechanical layout also simplifies maintenance by improving access to its components, while the machine's compact design allows it to fit in spaces where others cannot. Connectivity is another strong suit, with the proprietary "Connect-IT" enabling seamless integration of the machines into factory information systems via standard industrial communication protocols.

The CANNON e-Forming machines are already available globally and fully supported by CANNON's worldwide service and distribution network.

CANNON
cannon.com

Integrated High-Throughput Polyolefin Recycling Solutions Launched at K 2025

In response to the rapidly growing demand for high-capacity polyolefin recycling systems, Nordson BKG, part of Nordson Corporation's Polymer Processing Systems division, and FIMIC, have announced a strategic collaboration to deliver fully integrated solutions capable of processing 4.0 to 6.0 tons per hour of post-consumer plastics.

The joint solutions address key industry challenges, including material variability, filtration limitations, and costly downtime. By integrating Nordson's advanced gear pumps, valves, and underwater pelletizing systems with FIMIC's high-performance filtration units the systems ensure consistent pressure, superior filtration, and pellet homogeneity – even at high throughputs and high level of automation.

To meet the diverse and evolving demands of high-capacity polyolefin recycling, Nordson BKG and FIMIC have engineered a modular system architecture offering exceptional operational flexibility. The solution is available in three distinct configurations – DO (Discontinuous Operation), CO (Continuous Operation), and CFO (Continuous Flexible Operation) – each tailored to specific production environments, throughput goals, and maintenance strategies. This versatility empowers recyclers to optimize performance, minimize downtime, and maintain consistent product quality across varying operational scenarios.

• DO-Line (Discontinuous Operation): A cost-effective solution requiring a complete line shutdown during screen changes on the FIMIC melt filter.

• CO-Line (Continuous Operation): Features dual diverter valves that allow screen changes on one filter while the other remains in operation, maintaining up to 75% throughput during transitions.

• CFO-Line (Continuous Flexible Operation): The most advanced configuration is equipped with two underwater pelletizers. This setup enables one line to remain fully operational while the other undergoes maintenance, ensuring uninterrupted production. Smaller equipment reduces investment and spare part cost for gear pumps and underwater pelletizing systems.

(Photo: Messe Düsseldorf / ctillmann)

Key Features of the Integrated System:

• Complete Solution: Seamless integration from twin-screw adaptor flange to underwater pelletizer.

• High Performance: Minimum throughput of 4 t/h with filtration precision down to 100 to 150 µm.

• Automation & Efficiency: Intelligent pump control, modular system design, and minimal operator involvement work together to maximize performance and lower Total Cost of Ownership (TCO). Meanwhile, the fully automated, intelligent venting process ensures consistent product quality – even during filter changes – by eliminating defects.

• Thermal Management: Innovative design strategies, including mobile components and thermal elongation adaptors, maintain system stability under high-temperature conditions for high-capacity lines.

A key advantage of this partnership is the "one face to the customer" approach. By eliminating interface challenges and streamlining communication, Nordson and FIMIC ensure seamless integration and simplified project execution.

At Nordson BKG's technical center in Münster, customers can experience firsthand how seamlessly Nordson BKG and FIMIC components integrate to deliver a unified solution

This joint innovation reflects both companies' commitment to advancing sustainable, high-efficiency recycling technologies for the circular plastics economy, enabling recyclers to meet stringent quality standards while scaling operations efficiently.

FIMIC Srl.
www.fimic.it

Nordson BKG GmbH
www.nordsonpolymerprocessing.com

Another PET Bottle Washing Line Commissioned

Indian preform and plastic packaging manufacturer Magpet Polymer Pvt Ltd has commissioned Herbold Meckesheim with another PET bottle washing line.

Indroneel Goho, President & CEO of Magpet Polymers Pvt Ltd, visited Herbold at ist booth at K 2025 to sign the contract.

The new washing line is an extension oft he bottle-to-bottle recycling plant that Coperion and Herbold Meckesheim are currently installing for Magpet in India. The granulators and an initial washing line have already successfully commenced operation. With the new washing line, Magpet will be able to increase ist PET washing capacity by a factor of 2 to 2.5.

Indroneel Goho, President & CEO of Magpet Polymers Pvt Ltd, and Markus Parzer, President Performance Materials Division, Coperion, celebrate the contract signature with the Herbold Meckesheim and Coperion team at K 2025 (Image: Coperion, Stuttgart, Germany)

"By using innovative technologies, we produce first-class packaging and distribute it globally to our customers. The system solutions and expertise of Herbold Meckesheim and Coperion meet our requirements exactly – fort he benefit of our customers. And at the same time, we can increase recycling rates," said an enthusiastic Indroneel Goho at the signing oft he contract.

"We at Coperion and Herbold Meckesheim are very proud that Magpet has once again placed ist trust in us and our technologies. The washing line confirms our vision of advancing plastic recycling with innovative solutions. We look forward tot he next steps in our joint journey with Magpet," seid Markus Parzer, President Performance Materials Division, Coperion.

Herbold Meckesheim GmbH
www.herbold.com

Next Generation SmartCast Stretch Film Line

The SmartCast stretch film line (6-up) is one of the most versatile stretch film lines within SML's portfolio. The concept features the greatest variety of equipment options for unparalleled and efficient stretch film production – from 2-inch hand rolls to high-quality machine rolls, 60 kg-jumbo rolls, and films with folded edges, among others. At the K trade fair, SML unveiled the next generation of its SmartCast brand and presented innovations in both line design and product quality.

(Photos credit: KHP Karin Hackl)

New extruder arrangement – simplified maintenance

Next to an overall face-lift, the new 3 m line concept boasts an ultra-compact footprint with newly arranged, parallel-oriented extruders. This arrangement places all motors, dosing units, and filters next to each other, facilitating faster and easier access for maintenance and service. Pre-assembled extruder modules further streamline the installation process. In addition, all small electrical components are now housed in an E-contain-

er, which eliminates connection boxes in the hot areas of the extruder.

Chill roll with even larger diameter and new surface

The SmartCast is equipped with the largest chill roll ever seen in the stretch film market. With a diameter of 1,800 mm and the latest chrome-plated Smart 3.0 surface, this chill roll sets a new standard in the production of high-quality stretch film. The Smart 3.0 surface finish significantly reduces cleaning efforts for paraffin and other deposits that occur during production. The extended contact area at the chill roll allows for gentle cooling, which results in the highest elongation combined with superior tear propagation. Despite its size, it still offers the fastest cooling for SuperStiff products.

Coreless winding to save resources

With the new SmartCast design, SML has further developed its coreless winding technology not only to improve production economy but also to save resources and improve sustainability. SML's coreless technology improves the winding quality on the inside of the stretch film roll at optimised production speeds. Post-production shrinkage is reduced. But most importantly, quick switches between coreless winding and winding on rigid cores are achieved at the touch of a button. This unique key feature reduces waste to zero during changeover and maximises production efficiency.

To sum up, the new 6-up SmartCast stretch film line represents a significant leap forward in efficiency, product quality, and sustainability.

SML Maschinengesellschaft mbH
www.sml.at

Solutions for Maximum Flexibility and Productivity in Blown Film Production

Hosokawa Alpine presented its range of services for the production of blown films at the K 2025 under the motto „Blown film in perfection". The presentation in Hall 16 focused on the flexible 9-layer system from the mechanical engineering company. Thanks to its adaptability, it gives customers the freedom to master future market requirements innovatively and confidently. With solutions for the production of sustainable full PE films and films made from PCR materials, Hosokawa Alpine also addressed the major trade fair theme of „Shaping the circular economy". At another stand in Hall 9, the company's recycling division showcased its technologies, including those for recycling PCR plastics and films.

Their high flexibility makes Hosokawa Alpine's blown film lines a future-proof investment

MDO: Increased productivity and various cleaning features

Hosokawa Alpine has developed a solution for changing the stretching roller that takes only 15 minutes. Quick changeover ensures permanent availability of your system, flexibility in the selection of stretching rollers and thus maximum productivity. In addition to this quick roller changeover, Hosokawa Alpine will also offer ultrasonic bath cleaning for vacuum rollers.

Comprehensive solutions for automation and digitalisation

Hosokawa Alpine also focused on its wide range of automation and digitalisation solutions at the trade fair. These include the ExVis process visualisation system

with its start-up assistant, which allows a plant to be started up in just four steps, and its one-touch change for quick switching between film formats. The company's service brand, Blueserv, offers a new solution for predictive maintenance with isa.guard. isa.guard combines continuous sensor data with expert analysis to detect anomalies in real time and enable proactive maintenance planning.

Recycling technologies for a wide range of materials

Blown film lines are just one of Hosokawa Alpine's many areas of business. In the field of mechanical process engineering, the mechanical engineering company specialises in recycling technologies, among other things. Here too, Hosokawa Alpine presented innovative solutions for various materials at K 2025. These include plastics such as film residues and PCR materials, as well as rubber and textiles. The Rotoplex cutting mill plays a key role in many applications. This classic product in Hosokawa Alpine's portfolio is celebrating its 60th anniversary this year and is continuously being adapted and technically refined for new areas of application.

The Rotoplex granulator has been a fixture in Hosokawa Alpine's portfolio for 60 years and is used in numerous recycling applications

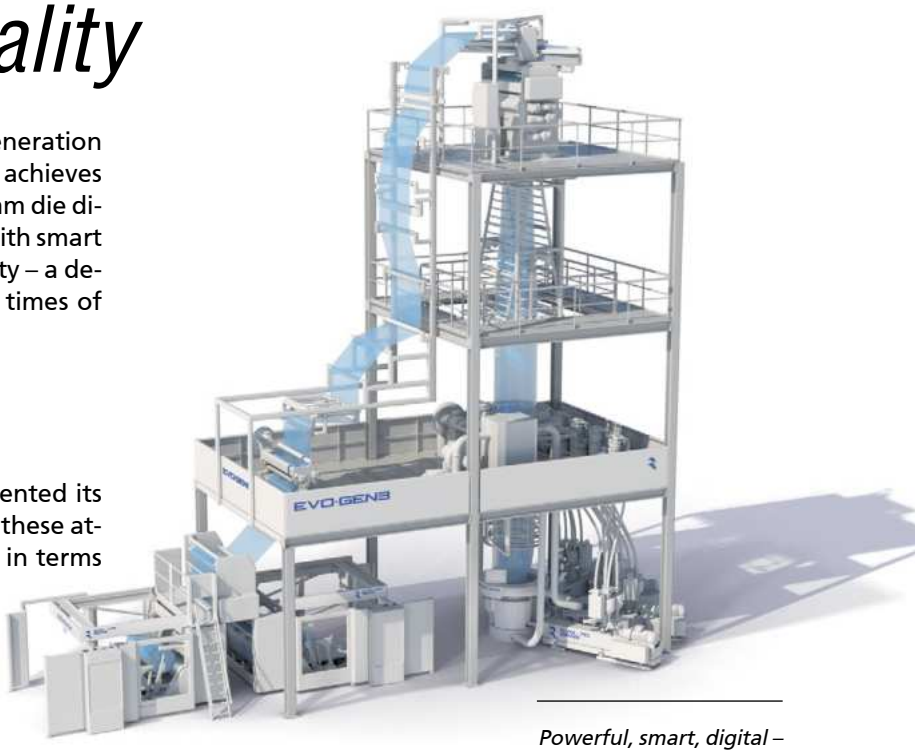
Hosokawa Alpine
www.hosokawa-alpine.com

New Blown Film Line – *Highest Output, Smart Automation, Measurable Quality*

Reifenhäuser presented its new EVO GEN3 generation of blown film lines at K 2025. The technology achieves record outputs of up to 1,050 kg/h with a 350 mm die diameter and combines maximum productivity with smart assistance systems and future-proof connectivity – a decisive competitive advantage for producers in times of global skills shortages.

Up to 30 percent more output – new benchmark in the market

Powerful, smart, digital – Reifenhäuser presented its new line generation for the first time at K with these attributes and setting an impressive benchmark in terms of output. The increase of up to 30 percent compared to its predecessor is achieved through the perfect combination of the new Ultra Dies and the most advanced cooling ring on the market – the Ultra Cool GEN3. The new die heads are available in three versions: a 3- and 5- layer version for maximum throughput and fast product changes, a 7-layer version – optimized for barrier films – and a 9-layer version for the highest



Powerful, smart, digital – with the EVO GEN3, Reifenhäuser presents a completely new generation of blown film lines that deliver a record output of 1,050 kg/h with a die diameter of 350 mm (Picture: Reifenhäuser)

film quality in complex products. The Ultra Cool GEN3 features a unique IBC (Inner Bubble Cooling) stack and was designed specifically for the new 3 and 5-layer die head, but is also available as an upgrade for existing systems. The investment pays for itself in no time, especially when replacing older cooling rings, thanks to a throughput increase of up to 20 percent.

Smart automation supports inexperienced operators and beginners

Reifenhäuser understands that performance is not just about higher output. In today's competitive environment, the ease of operation of a blown film line is just as important. The shortage of skilled workers and high employee turnover make it difficult for many manufacturers worldwide to reliably achieve the desired quality and efficiency. EVO GEN3 therefore relies on smart assistance systems that enable even inexperienced line operators or newcomers to achieve perfect results at the touch of a button. These clever helpers are integrated into the completely redesigned HMI "EVO OS 3," which guides operators to any setting in a maximum of two clicks. Thanks to customizable dashboards and a clear start-up page, it is more intuitive to use than ever before.

Auto Flat offers measurable film flatness

A unique selling point of the EVO GEN3 is the new Auto Flat system. Thanks to the Ultra Flat stretching unit, which is already well established on the market, Reifenhäuser blown film lines deliver particularly flat films that are much easier to further process, thereby saving costs. Among other things, less adhesive and ink are required for laminating and printing, which would otherwise fill the spaces in uneven films. With the new Auto Flat hardware/software solution, Reifenhäuser now makes film flatness measurable for the first time and also simplifies operation: A special sensor continuously measures how flat the film is and determines the optimal settings for the Ultra Flat stretching unit. This enables producers to effortlessly achieve perfectly flat films, making them a sought-after supplier for converters.

(Photo: Messe Düsseldorf / ctillmann)

Towards automated factories with ReStart Assistant and digitalization

New materials such as PCR or PFAS-free PPAs increase the need for cleaning and screen changes. EVO GEN3 reduces the time required for this to a minimum: The Restart Assistant ensures that the necessary stops and restarts of the system run smoothly, quickly, and accurately. All recipe parameters are set automatically, and even less experienced operators can quickly bring the process back to full capacity.

The EVO GEN3 also features a completely redesigned control architecture for maximum connectivity, data analysis capabilities, and cybersecurity – the foundation on which producers can build more digital or even fully automated manufacturing in the future. The integration of AI-supported Reifenhäuser NEXT solutions will play a crucial role here, offering completely new possibilities in line operation – including the use of a highly specialized chatbot.

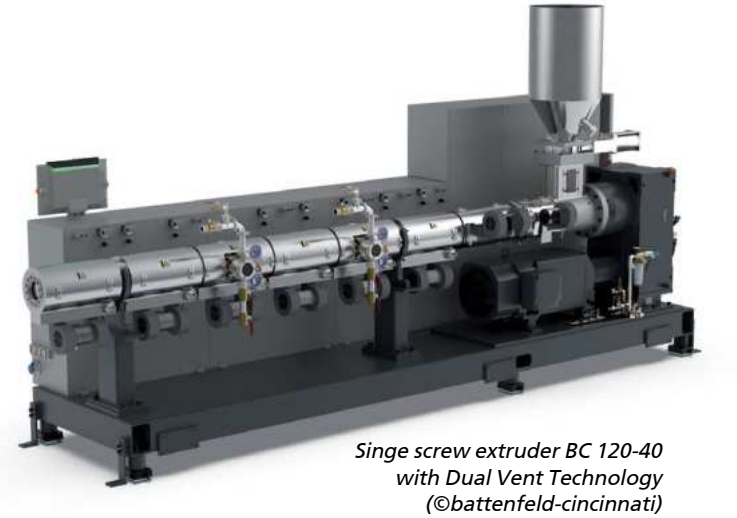
Reifenhäuser Group
www.reifenhauser.com

The EXTRUSION team wishes you a merry and peaceful Christmas and all the best for 2026

Flexible Material Use Thanks to Double Degassing

Efficient processing of different raw materials, almost no material pre-treatment, and high quality of the films and sheets to be produced – battenfeld-cincinnati meets these demands for modern resource management with the new BC 120-40 DVT single-screw extruder. The first extruder with the innovative Dual Vent Technology was on display at the booth at K 2025.

Double degassing is nothing new in single-screw extruders. However, until now, the degassing connections were located directly next to each other and served to increase the overall degassing capacity at a single area. In contrast, Dual Vent Technology (DVT) creates two independent degassing areas along the extruder's processing unit. This enables more effective removal of gases.



Singe screw extruder BC 120-40 with Dual Vent Technology (©battenfeld-cincinnati)

The completely redesigned screw concept enables the conditions to separate degassing chambers without changing the familiar user-friendly operation of the single-screw extruder. "Combining our expertise within the group, we have succeeded in developing an innovative concept that combines two separate degassing zones on one screw," explains René Hartmann, Regional Sales Manager at battenfeld-cincinnati. Thanks to this separation, volatile substances with low partial pressure can be effectively removed from the melt in the first intensive degassing zone, while volatile substances with higher partial pressure can be removed in the second zone. This enables to remove significantly more moisture and other volatile components from the melt than with one degassing zone. This in turn ensures high product quality, among other things, by preventing bubble formation. "For the processing company, this reliability means, on the one hand, that it hardly needs to pre-dry its material, thus saving on equipment and the associated acquisition and energy costs. On the other hand, the new double degassing extruder allows them to use untreated residues and regrinds and still extrude high-quality semi-finished products," says René Hartmann, explaining the increased flexibility in terms of material use.

With this further development, battenfeld-cincinnati is initially focusing on ABS processing; however, depending on the material and vacuum technology, other functions are also possible, such as the removal of odors using the new Dual Vent Technology.

battenfeld-cincinnati
www.battenfeld-cincinnati.com

Extrusion Tooling – *Impressions from K Show*

Guill Tool & Engineering, the global leader in extrusion tooling, attended the K Show in Dusseldorf, Germany. Guill's technical sales engineer Peter Leary shared his thoughts on the companies they met at the show, the international extruders they've partnered with, intriguing applications as well as what caught his attention. Additionally, the company's European sales manager Gerjan ter Wal discussed the role of Guill Tool Europe.

Known as the world's premier plastics trade fair, K brings together global pioneers from the plastics and rubber industry. Located in Hall 1, Guill Tool & Engineering's team included Peter Leary, Technical Sales Engineer, Extrusion Division, Jacob Marcure, Design Engineer and Gerjan ter Wal, Sales Manager in Europe.

Commenting on the companies met at the show Peter Leary said, "We met a wide range of companies across the extrusion and plastics industry including wire and cable manufacturers, medical tubing producers, compounding specialists and machinery OEMs. There was also a strong representation from raw material suppliers, large pipe extrusion and automation/controls providers, which gave us valuable insights into emerging technologies and potential partnerships."

Guill interacted with extruders and processers from all over the world, including Europe, Asia and the Americas. Leary added, "A

From left: Gerjan ter Wal, Peter Leary and Jake Marcure

handful were existing customers stopping by to discuss current projects, but we also met a large number of new potential partners interested in Guill's precision crosshead and tooling capabilities." The company has contacts in China, Mexico, India, Greece, Turkey, Thailand, the UK, Australia and Algeria. Additional countries include Sweden, Japan, France, Finland, Chile, Poland, Singapore, the Netherlands, New Zealand, Egypt, Indonesia, Ireland, Brazil, Kenya and Switzerland.

Several applications stood out to Leary, notably multilayer medical tubing and advanced materials for sustainable production. He observed notable interest in tools that handle recycled or bio-based polymers while maintaining tight tolerances and flow balance.

Leary was impressed with the scale and diversity of the K Show. "One highlight was seeing the increasing integration of digital process monitoring and AI-driven control systems."

Regarding Guill Tool Europe, Gerjan ter Wal said that one of the goals expressed by visitors was to optimize their extrusion process and that the European office can help ensure smooth communication and planning for new production solutions.

Visitors at the Guill booth

Guill Tool & Engineering, Co., Inc.
Tom Baldock, Sales Manager, Extrusion
tbaldock@guill.com
www.guill.com

More Efficiency in Compounding and Recycling

The central focus of Coperion's research and development work in the field of twin screw extrusion is increasing efficiency. Paths to greater efficiency in compounding and recycling were also the focus of Coperion's appearance at K 2025. Coperion exhibited a ZSK 58 Mc^{18} twin screw extruder. This model, with a 58 mm screw diameter, achieves throughputs of up to 2,500 kg/h with low energy consumption and a high degree of automation. Additionally, Coperion displayed an STS 35 Mc^{11} twin screw extruder at the same booth; this model has been specially optimized for masterbatch manufacturing. At the Recycling Pavilion in the Open Area, Coperion exhibited the added value of its twin screw extruders for recycling plastics. Coperion's patent-pending ZSK FilCo filtration compounder was on view there.

In compounding and recycling, the Coperion ZSK 58 Mc^{18} twin screw extruder delivers excellent product quality and extremely high throughputs because of its numerous innovative features (Photo: Coperion, Stuttgart Germany)

Both Coperion's ZSK and STS twin screw extruders excel with their high performance. Both series possess a very high specific torque – that of the ZSK Mc^{18} is 18 Nm/cm^3; on the STS Mc^{11} it is 11.3 Nm/cm^3. The torque is directly transferred via the gearbox and the screw shafts onto the rotating twin screws in the process section, making it possible to achieve very high throughputs economically and energy-efficiently when processing products with torque requirement. Moreover, depending on the high filling level in the process section, the compound quality is outstanding. Together with both extruder series' high level of automation, the costs per kilo of compound produced is comparatively low, and the return on investment is quickly reached. The extrud-

(Photo: Messe Düsseldorf / ctillmann)

ers are very robust and reliable, and both machine availability and OEE (Overall Equipment Effectiveness) value are extremely high.

Coperion exhibited the ZSK 58 Mc[18] with new screw elements that Coperion has developed especially for processing fillers. These reduce wear in the melt zone while simultaneously increasing throughput.

The STS 35 Mc[11] presented at the show is especially well suited for the production of masterbatches. It achieves throughputs of up to 300 kg/h. The closely intermeshing twin screws allow for an absolutely even distribution of the ingredients while ensuring effective self-cleaning in the process section. The compact design as well as the smooth machine surfaces make cleaning and maintenance during recipe changes very easy. The STS 35 Mc[11] stands out with very high process reliability and an attractive price-to-performance ratio. It was exhitited with a Coperion AccuRate® Series 602 volumetric feeder.

Coperion has expanded its C-BEYOND digital platform for capturing and displaying extruders' operation data. C-BEYOND makes decisive key performance indicator (KPI) evaluations such as availability, production output, and product quality, available in real time. The production process is documented in detail and both energy consumption and CO_2 emissions per kilo of compound produced are calculated. In the Overall Equipment Effectiveness (OEE) tool, a line's efficiency is represented in real time, allowing the operator to react quickly to deviations.

New to C-BEYOND is the Lifecycle Manager, a component that enables predictive maintenance planning, thus increasing a line's OEE. In the Lifecycle Manager, upcoming maintenance and repair tasks are computed for all components of a Coperion extruder, based upon operating hours and performance, and reports them in advance. For example, if service on the gearbox is coming up soon, C-BEYOND triggers a notification.

Servicing and maintenance work can be easily bundled using the Lifecycle Manager and scheduled proactively to minimize the impact on the Coperion extruders' high productivity. Following successful execution, any service measure is documented in C-BEYOND and is viewable at any time, along with a report. Thus, for every equipment, an extensive maintenance history is generated over the years of a machine's life.

The Lifecycle Manager has already proven itself in practice on several pilot machines. Coperion customers have been able to improve their machines' OEE significantly with this new tool.

Coperion exhibited its new extruder condition monitoring system at K on the ZSK 58 Mc[18]. With the aid of sensors on the motor, gearbox and process section, this system continuously monitors vibrations in the extruder and the gearbox's oil condition. The first anomalies in operation are detected early. Within a service agreement, Coperion remotely assumes monitoring and evaluation of the captured data and provides recommendations for action, allowing service measures to be conducted proactively and minimizing unplanned downtimes. The condition monitoring system can be integrated into both new and existing machines and has proven its reliability in numerous applications.

In the Open Area at the Recycling Pavilion, Coperion demonstrated that the ZSK extruder is suited not only for compounding but also for plastics recycling. In contrast to single screw extruders widely used in plastics recycling, the ZSK twin screw extruder stands out with its very intensive mixing properties, its strong devolatilization performance and the high mechanical energy input that makes short residence times in the process section possible. Product processing is very energy efficient and gentle. Excellent product qualities in recycling of post-consumer and post-industrial waste are achieved while reaching high throughputs of up to 25 t/h.

These results have been demonstrated, for example, in recycling expandable polystyrene (EPS). The ZSK twin screw extruder produces first-class EPS quality – in the manufacturing process, up to 30% waste material can be added without compromising end product quality. Similar results have been achieved with PET recycled on Coperion's bottle-to-bottle lines and condensed in an SSP (solid state polycondensation) reactor – a process which has been approved for direct contact with food by both the European Food Safety Administration (EFSA) and the U.S. Food and Drug Administration (FDA), as well as having been brand owner approved. One of Coperion's bottle-to-bottle reference facilities achieves throughputs of 6500 kg/h using a ZSK 133 Mc[18]. Throughput rates of up to 10 t/h are possible with this Coperion solution. With the ZSK FilCo, Coperion exhibited a particular design of its recycling extruders: this is filtration compounder allows for recyclate filtering and compounding in a single process step. The space requirement compared to that of two-step production lines is markedly less. The waste plastic is melted only once, thus ensuring very energy-efficient, high compound quality.

Coperion
www.coperion.com

New Twin-Screw Extruder Unveiled at K 2025

SML is expanding its extruder portfolio with the introduction of a co-rotating twin-screw extruder (TSE). This addition marks a significant enhancement of SML's offerings, allowing the company to provide a more comprehensive range of extrusion solutions to its customers.

The brand-new TSE is SML's answer to the increasing demand for high-output capacities for polyolefins and polyesters. "Our in-house-designed co-rotating twin-screw extruder is tailor-made for the specific requirements of our extrusion lines, contributing to an exceptional film quality," states Hans-Jürgen Luger, Head of Research and Development at SML.

(Photo credit: KHP Karin Hackl)

Compact size benefits energy consumption

Compared to a large single-screw extruder with the same output capacity, the TSE has a shorter processing unit and, thus, a smaller footprint. Therefore, less heating power is required to maintain the barrel temperatures. Because of starve feeding, the extruder drive operates at high torque over the entire output range, where it exhibits the maximum efficiency. Additionally, the melt temperature can be controlled by adjusting the degree of filling. Extensive tests of the new TSE on a CPP line in SML's Technology Centre have shown that the specific energy input (SEI) is 10-15% lower compared to a single-screw extruder. In terms of film quality, the gel count detected by a web inspection system could be reduced by up to 20% for a standard CPP film.

Optimised for high-performance cast film lines

One area of application with considerable potential is SML's cast film lines. "With throughputs in the range of 1,000 to 2,000 kg/h, the TSE is ideal for our high-performance cast film lines with end film widths of up to 6.5 metres," explains Elias Mayrhofer, Product Manager at SML.

Clever design and low maintenance

The swivel-mounted barrel design allows rear screw extraction for quick and easy screw changes. The temperature control of the barrel works via ceramic heaters and air cooling – which is a precise, cost-efficient, and low-maintenance solution. SML offers pre-configured single-piece barrel designs of different lengths and with venting ports depending on the application. For the extruder screws, single-piece solutions or shafts with segments are available.

PET without pre-drying and in-line compounding

In combination with SML's high-performance vacuum unit, SML can offer a complete in-house extrusion solution for processing PET or PLA without pre-drying. Furthermore, the TSE enables high amounts of regrind or flakes to be processed as well as in-line compounding.

SML Maschinengesellschaft mbH
www.sml.at


(Photo: Messe Düsseldorf / ctillmann)

Storage, Where It All Begins

To preserve the physical properties of plastics, prevent contamination and guarantee a defect-free finished product, it is essential to act at the origin of the transformation process, i.e. to ensure proper storage.

The production of plastic products begins with the supply of raw materials, which are stored in various types of packaging depending on their country of origin and material type. Certain materials, such as technopolymers, require specialised packaging such as aluminium-lined bags or 20 to 25 kg polythene bags. Materials transported in containers are often packed in big bags, while others are stored in octabins. For larger quantities, 25-tonne tankers and rail transport are commonly used.

In all instances, it is essential to implement storage solutions that can be integrated with automatic conveying systems reducing the use of manual feeding of processing machines. Each company has different characteristics, manufacturing processes and sector-specific challenges related to production, quality and market demands. Furthermore, each organisation maintains its own traditions, distinctive attributes, and strategic focus.

Storage containers: The bag is the simplest and most standard type of packaging and is widely available on the market. The appropriate quantity of material needs to be transferred into a container, that allows suction from the side of the machine to the hopper of the IMM, thus ensuring continuous production. These bins come in 10 different sizes, enabling the handling of an appropriate quantity of material per hour, shift or day, thereby reducing manual labour to a few interventions per day.

Moretto offers a range of containers suitable for treatment of granules, regrind materials, and flakes with applications and features suitable for even poorly flowing materials.

Moretto offers compact, modular storage containers made of stainless steel, suitable for indoor installation and for storing granular materials, with capacities ranging from 400 to 50.000 dmc. The series consists of 24 UNI single-chamber models and 24 TWIN double-chamber models. A bag-breaker screen is available to facilitate emptying bags or big bags. After storage in the SILBOX silo, the material can be connected to an automatic conveying system to feed the processing machines.

(Photo: Messe Düsseldorf / ctillmann)

Cylindrical stainless steel storage silos, complete with a removable lid and one-way suction valves, with capacities ranging from 1.800 to 30.000 dmc.

Big bags treatment: The big bag is a standard container for storing non-hygroscopic granular materials such as polythene and polypropylene. The BAGGY system has a large bag support that enables it to be emptied without losing any material. Thanks to the modular construction, once the big bag has been emptied, it is easily disassembled and stacked to save space.

To handle the emptying of 800-1.000 kg and 1.500 kg big bags, Moretto offers SBB system. Loading operations can be carried out using a forklift or lifting crane. The system features a large granule collection tank, a suction valve and a safety ring for secure opening of the big bag's spout. The version designed for processing flakes and/or regrind materials includes integrated shakers and safety protections.

Available options: Pulsed suction probe; Forced fluidification; Lower bridge-breaker for flakes; Capacitive and/or vibrating level sensors.

To fill big bags with granules, regrinds, flakes – or when regrind materials need to be stored for transport to another location – the FILLBAG is the right solution. An inflation system keeps the bag open at all times, streamlining the filling operations.

OKTOBAG is the system developed by Moretto for the complete emptying of big bags. Using a floating arm movement – known as the WAVE system – plastic granules are directed toward the centre of the bag, where a suction probe ensures efficient recovery while preventing material loss. The system is also suitable for emptying octabins, with the floating arms acting on the inner polythene bag to facilitate material discharge. Three versions are available: BLUE version with manual movement and control; SKY version with programmable arms; LUX version for medical applications.

An optional empty-bag detection valve is available to signal when the big bag has been fully discharged.

The patented system OKTOMATIK enables the emptying of up to 15 octabins per hour – i.e. one every four minutes – making it ideal for high-throughput operations. It is

particularly suited for transferring granules to a larger silo, which can be connected to an automatic conveying system. The OKTOMATIK unloader can empty octabins containing up to 1.500 kg of hygroscopic materials or technical polymers. The inner polythene bag safeguards the contents from environmental contamination and prevents granule dispersion.

TILTER is a device designed for emptying gaylords and/or octabins with capacities ranging from 500 to 600 kg to 1.000 kg. Granules are extracted using a suction system, provided the suction probe remains submerged in the material. Once the level drops, the tilting platform shifts the container, directing the remaining granules toward a bottom corner. This ensures complete emptying without the need for operator intervention.

Moretto S.p.A.
www.moretto.com

Driving Innovation for an Efficient and Sustainable Future

At K 2025, UTH brought together history and forward-looking innovation: Celebrating 40 years since its founding and 30 years of international recognition with its roll-ex® gear pump technology, the company now presented practical solutions designed to meet tomorrow's challenges. At the booth, UTH showcased its proven modular roll-ex® gear pump technology – trusted worldwide for three decades – alongside an expanded portfolio for processing rubber, silicone, and polymers. This includes advanced fine mesh straining solutions, innovative dosing and mixing systems, and a new generation of dual-drive machines engineered for greater efficiency and long-term reliability.

New machine generation roll-ex® 220 TRF Dual Drive: economical and sustainable thanks to reduced wear, longer service life, and lower maintenance costs

"The challenges we face today – from increasing demands on product quality, process reliability, and cost efficiency to the growing need for effective material rework – motivate us to continuously develop new solutions and enhance our existing technologies. This enables us to sustainably optimize processing in the rubber and silicone industries and adapt to shifting market conditions," says Peter J. Uth, Managing Director of UTH GmbH.

A key part of this approach is the modular roll-ex® system, which allows flexible combinations of machines with different feeding units depending on the application - including the Two-Roll Plasticizer (TRP), the Two-Roll Feeder (TRF), the Single-Screw Feeder (SF), and the Conical Twin-Screw Extruder (DSE). Building on this modular system, UTH has recently introduced several technological innovations: the TRP System for resource-efficient and continuous processing of rubber compounds, advanced mixing solutions, and the innovative Polymer Dosing System. Based on a conical twin-screw extruder, this solution closes a critical gap in the precise and reliable dosing of highly viscous polymers.

Resource efficiency, new material formulations with changing properties, and the ongoing digitalization of production are shaping the future of rubber and silicone processing. In addition to its product range, UTH presented its digital solutions DataLox and VisuGraph V2, which capture, archive, analyze, and clearly visualize production and process data. These tools enhance transparency, enable more robust process analysis, and provide the foundation for seamless quality assurance as well as long-term improvements in productivity and product quality.

At the booth, UTH presented exhibits that highlight the versatility of the modular roll-ex® system combined with its digital applications to address current industry trends. Visitors also had the chance to engage directly with experts, review their individual process needs, and explore tailored solutions to optimize production, strengthen quality assurance, and unlock potential for material and energy savings.

UTH GmbH
www.uth-gmbh.com

Extrusion Takes Some New Turns

A longtime global leader in extrusion tooling for medical tubing and other products, Guill Tool & Engineering has achieved a series of successes in the areas of multi-layer dies and, most recently, a reciprocal tubing die for wound draining that reconfigures the internal chambers of the tubing to accommodate drainage. Drain tubes can be inserted prophylactically to prevent or remove the accumulation of fluid in a wound. Alternatively, such tubing can also be therapeutically inserted to evacuate an existing collection of fluid in a wound. Fluid is removed in order to treat or prevent infection and promote wound healing and patient comfort. Drain tubes can also be used to diagnose post-operative complications such as an anastomotic leak or hemorrhage. The Guill design has unique features that eliminate the need to weld or otherwise join sections with different profiles together.

Guill has engineered this new reciprocal tubing die with various features, unique to the product. The traditional tip and die assembly is replaced with a linear reciprocating assembly that changes the tube's profile within a given length. This process is repeated throughout a single extrusion run without interruption. Cutting capability, in association with the extrusion speed, cuts the finished product to length.

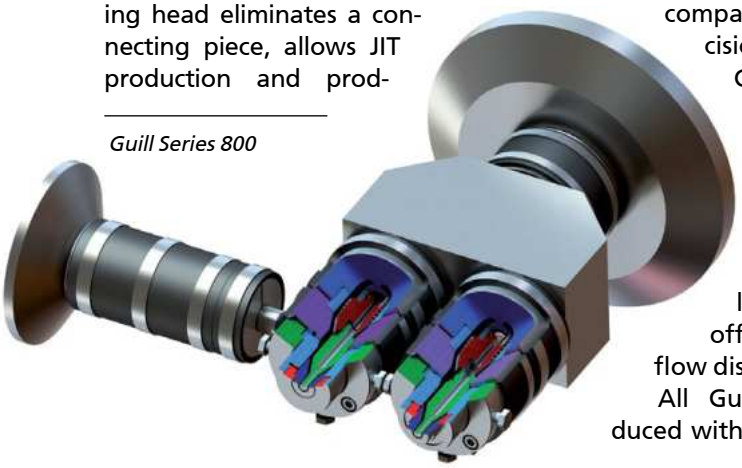
While cost and value stream activities are reduced, quality is actually improved. Only one extrusion run is needed to produce a finished product, as opposed to multiple extrusion runs with tooling changes along with a manual assembly operation to connect different tubing shapes via sonic welds or other methods of joining. Guill's new reciprocating head eliminates this entire assembly operation. It also eliminates in-process inventory. Thus, there is no need for storage of various tubing shapes and connectors needed for assembly, fulfillment of orders and replenishment of finished goods.

Furthermore, the reciprocating head eliminates a connecting piece, allows JIT production and products made-to-order. Lastly, it reduces total run time from receiving the order to shipping product.

Internal configurations of different designs used on wound drain and surgical tubing no longer require separate sections to be extruded, then joined. The Guill reciprocating head design produces various profiles within the tubing in a constant production run

In the multi-layer extrusion arena, a primary focus of Guill Tool over the years, the company has also introduced 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 medical and surgical 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. 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.



Guill Series 800

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.

Finally, the new Series 900 of inline tubing dies from Guill Tool offers improved extrusion performance and capabilities to customize at standard, off-the-shelf prices.

The new series is applicable to extrusion of hose or pipe ranging from 0.005" (0.127mm) to 8.0" (635mm) in diameter for all types of OEM, food service, automotive, industrial, telecom and medical applications in polymer or rubber.

The Series 900 technology offers these key benefits:

• Achieves concentricity or "product roundness" which greatly reduc-

Guill Series 900

es material usage compared with other types of extrusion tooling

- Spiderless inline-designed heads results in no spider lines and allows room for more air — thus eliminating cold legs, which can inhibit product output
- Runs 1-5 layers simultaneously
- Engineered for a multitude of applications — including special fluoropolymer applications

A key Guill Tool technical highlight of the Series 900 is a patent-pending FeatherTouch™adjustment in the die holder and a cartridge-style ball assembly that does not require the loosening of retaining screws to make adjustments. Additional unique benefits of the Series 900 include Guill's Seal Right Systems, a positive seal, which eliminates leakage between deflectors, along with easy self-alignment that reduces operator error during assembly and is adaptable to a variety of specific extruder layout configurations.

"This series offers a standard platform design of the head with specific characteristics that are unique to individual applications included at no additional charge in the cost of the tooling. This is a tremendous benefit to a company that requires precision tooling with custom benefits at a standard off-the-shelf price. That certainly helps our customers' bottom line," said Tom Baldock, Guill Sales Manager.

Guill Tool also manufactures tips, dies, and breaker plates using state-of-the-art computerized CNC machining and EDM equipment. As well, engineering services using the latest CAD systems are available for custom-designing extrusion tooling product such as crossheads, tips, clamps, flanges, forming rolls, spiderless inline dies, dies, swing gates, breaker plates, special equipment and sizing dies.

Guill Tool received ISO certification in 1995. The first major extrusion tooling company to meet international standards, Guill Tool has long been recognized as one of the leading established designers and manufacturers of custom extrusion tooling for applications including wire, cable, fiber optics, medical tubing, wood composites, automotive tube, plastic compounding, custom applications, rubber, profile, industrial pipe, hose/tube, blow molding, plus food and packaging.

Guill Tool also encourages and provides education and training for the extrusion industry with plastic and aluminum model heads, fully illustrated operating manuals for step-by-step assembly and disassembly, training videos, and classes on the care and cleaning of extrusion tooling.

Founded in Rhode Island in 1962 by A. Roger Guillemette, Guill Tool was established as a job shop supplying tips, dies, crossheads and replacement parts to the wire, cable or wire and cable, plastic and rubber industries in New England. Later, Guill Tool became a supplier for the entire United States and Canada, and today enjoys a worldwide market presence.

Technology in the Medical field is constantly evolving, and often requires an extensive array of Medical grade tubing in a variety of materials and thicknesses. Guill specializes in working with clients to design and manufacture Custom Extrusion Tooling to produce an unparalleled range of the highest quality Medical tubing in the industry. The company's Micro Medical tooling can extrude tube thinner than a human hair, .008" or finer per revolution, and can be used to keep procedures as non-invasive as possible. Other models are used to produce tubing for feeding applications, including nasogastric and jejunal tubes.

Tom Baldock, Sales Manager, Guill Tool: "Our automated extrusion process drastically changes the extruded profile in production, with no need to join separate sections of internal profiles."

Guill Tool & Engineering Co., Inc.
Tom Baldock, Extrusion Sales Manager
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Improved Quality in PE-Xa Pipe Production

One of the leading manufacturers of extrusion lines for PE-Xa (peroxide cross-linked polyethylene) pipes, Intelligent Extrusion Systems (iES), has successfully integrated advanced measurement and control systems from Zumbach Electronic into their production lines. This strategic move has empowered iES to deliver superior product quality, ensure compliance with international regulatory standards, and maintain cost-efficient manufacturing tolerances.

PE-Xa pipes are widely used in hot and cold water plumbing, heating systems (in sizes ranging from Ø 12 to Ø 63 mm), and industrial applications, (in sizes ranging from Ø 63 to Ø 140 mm). These applications demand high precision in pipe dimensions and structural integrity to meet both customer specifications as well as stringent regulatory standards across a multitude of different countries.

To achieve this, iES required a robust solution that could monitor and control pipe dimensions with specific attention to the outer diameter, inner diameter, wall thickness and ovality. Additionally, the solution had to be able to detect surface defects, ensure consistent quality across multiple production configurations, and maintain tight manufacturing tolerances to optimize material usage and cost.

After a prolonged consultation marked by rigorous evaluation and analysis of Zumbach's products and solutions, iES selected a range of measurement and control systems for integration into their extrusion lines that included the UMAC® Ultrasonic Measuring System, ODAC® TRIO Laser Measuring Heads, and the USYS IPC processor and controller, used for real-time measurement of pipe dimensions. Additionally, iES integrated the KW optical measuring device for surface detection of faults, lumps and neckdowns. These systems are deployed at critical stages of the extrusion process: at the initial stage for measurement and control of the inner PE-Xa layer's outer diameter, inner diameter, wall thickness and ovality; and at the final stage after the application of additional layers, re-checking the diameter and ovality and performing defect detection in accordance with the customer's requirement and/or regulatory standard.

Technical Director at iES, Juan Carlos Martinez stated "By integrating Zumbach's precision measurement and control technologies, iES has achieved total production control. The real-time feedback provided by Zumbach's solutions allow for immediate adjustments, ensuring consistent product quality through our extrusion process. This control has also enabled our products to meet the regulatory compliance standards for each target market, reducing the necessity to rework, which in turn reduces material waste, and lowers production costs."

The enhanced product quality and reliability provided by integrating Zumbach's measurement and control sys-

tems has strengthened iES's reputation and improved customer satisfaction. The partnership between iES and Zumbach Electronic exemplifies how smart integration of measurement technology can transform manufacturing outcomes. With Zumbach systems embedded in their extrusion lines, iES continues to lead the way in producing high-quality PE-Xa pipes.

ZUMACH Electronic AG
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Masterbatch Manufacturer Increases Operational Efficiency of its Extruders Using C-BEYOND

To ensure maximum efficiency of both its extruders and the entire production process in the long run, masterbatch manufacturer colorplasticchemie Albert Schleberger GmbH (cpc) in Remscheid Germany has enhanced its ZSK twin screw extruders with the Coperion C-BEYOND digital platform. This system records all the operational parameters of every ZSK extruder at cpc in a cloud, available in real time for valuable analysis.

With C-BEYOND, cpc can determine the OEE (Overall Equipment Effectiveness) value of both individual ZSK extruders, as well as the entire plant, at any time. Moreover, the cpc platform provides order planning support. Current production quantity data is available in real time. With C-BEYOND, the production process can be documented in detail and maintenance work can be scheduled to best advantage. In addition, C-BEYOND calculates both energy consumption and CO_2 emissions per kilogram of masterbatch produced. The data it records significantly accelerates and enhances the efficiency of remote servicing by Coperion.

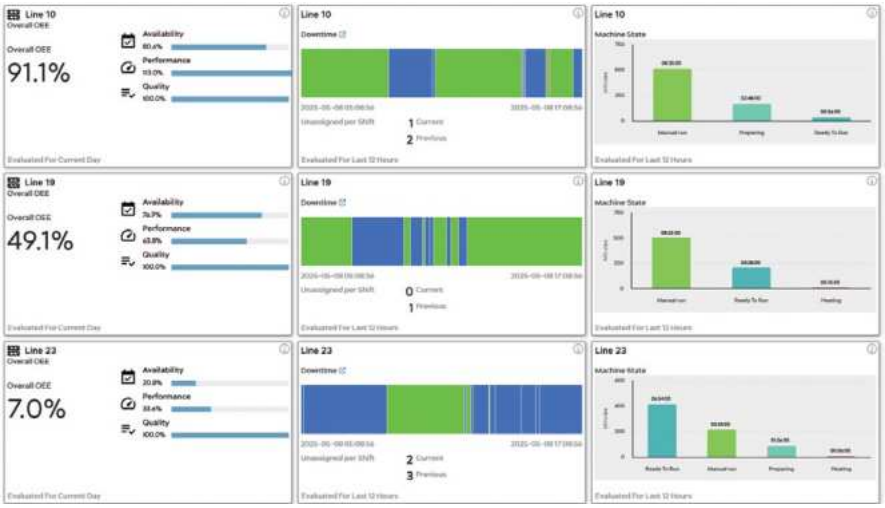
The C-BEYOND digital service platform is an important component of cpc's production planning. At any time, ZSK extruder operating personnel can enter data on the production status to the system (All photos: Coperion, Stuttgart Germany)

OEE dashboard: clear overview of extruder performance

"We produce exclusively tailor-made products for our customers on our ZSK extruders. Production quantities from 25 kg on up are possible. Within a single day, the masterbatch recipes have to be changed frequently. And precisely for this reason, forward-looking order planning and the shortest possible machine downtimes between tasks are critical for our production efficiency – and for our success," according to Rüdiger Kaczka, Plant Manager at cpc.

By upgrading its ZSK twin screw extruders with the C-BEYOND platform, cpc has taken an important step towards increasing its overall production efficiency.

The heart of C-BEYOND is an all-encompassing data platform that enables valuable analysis of production processes. At any time, cpc can access all production data from its ZSK lines instantly and transparently. Customizable dashboards summarize all plant efficiency data and visualize it in reliable, user-friendly analytical diagrams. Key production indicators (KPIs) for each line, including availability, production quantity and product quality, are easily accessible at a glance. This enables the seamless



With C-BEYOND, important ZSK extruder performance markers, such as availability, production quantity and product quality, are determined in real time and visualized in user-friendly OEE analysis diagrams

operation of machines and allows for the identification of trends, which can be leveraged to implement optimization measures.

"In the past, we often pulled together various statistics, calculation tools and our years of experience in order to make production-related decisions. With C-BEYOND, we can access valid data in one place that gives us the certainty that we are on the right track," Kaczka said enthusiastically.

Order planning: live view and downtime tracking for high efficiency

A look at production planning demonstrates how cpc integrates the C-BEYOND service platform into its workflow and profits from it. Especially in the case of frequent order changes, it is crucial for the entire plant's efficiency that extruders do not stand idle unnecessarily, or are warmed up without producing anything. Using C-BEYOND, cpc can see precisely when an order will be finished on every one of the ZSK extruders, and can promptly initiate preparations for the following order, ensuring seamless transfers between tasks and full exploitation of every machine.

C-BEYOND automatically accounts for production interruptions due to recipe changes, maintenance tasks, or other operational downtimes, providing the operational personnel the option to add additional useful information via tablets installed at the extruder. This downtime tracking enables evaluations over longer time periods, which in turn can reveal informative trends, allowing for implementation of measures to increase efficiency in the future. The system continuously documents which order was produced on which extruder, making the production process visible in detail. This data is helpful for claim management and can be used to optimize subsequent orders.

Rüdiger Kaczka, Plant Manager at cpc, is enthusiastic about the added value that C-BEYOND offers to his company

In case of machine breakdown or deviations in the operating window, C-BEYOND can automatically notify management and operating personnel, enabling even faster reactions.

Sustain app: for less energy consumption

"We take our responsibility for humanity and the environment very seriously", said Alexander Schleberger, Managing Director of cpc. "For that reason, we use the Sustain app with the energy monitoring function to capture precise real-time information about our extruders' energy consumption and individual aggregates such as motors, feeders or barrels. On this basis, we identify components and processes that consume a lot of energy and implement data-supported optimization measures."

If all production lines are integrated into the system, C-BEYOND can capture and monitor energy consumption across the entire facility. Inefficient equipment or even energy waste can be reduced to an absolute minimum so that valuable resources are used exclusively in a targeted manner and a strategic plan for optimal energy use is possible.

"We are supporting cpc by connecting the ZSK extruders to C-BEYOND in order to structure production processes and the machines' capacity more transparently, increasing efficiency in operation. For us, cpc's digitization initiative confirms the added value that C-BEYOND can offer. We are convinced that will be a groundbreaking tool in the long term, helping customers achieve increases in productivity and sustainability. It makes us very proud to be able to travel this path together with cpc, and we look forward to continuing our collaboration," said Markus Schmudde, Head of Research & Development, Compounding & Extrusion at Coperion.

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Screw & Barrel Replacement of Third Party Extruders

CONEXTRU has been active in the extruder technology market for quite some time. This market is divided into three areas, although it should be noted that there are very few companies operating across this entire spectrum. These three market segments are:

Technology transfer

Technology transfer of CONEXTRU screw and groove bushing technology to extruder manufacturers. CONEXTRU supplies complete drawings for the manufacture of screws, cylinders and groove bushings. This includes calculations of drive power, gear ratio and guaranteed output for e.g. PE, PP, ABS and other technical polymers. This is a major economic advantage for these manufacturers, as there are no development and prototype costs. In the meantime, a large number of manufacturers have taken advantage of this opportunity. As a result, there are a considerable number of extruders on the market that are equipped with CONEXTRU technology. The machine manufacturers using CONEXTRU technology are located in India, Turkey, Italy, the USA and China, totalling approximately 12 extruder manufacturers.

Pic. 1: 22 L/D long barrier part for best melt quality

Sale of CONEXTRU single-screw extruders

The product range of single-screw extruders with which CONEXTRU successfully operates on the market consists of:

C 25, C 30, extruders up to 20 kg/h for bonding agents, colour stripes and barrier layers

C 45, C 60, extruders with 30 L/D from 50 to 200 kg/h, and technical polymers

C 45, C 60, C90, C 120 with 37D l/D ratio from 250 kg/h to 1400 kg/h

C 45, C 60, C 75, C 90 with 40 L/D ratio from 500 kg/h to 2,000 kg/h.

A high-speed extruder with a size of L/D 42 is currently under development for outputs from 500 kg/h to 1,500 kg/h.

All these extruders are equipped with an AC motor and gearbox or a torque motor.

Pic. 2: Replacement set

Replacement of plasticising units in existing third-party extruders

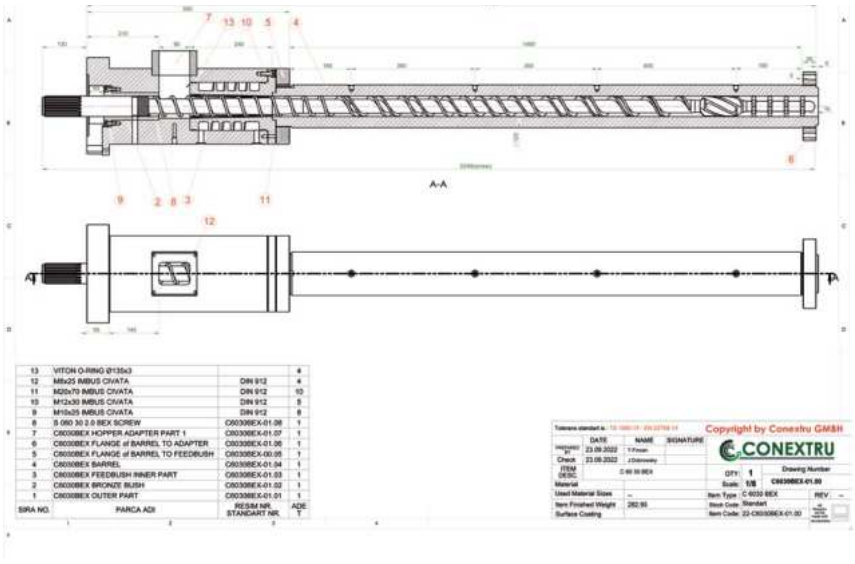
There are many reasons to switch to CONEXTRU units. Examples include:

- Special screws for highly filled materials with wear protection.
- Replacement of standard plasticising units due to high wear and cost-effective replacement of especially wear-protected units.
- New screws for quality improvement and a slight increase in output capacity. An increasingly important and therefore interesting market segment for CONEXTRU is the replacement or retrofitting of plasticising units in single-screw extruders. This means that the existing design is not remanufactured, but instead this extruder is fitted with a completely different design manufactured using CONEXTRU technology.

The following assemblies are affected by this replacement:

Flange connection to the gearbox, cooled feed section, grooved or smooth with adapter flange so that the existing hopper can be used, cylinder, flange connection to the tool and, of course, the screw. It should be noted that the new plasticising units are not copies of the existing design, but rather a switch from existing technology to CONEXTRU technology.

This applies to the groove bushing with length and volume and number and shape of grooves, as well as the screw, which is matched to the feed zone and the cylinder. If possible, the existing heating and cooling units are used – if the cylinder needs to be longer – to improve the melt quality, then new heating/cooling units are also required. These are designed according to the existing electrical system. It is important to note that the mechanical design of the extruder, such as motor power, torque, maximum screw speed and required output, must be known, as the screw



Pic. 3: Manufacturing drawings for replacement set

may need to be modified slightly from the CONEXTRU standard.

In order to carry out such a replacement, certain dimensions of the existing extruder are required. In order to obtain these dimensions, it may be necessary, for example, to remove the cylinder from the gearbox. This can be done by the manufacturer in preparation. CONEXTRU then comes on site, takes the actual measurements of certain parts and uses them to create new production drawings. The production drawings are sent to the manufacturer of the screw and cylinder with details of the quality, i.e. standard or, as is usually the case, particularly high-quality wear

Equipment

Finally, a note about delivery times. Once the natural dimensions have been approved, the

engineering is completed within a week and sent to the manufacturer. Depending on the size, the entire assembly is then ready for collection in Vienna within 40 to 45 working days. This also applies if new heating and cooling units are required.

As far as costs are concerned, a quote can be obtained within a few days without having to be on site. The measurements are taken in consultation with the customer after the order has been received.

The following table lists the qualities that can be manufactured. Particularly popular are bimetal cylinders with carbide inserts, grooved feeders made of H13 material and worms fully coated with tungsten carbide. This usually results in a significantly better design than the original.

Standard execution	
Screw	1/8509, screw flights with Colmonoy#56
Feedbush inner and outer part	1/8509, nitride
Barrel	1/7225, Bimetallic liner 3mm
Wear resistance execution	
Screw	1/8550, Quenching and tempering HB260~290 Surface treatment Tungsten carbide coating, at root and flight diameter on top of flight
Feedbush outer part	1/8509, nitride
Grooved Feedbush	1/2344, X40CrMoV5-1 - H13 - T20813, SDK 62
Barrel	1/7225, Bimetallic-liner 3 mm, Tungsten Carbide 25%
Corrosion resistance execution	
Screw	1/4542, stainless steel hard able or as alternative 2/7819 Hastelloy; Nickel-Chrom-Molybdän- alloy with Wolfram, In case of processing temperatures over 300 °C, Feed section Colmonoy #56 coating
Feedbush outer part	
Base steel:	1/8509, nitride
Grooved Feedbush	1/2344 - X40CrMoV5-1 - H13 - T20813, SDK 62 As an alternative 2/4856 – INCONEL
Barrel	1.7225, Liner 2/4856 Bimetallic-liner 3 mm, INCONEL Option to add 5 – 25% Tungsten carbide

By Josef Dobrowsky

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Optical Inspection System Ensures rPET Quality

In the growing market of sustainable packaging, Hiroyuki Industries (M) Sdn Bhd has established itself as a key player in the production of food-grade recycled PET (rPET). Founded in 2001 and based in Johor Bahru, Malaysia, the company is a subsidiary of Japan's Hiroyuki Co., Ltd.. Hiroyuki, and is specialized in rPET resin and high-quality packaging solutions tailored to the food and beverage industry. Its product portfolio includes food-grade rPET resin for bottle-to-bottle recycling, as well as strapping bands, stretch films, and tying twines for general packaging applications. To ensure that only the highest quality material leaves the facility, Hiroyuki relies on the advanced capabilities of SIKORA's PURITY CONCEPT V system for optical inspection and analysis.

Integrated into their quality control laboratory, the system inspects rPET samples before shipment and automatically detects visual defects such as black specks and discolorations on the pellets, and other contaminants as small as 50 micrometers. By replacing manual inspection processes, the PURITY CONCEPT V significantly increases accuracy and efficiency in quality control.

"With the PURITY CONCEPT V, we have significantly improved our ability to detect visual contaminants of the pellets. This not only enhances product quality but also boosts confidence in our material among our customers," says Chan Shuang, QA Assistant Manager at Hiroyuki.

Angel Loh, Chemist at Hiroyuki with rPET pellet samples to be inspected by the PURITY CONCEPT V system

The use of the PURITY CONCEPT V has led to measurable improvements in product consistency. Defects are detected earlier, allowing for immediate corrective action and reducing the number of non-conforming batches. Each inspection is recorded and archived, creating a reliable data trail that supports traceability, customer assurance, and regulatory audits. This data includes the number and size of defects, providing the team with valuable insights for ongoing process optimization.

At Hiroyuki, optical inspection systems like the PURITY CONCEPT V are considered a key element in ensuring compliance with strict international standards such as those set by the EU, FDA, and EFSA. The system supports the company's mission to deliver safe, high-performance recycled materials to its customers while continually refining its internal processes. Looking ahead, Hiroyuki aims to evolve into a comprehensive hub for rPET resin, preforms, and bottle production within its region. With a clear focus on innovation and quality, the company is well-positioned to lead the way in sustainable packaging solutions for years to come. A partner on this way is SIKORA and its inspection technology.

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Coming Clean On Ozone

Air pollution is one of today's (and tomorrow's) hot topics. Whatever your feelings on the reasons for global warming and the effect it is having on planet Earth, there is no denying the adverse effect on health brought about by air pollution – and this applies to the workplace as much as anywhere else.

So, with a production process like corona treatment, where harmful Ozone is a residual allotrope, care needs to be taken to reduce the impact on those in close contact with it, and to the environment overall. While it is impossible to remove Ozone from the process, it's a function of splitting the Oxygen molecule that is fundamental to corona treatment, there are steps that can and should be taken to reduce its impact.

These were brought into sharper focus in October 2024 (Directive EU 2024/2881) that introduces tighter ambient air targets for pollutants, including Ozone. Although it is up to individual member states to monitor and implement these, it does bring the EU more closely in line with World Health Organisation (WHO) standards.

As the inventors and pioneers of corona treatment technology, Vetaphone has always taken its responsibilities seriously and none more than to the safety and health of those who use its equipment on a regular basis. For this reason, the company has launched its Maintenance Contract Service in which Ozone efficiency is monitored and managed. But, in addition to health benefits, there is also valued added in terms of corona treatment efficiency.

All corona systems are fitted with Ozone eliminators, and the need for regular care and maintenance of these is often overlooked. What Vetaphone is now offering is 'Ozone Filters – Direct to your Door', a convenient delivery agreement that saves money, offers more consistent treatment and helps the environment.

The Vetaphone contract offers significant savings on Ozone filters with regular delivery. By scheduling these deliveries in advance, the adverse commercial effects of unexpected stoppages are mitigated, and the working life of the Ozone eliminator is extended. Vetaphone also undertakes to handle all the logistics of scheduling and delivery along with providing user-friendly guides for replacement and maintenance. All of which will prolong the working life of the technology and ensure the corona treater operates at maximum efficiency.

In today's ultra-competitive marketplace, every percentage point saved on production cost is valuable. Whether it is planned and regular servicing or more efficient operation, the benefits are clear and available on 1-, 3-, or 5-year agreements depending on specific requirements.

Finally, and not least of all, there is the added benefit of indoor operatives and the outside world enjoying cleaner air with fewer harmful emissions. In time it will become mandatory for all – Vetaphone now offers its customers the opportunity to be one step ahead.

Vetaphone Ozone eliminators are manufactured to suit individual requirements

Vetaphone A/S
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www.vetaphone.com

#6-2025

RECYCLING

Regular Section
in EXTRUSION INTERNATIONAL Magazine

Pilot Project on Chemical Recycling Successfully Completed

Porsche AG and BASF SE, in collaboration with technology partner BEST - Bioenergy and Sustainable Technologies GmbH, have successfully completed a pilot project on recycling mixed waste from end-of-life vehicles. The pilot project demonstrates the recyclability of high-performance plastics from automotive shredder residues (ASR) together with renewable raw materials. This mixture of plastic, film, paint, and foam residues is so complex that it can currently only be thermally recycled. The pilot project shows that these automotive wastes can be recycled through gasification, a special type of chemical recycling, and returned to the automotive cycle.

This pilot project validates the viability of new sources of plastics and applications for chemical recycling in components. The ultimate goal is to source less primary material in the future and increase the proportion of recycled materials in vehicles. As part of the project, the chemically recycled material was used in the manufacturing process for steering wheels.

Defossilization: First fully non-fossil gasification for the production of new plastics

In this project, a combined waste stream consisting purely of automotive waste and biomass was recycled in a gasification process for the first time. The resulting recycled raw material – the so-called synthesis gas and its derivatives – replaced the fossil raw materials in BASF's integrated value chain. Within its production network, BASF then produces the polyurethane formulation needed for the steering wheel using a mass balance approach.

The recycling innovation uses modern gasification technology from BEST GmbH to convert plastic waste and other residues into synthesis gas at high temperatures.

"In our plant, we have previously converted biomass such as wood or straw into chemical raw materials. In this pilot project together with BASF and Porsche, we have now used this gasification technology for the first time to convert complex plastic waste streams together with biomass into synthetic crude oil, known as syncrude," explains Dr. Matthias Kuba, Area Manager Syngas Platform Technologies at BEST - Bioenergy and Sustainable Technologies GmbH in Vienna. "This form of chemical recycling has great potential for converting complex, mixed waste streams into new, valuable raw materials. It thus represents a sensible alternative to waste incineration."

"At BASF, we coordinate our sustainability efforts on our plastics journey which consists of three key steps in the product lifecycle: make, use and recycle. For the latter, we offer a wide range of recycling solutions because we are convinced that many methods need to complement each other to achieve recycling goals. We prioritize mechanical recycling and continuously improve its efficiency. At the same time, the type of waste and the degree of sorting determine which technology is best suited. We are convinced that complementary technologies such as chemical recycling, which includes pyrolysis, depolymerization and gasification, are necessary to further promote the circular economy and reduce the plastic waste that still ends up in landfills or is incinerated today," explains Dr. Martin Jung, President of BASF's Performance Materials division. "To optimally utilize the various waste recovery options and further develop all technologies in parallel, the appropriate regulatory framework is essential."

Background: Chemical recycling and mass balance

Chemical recycling can process plastic waste that cannot be mechanically recycled for technical, economic, or ecological reasons. Gasification is a variant of chemical recycling that can convert particularly mixed waste streams into valuable new raw materials, for example: plastic production. When fed into large, complex, and continuously operated production plants such as the BASF Verbund, these new circular raw materials are mixed with conventional fossil raw materials and processed into plastic precursors. The new (secondary) raw materials are attributed using the mass balance approach. Products and sites are certified by independent auditors according to internationally recognized systems such as ISCC PLUS or REDcert². Due to the high quality of the new raw materials, the resulting products have the quality of new goods and meet the demanding requirements of high-performance plastics, as they are particularly needed for safety-relevant automotive components.

BASF

plastics.basf.com/gasification

Scaling Up Textile Recycling – Partnership with Australian Technology Pioneer

At K show in Düsseldorf, the world's leading trade fair for plastics and rubber, EREMA Group announced a strategic investment in clean technology company BlockTexx®. The Australian pioneer has developed a process that separates polyester and cellulose from blended textiles. By combining both companies' technologies, the partnership aims to scale post-consumer textile-to-textile recycling to industrial levels.

Through the strategic collaboration the EREMA Group emphasizes its commitment to returning polyester to the apparel production cycle and scaling up textile-to-textile recycling. "The PET fibre industry is three times the size of the PET bottle industry. We have been investing in the research and development of textile and fibre recycling for several years. With the technology we already provide for PET fibre recycling, our next step is to aim for full-scale industrial textile recycling. We consider BlockTexx® a key partner in this. Their technology paves the way for used textiles to re-enter the production cycle," said Manfred Hackl, CEO of EREMA Group.

BlockTexx®'s process separates polyester and cellulose from post-consumer textiles and clothing, providing the polyester for EREMA's technology. The INTAREMA® FibrePro:IV system will process the polyester into recycled pellets suitable for new garment production. "Our thermomechanical recycling system is a core element for textile recycling," said Wolfgang Hermann, Business Development Manager for Fibres & Textiles at EREMA Group. "However, full-scale textile recycling requires a combination of technologies, with BlockTexx® unlocking the solution for processing polyester-blended textiles."

From left: Manfred Hackl (EREMA Group), Adrian Jones (BlockTexx®), Wolfgang Hermann (EREMA Group), and Graham Ross (BlockTexx®) holding the new fabric made from 100% recycled polyester at the Edvanced Recycling Center, where EREMA demonstrates live recycling and products made of recyclate during the K show (Photo credits: EREMA GmbH)

BlockTexx® operates its first plant in Australia with a processing capacity of 10,000 tonnes per year, with plans for a second plant of 50,000 tonnes per year. Scaling up requires a strong investment partner. "Blended textiles like cotton-polyester account for over 60 per cent of global apparel production but are notoriously difficult to recycle due to fibre incompatibility and chemical contamination", says Adrian Jones, co-founder of BlockTexx®. EREMA Group's investment brings not only capital but also deep recycling expertise, proven technology and infrastructure. From the very beginning, it felt like a true partnership, Jones notes: "Both companies share the same intellectual curiosity and EREMA Group was committed to this journey from day one."

According to global non-profit Textile Exchange 75 million tonnes of synthetic fibres were produced in 2023, with polyester being the most common, accounting for 57 per cent of total fibre production. Recycling rates for polyester are estimated at only 1 per cent. "Currently, nearly all the recycled polyester in the clothing you see in retail stores is derived from PET plastic bottles" says Graham Ross, co-founder of BlockTexx®. As per Textile Exchange, recycled fibres constituted 7.7 per cent of the global fibre market in 2023, with 7 per cent being recycled polyester from waste PET bottles. Hackl emphasizes: "The goal must be to ensure that rPET from bottles is returned to new bottles. This investment is not only posi-

tive for the textile industry, but also for the plastics industry. By keeping rPET in the bottle-to-bottle loop, we can stabilize supply and prices for the market."

With the EU recently adopting binding legislation that will make textile producers responsible for the collection, sorting and recycling of textile waste through mandatory Extended Producer Responsibility (EPR) schemes, the sector is set for change. As these rules come into force over the coming years, the demand for post-consumer textile recycling solutions is expected to grow significantly. "The EU legislation could fundamentally transform the sector. While most textile production takes place in Asia, Europe is a major consumer of fashion. This legislation will therefore have a significant global impact", Ross notes.

By combining mechanical processing, chemical separation, and fibre regeneration, the partnership establishes a model that sets new industrial standards for circularity. "Twenty-five years ago, people could not imagine bottle-to-bottle recycling. Today it is standard. I believe the same will happen for textile-to-textile recycling", says Hackl. "The textile industry has been slow to recognize the importance of recycling, often citing difficulties as an excuse. Now there are no more excuses. Textile-to-textile recycling will become a reality at industrial-scale through the collaboration between EREMA and BlockTexx®," adds Jones.

EREMA Group
www.erema.com

Strong, Smart, Future-Proof

No other material is under as much pressure worldwide as plastic. Stricter regulations, rising energy and raw material costs and increasingly ambitious targets in the circular economy are presenting processors and recyclers with growing challenges. At the same time, the demands on efficiency, quality and sustainability are constantly increasing. High-performance machine technology is therefore required for resource-saving and economical processing. This is exactly what WEIMA was presented at K 2025 in Düsseldorf: with the new version of the W5 single-shaft shredder series for plastics and the revised C.200 Duo dewatering press. The trade fair appearance was rounded off by the presentation of the WE.connect digital service platform.

The new W5.22 with revised swing arm slide ensures better material guidance

WEIMA W5.22 single–shaft shredder

With the new generation of the W5.22, WEIMA is setting new standards in throughput, ease of use and flexibility. The powerful shredder reliably processes hard plastics, films and tear-resistant fibers, as well as a variety of other materials. A rotor with a length of 2.200 mm and a diameter of 500 mm ensures effective material shredding. The redesigned swing arm pusher ensures better material guidance during the shredding process, while the redesigned table surface ensures even more aggressive material feed and increases power transmission by up to 20 percent.

The new generation of the W5.22 with a PowRex drive system from Baumüller and a Tevox® direct drive from Nidec Desch

A particular highlight is the significantly wider inspection flap, which offers more space for maintenance work, for example. In addition, access from the rear can now be opened fully automatically and the swing arm can be locked more conveniently, which speeds up maintenance considerably. The new diagonally mounted signal towers, which can also display the hopper fill level if required, ensure greater transparency during operation.

The right drive for every application

WEIMA offers maximum flexibility with the W5.22 shredder: Customers can choose from several drive con-

The widened inspection flap of the WEIMA W5.22 offers even more space for maintenance work

cepts to optimally adapt the machine to their processes. A hydraulic drive is particularly suitable for applications with frequently changing loads. The robust drive ensures high torques with a low kW output. The classic electromechanical direct drive ensures high energy efficiency and easy maintenance.

The measuring machine is equipped with a high-torque drive including servo controller – a new development from Baumüller in collaboration with Nidec Desch. This direct drive solution is specially designed for particularly demanding applications with difficult-to-shred plastic fractions. The drive system with high-torque motor achieves a high torque even at low speeds. Thanks to a well-coordinated connection between the drive and the rotor shaft, the power transmission is optimally utilized and a higher drive power is achieved. The innovative drive system not only enables cost-saving operation, but also sustainable production.

WEIMA C.200 Duo hydraulic press

Another highlight at the WEIMA booth was the C.200 Duo dewatering press. Particularly for recyclers of post-consumer plastics, the economical separation of water and plastic residues (fines) is becoming increasingly important due to high disposal costs. The C.200 Duo dewatering press uses a hydraulic pusher cylinder to compact moist plastic flakes into almost dry pellets with a diameter of 200 mm. The low-maintenance compact machine can be used independently or in production lines.

WE.connect – The digital platform for WEIMA machines

With WE.connect, WEIMA offers a central platform that bundles all digital service offerings. WE.monitor visualizes machine data, additional information and maintenance recommendations. Machine statuses, operating data and maintenance intervals can be tracked live using smart sensor technology and cloud-based monitoring. WEIMA is constantly developing the tool and, thanks to early notification, enables downtimes to be avoided, service calls to be planned and productivity to be sustainably increased. The WE.shop enables customers to quickly purchase original parts around the clock. Thanks to the intelligent search function with the machine ID, precisely matching parts can be identified and ordered easily. In-depth expertise is provided by the WE.know knowledge database. From step-by-step instructions and maintenance videos to technical documentation.

WEIMA Maschinenbau GmbH
www.weima.com

Technology Alliance Unveiled Advanced Film and Lightweight Materials Recycling Solution

In a strategic technology alliance, MAS and Siempelkamp Size Reduction (formerly Pallmann) have combined their expertise to develop a next-generation solution for the most demanding film recycling applications: the "iQonicTwin PreDensifier".

Post-consumer film recycling becomes increasingly vital, especially in the packaging industry. The challenge of processing lightweight, fluffy films with air pockets, inks, and adhesive layers persists. These materials are notoriously difficult to handle and often lead to inconsistent quality and energy inefficiencies.

While the conventional cutter compactor route was considered, MAS and Siempelkamp Size Reduction chose to aim higher – pursuing unmatched performance and quality.

Cutter compactors can no longer meet the growing demand for top quality, as their process control cannot ensure a uniform melting process, leading to quality fluctuations in the extruder feed.

"The iQonicTwin PreDensifier represents the fusion of two proven top technologies and marks a significant leap forward in recycling process stability, efficiency, and product quality."

The machine combines Siempelkamp's high-performance PreDensifier with MAS's energy-efficient conical co-rotating twin-screw extruder – delivering

an exceptional set of technical and economic benefits.

Key benefits of the iQonicTwin PreDensifier:

• Significantly reduced gel formation & black spots - Low energy input, less mechanical stress

• Stable, reliable and reproducible processing - even with fluctuating feedstocks - Consistent material quality

• High energy efficiency (~0.15 kWh/kg)

• No dust emission, no water injection

• Compact design and simplified maintenance - Seamless integration into existing systems

• Instant start/stop capability incl. no warm-up needed

• Easy cleaning, faster material change

• Full process control (start/stop, emergency stop, monitoring)

• No cake formation as seen with cutter compactors

• Ultra-automated

From films and fibers to PP ropes, nonwoven materials, fleece, and even XPS recycling, the iQonicTwin PreDensifier delivers consistent, high-quality results across a wide range of applications, setting new benchmarks in recycling performance.

M-A-S Maschinen- und Anlagenbau Schulz GmbH
www.mas-austria.com

Siempelkamp Size Reduction
(formerly PALLMANN)
www.siempelkamp.com

Efficient Filtration in PET Recycling – *How the New COBRA Filter is Setting New Standards*

A conversation with Matthias Schmitz, Head of Engineering Recycling Technology at BB Engineering

Rapidly rising recycling rates, fluctuating input qualities and high demands on product purity pose major challenges for recyclers – especially in filtration. BB Engineering is responding to this with an innovative filter system: the COBRA filter. This combines large-area fine filtration with inline cleaning and promises not only increased efficiency and low operating costs, but also noticeable cost reductions. In this interview, Matthias Schmitz, Head of Engineering Recycling Technology at BB Engineering, talks about the development goals, technical features and practical benefits of the new solution.

Mr Schmitz, what was the main motivation behind the development of the COBRA filter?

Schmitz: The filtration requirements in PET recycling are high. The input material is often heavily contaminated, but at the same time the quality of the end product must be right. Conventional filter systems quickly reach their limits – either they cannot achieve the necessary filtration fineness, or they are extremely maintenanceintensive and complicated to handle. And yet filtration plays a key role in recycling. Our motivation was to develop a system that could overcome these challenges – efficiently, automatically and with as little waste of resources as possible.

The result is an automated large-area fine filter with inline cleaning – a system that has never existed before. Can you tell us more about the COBRA filter? What makes it special and how does it stand out from existing filter systems?

Schmitz: Exactly. Our COBRA filter is a continuous large-area fine filter with an automated cleaning process directly in the filter – a novelty in this form. We

use pleated filter cartridges in two filter inserts so that COBRA can produce non-stop. Switching between the two filter inserts is automated, as is inline intermediate cleaning. While one filter insert is in production, the other insert is cleaned. The whole system is closed and runs without manual intervention or cleaning chemicals. Our 'White Filter Cleaning' technology works exclusively with superheated steam and restores the filter cartridges to an operational condition. This extends the service life of the filter many times over and protects the materials. In summary, our COBRA filter achieves significant efficiency gains through integrated intermediate cleaning, requires only minimal operating effort thanks to automation, and is very safe in terms of both process stability and handling.

There are many exciting aspects to this. Let's first return to the topic of filtration itself. COBRA is a large-area fine filter with cartridges. Why do you use this particular method and how effective is the filtration?

Schmitz: Large-area filtration has the stigma of high costs, high maintenance and time-consuming conversion and cleaning work. This is why many producers shy away from large-area filters.

However, they offer the best filtration performance, which is essential, especially with increasing rPET proportions. That is why we have created a large-area filter that precisely overcomes these known weaknesses. With its pleated filter cartridges, COBRA offers a filter area of up to 24 mÇ with a fineness of up to 20 µm.

COBRA therefore filters more finely than screen changers or laser filters and can absorb a larger amount of contamination. This makes it perfect for recycling applications or other demanding filtrations tasks, such as synthetic fibre spinning and film production. In a filter test with rPET, the COBRA filter with 20 µm showed a filter pressure value of 1,5 bar/kg/cm2, which corresponds to the quality of virgin material.

Your approach to the high operating costs associated with changeover and cleaning is the intermediate inline cleaning. How exactly does it work?

Schmitz: We have been offering our White Filter Cleaning (WFC) filter cleaning system as a standalone solution for several years now. This intermediate cleaning of filter inserts does not require any chemicals and uses only superheated steam. This protects the components, is more cost-effective and also significantly safer for operators and, of course, for the environment. The WFC system is now fully integrated into the COBRA and can therefore be used as a closed system with filtration to its full advantage. The filter control system signals when intermediate cleaning is required, switches production to the second filter insert and initiates cleaning. The filter insert remains in the filter and is automatically drained and then repeatedly exposed to superheated water vapour in several hundred cycles until it is ready for operation again. The cleaning process takes only 10 hours, whereas pyrolysis and chemical cleaning require several days.

Rendering of the new COBRA filter from BB Engineering

What advantages does this offer producers?

Schmitz: COBRA offers advantages in many respects. Operators do not have to handle molten liquids or hot components, and there is no need to spend time on changeovers and cleaning. Furthermore, the consumables and materials have a longer service life because they are cleaned gently, without aggressive chemicals or the extremely high temperatures of pyrolysis. The costs for chemicals and their disposal are eliminated. Ultimately, COBRA's automation and intermediate cleaning lead to noticeable OPEX savings in terms of personnel, energy, materials, and parts. However, in our view, the biggest advantage is the significantly longer service life of the filter. Thanks to the intermediate cleaning cycles, the filter can remain in use approx. 3 to 5 times longer before it needs to be cleaned and inspected again. This means a significant increase in efficiency, especially in recycling, where service lives tend to be shorter rather than longer. This also applies to downstream processes.

To the downstream processes – in what respect?

Schmitz: The high filtration performance of the COBRA filter makes the melt so clean that downstream cleaning steps are significantly reduced or even eliminated. This saves time, material, and energy. In addition, there are fewer interruptions in the production chain due to residual particles in the melt. This is a decisive advantage, especially in demanding applications such as the packaging or textile industry.

Are there any applications beyond PET recycling?

Schmitz: Definitely. Although the COBRA filter was developed with a focus on PET recycling, its modular design means it can also be used in other areas – such as plastic spinning or the processing of technical plastics. Wherever high-purity melt is required, and contamination is to be expected, COBRA can demonstrate ist strengths, even as a retrofit solution in existing plants.

How do you see the future of filtration in the context of the circular economy and sustainability?

Schmitz: Filtration already plays a key role in recycling and will become even more critical if we want to achieve really high recycled content in high quality products. To do this, filters have to perform well under high levels of contamination while remaining efficient. What's more, sustainability doesn't just start with the product, but with the process design. I believe that solutions such as COBRA help to ensure that recycling remains economical, becomes more efficient and becomes even more widespread in industrial applications.

BB Engineering GmbH
www.bbeng.de

Intelligent Automation

The more precisely the machine parameters can be matched to the input material, the higher the throughput and better the quality. PURE LOOP developed DynaShape® as an intelligent automation solution for the ISEC evo recycling machine to optimise settings on its own and maintain a consistent recycling process even when the feed material changes.

PURE LOOP, a member of the EREMA Group, launched the next stage in development of the proven ISEC evo machine for recycling production waste at K 2025 in Düsseldorf. The new DynaShape® technology responds to changes in feed material shape and bulk density by automatically adjusting the machine to get the best possible results from the polymer. During exhaustive test runs that simulated different stages of production, including changes in the input material, PURE LOOP clocked an increase in productivity of up to ten percent.

A stable recycling process that is easy to operate

The ISEC evo has made its mark as a true material all-rounder over the past ten years. The integrated shredder-extruder combination with patented double feed ram system and conical transition to the extruder reliably processes clumps, guillotined rolls of film, film shreds, glass fibre-reinforced plastics and fibres into high-quality recycled pellets. Previously, an experienced technician was often needed to optimise the relevant machine parameters. Now, DynaShape® carries out this task automatically, ensuring that the machine operates consistently at maximum potential in all applications. This significantly reduces the time and labour required to get the best output.

"DynaShape® regulates our recycling machine to get the perfect settings. It does it as precisely as a professional technician with ten years of experience," says Manfred Dobersberger, Managing Director of PURE LOOP. "Our customers get the advantage of higher throughputs with consistent high quality and a noticeable reduction in operator workload. The technology is in a class of its own when processing challenging applications with fluctuations in feed material shapes and bulk densities; tasks for which the ISEC evo is predestined." These kinds of applications involve injection mouldings with material shapes ranging from start-up lumps to sprues and regrind, and PVC pipes, where production waste ranges from large sections of pipe to shavings (the fine chips produced during machining).

Manfred Dobersberger, Managing Director of PURE LOOP, presented DynaShape®, the intelligent automation solution for the ISEC evo recycling machine at the K trade fair in Düsseldorf

The dynamic technology duo

The core of DynaShape® is based on the interaction of two components. The proven double feed ram system, which now dynamically adjusts its speed to the rotor load, while the hydraulically adjustable intake apertures adjust automatically - instead of manually as before. Throughput is increased as a result, and so is the quality of the melt. Thanks to the consistent melt pressure and optimum extruder screw filling level, there is no oxidative degradation of the melt. What is more, the temperature of the melt can be trimmed automatically on a case-by-case basis by setting a maximum temperature for each polymer. In contrast to manual operation, DynaShape® reacts immediately to increases in temperature to make sure that the specified limit value is not exceeded.

Another practical feature is that the intelligent DynaShape® settings can be saved as a recipe. This means that the next time it is started up, the machine operates immediately with the optimum setting, further reducing the time required for manual intervention.

PURE LOOP
www.pureloop.at

Odour Reduction in Plastic Recycling

Every day, large quantities of post-consumer plastic waste are generated from packaging, household applications, and more. Despite the costly processing of this waste through sorting stations and wet washing, the output from these material flows often cannot be reused for high-quality applications due to remaining unpleasant and pungent odours in the granulate. Current recycling processes are inadequate for removing these odorous substances, which have migrated into the material during the product's life cycle.

A multi-stage treatment is required to eliminate these odours sufficiently, allowing the pellets to be processed into high-quality end products for applications in industries such as packaging, automotive, and consumer goods.

Next Generation Recyclingmaschinen (NGR) and Kreyenborg have announced a strategic collaboration to sustainably enhance the quality of the recycled product through innovative technologies aimed at reducing odours and emissions. This partnership combines NGR's know-how in efficient recycling of plastic waste streams with Kreyenborg's innovations in heat treatment of recycled pellets. A modular, energy-efficient system has been developed that minimizes unpleasant odours in post-consumer plastics, thereby increasing the acceptance and potential applications of recyclables in high-quality applications.

Maximum Cleaning in the Melting Phase of Plastic

The process begins with an exceptionally efficient regranulation step based on NGR's proven C:GRAN cascade technology. An initial cleaning step occurs in the cutter compactor, where warm exhaust air from the cylinder cooling system flows through the preheated material.

Optionally, a degassing zone can already be integrated before the melt filter to remove volatile contaminants. In the subsequent melt filter, all solid particles are removed from the melt stream. After filtration, the melt is fed into a high-performance degassing zone within a cascade extruder.

This "power venting section" acts as a surface generator and, along with an efficient vacuum system, facilitates maximum degassing performance. The goal is to remove volatile impurities from the melt as thoroughly as possible. After passing through the cascade, the melt is granulated, and the granules are transported to the Kreyenborg IR-Fresh Conditioner for post-treatment.

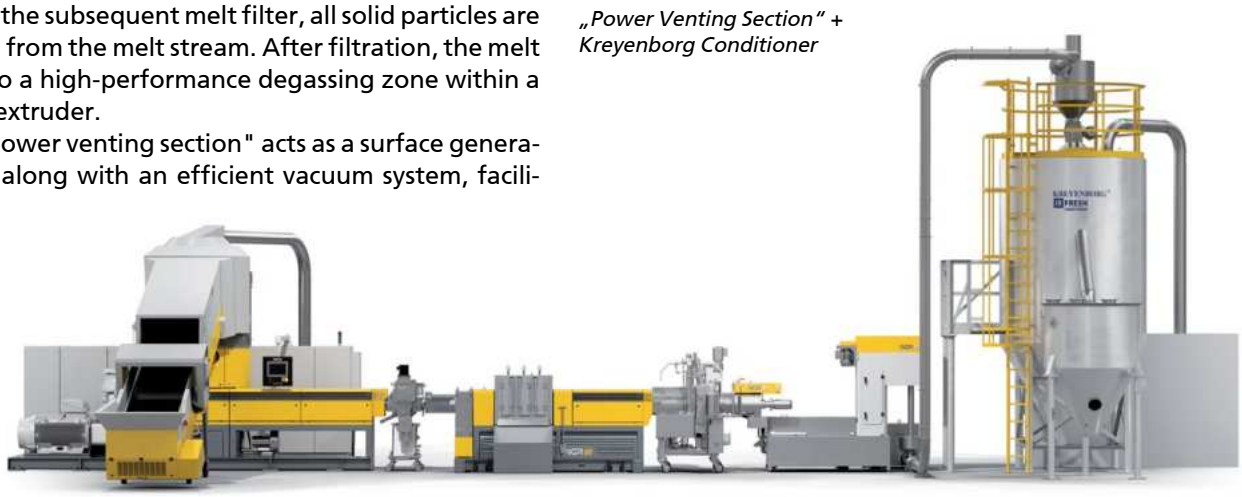
Thermal-Physical Post-Cleaning using the Kreyenborg IR-Fresh Conditioner

In the second crucial step for overall process quality, remaining low-molecular impurities are reliably removed through a thermal-physical cleaning process in the IR-Fresh Conditioner. This specially designed container maintains the material at the optimal temperature range for decontamination using a stream of hot air.

The precise interaction of the process parameters ensures consistently excellent deodorization and decontamination results, as evidenced by numerous successful tests conducted on various material streams.

For extremely stubborn volatile contaminants, the ground material can also be pre-treated before the extrusion step. This treatment removes odorous substances from the surface before they are incorporated into the melt during the extrusion process. Kreyenborg's proven infrared technology quickly brings the material to the ideal temperature for the respective plastic. The continuous rotation of the IR drum ensures a homogeneous mass flow with a defined dwell time (first-in/first-out principle), whilst integrated rotation and mixing elements guarantee constant surface exchange. This pre-treatment, in combination with the IR-Fresh Conditioner, significantly enhances odour removal in a short residence time, greatly contributing to the overall success of the recycling process and improving energy efficiency.

C:GRAN – Cascade with „Power Venting Section" + Kreyenborg Conditioner



Two Proven Technologies, One Goal: Producing High-Quality Granulates

"The combination of our technologies enables a substantial improvement in pellet quality and opens up new markets for recycled plastics," explains Marcus Vogt, Technical Sales Manager at Kreyenborg.

Stefan Lehner, PCR Product Manager at NGR, also views this collaboration as a pivotal step towards promoting the circular economy and meeting its increasing demands.

The joint system is already successfully operational in the market. Furthermore, tests can be conducted with customer materials at any time to demonstrate the efficiency of this collaboration in a clear, and measurable manner.

Kreyenborg GmbH & Co. KG
www.kreyenborg.com

NGR Next Generation Recyclingmaschinen GmbH
www.ngr-world.com

New eBook Underlining AI's Transformative Power in Recycling

TOMRA Recycling has published its latest eBook, 'AI in Recycling: Unlocking New Possibilities'. This comprehensive guide explores the rapidly evolving role of Artificial Intelligence (AI), particularly deep learning (DL), in revolutionizing the global recycling industry and driving material circularity.

The free-to-download eBook aims to demystify deep learning, explaining its mechanisms and showcasing its practical applications in overcoming complex sorting challenges, such as enabling the separation of previously hard-to-classify materials through the training of vast datasets. From manual processes to the prospect of fully autonomous AI-driven systems, the evolution of sorting technologies is also examined in detail, alongside the core concepts of AI and deep learning.

The eBook details how the powerful synergy achieved by combining deep learning with traditional sensors in optical sorters is unlocking new opportunities for the recovery of valuable resources, enhancing material purity and creating new revenue streams. This is exemplified by TOMRA's award-winning GAINnext™ solution for food-grade plastics recovery (for PET, PP and HDPE), PET and paper cleaning and high-purity recovery of aluminum Used Beverage Cans (UBC), as well as the capabilities of the PolyPerception AI-based waste analyzer in providing real-time, end-to-end object tracking and classification of waste streams.

TOMRA's new eBook explores the role of AI in revolutionizing the global recycling industry

Readers will gain insights into the tangible benefits of DL-based solutions, including enhanced flexibility, the creation of new high-value material streams, superior sorting accuracy, advanced plant automation and optimized processes. The guide also showcases the growing range of deep learning applications pioneered by TOMRA including real-world examples. Furthermore, it examines the crucial role of AI in meeting the demands of evolving regulations like the Packaging and Packaging Waste Regulation (PPWR), which necessitate advanced sorting capabilities to achieve circular economy targets. Looking ahead, the eBook presents a vision for the future where AI could drive fully transparent and self-optimized recycling plants.

Fabrizio Radice, SVP & Head of Sales and Marketing at TOMRA Recycling, comments: "We believe our new eBook will serve as a valuable resource for the global recycling community, providing a clear understanding of how deep learning is not a futuristic concept, but rather a tangible solution that is already delivering significant benefits and paving the way for a truly circular economy. By demystifying the technology and showcasing real-world applications, our aim is to encourage recyclers and processors to embrace the transformative potential of AI and explore how it can help them achieve their operational goals, meet rising demand for recycled content and take advantage of new, expanded market opportunities."

To download a free copy:

www.tomra.com/waste-metal-recycling/media-center/download/AI-ebook

Enhancing Mechanical Recycling Quality

LyondellBasell (LYB) is enhancing its high-quality standards for mechanically recycled materials through investments in their R&D capabilities. One example is at the innovation Center in Frankfurt where LYB is strengthening its efforts in the development of advanced sorting, decontamination and compounding technologies as well as advanced analytics of post-consumer recyclates under near industrial conditions.

LYB is developing mechanical recycling technologies using its new innovation facility designed to simulate industrial conditions, focusing on advanced sorting, decontamination and compounding technologies for post-consumer waste feedstocks. "With the ability to process several hundred kilograms of test material – sorted by plastic type and color – and combining this with options for decontamination, extrusion and degassing, this facility marks a key milestone in developing our technologies under near-industrial conditions. In this way, we continuously improve our processes together with our locations in Geleen, where we already operate mechanical recycling technologies," says Ulf Schüller, head of Process Technology Development Frankfurt. Investments include the installation of a new flake sorter, decontamination steps as well as extrusion, downstream degassing and purification units, that will enable us to develop more consistent and higher quality end-products for our customers.

Analytics play a crucial role in enabling the safe use of mechanically recycled materials for future applications. That is why the in-house analytics team at LYB in Frankfurt is advancing trace analysis to assess the suitability of these materials for cosmetic packaging.

Examples of analytical methods used to evaluate recycled materials include:

- Gas Chromatography–Mass Spectrometry (GC-MS) for identifying and quantifying trace organic contaminants
- Inductively Coupled Plasma Mass Spectrometry (ICP-MS) for detecting heavy metals

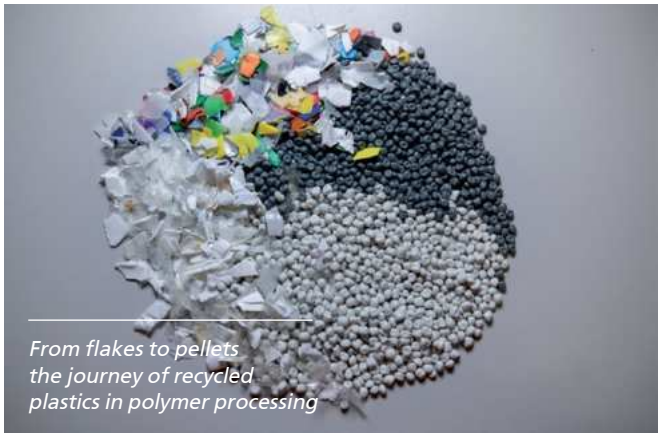
The in-house analytics team at LYB in Frankfurt is advancing trace analysis

- High-Performance Liquid Chromatography (HPLC) for analyzing additives and degradation products

These techniques help ensure that recycled materials meet stringent safety requirements, particularly for sensitive applications like leave-on cosmetics. "Smart recycling begins with smart analytics. Through continuous research and cutting-edge technology, we can truly meet our customers' expectations and drive the future of recycling – ensuring recyclates are free from hazardous substances like heavy metals, plasticizers, and other toxic chemicals," says Diana Doetsch, R&D Lead Polymer Physics & Characterization.

Each recycling technology developed by LyondellBasell offers distinct strengths, collectively contributing to the reduction of plastic waste and advancement of a circular economy. Understanding that not all plastic waste is the same is essential – processing flexible plastics requires different technologies than processing rigid ones.

LyondellBasell (LYB)
www.lyb.com



From flakes to pellets the journey of recycled plastics in polymer processing

Detecting chemical fingerprints Recyclate pellet ready for measurement

The Fourth-Generation Micromat Presented

Energy efficiency meets ultimate material diversity: At the core of the new Micromat series is a new generation, energy-efficient drive concept, which operates at an efficiency of 97 %. Also new: The adjustable rotor concept which enables a quick change between pointed and step knives, ensuring ultimate material flexibility. Simple adjustment of the cutting gap, a new coupling concept, effective counter knife cooling, intuitive menu navigation and patented automatic belt tensioning complete the new shredder series.

At K 2025, Lindner unveiled the next generation of Micromat: The ever-popular plastics shredder has undergone a targeted upgrade and sets new benchmarks in efficiency, flexibility and ease of servicing. Lindner has built on the tried-and-tested strengths of Series III – a successful and established concept that the market has enjoyed for many years. The recycling pioneer's Micromat IV is a trailblazing solution with new features that are optimally designed for the needs of the modern plastics industry – aligned with the motto 'Ready for the future of your business!'

Lindner's Micromat series is established globally as a reliable solution for shredding plastics. The fourth-generation Micromat has built on the proven strengths of Series III, with added upgrades that improve both maintenance and productivity. A new drive concept is at the heart of the new series, boasting efficiency above 97 % and a flexibly configurable knife system (Copyright © Lindner Recyclingtech)

Energy efficiency redefined

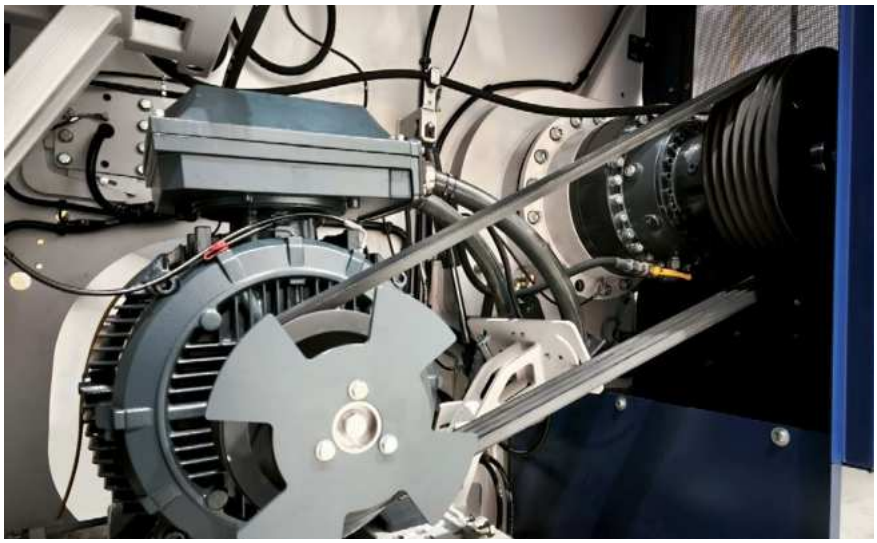
The fourth-generation of this stationary single-shaft shredder presents an impressive, energy-efficient and maintenance-free drive concept. At its core is a state-of-the art synchronous reluctance motor that achieves IE6 energy efficiency class, and offers remarkable efficiency > 97 %. In comparison with a torque motor, the reluctance motor does not use any rare earth metals and, with considerably lower energy losses in winding and bearing, it is particularly durable and robust.

With the new coupling function, the drive system is also completely maintenance-free: The drive belts are automatically tensioned so they are always at the optimum point. If a foreign body is detected in the machine, the pressure is released from the hydraulic cylinder to protect the drive unit. Another advantage: Changing the belt is a quick and easy operation that the customer can perform on site without needing any external service personnel. Our proprietary belt running-in system ensures that the belt is optimally tensioned after replacement. A smart system that saves time and money.

The multicut rotor in the new Micromat series offers maximum flexibility with its different knife systems for changing material flows and covers films, rigid plastics, sheets and lumps of plastic, as well as woven plastics such as big bags

Material flexibility and ease of servicing

The new multicut rotor is another highlight and combines maximum flexibility in handling diverse material



At the heart of the Micromat Series IV is the synchronous reluctance motor with energy efficiency class IE6. It impresses with an impressive efficiency of > 97% and does not require any rare earths. The new patented belt coupling and the automatic belt tensioning system (ATB) complete the new drive concept

flows with low maintenance effort. The cutting system was specifically developed for customers who shred a wide range of input materials. Each of the four knife systems is suitable for different plastics applications:

- Step knives arranged in a row – for films and rigid plastics
- Step knives that are offset with elevations – for plastic panels and lumps
- Pointed knives in a row and offset – for films, fibres and woven plastics such as Big Bags

The flexibly configured knife system makes it possible to quickly and easily change pointed and step knives without having to replace the entire rotor. By using screws and no welding, the process is complete in about five hours. This function makes the Micromat IV particularly adaptable to various material requirements and once again, emphasises its customer-friendly maintenance. "The new cutting system with a row of step knives has already proven itself many times over in customer tests. Applications with films in particular have shown the system to achieve up to 40 % more throughput," says Product Manager Christoph Gaschnig.

Maximum quality

To ensure the stationary single-shaft shredder runs reliably at the optimum operating point, the cutting gap between the rotor blades and the counter knives will need to be adjusted. Now you can adjust the cutting gap or replace the counter knives from the outside – without opening the maintenance flap or shutting down the machine: Quick, convenient and time-saving. As well as the improvements in its core features, the Micromat IV also offers additional product updates such as effective counter-knife cooling and a simplified and optimised control concept with intuitive menu navigation.

The new Micromat series combines the customary Lindner quality with ground-breaking energy efficiency and ease of service and is available in four models – with different torques and performance levels, specifically designed for the requirements of the respective input materials.

Lindner Recyclingtech GmbH
www.lindner.com

Pioneering Circularity in Plastic Film Recycling – *Setting New Standards in the Baltics*

AB Plasta, part of the CEDO Group and one of Central Europe's leading film recyclers, has successfully implemented an advanced flexible film recycling line in collaboration with TOMRA Recycling. By adapting the input material to the specific requirements of the sorting line and integrating AUTOSORTTM SPEEDAIR and TOMRA Insight, the plant is achieving high purity recyclates and operational efficiency, supporting full circularity and compliance with the EU Packaging and Packaging Waste Regulations (PPWR).

Located in Vilnius, Lithuania, AB Plasta has achieved an industry milestone: the ability to produce high-quality PCR film recyclate exclusively from post-consumer flexible packaging waste.

The company's success is the result of a tailored approach that combines raw material optimization with sensor-based sorting, a strategy that supports both operational efficiency and compliance with Europe's ambitious PPWR.

Danas Poderis, Managing Director of AB Plasta, comments: "Sorting flexible packaging waste into high-quality fractions is one of the

most complex challenges in plastic recycling but by adapting the post-consumer input material to our lines and integrating TOMRA's advanced AUTOSORTTM SPEEDAIR as part of a customized sorting process, we managed to overcome these. We are now able to process post-consumer PE film and produce consistent, high-purity recyclates that meet the demanding expectations of our end customers.

With over 60 years of experience in plastic processing, AB Plasta is one of the largest polyethylene recyclers in Central and Eastern Europe. The company integrates recycling and manufacturing in a single plant for a fully circular production model, handling both post-consumer and commercial film streams on the same line. The plant produces approximately 35,000 tonnes of recyclate annually, operating 24 hours a day, seven days a week.

AB Plasta, one of the largest polyethylene recyclers in Central and Eastern Europe, produces 35,000 tonnes of recyclate annually

Turning a challenge into a circular opportunity

Processing flexible film waste, particularly from multiple European sources, is considered a complex task. The input streams are highly contaminated and varied in material composition, making it difficult to produce recyclates of consistent purity suitable for reuse in new packaging. Additionally, this material is extremely low in density and often sticky due to organic residues and moisture. It is precisely here that technologies such as AUTOSORTTM SPEEDAIR, which stabilizes the material on the belt, are crucial to ensuring high throughput and overall economic viability.

"AB Plasta needed a solution that would enable 100% recycled content in its products without compromising on quality. The goal was clear: stable 24/7 operation, high throughput and exceptional purity levels that meet the standards for direct reuse in consumer products," explains Michał Bula, Sales Manager at TOMRA Recycling.

TOMRA's complete process design

TOMRA not only supplied the equipment but also played a key role in designing the entire material flow, ensuring stable and efficient plant operation from the very beginning.

The solution is built around a series of four AUTOSORTTM SPEEDAIR units- high-throughput, high-speed optical sorters developed specifically for stabilizing lightweight materials such as post-consumer plastic film. TOMRA's unique film stabilization system enables unmatched sorting performance, even with lightweight, irregular film fractions-delivering the throughput and purity needed for high-end PCR applications.

Once the baled flexible waste arrives at the facility, it undergoes shredding and pre-screening to prepare the material for optical sorting. Using TOMRA's film sorting systems, the various plastic fractions are separated with high precision. The input material ranges in size from 20 mm up to 200 mm, allowing for optimal detection and classification across varied film types. A key feature of the process is the use of a fourth AUTOSORTTM SPEEDAIR unit, positioned at the end of the main sorting line to recover any remaining polyethylene film-resulting in a 90% overall process efficiency.

The cleaned film then passes through a washing and flotation process to remove any remaining contaminants before being re-granulated into high-quality recyclate.

Optimal performance with TOMRA Insight

The facility is also connected to TOMRA Insight, a cloud-based monitoring platform. TOMRA Insight provides AB Plasta with real-time access to machine performance and sorting quality, enabling faster, data-driven decisions. Automatically generated daily reports help identify process inefficiencies and ensure consistent, stable production output.

Danas Poderis, explains: "By having machine status and spare part consumption to near real-time sorting data all in one place, we can keep a close eye on efficiency. This is especially important as we adapt to increasingly demanding EU regulations like the PPWR, which require higher recycled content in packaging. The collaboration with TOMRA has been excellent – professional, technically strong, and focused on long-term results."

Sustainability and compliance aligned

This project enables AB Plasta to meet the increasing demand for recycled content in packaging, driven by EU legislation and broader sustainability targets. By replacing virgin materials with high-quality recyclate, the company is significantly reducing its carbon footprint and supporting closed-loop production.

In addition to supplying recyclates, the company manufactures its own end products in-house, using the recovered material to produce garbage bags as well as film for construction and agricultural use. The entire process is conducted internally, enabling AB Plasta to reintroduce its own recyclates directly into production lines and supply film products with high recycled content to European retailers, distributors, and industrial clients.

The success of this project also positions it as a replicable blue print for similar initiatives across Europe, especially in regions aiming to upgrade their flexible packaging recycling infrastructure.

TOMRA Recycling

www.tomra.com/waste-metal-recycling

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