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BDOx2

A perfect flow continuity even at high working pressure

The construction complexity **has been minimized**, ensuring high material quality.

The **new sealing system** is compatible with extrusion lines operating at **very high pressure levels**.

It has undergone **successful testing** on flat sheet and pipe extrusion lines, including strand dies, under water pelletizers, and hot melt coating processes.

Recently, this continuous technology has also been proposed for blown film extrusion lines, demonstrating extraordinary performance and seamless flow continuity.

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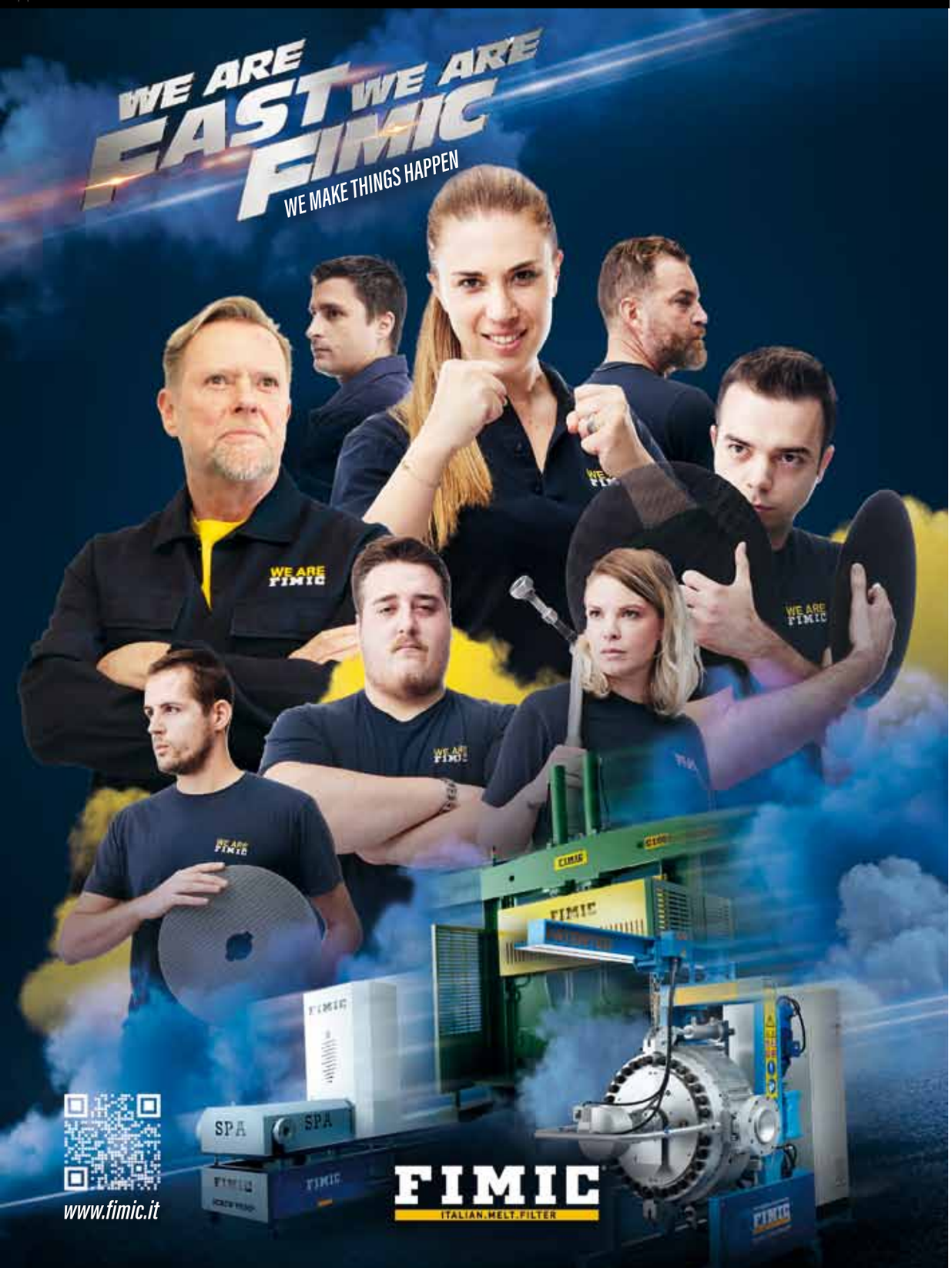


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Read the complete article at page 10

Join Us for the Future of Extrusion

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In a world that moves at breakneck speeds, the plastic extrusion industry demands innovation, precision and sustainability. Friul Filiere, with its Italian roots and global reach, has been a pioneer in crafting custom-made extrusion machinery that caters to the unique needs of each client. Our machines are more than just mechanical marvels: they are the heartbeat of your production line, engineered to elevate your manufacturing capabilities.

Our team is a blend of seasoned experts and dynamic innovators, all dedicated to turning your vision into a tangible, operational reality. With Friul Filiere, you're not just purchasing a machine; you're investing in a partner who is committed to pushing boundaries and achieving mutual success.

Your business value

Choosing Friul Filiere means selecting a future-forward partner that is invested in your growth, dedicated to quality and relentless in the pursuit of excellence. Join us as we continue to break new ground, crafting the tools today that will define the industry of tomorrow.

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NPE 2024 preview: news from the exhibitors – page 46 - 88

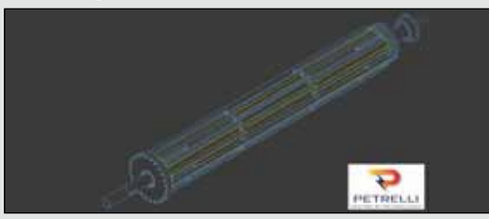
THE MACHINE OF THE MONTH

Estro: the new rotomolding hybrid machine

Rotational moulding is the best technique available for the production of small, medium, large and very large hollow articles up to liquid containers of 50,000 litres capacity.

Crucial to the production process is inducing a temperature inside the mould that allows polymerisation of the raw material, PE, PP, etc., to take place.
For almost all the machines in Europe, this phase is managed by an oven, consisting of a combustion chamber, where the digital gas burner is housed, and a moulding chamber connected to it, where the mould, kept in bi-axial rotation, is hit by the flow of hot air. An air circulation system is set up between the two chambers so that the cooler air, which has transferred heat to the mould, heats up again in the combustion chamber before returning to the moulding chamber.

Petrelli Heating Technologies (PHT)
Presents infrared electric heating device for calenders



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Marco Mastrosanti

TecnoGlobalising

Tecnoplast's stories from Chinaplas in China to Npe in the US

I write this editorial sitting in a conference room in Shanghai.
The largest trade fair on the planet, Chinaplas, is about to begin, and the large family of plastics journalists has been invited to witness this event.
Between one conference and another, the drafts arrive from Italy of the issue of Tecnoplast International that in a few weeks' time (in the writer's time) we will circulate in America, in Orlando, at the Npe fair, the most important on the American continent.
In short, is globalisation still working? Despite geopolitical factors that hinder it? Despite skyrocketing material and transport prices?
Let's say that it is settling down, perhaps the mega-areas of universal business - Asia, Europe and the USA - are adjusting a few pieces, but in general what we see is a regionalised globalisation. And the big players present, even here, see Arburg or Engel just to name a couple, confirm this.
Coming back to us, the drafts that reach me from the other side of the world testify to a super-tightness of the Italian market, which resonates strongly in the pages of this Tecnoplast International, which is about to be one of the most important and biggest dossiers we have ever brought abroad. At the same time, however, I have my eye on the international issue printed and distributed in China, which is also dense and lively...
In short, the road continues, and our magazines, printed all over the world, are the tip of the iceberg of our entire communication package, which by now makes us - via the LinkedIn network and our super TecnoTv - the spokesperson for Italian and European rubber/plastics. In short, the storytellers of how our companies are always at the forefront and protagonists at er the world. A high-tech rainbow that starts in Shanghai and China and lands in Orlando, USA. With a common language of success that you will find in the pages of the magazine you are leafing through.

tecno Plast

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Our team is a blend of seasoned experts and dynamic innovators, all dedicated to turning your vision into a tangible, operational reality. With Friul Filiere, you're not just purchasing a machine; you're investing in a partner who is committed to pushing boundaries and achieving mutual success.

Our innovation

Sustainability isn't an afterthought: it's a principal component of our philosophy. For years, we have been at the forefront of creating customized solutions that allow our clients to produce profiles and tubes with recycled and recyclable material. Our commitment to the environment is unwavering, as we continuously seek out innovative methods to reduce our ecological footprint.

A shining example of our dedication to innovation and sustainability is Light Thermal Break. This groundbreaking technology exemplifies our drive to enhance performance while paying close attention to environmental concerns. Light Thermal Break is a revolutionary concept that allows extruded profiles to achieve significantly higher levels of thermal insulation, while reducing the mass of the material and optimizing its mechanical properties.

The core innovation of Light Thermal Break is the deployment of a physical foaming system that substantially lightens the profiles' weight, yielding considerable performance and environmental sustainability benefits. The finished profile is fully recyclable, free from any polluting residues. Additionally, the lightening process enhances the production process since the physical expansion aids in cooling the internal mass, thereby allowing for faster extrusion speeds within the required tolerances for these profiles. Economically, this technology enables a rapid return on investment due to material cost savings and enhanced productivity.

Your business value

Choosing Friul Filiere means selecting a future-forward partner that is invested in your growth, dedicated to quality and relentless in the pursuit of excellence. Join us as we continue to break new ground, crafting the tools today that will define the industry of tomorrow.

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Quality dehumidification and reduced energy consumption brought to a higher level?

Vismec has been active in the plastics processing sector since 2007 and offers high-performance industrial machines: dehumidifiers, conveying systems, dosing and granulating plants designed to facilitate and make processing more efficient.

Currently present in several countries around the world through distributors and direct subsidiaries in the United States, France and Korea, Vismec offers a wide range of solutions for applications in sectors including automotive, medical, optical, beverage, electronics and technical moulding.

The company's core business is still dehumidification, which reaches 15,000 machines sold worldwide. Vismec brings to the market its technology that has always distinguished it: a wheel dehumidifier that ensures efficient dehumidification combined with great flexibility. A product able to guarantee the best energy efficiency, reducing consumption and costs without lowering performance, an unattainable advantage when compared to traditional twin tower dehumidifiers. VISMEC has always been a pioneer in this technology and in these 18 years has traced a furrow now followed by many others on the market because standing out and being innovative has always been part of our DNA.

The Vismec wheel dehumidifier is the new generation of dehumidifiers. It is much more efficient, much more compact and has a lower maintenance requirement proven by the five-year warranty the company offers on the dehumidification wheel.
Conventional dehumidifiers use a large volume of molecular sieves in the form of granules, composed of at least 30 per cent clay, which tends to degrade very easily over time, decreasing its dehumidification capacity and contaminating the material inside the process hopper. In the rotor, the pure molecular sieve is applied to a synthetic substrate, rolled into a cylinder forming a honeycomb structure and covered by a steel guard
The wheel turns thanks to a stepper motor and air is passed through it in 3 sections: dehumidification, regeneration and cooling.

1. In the first section, moist air from the hopper passes through the wheel to dehumidify, and then passes through the heating chamber to be brought to the temperature previously set in the dehumidifier. Finally, it enters the hopper to dehumidify the material.

2. At the same time, the next section is crossed by hot air generated by a dedicated chamber and blower.
3. In the third section, the wheel is cooled and then ready to re-enter the first dehumidifying section.

DRYCUBE DC - NOT JUST A DRYER

As previously announced, the Vismec wheel dehumidifier offers numerous advantages: these advantages arise especially from the possibility of adjusting the dew point of the air flow. The operating mechanism of our machines, in fact, allows the dew point to be calibrated and kept constant over time, regardless of the conditions of the outside environment.
To this feature, each Vismec plastic granule dehumidifier adds additional adjustment, temperature monitoring and control mechanisms.
In particular:

- Smart Mode: controls the temperature of the return air, adapting the process automatically to the production needs of the client company.
- MPM (Material Protection Management): guarantees the integrity of the material, protecting it from excess dehumidification. This, which is important to ensure maximum quality, is made possible by monitoring the loading mechanism and the temperature of the return air.
- SLS (Safety Loading System): prevents plastic granules that are still wet from reaching the production machinery by accurately controlling the dehumidification time.

The latest proposal in Vismec's range of dehumidifiers fits perfectly into this context: DRYCUBE.
Drycube represents an innovative solution that redefines the standards of plastic granule processing. Drycube combines efficient dehumidification with an integrated pneumatic conveying system while maintaining the compactness and flexibility that have always been the hallmarks of Vismec dehumidifiers.
A solution that consists of a high performance wheel dehumidifier, the Vismec transport system, a receiver for the dehumidification hopper, a receiver for IMM and all related accessories. It is an application designed to complement the transformer machines, a unique solution that optimises space and equipment management.

EFFICIENT OPERATION

Hot materials are transported in a closed circuit: dry hot air is used to transport the material to the converting machine and this solution keeps the polymer stable away from changes in temperature and humidity.

DryCube allows automatic parameter setting of the dehumidification process and continuously monitors the operating mode to achieve ideal conditions and protect the material from over-drying.

Compact and flexible solution, ideal for different types of applications and in particular for:

1. Production of finished batches
2. Differentiated production

A solution that looks to the future, which guarantees the management of differentiated production and creates a perfect combination of different Vismec technologies.

Below we see how the DRYCUBE system is composed in detail:

1. A compact, trolley-mounted rotor dehumidifier for improved flexibility and space management within the production area:
- Dehumidification temperature up to 180°C.
- Constant and adjustable dew point down to -50°C
- Energy savings of 40 % and more.
- Dehumidification data displayed on a single screen: working temperatures, dew point, air flow production per hour and any maximum limit not to be exceeded, power currently used, energy monitoring and consumption.
- Preset but modifiable and adaptable benchmarks with Smart Mode system;
- MPM - Material Protection Management: system to protect material from over-dampening and degradation;
- SLS - Safety Loading System: safety system to prevent non-dehumidified material from reaching

the processing machine.
- Monitoring and programming of individual machine start and stop for each day of the week thanks to the new touch screen control.

2. Pneumatic transport with brushless blower and dual-stage cyclone/cartridge filter
- Separation efficiency: thanks to its structure and physical operating mechanism, the cyclonic filter allows the separation of plastic granules from the air flow in a very efficient manner.
- Robustness: the filters are designed and constructed in such a way as to withstand the continuous stresses of transport over time.
- Ease of maintenance: the special design of the cyclonic filter makes maintenance almost zero, reducing maintenance costs and downtime. It is usually limited to periodic cleaning of the inner walls to ensure optimum performance is maintained.
- Adaptability: the filters, and the entire vacuum conveying system in general, can be customised to meet the specific needs of different plastics processors.

3. Air heat exchanger for hot material transport in closed circuit and automatic circuit valves

4. ASPUL suction valve. This is the new Vismec suction valve made of stainless steel that also integrates the duct cleaning valve. Its special construction allows automatic air fluidization without any contamination.

5. Vismec receivers made entirely of stainless steel and available in sizes
- Receivers 2 - 4 litres for DC 25 d40 and d38 (D1.5")
- Receiver 6 litres for DC 50-80 d40 and d38 (D1.5")
- Receiver d50 (D2") for DC 160-250

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Innovative DUO screenchanger from Break Machinery

The extensive knowledge of polymers and the expertise developed in the mechanical field by the Pegoraro group over 50 years contribute to the development of efficient and innovative filtration systems.

Break Machinery started its business -production of automatic screen changers for plastic filtration- in 2019.
The company's know-how is the fusion of various skills acquired over the years in the fields of mechanics, moulding and plastic recycling.
The first product distributed is ONE, an automatic filter changer with a valve discharge system.
Growing knowledge of the market, and comparisons with customers, highlighted the need to develop a new screen changer that would increase line productivity, but at the same time help contain costs and reduce waste.
Break Machinery's R&D team has therefore developed a new filtering machine, with a screw discharge system, capable of bringing numerous advantages to the line into which it is integrated, whether new or existing, and for which three patents have been granted.
Break DUO is designed for the filtration of various types of plastics and enables the processing of materials with high percentages of impurities (up to 15% by weight depending on the type of pollutant). It is designed to handle different types of contamination such as: paper, wood, aluminium, copper, etc...
DUO guarantees high process stability and helps extend the life of consumables (filter and blades).
In addition, while keeping the dimensions small, the presence of two filters allows for a large filtering surface area and increases the productivity of the entire line, processing up to 6.000 kg/h.
DUO is available in 4 sizes (1400-1750-2800-3500) allowing it to meet different production requirements. The dimensions of the machines are different, depending on size, but from a construction point of view they all have the same structure.
DUO consists of a single filter chamber, in the centre of which a scraper impeller is positioned. This one is placed between the two perforated plates, which in turn support the breakers, one fixed to the bottom of the chamber and the other to the cover.
Finally, there is a discharge screw located in the centre of the various elements and in communication with the inside of the impeller.
The geometry of the various components ensures that each element is coupled to the other, ensuring the correct operation of the system; unlike the ONE model, no material pressure is required for the correct operation of the impeller, or for the discharge of contamination.
In the case of DUO, in fact, it is the worm screw that conveys the contamination outwards, and does so continuously.
The screw and the impeller are controlled by two separate motors: in this way, the speed of each element can be adjusted, and changed depending on the characteristics of the material and the contamination to be removed.
The special geometry of the 6-blade rotating scraper

Scraping operation

disc allows excellent cleaning even at low speed.
The screw, once the machine is open, remains inside the cover, and this is a considerable advantage: the working area remains free of clutter, making cleaning and filter replacement operations extremely simple and fast.
Furthermore, there are no machine parts to dismantle, except for wear parts.
Cleaning takes no more than 25-30 minutes, and includes the following steps:
- loosening the bolts and opening the lid
- removing the plastic deposited in the filtration chamber
- removal of impeller
- removal of filters to be replaced
- positioning of new filters
- installation of the new impeller (2 impellers are given to the customer to facilitate cleaning operations)
- closing cover and tightening bolts

The impeller can be cleaned in a pyrolytic oven, and reused, as can the filters, which can also be reused, up to a maximum of 4 times, again by cleaning in a pyrolytic oven.
Blades attached to the impeller, on the other hand, must be removed and replaced with new blades at each filter change.
With DUO, the presence of the operator is greatly reduced and extraordinary maintenance operations can be carried out directly at the customer's production site.
The amount of residual plastic inside the chamber is minimal, thanks to the continuous operation, which remains active until the lid is opened.
Duo is equipped with 7 heating zones that allow the temperature of the material to be measured in the various passage areas, namely: at the inlet, at the outlet, in the chamber, downstream of the 2 two filters, in the screw and in the discharge channel.
Melt control (pressure and temperature) is already standard at the inlet and outlet with downstream arrangement of each filter (optional).
DUO's control panel is equipped with an HMI that allows the operator to manage and dialogue with the machine in a simple and intuitive way.
The graphical interface is equipped with an alarm system to understand what is really happening on the machine; there are also graphs to allow an immediate visual reading of the phenomena that the various sensors detect.
The HMI makes it possible, via pages, to set temperatures, pressures and cleaning parameters for optimal operation of DUO.
The Break system allows a recipe book to be stored, which can be parameterized by the customer, so that the data entered can be quickly retrieved.
The PLC allows, via the OPC-UA protocol, to exchange input and output data with other PLCs, SCADA or management systems.
The switchboard is equipped with a tele-management router, which allows the system to be monitored remotely; in this way Break can guarantee continuous and immediate assistance to the customer.
DUO is also prepared for the American and Canadian markets (UL - CSA).
DUO can be configured in 4 different ways, depending on the customer's needs: lid opening on the right or left, inlet and outlet according to line configuration.
Duo can be installed in any extrusion line, and is connected directly to the extruder and overhead cutter via customised flanges, made for each project, based on the technical characteristics of the plant.
It is suitable for granulating lines, but also for coil, sheet or spaghetti extrusion lines; the continuous operation mode ensures high process stability, eliminating pressure fluctuations and material voids.

Scraping operation

The melted plastic material (1) is conveyed into the filtration chamber (2) and passes through two filters (3) facing each other.
Between the two filters is a scraper disc (4), equipped with interchangeable blades, which rotates to remove the contamination deposited on the filters by channelling it into the scraper disc itself (5).
The centre of the scraper disc is in communication with an independent discharge screw (6) that ejects the contaminated material.
The melted plastic material filtered (7) from the two filters then rejoins the outlet channel (8) to pass on to the next process.

Automatic opening

DUO is also available in a version with an automatic opening system, the purpose of which is to make opening and closing the lid easier, faster and safer.
This system consists of a threaded lid that screws directly onto the machine body, and a motor that controls its movement.
Operation is activated via a button located on the front of the DUO.

Automatic opening

Backflush operating

This system reduces the time needed to open and close the cover, as it is no longer necessary to loosen and tighten the bolts. The presence of the operator is limited to a control function.

Backflush system

The backflush mode is suitable for materials with low contamination and allows very low filtration levels. This second option further reduces consumable costs. In fact, it is no longer necessary to use laser filters but wire cloths with the required degree of filtration are used.

Each machine can switch from scraping mode to counterflow mode by simply changing the internal component kit.

In the case of backflush, the component block includes a cleaner and two protective breakers.

Backflush operating

The molten plastic material (1) is conveyed into the filtration chamber (2) and passes through two wire meshes (3) opposite each other, both positioned between two breakers: a support (4) and a protection (5).

Supporting the two protective breakers is a cleaner (6) that sucks up the contamination deposited on the wire mesh.

The centre of the cleaner is in communication with an independent discharge screw (7) that expels the contaminated material in a controlled manner.

The melted plastic material filtered (8) by the two filters then rejoins the outlet channel (9) to pass on to the next process.

Laser filters in-house production

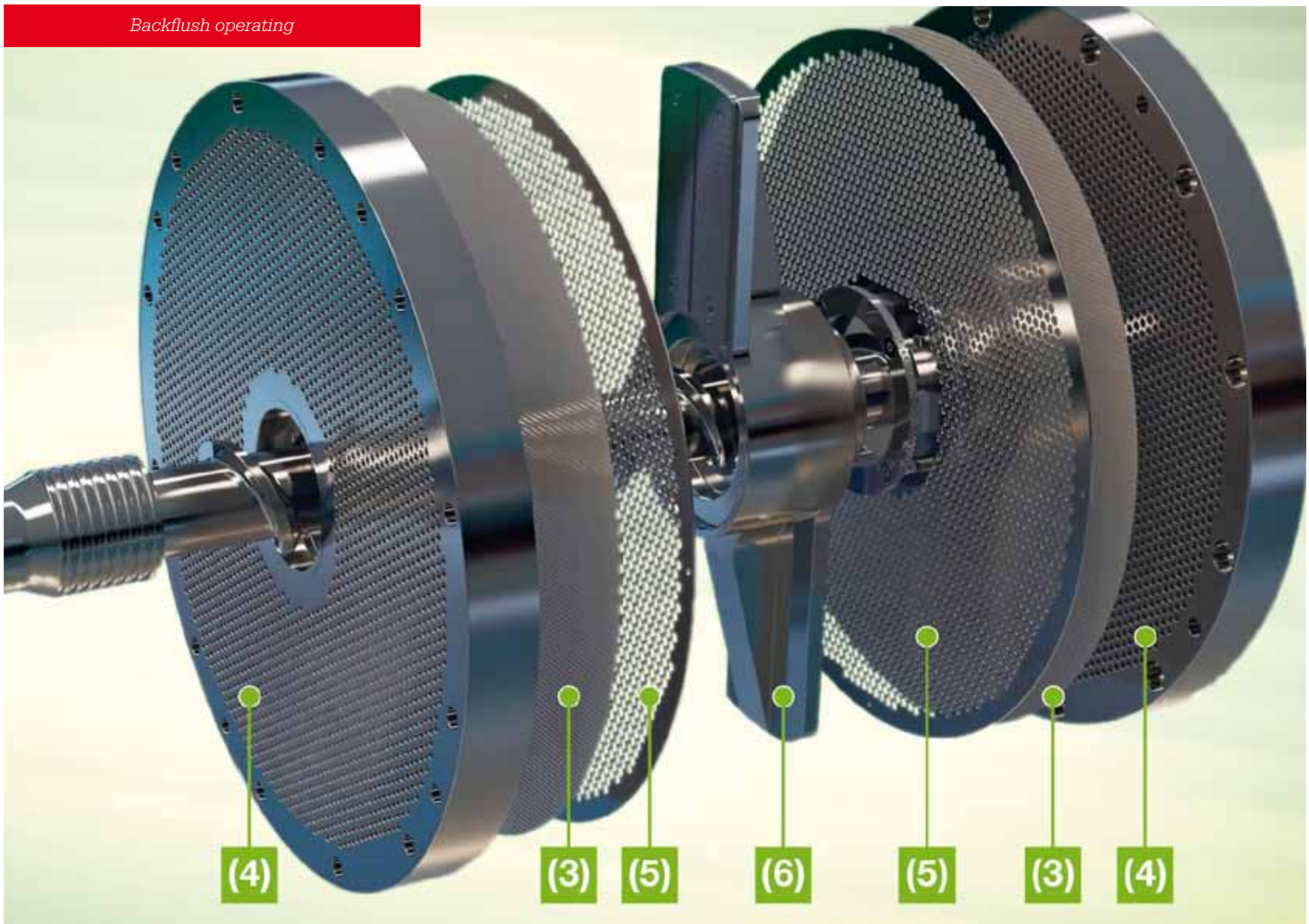
Break Machinery manufactures the filters in-house, to guarantee a high quantity product that is always available in stock.

They are made from special steels, on which specific heat treatments are carried out in order to guarantee a longer service life and the possibility of re-use, after special cleaning in a pyrolytic oven.

Thanks to the thickness of the sheet metal, the depth of the heat treatments and the reinforced central and perimeter zones, the filter is robust and able to withstand various stresses.

They are available with filtrations from 60 to 400 microns, to meet different customer needs.

Backflush operating



IDENTITY CARD

NAME
DUO

PRODUCER
BREAK MACHINERY s.r.l.
Via Martiri della Libertà, 7
35010 GRANTORTO (PD) Italy
info@breakmachinery.com
breakmachinery.com

TECHNICAL SPECIFICATIONS:

	DUO 1400 DS	DUO 1750 DS	DUO 1750 DS AUTOMATIC	DUO 2800 DS	DUO 3500 DS
Total filtration surface [cm²]	1418	1756	1756	2847	3515
Heating zones	7	7	7	7	7
Operating pressure max [bar]	350	350	350	350	350
Throughput capacity kg/h (1)	2000	3000	3000	5000	6000
Filtraton finess [microns]	60-2000	60-2000	60-2000	60-2000	60-2000

1) Throughput depending on: the viscosity of melt, filtration fineness, type and degree of contamination, extrusion line
Break DUO is suitable for materials with high level of contamination (up to 15 % by weight contamination depending on the type of contaminant)
Break Machinery Srl reserves the right to modify the data of this document without prior notice

Plastic extrusion recycling by Celectric Technology and Delco Extrusion

At Celectric Technology and Delco Extrusion systems are meticulously designed with a single goal: to revolutionize plastic extrusion recycling through innovation and efficiency.

Celectric Technology and Delco Extrusion design reliable machines and components with particular attention to customer needs and solutions. “Our commitment to sustainability aligns perfectly with profitable manufacturing, driving our business ethics. Currently, hundreds of our systems operate globally, collectively producing millions of tons of high-quality pellets each year. These impressive figures consolidate our position in the plastic recycling machinery and components sector worldwide. As a forward-thinking company, we are constantly exploring new technologies and optimizations, ensuring we remain at the forefront of industry evolution”.

Since its establishment in 1996, Celectric Technology and Delco Extrusion have relentlessly pursued innovation. Numerous breakthrough inventions in plastic recycling, combined with sustained growth and market expansion, underline our indomitable commitment to progress.
Today the company focuses on:
- Strategies for the redefinition of waste
- Strategies for post-consumer plastic recycling
- Power layout optimization in masterbatch production
- Cutting-edge solution for Bottle-to-Bottle recycling and Rpet inline application.

Customer center

"Discovering the perfect machine for your specific application is our commitment to you.
Would you like to see our plastic recycling systems in action? We invite you to visit our state of the art. Here you will have the opportunity to come into contact with a fully equipped, variable industrial-scale recycling facility that will allow you to experience first-hand the efficiency and capabilities of our recycling solutions".

www.celectric.it

DELCO ELECTRIC

FAP: minimizing the environmental impact of foam applications

FAP is a dynamic second-generation family-run company with over 37 years of international experience in the design and construction of foam machinery and R&D activity to create for our customers something truly valuable and capable of raising the production of foamed polymers to a completely different level.

In this regard, nowadays, the technology of extrusion of physically foamed branched polypropylene, which is still little known to the markets, is of great interest. Light weight, strong, thermoformable, 100% recyclable with excellent insulation properties. These and other characteristics have made it the unique material that can replace most traditional polymer materials in markets such as insulation in the automotive industry, heat and sound insulation in construction, and the food industry.

Comparative characteristics of foam material of 5 mm thickness and 40 kg/m3 density.

Indicators	Closed cell physically foamed polypropylene foam
Thermal conductivity	0,036 W/m·K
Application temperature	-30 C0 / +120 C0
Compressive strength 25%, kPa, not less than	≈ 55 KPa
Breaking tensile stress, kPa	≈ 1350 KPa
Relative residual deformation in compression by 50 % in 72 h	≈ 12 %

By leveraging our wide-ranging expertise in PP foaming technology, we improve physical foaming processes in order to offer innovative material solutions that are affordable, resource efficient, and more environmentally compatible. Great example of closed-loop production: all material waste generated during production is immediately turned back into granules and fed back into the process, thereby reducing the use of virgin raw materials – with no compromise in mechanical performance.

Extrusion has been recognized as the most common foaming technology. Branched PP is a crystalline material with high melt strength compared to low-density PE and has technological differences in production.

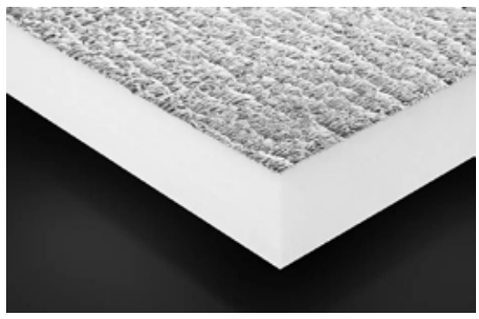
Production of ultra-low physically foamed polypropylene (<25 kg/m3) and thickness from 1 to 10 mm with high quality characteristics is possible exclusively with a hydrocarbon foaming agent (such as isobutane or n-butane) and using twin-screw foam extrusion technology, which will create a certain pressure and melt speed to dissolve gas into the polymer even at high temperatures melting required for polypropylene processing. Inert gases can also be used in extrusion foaming, like supercritical nitrogen (N2) or carbon dioxide (CO2) for production of higher density foams of 150 kg/m3 or more. Non-combustible CO2 reduces the industrial hazard class in the physical foaming process, it is easier to store, and fairly inexpensive.

Having tested the use of CO2 as a foaming agent in the laboratory for many years, FAP was able to develop a new machine to foam EPP using CO2, where the screws are designed in such a way as to maintain the necessary pressure in the gas injection zone at high temperatures. Further tests led to the development of a unique extrusion head and dies allowing to obtain high quality cellular structure of the foam and much better control over the expansion and crystallization of the polymer after leaving the extrusion head.

"Our decades of experience in extrusion, and many years of laboratory in collaboration with our partners have expanded our understanding of what is possible in the physical foaming of polymers. We have further refined our unique counter-rotating twin-screw extrusion technology. The result is superior quality and unique characteristics of the finished foam product."

Francesco Poli FAP CEO

fapitaly.com



ULTRA PLAST

THE PURGING COMPOUND

ULTRA SYSTEM
PURGING COMPOUND

Ultra System S.A.
1920 Martigny - Switzerland
email: info@ultrasystem.ch
www.ultrasystem.ch

BD Plast: pioneering extrusion solutions with Italian Excellence

BD Plast Filtering Systems, a flagship of the "Made In Italy" tradition, has consistently been at the forefront of meeting the demand for innovative extrusion, currently serving as a strategic partner for leading extrusion plant manufacturers.

Despite the challenges faced during those years, they were marked by remarkable vitality, contributing to robust economic and technological development—the very foundation of the celebrated "Italian economic miracle."

Today BD Plast remains a family-owned business with a history spanning over 75 years. The company features fifty highly qualified employees who diligently contribute to its growth, continuously demonstrating its innovative capabilities, not only in its products but also in its agility to respond promptly to the most demanding changes in the commercial and market environment.

Internally designing, developing, and manufacturing all systems and components, BD Plast ensures total control over every aspect of the process. This approach allows them to offer customized and unique solutions that address the most advanced needs.

In addition to providing a comprehensive range of screen changers, and other components for plastic material extrusion, BD Plast designs and manufactures complete industrial solutions for extrusion lines.

According to Dino Boicelli, Corporate Manager of BD Plast, "Today BD Plast is capable of providing complete platforms, groups with screen changers of all types integrated with volumetric or gear pumps, offering complex solutions where the company manages the entire downstream process. From our perspective, we aim for continuous improvement and are also working on traditional systems to make them more efficient and economically advantageous. With a production of approximately 1400 systems per year, our technical office is dedicated to creating highly customized products of varying sizes".

CleanChanger®: revolutionizing plastic material extrusion efficiency

One of BD Plast's standout products is CleanChanger®, a fully insulated self-cleaning screen changer now tested up to 400 self-cleaning cycles. Patented in both Italy and the United States, CleanChanger® operates autonomously, minimizing waste and enabling 100% material reuse.

Equipped with a complete automatic breaker plate expeller, the product has been developed and tested for use in processes such as granulation, com-

pounding, recycling, extrusion, blown and flat film production, tubing, profiles, wire granulation, underwater granulation, Hotmelt coating, and masterbatch production. Filter masses for CleanChanger® are available in diameters ranging from 60 to 250 mm, providing a complete range to meet all filtering needs.

The self-cleaning sequence of CleanChanger® is fully autonomous and controlled by a PLC with a touchscreen, further reducing production costs through highly efficient filter cleaning cycles. It's a powerful product that enhances the entire supply chain's efficiency.

According to Dante Boicelli, CEO of BD Plast, "CleanChanger®, is a technical innovation because it also works with operating pressures that often create difficulties for similar systems. Typically, self-cleaning screen changers require downstream pressure that matches the pressure used to regulate the backwashing system. The backwashing system uses a portion of the already filtered polymer, reversing its flow direction to remove dirt from the filter screens and discharge it outside the production line.

However, there are conditions where the pressure level is sufficiently high for this operation, but there are others, especially in compounding, where pressures are physiologically low. The product is capable of operating with working pressures ranging from 8 to 15 bar, while other similar systems on the market typically operate at an average of 40 to 50 bar. This means that it can be used in situations where other machines struggle or work less effectively. Additionally, cleaning the filtration screens at a lower pressure also translates to energy savings. When CleanChanger®, operates during backwashing, it only loses 0.6 bar, making it possible to ensure perfect flow continuity even without using a gear pump".

Boicelli also emphasized the system's ease of use, as it is intentionally designed to be simple both in setup and design.

Paving the Way for cleaner, circular plastic production

BD Plast Filtering Systems makes an increasingly sustainable choice by addressing the demand for high-efficiency filtration systems. These systems aim to obtain cleaner, purer, and higher-quality plastic, supporting the circular economy. Given the frequent necessity of using recycled plastic in industrial production today, this step forward is crucial.

By offering these options, we further enhance the flexibility and efficiency of our partners' industrial processes. Another standout product from BD Plast is BDOx2 screen changer, featuring a perfect flow continuity, even at high working pressure, maintained even on single-layer lines with product thicknesses up to 10 microns.

Filter masses for BDOx2 are available in diameters ranging from 45 to 350 mm.

Empowering Excellence: BD Plast's customer-centric approach.

By prioritizing positive customer experiences, BD Plast has gained a competitive edge in the market. Let's delve into how their commitment translates into tangible benefits:

This special attention results from consistent commitment at all levels, including technical support, spare parts availability, prompt deliveries, and rapid response. Leveraging the opportunities offered by the network, BD Plast has expanded its range of services and fully embraced Industry 4.0 protocols, ensuring increasingly direct control over system operations and optimal service to customers.

Today, BD Plast's customer centricity translates into the following:

• Design: BD Plast engineers, supported by an in-house technical office integrating all internal information flows, analyze customer needs and interpret them effectively. They create solutions aligned with the best production and process results.

• Customization: The company's strength lies in its ability to deliver highly customized solutions. Close collaboration with customers' technical offices ensures a thorough understanding of specific requirements.

• Comprehensive Supply: Whether for extrusion line manufacturers or end users, BD Plast provides a complete technological package ready for integration into the main production plant.

• Spare Parts Availability: BD Plast customers can rely on a wide range of spare parts for their screen changer systems, promptly shipped worldwide.

In summary, BD Plast's customer-centric approach isn't just about words; it's about delivering excellence at every touchpoint.

www.bdplast.com

Tecno System excellence: quality, reliability and innovation

With over 65 years of experience, Tecno System is capable of providing its customers with the best solution for their needs. The extensive experience over time, constant research and development, combined with the professionalism of a qualified team, are just some of the elements that distinguish Tecno System in the field of plastic extrusion and processing of plastic profiles, offering both individual machines and complete turnkey systems. In recent history, Tecno System has successfully strengthened its presence in the main markets for PVC profiles for windows, simultaneously expanding its workforce and know-how, and further consolidating the trust relationship with our customers, an essential factor for the company.

Tecno System is a reality characterized by a constant commitment to innovation and the ability to adapt to the changing needs of the market. Our vision is based on excellence, sustainability, and passion, values that permeate every aspect of our activities.

The pursuit of quality is a fundamental principle. From the design phase to production and delivery, efforts are aimed at ensuring that every product and service meets the highest standards. We invest in cutting-edge technologies and innovative processes to ensure consistency and excellence in everything we do.

Passion is what drives Tecno System to continually push boundaries and pursue excellence in everything they do. Tecno System is committed to providing innovative solutions that fully meet customer needs; we carefully listen to customer feedback and constantly seek ways to improve and evolve our products and services.

If you are looking for reliable machinery and superior performance in the extrusion industry, Tecno System is the ideal choice. With proven experience in the sector and a consolidated reputation for the quality of its products, Tecno System stands out for the excellence and reliability of its extruders. Tecno System machinery is renowned for its reliability. Thanks to meticulous design and the selection of high-quality materials, the extruders offer consistent and reliable performance over time. The company is committed to providing robust and durable solutions that enable customers to achieve excellent results reliably.

Tecno System is at the forefront of innovation in the extrusion industry. The company continually invests in cutting-edge technologies and advanced production processes to ensure that products meet the evolving needs of the market. With state-of-the-art solutions, customers can be sure they have access to the latest technology and industry best practices.

Tecno System recognizes the importance of the

uniqueness of each customer and is committed to providing customized solutions that meet their specific needs. From designing tailor-made products to flexibility in delivery options and after-sales support, Tecno System is committed to ensuring a unique and highly satisfying experience for every customer. The company offers its customers specific and consolidated expertise and constant research and development efforts combined with the professionalism of a highly qualified team, in order to provide intelligent solutions to customers. The main goal is to ensure customer satisfaction, which is the cornerstone of Tecno System's mission. To achieve this, all products are fully designed, manufactured, and tested at the Consandolo plant (Ferrara, Italy), controlling every stage of the supply chain and applying very strict quality standards to ensure full product compliance with European regulations.

Over the years, Tecno System has grown not only organizationally but also in terms of sales volume, revolutionizing its commercial strategy and opening up even more to the global market.

In recent years, in fact, the company has been investing even more energy in international markets and developing a vast and structured sales network to simplify customer needs. The result of these massive efforts is that today Tecno System exports its products to more than 40 countries worldwide with the daily support of 6 representative offices that promptly assist customers respectively in Brazil, Spain, France, Russia and other CIS countries, Turkey, and finally India.

By opting for Tecno System extrusion lines, customers can meet various capacity requirements (from 5 to 350 kg/h) as well as a wide range of purposes in the field of profile extrusion such as pipes, technical profiles, building profiles, medical tubes, thermal profiles with fiberglass, etc., and made in a wide variety of thermoplastic materials such as plasticized PVC, rigid PVC, PP, PC, HDPE, LDPE, PP, PMMA, etc. The lines are also characterized by low energy consumption of calibration units and innovative solutions such as new cutting units with radial hot blades.

Special attention is paid to the main sector of PVC profiles, with Tecno System's solid experience in the design and construction of high-quality extrusion dies and calibrators for the production of PVC window frames, shutters, panels, cable management channels, gutters, and downspouts, etc.

Another strength is the construction of extrusion lines dedicated to single or multiple-layer medical tubes made with raw materials of medical grade used in clean room environments (soft PVC, TPU, PEBAX, etc.). Tecno System's medical tube extrusion lines are becoming very popular among customers in Italy and abroad for the high-speed extrusion standards that can be achieved, which are the result of the latest advances in automation and mechanics, combined with close collaboration with raw material manufacturers to improve and refine screw geometry and design. Furthermore, there is the possibility of having Industry 4.0 ready extrusion lines for multilayer tubes complete with OD/wall thickness control, inkjet printer, and single or double end semi-automatic winder to facilitate and optimize any phase of the production process.

It must be said, therefore, that Tecno System's wide range of products is not limited to extrusion lines and tooling systems: in addition to these main solutions, the company can also provide in-house technologies for profile mechanical processing: for example, the extensive experience in the field of punching unit systems has allowed Tecno System to develop integrated and customized solutions for their extrusion lines, which have become strategic solutions in the company's market policy.

The micro-extrusion medical tube lines offered by Tecno System include a wide range of options, including mono and multi-lumen tubes with up to 18 lumens, available in both mono-layer and multi-

layer versions with up to five layers. These tubes can have an outer diameter ranging from 0.40 mm up to a maximum of 14 mm and can be made from any thermoplastic material. Micro-extrusion semi-finished products are widely used in a variety of biomedical sectors, including cardiovascular, epiduroscopy, neurology, gynecology, urology, and more. The flexibility and precision of these tubes make them an ideal choice for medical applications that require reliable performance and compliance with the highest quality and safety standards offered by Tecno System.

With a winning combination of reliability, innovation, and top-notch customer support, Tecno System confirms itself as a leader in the extrusion industry and beyond. Choosing Tecno System means investing in quality machinery and achieving outstanding results for your business.

In conclusion, Tecno System stands out in the industry for the quality of its products and services, customer sustainability, passion for meeting customer needs, and offering customized solutions through extrusion lines. The company is proud of its commitment to excellence and will continue to work hard to maintain the trust of its customers and the high standard it has set for itself.

This year, Tecno System will be present at the international PlastPol fair, which will be held in Targi Kielce, Poland from May 21st to 24th, 2024, and will be ready to welcome its visitors at booth A-28; furthermore, Tecno System will also be present at the international FIP fair, which will be held in Lyon, France from June 4th to 7th, 2024, and will be ready to welcome its visitors at booth M04-N05.

www.tecnosystemfe.it

PVC PIPES · END LINE AUTOMATION

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BELLING MACHINES FOR PVC-O

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Maris innovative process for the odor reduction of post-consumer polymers

One of the most critical aspects of post-consumer plastic recycling is the presence of unpleasant odors.

Maris has recently developed an innovative extrusion process specifically designed to solve this issue.
The odorous contamination of plastics is usually of organic origin, and the most common one comes from food residues and fuel tanks.
This study was divided into two parts:
• the first concerns the development of an innovative extrusion process for the abatement of odors/contaminants from HDPE fuel tanks – a task carried out by Maris;
• the second part concerns the characterization of the samples to identify the best process conditions – an activity which was carried out by the Università del Piemonte Ovest.

Thanks to the work and synergy of these two different experiences, it was possible to break down up to 98% of volatile and semi-volatile organic compounds.
Maris extruder developed for this specific recycling has the following technical characteristics: Do/Di = 1,55; extruder length 48 L/D, equipped with two different side degassing units, a water injector and a strands die. The downstream equipment is composed of a cooling water batch, a drying air knife and a strand granulating pelletizer.
The contaminant reduction process has been divided into two phases. During the first one, the polymer was melted using a very high thermal profile and subsequent degassing of the material through the first side degassing unit. During the second phase, water was injected into the extruder with a gravimetric pump and subsequent degassing of the material through the second side degassing unit. The water injected at room temperature, instantly switched to the gaseous state. Thanks to the proper combination of the mixing screw elements, it was homogenized with the molten polymer. After mixing, the material was degassed together with water vapor, which acts as a stripping carrier for the organic contaminants.

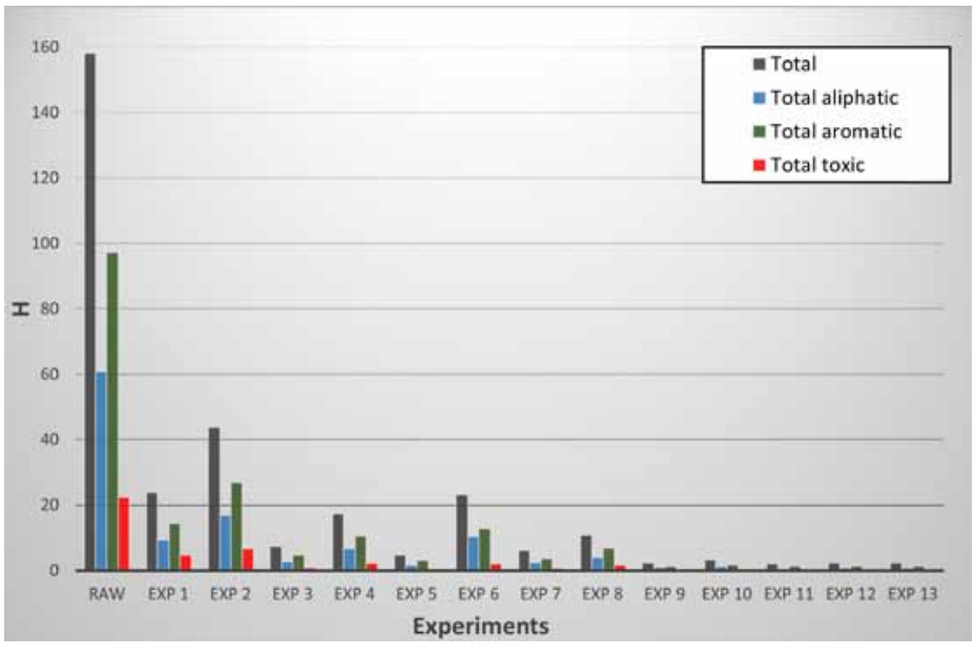


Figure 1 shows the layout of the extrusion line together with the main equipment.

In order to identify the best process conditions in terms of odor reduction / VOC removal, 13 samples have been performed. The samples of each test were analyzed by the Eastern Piedmont University using Headspace Sampling and GC-MS analysis. The excellent results obtained are shown in the histogram:

www.mariscorp.com

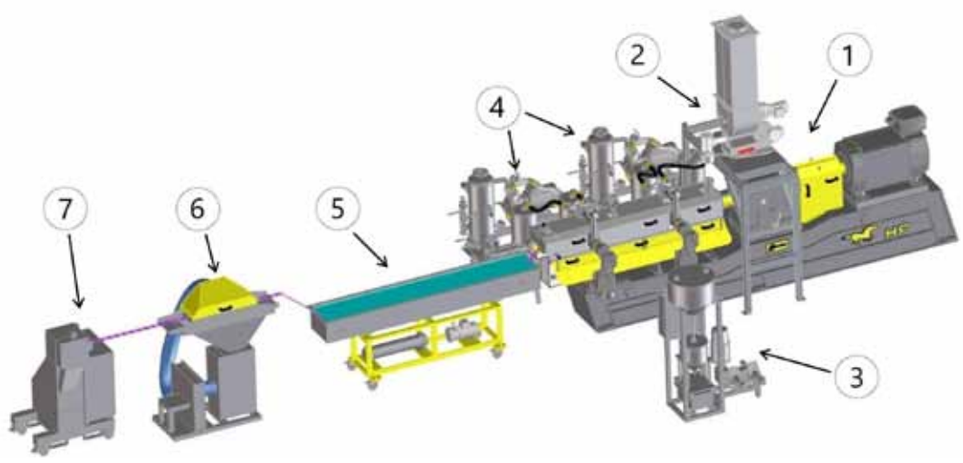
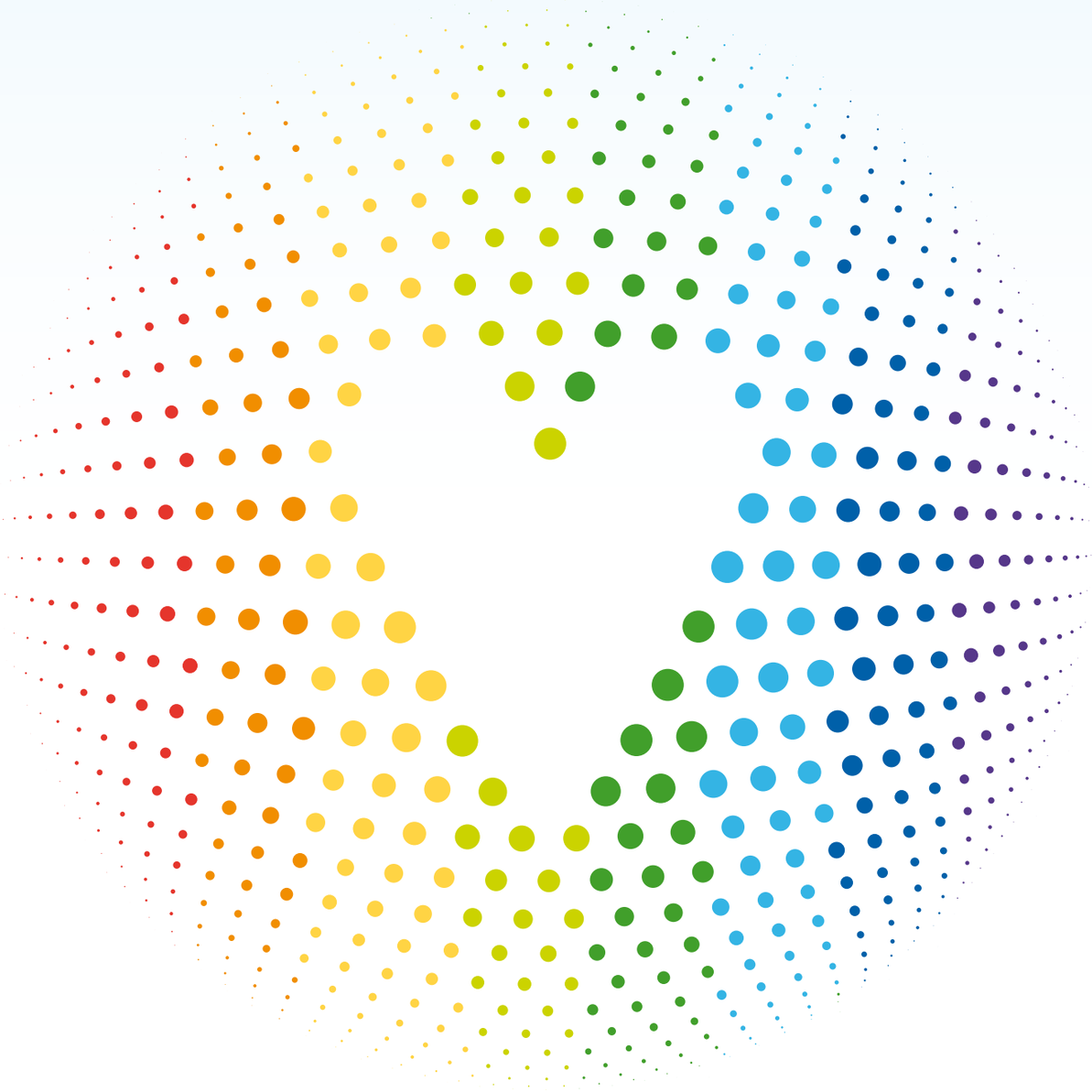


Figure 1. Extrusion layout-Maris EVOREC PLASTIC. 1. Extruder, 2. Gravimetric feeder, 3. Gravimetric pump, 4. Vacuum pumps, 5. Water bath, 6. Air knife, 7. Pelletizer

Caldara Plast

Upcycling plastics and compounding since 1963



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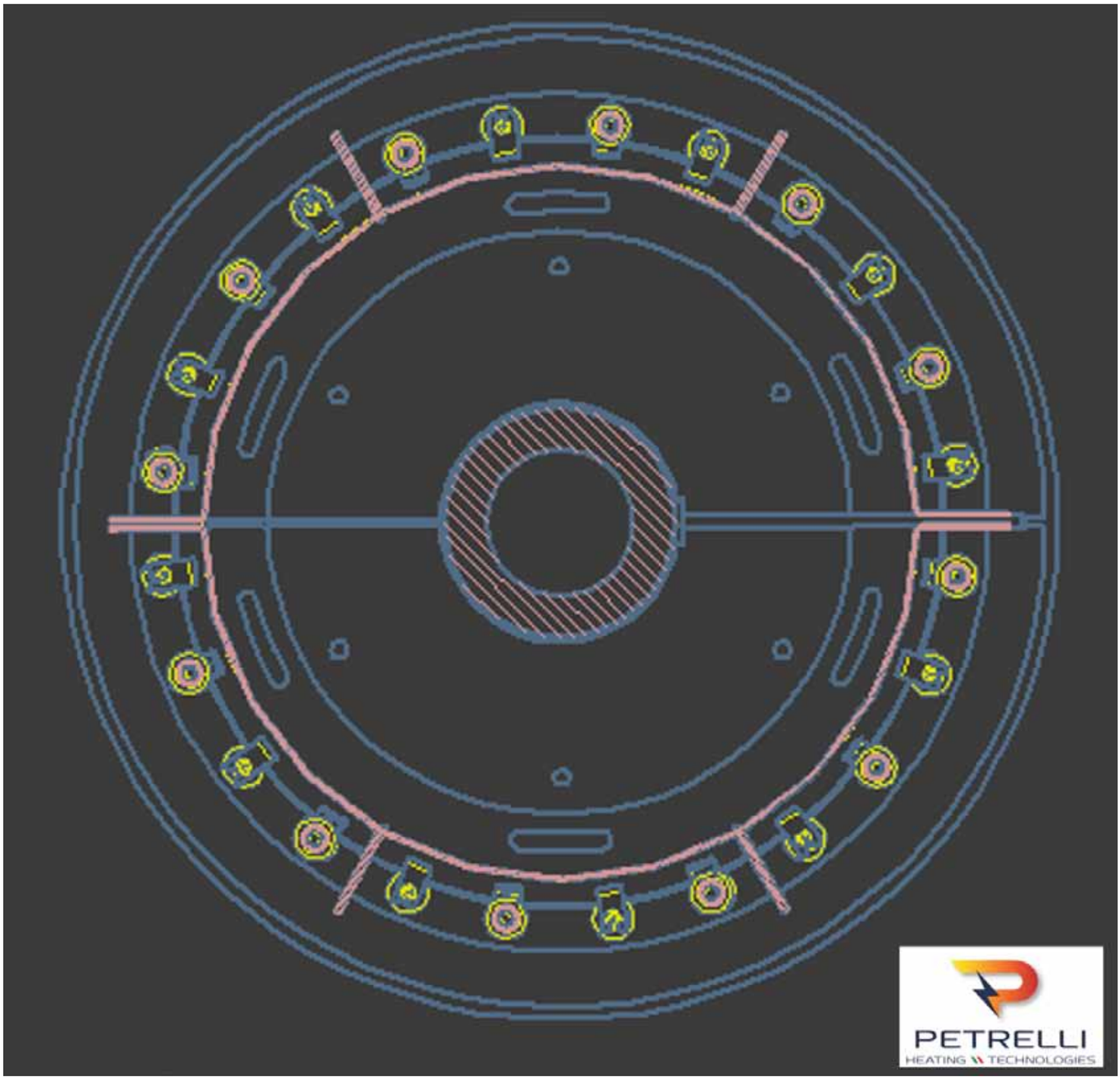
Caldara Plast S.r.l.
Recovery Division Via Trieste, 28/E 22036 Erba (CO) Italy Tel. +39 031610190
Compound Division Via Gianbattista Giovio, 633 22040 Alzate Brianza (CO) Italy Tel. +39 031632542

Innovative Heating for Calenders by PHT

Petrelli Heating Technologies presents infrared electric heating device for calenders

The world of plastic industry is constantly evolving, driven by the relentless pursuit of innovative solutions to improve production efficiency and material quality. Among the revolutionary technologies transforming the sector, heating devices for calenders play a fundamental role in optimizing production processes. In this article, we will explore the key role of one of these advanced technologies, focusing on their characteristics, benefits, and impact on the plastic industry.

Calenders are an essential component in plastic production processes, used for processing a wide range of materials, from thin films to thicker sheets. These machines play a crucial role in shaping and refining plastic materials, ensuring compliance with the specific requirements for each application. Heating is a fundamental element in the operation of calenders, allowing for proper plasticization and manipulation of materials. In the past, the heating devices used were mainly based on conventional methods, such as diathermic oil heating. However,



with advancing technology, more efficient and innovative solutions have emerged, offering a range of significant advantages over traditional systems. Among these innovative solutions, electrically operated infrared heating devices stand out, patented by PHT PETRELLI HEATING TECHNOLOGIES.

Research and Development as a Tool for Energy Consumption Reduction

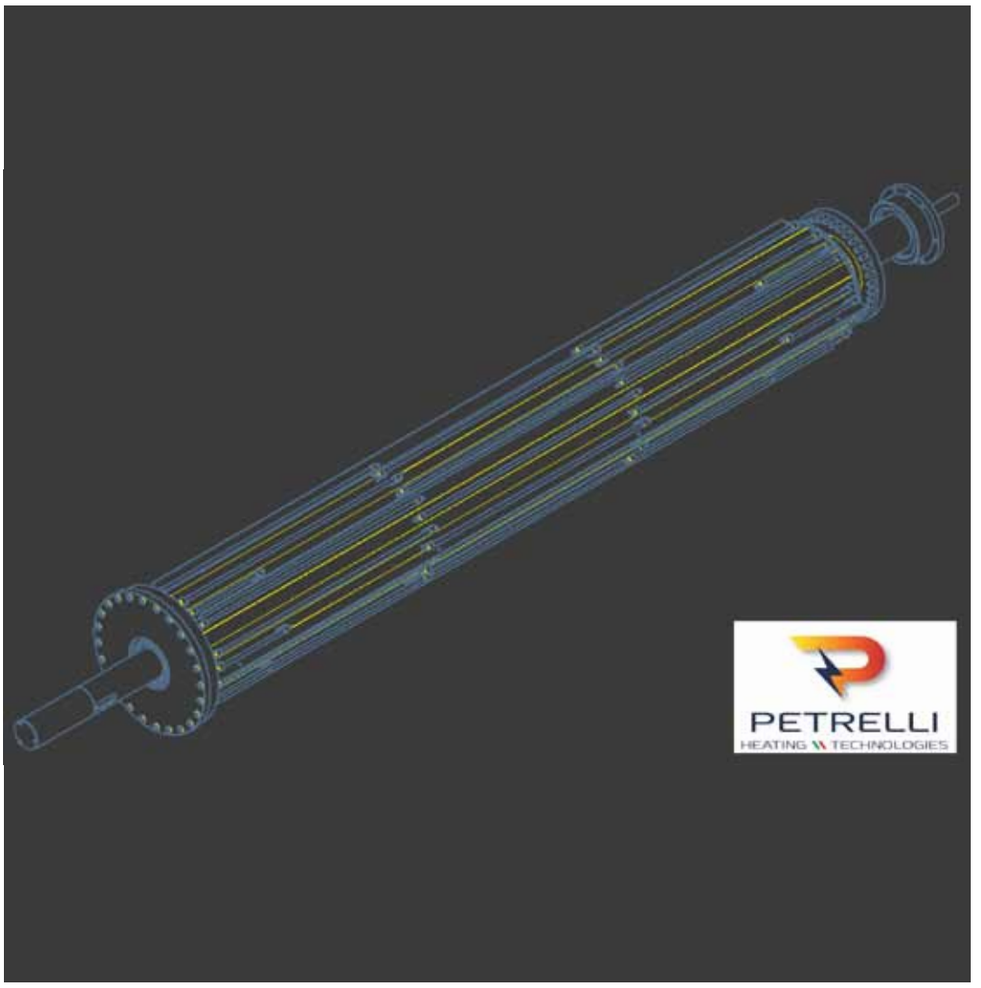
"The continuous desire to improve our products and adapt to the needs of each of our customers has made research and development a fundamental pillar to optimize production processes, seeking a balance between operability and profitability in such a competitive market as the plastic industry," says Patrizio Petrelli, R&D manager at PHT.

From this perspective, PHT's approach has been to apply an electromagnetic wave heating system, a prerogative of our company for over 40 years, to significantly reduce energy consumption costs without compromising production. Research has led us to develop and patent a new technique for delivering heat to calenders for plasticization plants, still heated today with diathermic oil or steam. This technique involves heating with electromagnetic waves that, through frequencies in the infrared spectrum, transmit heat to the surface of bodies without heating the air. This allows for targeted heat transmission without dispersion, resulting in almost 70% energy savings. Furthermore, this system allows for precise and uniform temperature control as well as differentiation of temperatures along the development of the cylinders themselves and rapid attainment of the set temperature.

The Infrared Revolution

Mechanically, the new patented Petrelli electric infrared heating devices for calenders are mounted on a turned and processed steel core to accommodate the cables. The device consists of a system of parabolas (reflective stainless-steel plates) on which quartz candles are installed to transmit heat through electromagnetic waves with wavelengths in the infrared spectrum (Picture 1). The number of candles and their power are determined based on specific needs. In fact, all Petrelli products, including the same heating devices for calenders, are analyzed together with the technical office and customized based on the needs of customers' production processes. Many customers have already relied on this Petrelli infrared technology, expressing full satisfaction and even exceeding expectations.

The use of infrared in heating devices for calenders has revolutionized the way plasticization processes are managed because it allows for faster reaching of working temperature and precise temperature control, ensuring optimal material processing and greater product uniformity. Specifically, the Petrelli heating device is designed to have different temperatures along the length of the cylinder, creating different zones that can be managed separately with an appropriate temperature control system, allowing for homogeneous heat distribution around the circumference of the calender (Picture 2). In this way, PHT PETRELLI HEATING TECHNOLOGIES has solved the problem of diathermic oil calenders, where temperature losses due to hub conductivity are around 3-5°C, thus eliminating temperature loss at their ends.



Infrared technology allows for greater energy savings due to its ability to transfer heat directly to the material without significant losses. This results in reduced production cycle times, improved final product quality, greater operational efficiency, and cost reduction.

One of the disadvantages of diathermic oil systems is the presence of rotary joints, elements susceptible to oil leakage. Thanks to the electric heating system proposed by Petrelli, customers can forget the fire hazard risks associated with these leaks. Furthermore, maintenance costs and even disposal costs of used oil are eliminated, resulting in a lower environmental impact. This last factor is very important especially in recent years, renewing our commitment to a sustainable future.

The interior of Petrelli's heating devices for calenders is designed as a fixed, non-rotating structure, welded to the shaft, eliminating the presence of sliding electrical contacts present in diathermic oil systems, subject to dirt and dust. This reduces insulation loss due to dirt and dust in these areas and eliminates the possibility of associated short circuits.

The material used to design the internal structure of the heating device, stainless steel, is suitable for temperatures close to 700°C, well above the needs of the production process. Consequently, all other materials used to complete the device also support these temperatures.

The innovation of this heating system does not stop here. Petrelli also offers the possibility of adding cooling inside the core (the so-called shaft) to facilitate and speed up the production cycle in case of maintenance. This ventilation is achieved through an external fan that transmits air through the shaft, which is conveniently perforated to allow air passage, allowing for much faster cooling and avoiding melting of plastic, thus preventing issues in the plant.

Heating devices for calenders based on infrared technology represent one of the most significant innovations in the plastic industry. Thanks to their ability to offer rapid, uniform, and highly controlled heating, these systems transform production processes, allowing companies to achieve better results more efficiently and sustainably. With an eye toward the future, further developments and improvements can be expected in this promising technological area. At PHT PETRELLI HEATING TECHNOLOGIES, we are constantly committed to reducing the environmental impact of our operations and promoting eco-sustainable practices through innovative solutions as a tool to protect our planet and offering efficient energy solutions that help reduce emissions. Every action counts: let's work together for a greener future and a better world for future generations.

IDENTITY CARD

NAME
INFRARED ELECTRIC HEATING DEVICE FOR CALENDERS

MANUFACTURER
PHT – Petrelli Heating Technologies S.r.l.
Via Primo Maggio 10/A – 21022 Azzate (Varese)
Tel. +39 0331 89 33 00 – Fax +39 0331 89 23 22
Email: info@p-h-t.it
Website: **www.petrelliheating.com**

SPECIFICATION
Infrared Device

APPLICATIONS
Calenders for heat treatment of various types of plastic, rubber, and paper materials

ADVANTAGES
- Customizable
- Zonal thermal conduction
- Uniform cylinder heating
- Possibility of ventilation
- Energy savings
- Electrical connection
- Reduced working cycles
- Improved productivity cycle
- Low operating costs

TECHNICAL SPECIFICATIONS:
Infrared electric heating device for calenders

Dimensions:	Customized
Device geometry:	Cylindrical
Heating mode:	Electric with infrared candle
Maximum set-up temperature:	700°C
Power:	Customized
Construction material:	Stainless-steel
Special features:	Arrangement of infrared candles in different zones - Customized

HI AI

HUMAN
INTELLIGENCE

ARTIFICIAL
INTELLIGENCE

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FOR **RUBBER** TECHNICAL COMPONENTS

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SYSTEM CERTIFICATION ISO 9001 SGS

Green attitude

When it first appeared on the market two years ago, HT-Cooling did so in the belief that the experience of the two partners that constituted it could be spent on behalf of companies to direct them towards solutions tailored to their needs, able to guarantee energy and consequently economic savings for those who use them. Two years later we can say without a doubt that the company has achieved its goal.

Today HT-Cooling's proposal includes air and water cooling solutions, dry and adiabatic coolers, customized hydronic groups and absolutely innovative systems for blown film cooling.

Sustainability and respect for the environment are essential guidelines for the company and it is precisely around these concepts that cooling solutions have been developed that are capable of being high-performing on the one hand and energy efficient on the other.

We are talking about chillers but also of adiabatic coolers, which exploit the humidity present in the air to increase the cooling capacity to the use.

Large quantities of water are used daily worldwide through the use of conventional evaporative systems for the cooling of industrial processes. Due to the growing scarcity of water resources, their difficult availability and ever-increasing costs, industries are adopting a new technology that can save up to 95% of water: adiabatic cooling. This solution not only guarantees greater efficiency in heat transfer, but also brings a series of advantages:

• Drastically reduces water consumption, up to 95% compared to traditional evaporative systems.

• It contributes to countering the growing scarcity of water resources by offering a more sustainable alternative.

• It improves heat transfer efficiency, ensuring optimal performance.

• It requires less maintenance, reducing operating costs.

• It eliminates the use of polluting chemical agents, promoting a healthier and safer working environment.

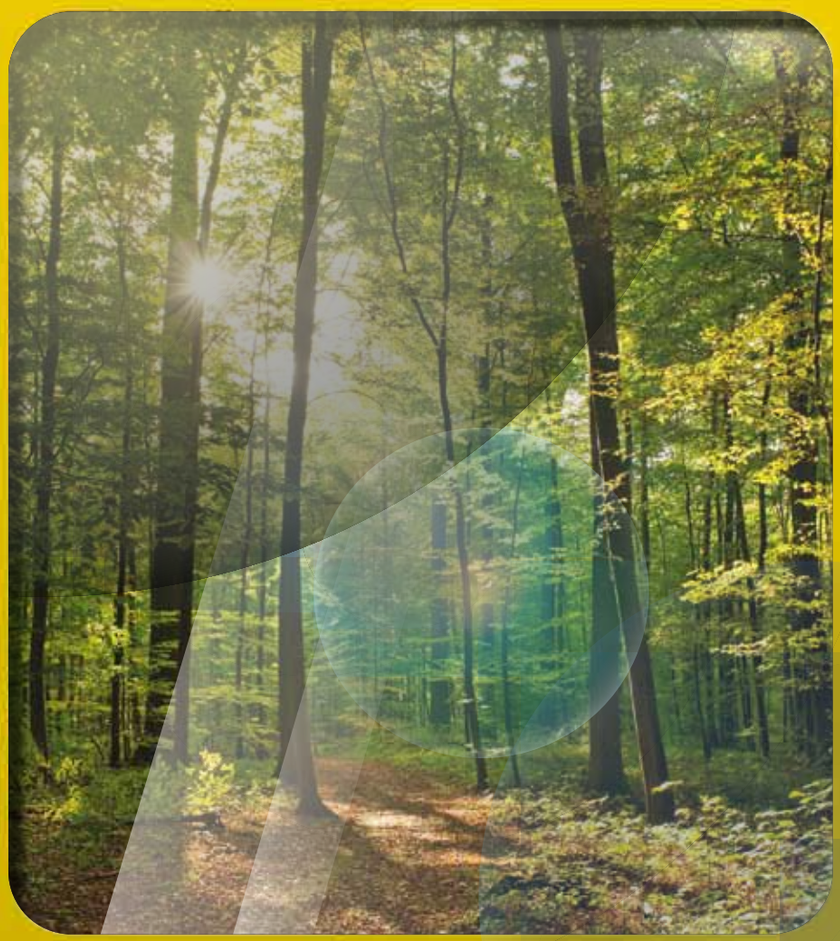
The DC-W series of adiabatic coolers, consisting of 16 sizes, has been designed using modules of different sizes and EC Brushless fans. Thanks to the insertion of the adiabatic section, the series is able to deliver cooling caapcity from 95 to 1100 kW, close to the ambient temperature, thus allowing a significant energy saving.

Furthermore, the combination of a DC-W with a chiller allows the creation of the so-called "free-cooling" systems, i.e. a "free" cooling mode which involves switching off the chiller and operating only the cooler, thus reducing energy consumption. The conversion of the system from the chiller setting to the free-cooling setting occurs completely automatically, through a microprocessor that controls the entire system and which operates in an automated mode following the trend of environmental conditions.

The most recent regulations on the use of low GWP refrigerants find HT-Cooling already committed to defining a range of products in line with the new requirements, renewing the company's GREEN ATTITUDE once again.

ht-cooling.com

img



YELLOW OUTSIDE GREENER IN THE HEART

IMG finds innovative and **effective solutions** for the entire molding of elastomers and thermosets sector, while paying great attention to its **environmental footprint and sustainability**.

IMGMACCHINE.IT

FILTEC: Italian excellence in the field of filtration and granulation of plastics

A journey through 30 years of research, environmental sustainability, craftsmanship and innovation

A star in the industry of filtration and granulation of plastics, based in Badia Polesine (Italy), in the hearth of Veneto Region: Filtec. With over 30 years of experience, this company has established itself on the market as a lighthouse of innovation and quality. Over the years Filtec has been responding to the management, production and consumption optimization challenges that have affected the industrial sector. Founded in 1993 by the Baracco family, driven by an already consolidated experience in the field of special automation for thermoplastics, just two years after

opening Filtec introduced the first Water Ring pelletizer in the market and started to produce the first prototype of Underwater Pelletizer. These products are still present in the company catalogue which have undergone evolutions and transformations over the years to keep up with the times. Together with the granulation systems, the products range offers single/double plate screen changers, water filtration and cooling systems, vented vibrating screens, centrifuges.

In 2022, the restyling of the logo and the renewed website show the visionary spirit of Filtec, made up of increasingly high-performance challenges and technologies.

Today, within its over 5,000 m2 of factories, the watchword is craftsmanship. An all-Italian craftsmanship that not only makes the Made in Italy its strong point, but which uses on-site production to guarantee customers total control over the quality of its systems and a customer service close always available.

Filtec is more than just a manufacturer of machinery: it is a trusted partner, a supplier of tailor-made solutions, a collaborator who is committed to guaranteeing reliable and constant performance over time. In addition to the very high quality of systems and materials, the company stands out on the market for a customer service that goes beyond expectations, actively contributing to maintaining efficient and long-lasting systems. With its tireless commitment to ensuring excellent technical and commercial assistance, at Filtec each system is designed to guarantee high performance, together

with the advanced management software and integrated CRM which allow for impeccable organization in sales and purchases.

With more than 700 customers all over the world, over 400 suppliers and more than 1,600 global installations, Filtec is a true emblem of Made in Italy whose gaze, like that of any self-respecting leader, goes beyond mere production of machinery and extends to the environmental theme. For years, in fact, Filtec has been an official partner of "Are you R", a European project that aims to raise awareness among the world population about plastics recycling. The decision to establish this strong collaboration is a clear manifestation of a profound commitment towards the circular economy, recycling, and sustainability.

In more details, the "Are you R" project aims to increase collective awareness on the relevance of recycling plastic materials. By telling daily stories about reusing and recycling, this path has now become the point of reference for thousands of people who exchange opinions every day with a single common denominator: the desire to be an active part in the process of environmental sustainability through recycling. From this perspective, Filtec's participation in this initiative reflects its commitment to seeking sustainable solutions for the good of the planet, joining a broader community with its same goal.

Looking ahead in time and moving on to annual events, the company is preparing for 2024 with enthusiasm, participating in several leading trade fairs in the sector around the world. It starts on 19 and 20 June in Amsterdam with PRS Europe 2024, continuing from 10 to 12 September in Dubai with PRS Middle East & Africa. On the PRS events (Plastics Recycling Shows) organized around the world, Filtec will have the opportunity to compete with the largest players in the field of plastics recycling, presenting its products and exporting its know-how first to Europe and then to Asia. On 11 and 12 September it will be the turn of the Compounding World Expo Europe in Brussels, while for the last event of the year the company is ready to fly to Friedrichshafen, Germany, for the 2024 edition of Fakuma, the leading global trade event for industrial plastics processing, with over 1,600 participating exhibitors.

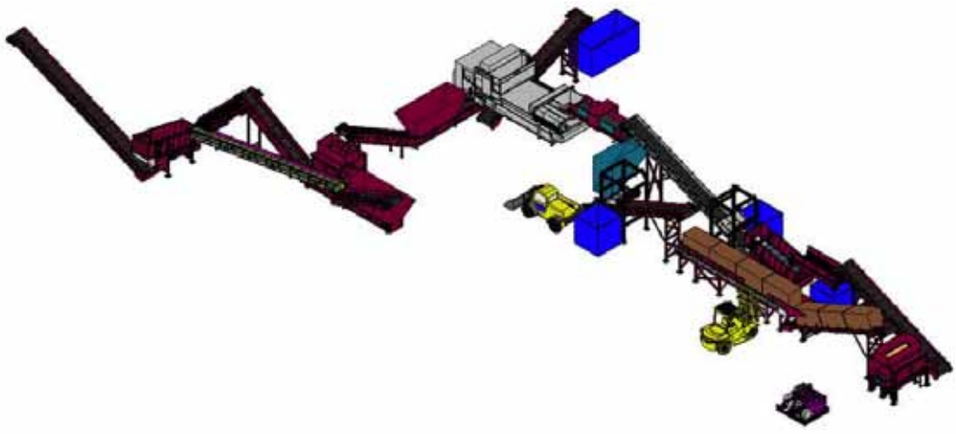
At these events, Filtec will bring its virtual showroom as last year. Thanks to this new platform, customers and visitors are offered an engaging experience that allows them to explore the products, discover their characteristics and understand the potential of the systems simply with a monitor and a couple of clicks. A real virtual visit to the entire range of products, with the aim of allowing customers to examine materials and components in detail to be able to make informed and personalized choices. In short, give customers a realistic vision of Filtec's entire offering; showing the company's desire to equip itself with innovative technologies to support sales.

In conclusion, thanks to tireless work aimed at continuous improvement, Filtec today represents a national excellence with deep roots in Italian craftsmanship. What holds the group together is the vocation for environmental sustainability, demonstrated by the partnership with "Are you R" but also by a work ethic that reserves the utmost respect for these issues. Participation in international fairs, attention to recycling, the very high quality of the offer and continuous research activities summarize Filtec's nature as a global leader in its sector.

www.filtecsrl.eu

Promeco: pioneering chemical recycling plants for sustainable future

In the ongoing fight against environmental degradation and the pressing need for sustainable solutions, Promeco® emerges as a beacon of hope.



Italian manufacturer of mechanical and chemical recycling lines, Promeco® is at the forefront of innovative technologies designed to combat the ever-growing challenge of plastic waste.

The Urgency of Plastic Waste Management

Plastic pollution has reached alarming levels globally, with devastating consequences for ecosystems, wildlife, and human health.

The mechanical recycling, while effective to some extent, faces its own set of challenges, including contamination and limited recyclability of certain plastics.

Through mechanical recycling the plastic waste is transformed into Secondary Raw Material, which can be used as a semi-finished product in new production processes. But mechanical recycling cannot go on indefinitely: its excessive use involves the alteration of the material with the consequent impoverishment of the polymer chains.

The other alternative traditional methods of waste management, such as landfilling and incineration, fall short in addressing the magnitude of this crisis.

Enter Promeco®: Chemical Recycling Revolutionaries

Promeco® stands out with its commitment to tackling plastic pollution through its cutting-edge chemical recycling technology.

Chemical recycling is complementary to the mechanical one which has obvious limits in the valorization of the mixed, heterogeneous and compound wastes and cannot go on indefinitely.

Chemical recycling allows the recycling of a wider range of plastics, including mixed or contaminated and produces a material with qualities comparable to virgin material:

it breaks down plastic polymers into their molecular components and allows for the creation of new, high-quality materials.

How Chemical Recycling Works

At the heart of Promeco®'s operations is its advanced chemical recycling plant.

The PROMECO® CHEMICAL RECYCLING PLANT is a merging of process and equipment that have been designed and produced over the last 28 years by Promeco®. The data and tangible experience that has been collected and optimized gives Promeco the ability, know-how and experience to engineer a best-in-class solution.

These advanced recycling line utilizes various processes such as pyrolysis, depolymerization, and gasification to transform plastic waste into valuable resources. Through controlled heating and chemical reactions, plastics are converted into feedstocks, which can be used as raw materials in the production of plastics or other chemicals.

Quality Output

The end products of chemical recycling are of high quality, suitable for use in various industries.

This ensures a closed-loop system where plastics can be continuously recycled without compromising performance or integrity.

Currently Promeco is working a chemical recycling project in Finland: as it is readable in the press release of Lamor, Promeco®'s customer, the output from the Promeco® chemical recycling plant will be sold to Shell for further refining into a suitable raw material for plastics producers.

Reduced Environmental Impact:

Today the producers of virgin polymers are under intense pressure from all stakeholders to find ways to recycle plastics, maximize efficiency to provide a solution that is both sustainable and profitable.

Currently the key goal of all stakeholders is the reduction of polymers from natural resources as well as in increase in reusing current plastic waste thanks to chemical recycling technology.

By diverting plastic waste, which cannot be mechanically recycled, from landfills and incinerators, chemical recycling significantly reduces greenhouse gas emissions and environmental pollution.

It contributes to the circular economy by promoting resource conservation and minimizing reliance on virgin materials.

Promeco® Impact and Innovation

With a track record of successful waste recycling projects worldwide, Promeco® is currently proving the viability and effectiveness of chemical recycling in addressing plastic waste challenges.

Their innovative solution not only mitigates environmental harm but also creates economic opportunities by establishing sustainable supply chains and fostering technological advancements.

Shaping a Sustainable Future

In the fight against plastic pollution, Promeco® stands as a testament to the power of innovation and dedication. Through its mechanical & chemical recycling plants, it offers a sustainable pathway towards a cleaner, greener future.

However, its efforts alone are not enough: collective action and support from governments, industries, and individuals are crucial to realizing a world where waste is minimized, resources are conserved, and the planet thrives.

As we embrace the promise of advanced and sustainable technologies, we take a significant step towards building a more resilient and harmonious relationship with the environment.

www.promeco.it

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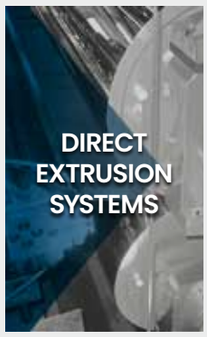

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BRONZE 2023 ecovadis Sustainability Rating

TRANSPARENCY ON GREENHOUSE GAS EMISSIONS CO_2 270 TONN. CO2/EQ

CERTIFICAZIONE DI SISTEMA QUALITÀ DNV ISO 9001

Conair Group to introduce AI-driven conveying technology

Conair will be making its largest – and most interactive – new-product introduction ever at NPE 2024, where it will display more than 55 pieces of equipment, working medical and filament extrusion lines, and 12 new products, all aimed at helping users "Make Every Pellet Count."

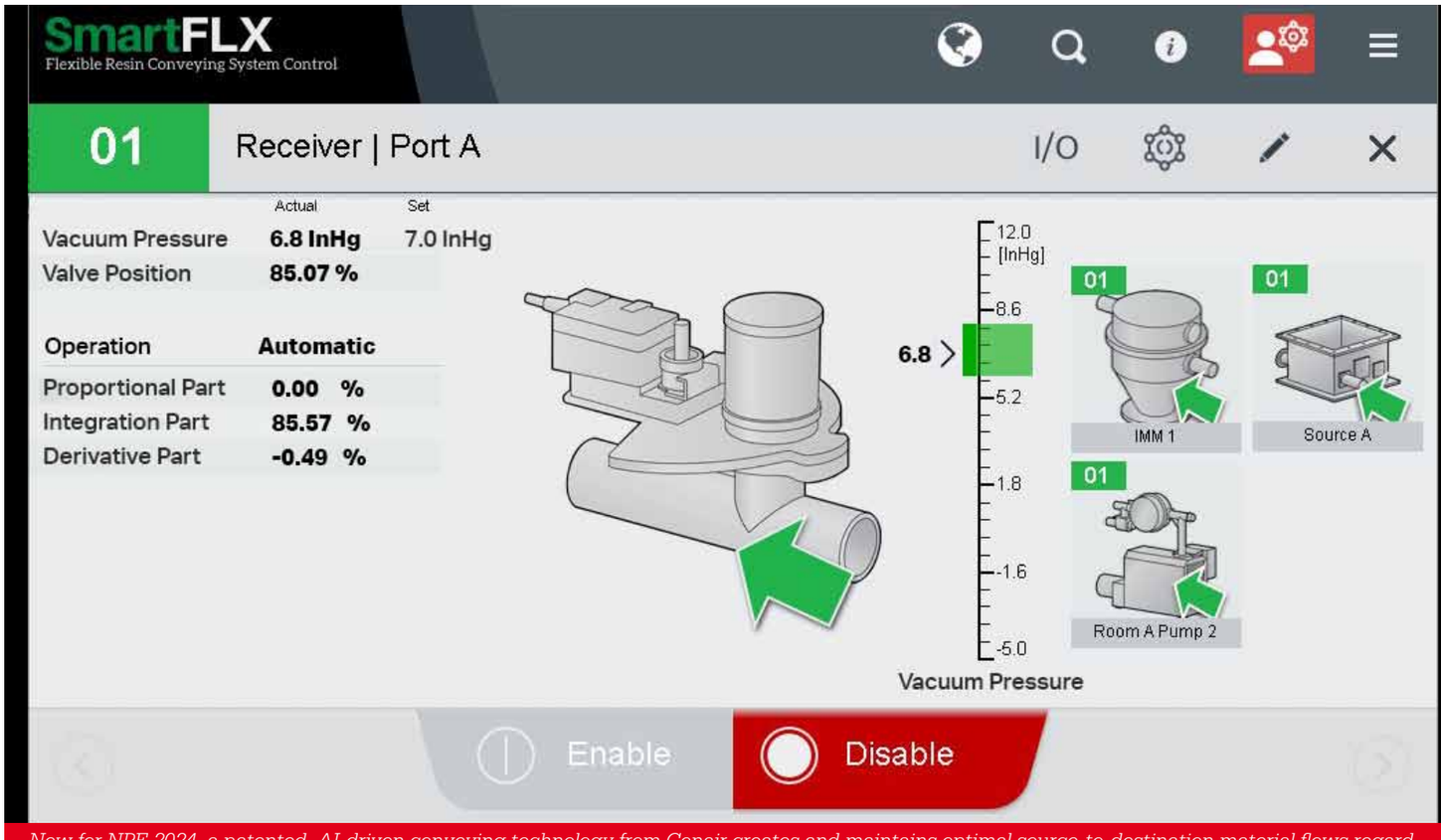
The Conair booth (W2113) will feature products in eight functional areas, inviting visitors to encounter more than a dozen interactive "hands on" demonstrations with a new generation of smart, AI-driven controls and equipment. Highlighting Conair's NPE 2024 booth is a live, interactive demonstration of a novel and patented AI-driven conveying technology that virtually eliminates the need for human interaction or adjustments to central conveying system. This patented AI technology creates and maintains optimal source-to-destination material flows regardless of material characteristics, distances, or destinations while automatically compensating for common conveying problems. All the operator needs to do is tell the conveying controller where to send the material, and the technology takes care of the rest.

"At Conair, we have always sold auxiliary equipment to processors with the understanding that it's going to provide labor savings and increased productivity," says Sam Rajkovich, VP Sales & Marketing. "Our latest products, including our AI-driven conveying technology, offer processors a practical, affordable, and technically advanced way to meet high labor training and turnover costs head-on. Investing in this product is going to directly save labor and simplify training because artificial intelligence will not only optimize the process of conveying, but also will eliminate labor costs, specifically the need for error-prone manual interactions with the conveying equipment."

Conair invites processors to bring a list of their most annoying conveying issues to the booth, and experience in person how this AI-driven solution eliminates those daily headaches.

The Conair Groupoffers innovative auxiliary equipment solutions to plastics processors around the world. With 32 degreed engineers, including 16 senior team members with an average of over 23 years of experience, Conair brings unparalleled technical expertise and support to its customers, guaranteeing its products will deliver maximum productive uptime. Twenty parts and service team members respond to tens of thousands of calls each year, answering in an average of about 15 seconds. Over 450 individual products include resin drying systems, blenders, feeders and material-conveying systems, temperature-control equipment, and granulators. Extrusion solutions include line-control systems, film and sheet scrap-reclaim systems, and downstream equipment for pipe and profile extrusion. Conair also has specialized expertise in every major end market – such as packaging, medical, transportation, building and construction, and many others – and strives to ensure plastics processors succeed in today's competitive global marketplace.

www.conairgroup.com
NPE: booth W2113



New for NPE 2024, a patented, AI-driven conveying technology from Conair creates and maintains optimal source-to-destination material flows regardless of material characteristics, distances, and destinations while automatically compensating for common conveying problems.

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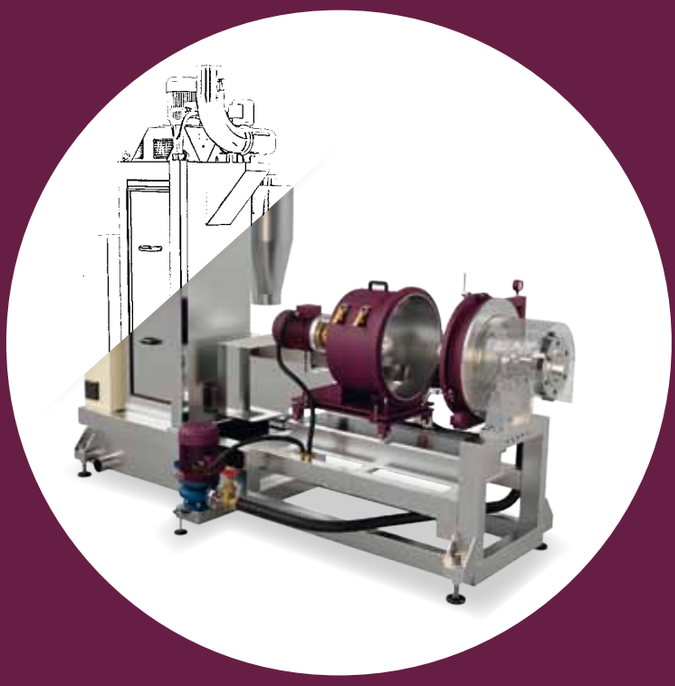

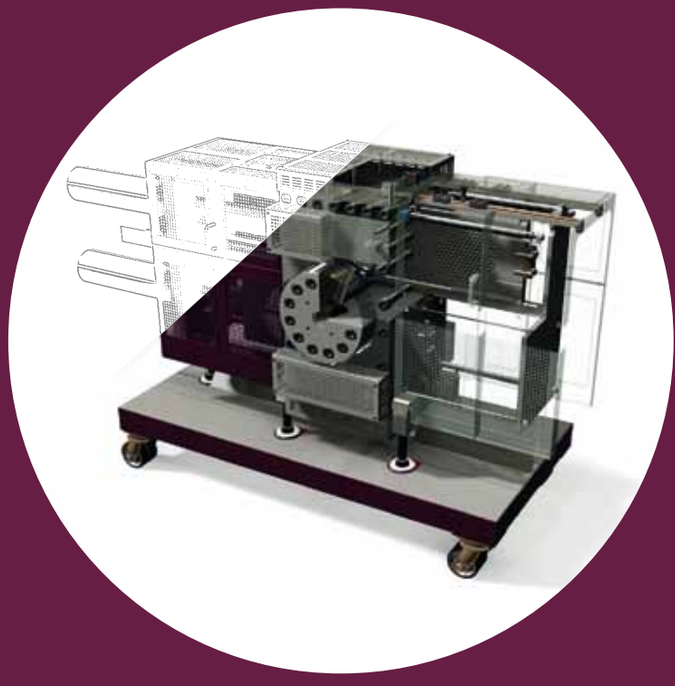

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Filtec is technical sponsor for the project Are you R. Follow the Facebook page to find out more.

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We cultivate and customize your projects.

prs Plastics Recycling Show EUROPE	prs Plastics Recycling Show MIDDLE EAST & AFRICA	COMPOUNDING WORLD EXPO EUROPE	Fakuma
19 - 20 June 2024	10 - 12 September 2024	11 - 12 September 2024	15 - 19 October 2024
Hall 12 - Stand F2	**Stand P406**	**Stand C624**	**Stand TBA**

Starlinger: Solutions for food-grade recycled post-consumer PE, PP, PS and PET

Super-cleaning and odor reduction solutions for the most popular consumer packaging materials: The two Starlinger business units viscotec and recycling technology have joined forces to offer high-end solutions for producing food-grade recycled PP, PE, PS and PET.

Based on Starlinger's vision "food-grade without compromise", the combination of the proven post-consumer pelletizing line recoSTAR dynamic with the new viscoZERO melt phase decontamination technology and the downstream pellet flushing unit PCUplus provides super-cleaning and odor reduction not only for PET but also for PP, HDPE and PS.

"With this new machine setup we present a super-cleaning solution for post-consumer packaging made of polyolefins such as PP and PE or polystyrene at this year's NPE", said Paul Niedl, Commercial Head of Starlinger recycling technology. "Especially PP, PS and HDPE post-consumer packaging waste degrades during recycling; thus, the produced material can only be used in lower-grade applications. With the new technology, the material is upgraded in the process and thus suitable for use in high-grade applications including direct food-contact packaging."

Re-cycling instead of down-cycling

The newly conceived recycling process ensures the thorough decontamination of post-consumer PP, PE or PS food packaging, producing food-safe, odor-reduced regranulate that can be reused in the production of food-contact packaging instead of other, lower-grade types of packaging.

The recycling system consists of a recoSTAR dynamic recycling extruder with/without degassing, a continuous melt filter or power-backflush filter, the viscoZERO melt phase decontamination reactor, a subsequent belt melt filter or power backflush filter before the underwater or waterring pelletizer, and the optional PCUplus pellet flusher at the end of the process. Depending on the components in the line setup, the system produces recycled resin in various grades, ranging from food-safe to highly decontaminated and odor-treated. The viscoZERO reactor in combination with the PCUplus pellet flusher produces recycled PE, PP and PS that meets the highest standards for packaging with direct food contact.

The viscoZERO melt phase decontamination reactor can also be installed as a turn-key stand-alone solution for decontaminating different types of high-viscosity materials fast and efficiently. "The viscoZERO reactor opens new business opportunities as it provides plastics recyclers with the flexibility to process a wide range of input materials into resins of outstanding quality", said Gerhard Bräuer, Product Manager viscoZERO at Starlinger viscotec. "You can recycle post-consumer PP, PE, PS, and PET and achieve highest output quality for the respective material so that it can be used in food-contact packaging." During the decontamination process in the reactor volatile contaminants are removed effectively and the material is cleansed and homogenized. Unwanted odors or substances such as spin finish are removed effectively. When processing PET, it is possible to increase the IV to the desired level.

Closing the loop for industrial plastic packaging

Being the world market leader for machinery and process technology for woven plastic bags, Starlinger also supplies the entire machine range for this type of packaging – from tape extrusion lines and circular looms to lines for coating, printing and sack conversion. With the ground-breaking "Circular Packaging" concept the company offers the first closed-loop solution for industrial packaging made of PP or PET tape fabric such as FIBCs.

www.starlinger.com

NPE: Booth W5169




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Oerlikon HRSflow: Breakthrough Hot Runner Technologies

Oerlikon HRSflow is excited to announce its participation in NPE 2024, happening from May 6-10 in Orlando, FL, at the Orange County Convention Center. Located in South Hall at Stand S25183, Oerlikon HRSflow will demonstrate its leadership in hot runner technology, showcasing versatile applications across various sectors.

Focusing on the American market, the company will highlight innovations in thin-walled packaging, environmental and logistics solutions, medical technology, and applications for the beverage and home sectors. A special emphasis will be on biopolymers and compostable materials, aligning with sustainable practices.

MULTIflow: The multi-cavity line for low shot weights

The multi-cavity line for low shot weights, recently named MULTIflow HRS, is suitable for packaging, caps and closure as well as medical applications, manufactured with engineering polymers for technical components. Some of the main benefits include fast cycle time, high production volume, processing of PCR compounds and biopolymers, quick colour change and an excellent finish of the molded parts. As an example of this new line, we will showcase a hot runner system, 16 drops, thermal gate Vp, along with captivating applications for small plastic parts from 2 to 60 gr.

Oerlikon HRSflow will show other dedicated solutions such as the Vf nozzle series, designed for fast cycle times (2.2 to 3.5 seconds) and maximum process reliability. Specifically developed for HDPE caps and closures, these nozzles support part weights from 0.5g to 8g, ensuring consistent quality, rapid color changes, and system restarts. With optimized gate control and separate replaceability for quick maintenance, they offer efficient performance.

Innovative Stack mold for enhanced Thin-walled Packaging Injection Moulding

Tailored for thin-wall packaging applications, our X series valve gate nozzles withstand high filling pressures with precision, ensuring rapid injection and cycle times for uniform part weight. The Xp line offers a single-face option, while our latest patent-pending solution, the Xd line, meets evolving industry needs for stack systems. Oerlikon HRSflow's new stack mold system aligns with circular economy requirements. Its innovative, easy-to-assemble design minimizes downtime and allows flexible use across various applications, even in smaller injection molding machines; for this reason, it can be included in plug-and-play solutions. The system, perfect for high filling pressures, is equipped with nozzles of the new Xd series, engineered for thin wall packaging applications and mounted on a 220 mm hot half plate.

A new addition to the company's test lab, the hybrid ENGEL e-Speed 280 machine, is tailored for processing R-PET and other sustainable materials, meeting the EU Packaging and Packaging Waste Regulation (PPWR).

Oerlikon HRSflow commitment to a greener future

Oerlikon HRSflow is deeply committed to sustainability, not just as a concept, but as a practical approach integrated throughout the supply chain. A core objective of the company is to engineer hot runner systems optimized for eco-friendly applications. Our systems are conceived to process at the best both bio-based and PCR compounds, without affecting the cosmetic and functional result of the part. These materials often present difficulties due to their high temperature and shear sensitivity, which can lead to material degradation. Achieving short cycle times and maintaining good gate quality without compromising the integrity of these sustainable polymers are among the challenges Oerlikon HRSflow strives to overcome.

Oerlikon HRSflow's dedication to sustainability is evidenced through selected applications developed in collaboration with clients. One of our most recent systems for processing sustainable resins, which operates successfully in South America, is a 48-drop machine equipped with TP series nozzles and cylindrical valve gates, designed for the production of biodegradable spoons.

FLEXFlow HRS System for Environmental & Logistics PCR applications: Fruit Box

The FLEXflow HRS servo driven system stands out for its specialized application in processing post-consumer recycled (PCR) materials, underscoring Oerlikon HRSflow's dedication to sustainability and circular economy principles. A notable application of this technology is the production of fruit crates utilizing an optimized PE composite resin derived from recycled Tetra Pak packaging. This project exemplifies a collaborative effort to address the challenges associated with PCR materials, showcasing the system's capability to achieve high-quality injection points and overall product quality.

The patented TTC cooling bushing plays a crucial role in this process, ensuring efficient cooling and preventing valve sticking issues, thereby enabling rapid cycle times without compromising the quality of the final product. The collaboration with industry partners highlights Oerlikon HRSflow's commitment to innovation and sustainability, offering practical solutions that contribute to environmental conservation while meeting the logistical needs of the market.

Hot Runner Systems with Optimized Design for Sustainable Houseware Applications in R-PET: R-Box

Partnering with Pezzutti Group, Oerlikon HRSflow has successfully tackled the challenges of using recycled PET (R-PET) for the production of sustainable houseware, specifically the R-Box. This project not only demonstrates the potential of R-PET as a sustainable material but also highlights the technical capabilities of Oerlikon HRSflow's hot runner systems to overcome the inherent difficulties of processing recycled materials.

The collaboration led to the creation of a family of stackable containers with lids, showcasing the ability to manage materials of different sizes and weights simultaneously. The servo-driven FLEXflow HRS technology was instrumental in achieving an optimal balance in the molded parts, ensuring high-quality surface finishes, and addressing the smoky coloration typically associated with R-PET, thanks to specialized cooling bushings.

Through these case studies, Oerlikon HRSflow demonstrates its leadership in advancing the injection molding industry, offering solutions that combine technical innovation with a commitment to environmental sustainability.

Trendsetting for automotive applications: FLEXflow HRS

FLEXflow HRS technology, with its servo-driven valve gate system, showcases versatility in automotive applications, demonstrating the capability for precise adjustment in cascading injection processes. Examples include smart automotive surfaces and efficient production of car door panels, highlighting Oerlikon HRSflow's role in advancing injection molding techniques.

An example of this, presented at NPE, is a smart 2K rear panel consisting of a PC+ABS frame that is overmoulded with PMMA or alternatively PC. A hydraulic 2-drop system from Oerlikon HRSflow is used in the first injection phase, and a single nozzle from the Ga series in the second phase. Finally, the part is decorated with a capacitive and aesthetic film directly in the mould. The realisation of these complex requirements demanded exact rheological calculations. Oerlikon HRSflow's project partners were Schöfer, LEONHARD KURZ and Röhm.

Oerlikon HRSflow remains at the forefront of the injection molding industry, continually investing in sustainable approaches and innovative technologies. By combining cutting-edge solutions with environmental stewardship, Oerlikon HRSflow is setting new standards for efficiency, sustainability, and quality in the global market.

www.oerlikon.com/hrsflow

NPE 2024: South Hall at Stand S25183

SIKORA shows a wide range of product highlights

SIKORA, manufacturer of innovative measuring, control and sorting technologies, will be exhibiting its wide range of technology for quality control and cost optimization in hose, pipe and tube extrusion and material production and processing at NPE 2024.

At NPE 2024, SIKORA will present new measuring devices that redefine the segment of measuring technology for hose and tube extrusion lines. “Our customers can look forward to reliable, future-oriented products that continue to lead the way with their performance and make a significant contribution to increasing productivity and cost efficiency in production,” says Katja Giersch, Head of Corporate Communications at SIKORA. Visitors can convince themselves with the benefits of the systems live at the exhibition stand.

At NPE SIKORA shows the CENTERWAVE 6000 that measures diameter and wall thickness of tubes and pipes during extrusion.

CENTERWAVE 6000: Measurement of tubes and pipes at a push of a button

For measuring tubes and pipes with a diameter from 32 mm to 1,600 mm, SIKORA will showcase the CENTERWAVE 6000 at NPE. All models of the CENTERWAVE 6000 device series are characterized by their innovative measuring principle based on millimeter wave technology. Operation is intuitive at the push of a button. Once activated, the operator immediately receives continuous and precise measured values – without presetting the product parameters, without the influence of a coupling medium (water) and without any calibration. Right after the first vacuum tank, the system provides all product dimensions. A continuously rotating transceiver measures the diameter and wall thickness in 360 degrees across the entire product circumference. The extensive and precise measuring data enables fast centering of the extrusion tools respectively an automatic control to the minimum wall thickness for optimum material usage and overall sustainability as well as cost saving.

The X-RAY 6000 PRO measures the wall thickness, eccentricity and inner and outer diameter of hoses and tubes in extrusion lines.

X-RAY 6000 PRO: Perfect partner in extrusion lines to save material

With the X-RAY 6000 PRO, SIKORA presents a system based on X-ray technology that continuously provides measuring data on wall thickness, eccentricity and inner and outer diameter of hoses and tubes in extrusion lines. These are clearly displayed on the monitor of the ECOCONTROL 6000 processor system. The X-RAY 6000 PRO can be used either after the extruder, between two vacuum tanks/cooling sections, or at the end of the line for cold measurement. From the first day of commissioning, the system enables the wall thickness to be reduced to the smallest permissible value. This results in sig-

The PURITY SCANNER ADVANCED is used for inspection and sorting of plastic pellets.

nificant material and cost savings for the user.

PURITY SCANNER ADVANCED: Modular system for flexible optical online inspection and sorting of plastic pellets

At NPE SIKORA exhibits the PURITY SCANNER ADVANCED that is used for inspection and sorting of plastic pellets. Even the smallest, critical contamination are reliably detected and sorted out by the system. Thanks to the modular concept, different camera types can be used depending on the inspected material. In addition to optical 25 µm high-resolution cameras, which detect black specks and discolorations, an X-ray camera can be installed to detect metallic contamination down to 50 µm in the pellet. Common systems on the market have a maximum of two optical cameras. However, these quickly reach their limits due to relatively low coverage as soon as the contamination are outside the cameras' field of view. The PURITY SCANNER ADVANCED automatically sorts out detected contamination via a blow-out unit. For optimizing the by-catch, SIKORA has developed a "hybrid blow-out" feature. The customer defines in advance which contaminants in the material are uncritical and select a smaller blow-out unit for these, so that their by-catch is reduced. Both the reliable detection and hybrid blow-out ensure the highest material quality. At the same time, production processes are optimized, and the reduced by-catch contributes to cost-efficient and sustainable production.

PURITY CONCEPT V: Reproducible optical laboratory testing of pellets, flakes and plates

In the area of plastics, visitors can bring small quantities of opaque and amorphous pellets, flakes or plates to be inspected and analyzed for impurities with the inspection and analysis system PURITY CONCEPT V during the exhibition. The system is suitable for reproducible laboratory applications and detects black and colored contaminants from a size of 50 µm as well as discolorations. The analysis takes less than a minute, including test certificate and HSV color chart of the detected color deviations. The system thus contributes to increased product and quality reliability.

www.sikora.net
NPE 2024: Booth W5589

FIMIC at NPE 2024

FIMIC is returning for the third time to NPE with an array of exciting updates, since 2018 FIMIC has developed technologies offering a wide range of automatic melt filters and has integrated into their product portfolio a screw pump called SPA, available in three different sizes to easily transport the plastic melt without using gears that can be positioned before or after the filter.

At NPE2024, FIMIC will display its flagship melt filter, RAS 700 model, showing plastics industry insiders and all other visitors how its technology can be adapted to the application requirements and is designed precisely for filtration processes.

WE ARE FAST, WE ARE FIMIC

FIMIC's booth #W5089 is located in the Recycling Zone on Level 2 of the West Building. "We are fast, we are FIMIC – We make things happen" this year's exhibition tagline, is not just a statement; it is a philosophy with which FIMIC underscores its commitment to providing fast support to customers in a fast-changing industry, by responding to promptly with the solutions they need at every step of the process.

Let's connect and have fun! Visit the FIMIC stand and be surprised by a 6'7" LEGO model of RAS-UP, the superhero of recycling, a masterpiece that will make both adults and children smile. Strike a pose at our photo booth recreating FIMIC's iconic advertisement, capture memories and share them with your network!

FIMIC live on stage for Spanish speakers

On May 8, 9am, FIMIC experts Omar Ruesga and Michele Colombari will present the latest trends in recycling technology along with the most recent innovations to enhance plastic recycling to an international audience during "Seminarios Latinoamericanos". Seminar 2 will be held in Room W315AB, West Hall - Level 3 for those interested in learning in more detail about FIMIC technology with real-life case studies.

Meet the TEAM

NPE2024 is the ultimate networking opportunity and an exclusive occasion to meet the team; FIMIC's CEO Erica Canaia, frontwoman and influential figure in the promotion of Women in Plastics will also participate at the first-ever Women in Plastics Breakfast organized by NPE. Get in touch with the Regional Sales Managers who provide timely, local service and support for FIMIC customers in the Americas; Ludovic Pitrois in North America, Omar Ruesga in South America, and meet in person FIMIC's new regional sales manager for Mexico and Central America, Teresa Márquez. Michele Colombari, an expert in the plastics recycling industry and technical support of the entire sales team will also be present to advise recyclers and help them find the most suitable solution to their specific case. FIMIC is a team in constant growth, and NPE is the perfect occasion to officially introduce our new team member; a key player in the plastics recycling industry, with more than 12 years of experience in the international market who will help our customers to develop strategic alignments with clear focus on results.

Visit FIMIC

Whether you are returning to the show, or are new to the industry, there is something for everyone at FIMIC booth. So come join us to network, expand your knowledge and plan your next strategical move. Together, we will push the boundaries of what's possible in plastics.

www.fimic.it

FIMIC @NPE: West Building , Level 2, Hall C Booth W5089

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New screen changer enables sustainable use of recyclate

See live demonstrations of the WM-030 Screen Changers at the NPE 2024 show – Booth #W4180

The blow molding specialist W. MÜLLER has developed a new generation of screen changers for its extruders in extrusion blow molding. It is designed to be particularly space-saving. It is also suitable for installation in vertically oriented extruders, can easily be retrofitted and operated safely. The company currently has 100+ systems used in customer production within North America.

"These new screen changer designs represent a true game changer in this industry," states Mario Jardin, Director Aftermarket and Service. "From personal experience in the field, I see how operators frequently struggle with leaks and injuries when trying to operate traditional screen changers, due to the heaviness of these systems, which often tend to jam. The operator friendly piston design of our W. Müller Screen Changer eliminates the room for leakage and does not seize. This reduces screen changing times significantly."

The new vertically constructed screen changer from W. MÜLLER is particularly compact and makes the processing of PCR easier in blow molding systems. Photo: W.MÜLLER

Filtering the melt is an essential element of controlled extrusion – especially when using Post-Consumer-Recyclates (PCR), so use of screen changers is highly recommended. The filtering screen consists of a fixed perforated carrier plate, which is covered by several interchangeable grids with different mesh sizes. If the differential pressure on this grid exceeds a certain value, the screen must be changed. The screen changer absorbs impurities ensuring highest melt and end product quality.

Johannes Schwarz, sales manager at W. MÜLLER explains: "The screen changer ensures, that impurities are kept away from the extrusion head. In addition to the use of PCR, which can be contaminated with other plastics or particles, for instance, abrasion from the mill, degraded plastic material or often sections of cable ties. Impurities interfere with the process and may lead to interruptions in production. It would be even more problematic if leaking containers were produced and ended up in the filling station."

Managing Director Christian Müller specifies: "Of course, we are also talking about the usage of recyclates. In the processing of recycled material, in particular PCR materials, the risk of contamination increases, which does not enter the production process from the outside but from the used material itself. These can be, for example, snippets of aluminum lids or sleeves of bottles. In operation, the screen is slowly getting clogged and must be changed regularly. How often, depends on the quality of the processed material. W. MÜLLER has designed its own system for this change."

The screen changer can be retrofitted and does not require any special safety precautions, as it does not have its own drive. It can be operated manually or e.g., by using a cordless screwdriver without effort.

For PCR processing, W. MÜLLER offers the ReCo3 system for its extrusion units, consisting of three independent extruders. The PCR layer is enclosed in the middle by two layers of virgin material. The extruders are mounted vertically for this process.

Christian Müller explains: "Traditionally, there are no screen changers for such extruders, we are one of the very few suppliers on the market. Normally,

the changers are too long to install vertically without risking the stability of the extruder.
Also a retrofit of a ReCo3 system with the matching screen changers in most cases is possible without any problems. This way, we are able to offer every interested company to get started with PCR processing."
Johannes Schwarz adds: "The compact design is possible because the screen changer is integrated into the connection piece between extruder and extrusion head. By retrofitting a screen changer, the extruder is not significantly extended. In addition, it can be installed in any orientation, which further increases flexibility."
Jens Schlueter, President of W. MÜLLER USA, Inc. explains: "We are also receiving more and more inquiries from North, South and Central America about systems for safe recyclate-processing. I expect a further significant increase here, also because of the changing raw material situation. The production of gasoline and diesel is declining. Accordingly, less ethylene and propylene is present for polymerization. This will further drive the demand for alternative materials. At NPE, we have a limited offer for a free 3-month testing for customers, as we are confident they will be very pleased with the performance."
W. MÜLLER constantly carries out tests with PCR and other recyclates in their in-house technical centers in Germany and the US and deepens its expertise in this area.

www.mueller-ebm.com
NPE @ Booth #W4180

The screen changer is safe to operate manually. To simplify the process, for example, a cordless screwdriver can be used. Photo: W. MÜLLER

Macchi presents a 5 layer R-POD FLEX line

R-POD FLEX is the latest evolution of the innovative POD FLEX system (Polyolefin dedicated), specifically designed for very high productivity and for the use of "secondary" raw materials (regenerated/recycled).

The 5 layer R-POD FLEX line is conceived for sustainable specialty films with reduced thickness, perfect sealing and excellent optical and mechanical properties.

This new technology allows to meet the growing market demand of highly flexible extrusion lines, capable of extruding recycled materials up to 1200 kg/h at 2500 mm net width.

The new R-POD FLEX line allows extremely rapid job changes and, at the same time, minimizes production wastes. Thanks to the introduction of important developments both from the technological and automation point of view, the line on display will show how simple it is to shift from high-capacity productions for lamination films, to recycled material productions for industrial packaging.

The line running throughout the NPE show will have the following features:

- Extruders configuration 65/65/105/65/65
- Continuous flow hydraulic screen changers
- Triple flow air ring with integrated automatic profile control system
- Wax drainage system for air ring
- Frost line scanner
- Smoke suction system on bubble guide
- Centro Freeze supporting basket with cooling function
- Double station automatic winder Bo Plus
- Recotrim - inline system for side trim recovery
- Macchi I.o.T. – the revolutionary digital solution to perform OEE monitoring, breakdown analytics, predictive maintenance, and to verify production efficiency in real time
- Macchi W.i.S. (Web Inspection System) - the innovative solution for film defects mapping

www.macchi.it

NPE 2024: booth W6570

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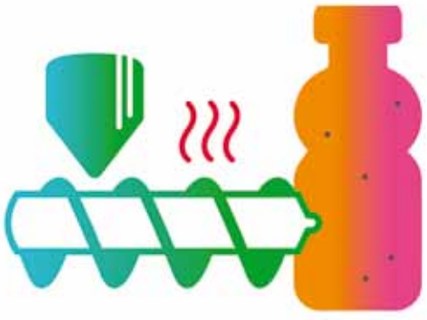

Avoid downtime – The right spare part on hand when you need it

Flawless bottle surface even with PCR

service@w-mueller-gmbh.de
www.mueller-ebm.com

W. MÜLLER
EBM Technology

Amut at NPE 2024: extrusion, cast and recycling technologies

AMUT invites guests to explore extrusion, cast and recycling technologies enhancing production efficiency.

Amut's team of experts will be on hand at booth W7389 to present proven solutions that enhance customers' businesses in all the sectors in which the company operates.
The company explains: "We have been designing and manufacturing, extruders and extrusion lines for a vast array of applications, ranging from food to medical and pharmaceutical packaging, building & constructions, from the automotive to industrial sectors, to mention a few, since 1958. Our custom-engineered fully automated plants are suitable to satisfy the most stringent project specifics, in full compliance with prominent international standards, guaranteeing high and great quality output. An extensive technology, strong know-how and consolidated level of experience characterize our extrusion lines for the production of foils and sheets, waterproofing membranes, pipes and pro-

files. Tailor- made solutions with different capacity, processing several kinds of thermoplastic materials, resulting in great quality products are designed, produced and tested at our facility, in Novara.
Our cast lines are equipped with the ultimate PRO WIND 4.0 winder concept ensuring the best winding quality with idle shafts. The 2000 mm width stretch film winder, developed by our R&D team, is a purely contact winder. The winding shafts are idle, while for the synchronization of the new shaft

entering the winding process magnetic field force is used, so there is not any direct contact with the entering shaft during speed up process.
Our high-performance recycling solutions are instrumental in reducing environmental impact, by valorizing post-consumer plastics scraps. AMUT single source, integrated sorting and washing lines, developed for a cleaner environment, are equipped with the patented De-Labeller and Friction Washer. The complete plants, ranging from a capacity of 1,250 up to 6,000 Kg./h., are designed to process PET, HDPE, PP bottles, containers and PE film. These turn-key solutions suitable for the treatment of contaminated plastics, from the front-end sorting section to washing, allow to obtain high purity flakes, with reduced water consumption to 1,1 liter for each kg of high purity flakes and energy savings. AMUT modular systems guarantee, through the De-Labeller unit, the removal of all types of labels with 95% efficiency; full preservation of bottles' necks and bodies and low operational costs.
Join us at the international meeting point for the plastic and rubber industry and stay up-to-date with new challenges and opportunities within the plastics processing and recycling".

www.amut.it
NPE@ W7389

Fully automated mixing plant solutions fully controlled

PLAS MEC celebrates a remarkable milestone: 58 years since its inception, reaffirming Italy's global leadership in the manufacturing of mixing equipment and plants for plastic powders

As a 100% Italian family-owned enterprise established in 1967, PLAS MEC specializes in crafting equipment and accessories for mixing various plastic materials such as PVC, PE, PP, ABS, as well as technical and special polymers like TPE, PA, PC, PU, PET, PTFE, among others. Additionally, they cater to powder coatings resins, wood-plastic composites, masterbatch, additives, pigments, and thermoplastic rubber. PLAS MEC has garnered recognition over the years as a premier provider of mixing systems for plastic powders, having delivered thousands of mixers and accessories worldwide.

Noteworthy among PLAS MEC 's attributes is its adaptability in tailoring high-tech solutions to meet individual customer needs. Renowned for its production of robust, enduring machinery that upholds impeccable production standards, PLAS MEC'S commitment to quality is underscored by the decision to retain a significant portion of manufacturing in-house, ensuring meticulous oversight of every machinery detail.

PLAS MEC manufacturing range comprises mainly the following:

COMBIMIX HC

The combination between an optimized design of the High-Speed Mixer type "TRM" and the High-Efficiency Cooler type "HEC," is a flagship equipment which guarantees high productivity and reliability, offering an optimal solution for technical mixing requirements in PVC or WPC dry blend production. COMBIMIX HC variants range from 200/800 to 2500/8500 liters capacity.

Featuring Complementary accessories tailored to production specifics and customer needs further enhance its capabilities.

CONTAINER MIXER TRR

Serving as an ideal alternative to conventional turbomixers, the Container Mixer TRR is suitable for masterbatch, pigments, technopolymers, and powder coatings preparation. Offering versatility and the ability to mix various recipes with a single machine, it can be configured as High Power for intense mixing and significant temperature increase requirements. Continuous improvements ensure enhanced performance and user-friendliness.

All the equipment can be designed and built to be compliant with the ATEX directives, following the requirement of the customers.

The production range of PLAS MEC is not limited to mixing equipment alone; it extends to encompass a comprehensive array of accessories designed to facilitate every aspect of the mixing process. These

accessories include :
- loading mechanisms to efficiently introduce raw materials into the mixing equipment,
- transport systems to seamlessly move materials within the production facility,
- weighing devices to ensure precise measurement of ingredients,
- storage solutions to maintain the integrity of powders before and after mixing.

Moreover, PLAS MEC goes above and beyond by offering complete automation solutions to control the entire mixing process. This automation is integral to providing customers with a complete solution, streamlining operations, and enhancing efficiency. By automating the mixing process, PLAS MEC enables customers to achieve consistent and high-quality results while minimizing human error.
Central to PLAS MEC's commitment to customer satisfaction is the provision of full remote access to the mixing plant. This remote access feature empowers customers with real-time visibility and control over their mixing operations from anywhere in the world.
Through remote diagnostics, PLAS MEC's technical experts can swiftly identify and address any issues that may arise during production, providing timely resolutions and minimizing disruptions.

PLAS MEC is committed to providing customers with the tools and support they need to ensure smooth operation of their plants and achieve optimal performance and efficiency in their mixing operations.
Thanks to its commitment to supplying and operating quality systems, often beyond customers' expectations, PLAS MEC earns their trust and continues to consolidate its reputation as the preferred partner for companies seeking reliable and innovative solutions in the field of plastic mixing technology.

www.plasmec.it
NPE @ Booth W7189

Maximos

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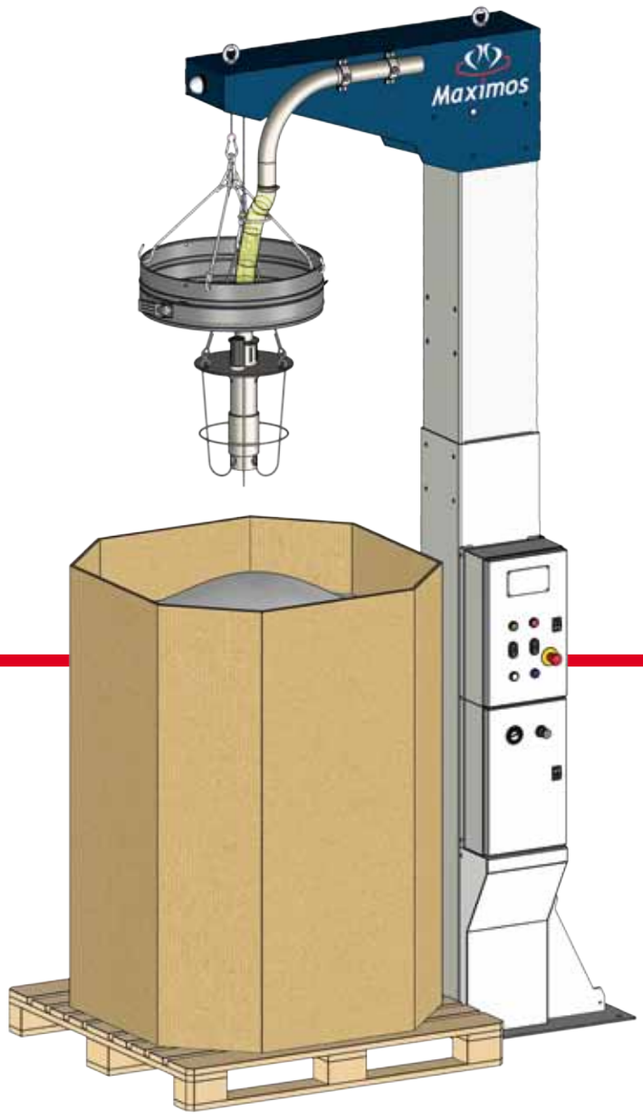

Main Tech

www.maintechsrl.com

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35010, San Giorgio delle Pertiche (PD), Italy

MCC Verstraete covers IML needs

MCC Verstraete, MCC Korsini and MCC Karydakis, part of Multi-Color Corporation and leading players in the in-mold labeling (IML) industry with several locations around the world, is pleased to announce its presence at NPE 2024. The spotlight is on sustainable IML innovations and the groundbreaking Medical IML system.

MCC Verstraete's plant in the U.S. exemplifies an exciting story of growth, rooted in a wealth of experience in in-mold labeling (IML). With a robust portfolio of innovations across all segments, from smaller thin-wall tubs to larger containers for industrial IML applications, MCC Verstraete US is ready to make a significant impact at NPE 2024. Empowered by deep-rooted ties with partners and a wealth of industry experience, MCC Verstraete US is on hand to demonstrate its capability and leadership in the IML sector.
As consumer demands evolve and sustainability takes center stage, MCC reaffirms its commitment to creating the IML packaging of the future, labeled with NextCycle IML™. During NPE2024 attendees will have the opportunity to discover how MCC's integrated IML business unit is at the forefront of sustainability and offers pioneering methods to improve the sustainability of packaging materials.

Highlights:
1. Extended product offering: By combining the expertise and resources, MCC has solidified its position as a pioneer in IML. The unified business unit is poised to deliver innovative and sustainable label solutions that exceed customer expectations.

2. Sustainability redefined: Participants at NPE2024 will gain insight into the latest developments in sustainable packaging. IML innovations that boost the circular economy for PP packaging without compromising quality or aesthetics will be demonstrated.

3. IML Goes Medical: MCC's IML business unit is excited to introduce its expertise to the medical sector. The unit's commitment to precision, hygiene, and innovation paves the way for advanced IML solutions in medical applications, revolutionizing packaging for medical applications.

4. Local Presence, Global Impact: MCC Verstraete's proudly US-produced labels embody a journey of growth and excellence. With a local presence supported by a global vision, our team is dedicated to sharing our compelling story and demonstrating our ongoing commitment to quality and innovation.

Mathieu Nieuwenhuyse, Managing Director at MCC Verstraete US, is excited about the event: "Our exhibit at NPE 2024 underscores our commitment to keep driving innovation and sustainability in the IML industry. At the same time, it's the perfect opportunity for us to connect with customers and visitors. Local presence and production are essential to many US businesses, which is why we continue to invest in our production capabilities near Cincinnati. Our team looks forward to showcasing our breakthrough solutions and ongoing dedication to excellence!"
Visit the MCC Verstraete booth at NPE2024 to witness the future of packaging innovation and learn how our integrated approach will reshape the industry.

www.mcclabel.com

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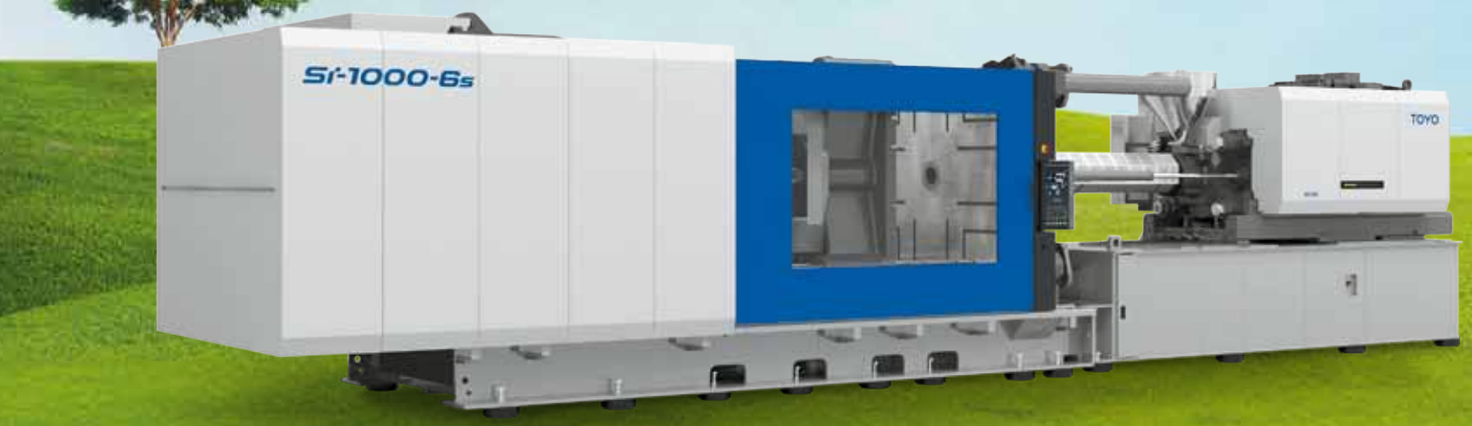

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Leistritz: Focus on innovation

Interview with Daniel Nagl, Managing Director of Leistritz Extrusionstechnik GmbH

Leistritz is one of the leading companies in extrusion technology. Since 1937 development, production and worldwide distribution of extruders and extrusion lines have been main business objectives. As part of the Leistritz Group, headquartered in Nuremberg/Germany, it has a strong focus on the innovation aspect as well as subsidiaries on a worldwide scale, present not only in Europe, but also in Asia and America. We had the pleasure to meet and interview Daniel Nagl, Managing Director of Leistritz Extrusionstechnik.

Are exhibitions still a good instrument for marketing? Is it still the way to do business?
I think it is still a fit place to be, mainly participation in key fairs. At NPE we will exhibit a wide range of twin screw extruders and auxiliary equipment. Our theme will be "The Race to Success", which is representative of the continued advancements made possible via twin screw extrusion to make better products at a lower cost.

What novelties can we expect at the Leistritz booth?
Exhibited for the 1st time @ NPE, the ZSE-12 twin screw extruder is suited for continuous operation and is designed for low rate and small batch processing. Modular stainless-steel barrels and screws are assembled on splined shafts. The process section can be configured for liquid injection

ZSE-12 + micro-plunger

ZSE-60 MAXX + 52-1 + 2 LSBs

and multi-stage devolatilization. The feed section is equipped with a patented micro-plunger feeder, which facilitates processing as little as 50 -100 gm batches.

But also proven technology is on display: Our ZSE 60-MAXX co-rotating twin screw extruder is the most popular production compounding twin screw extruder in North America. It features a modular design for barrels and screws that are rated for 425 degree C operation. Auxiliary equipment includes an LSB side stuffer for downstream introduction of fillers into the process section and an LSA swing gate strand die with provision for filtration.

The ZSE-27 MAXX extruder is suited for research and full scale production and features a quick-change flangeless barrel design for accelerated barrel reconfiguration. The gearbox is attached to a dovetail mounting plate that allows the gearbox to be quickly repositioned to facilitate different length/diameter (L/D) ratios testing. All electricals are integrated into a roll-around stainless-steel base, and an Allen-Bradley PLC/HMI controls architecture will be displayed.

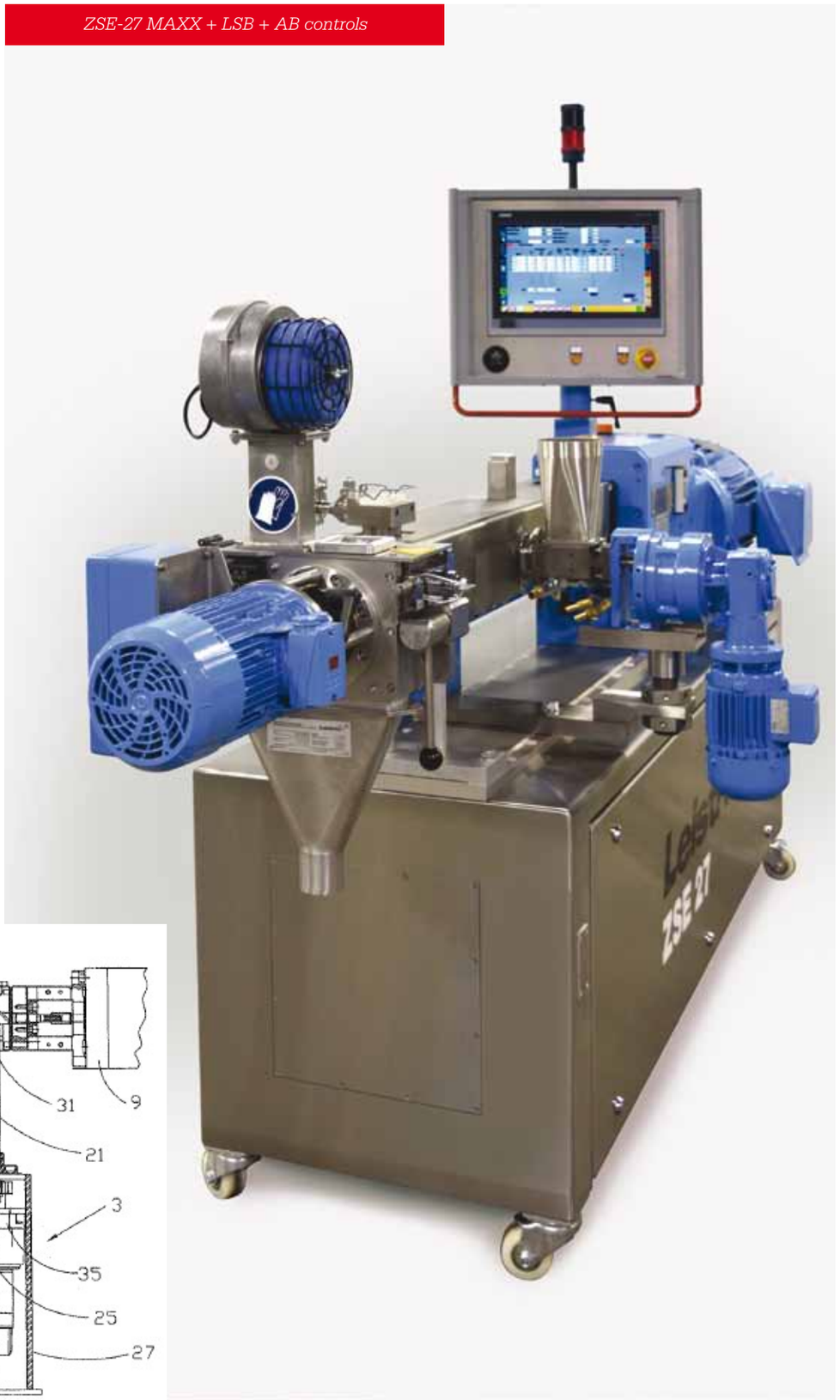
We will showcase twin screw extrusion equipment for compounding, reactive extrusion, devolatilization, foaming and direct extrusion – so there's a lot more to be discovered at the Leistritz booth!

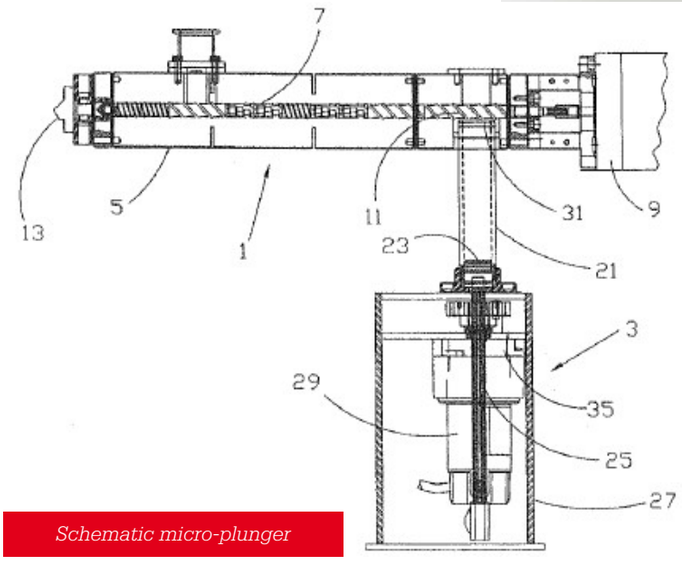
What is the secret of 100 years of business?

Constant innovation and good teamwork and, of course, stay hungry for business! Representatives from Leistritz worldwide will be available at NPE 2024 and tell you more.

Leistritz @ NPE: #W6343
extruders.leistritz.com

ZSE-27 MAXX + LSB + AB controls





Schematic micro-plunger

Arburg Allrounder 720 E Golden Electric: first world premiere in the USA

For the first time a new machine from Arburg is celebrating its world premiere not in Germany, but on the international stage. The new Allrounder 720 E Golden Electric with a clamping force of 2,800 kN extends the product range of the electric series of the same name upwards and is the highlight at NPE 2024 in Orlando, Florida, USA. Streamlined in terms of installation area and price – this summarises its main advantages. The new injection moulding machine continues to stand out for its electric precision and process stability and offers high component quality with low investment costs and short delivery times.

"The fact that we are holding the world premiere of the new electric machine at NPE2024 reflects the great importance of the American market for Arburg, our leading position in the USA and the expansion of our international business," says Gerhard Böhm, Managing Director Sales and Aftersales from the company's German headquarters in Lossburg. "Extending our portfolio of electric machines helps customers to meet current challenges such as increasing price pressure combined with rising costs for labour, energy and materials, shorter product life cycles and ever faster product changeovers." Technical Director Guido Frohnhaus adds: "To make attractive investment costs and a quick return on investment (ROI) possible, we rely on standardised equipment without compromising on quality and performance. Our new 'golden' electric machine combines high precision with a streamlined design at a particularly attractive price."

Slim in design and price

Arburg has optimised the design so that the new Allrounder 720 E Golden Electric, with a width of just 1,848 millimetres, has a significantly reduced installation area compared to other machines in its class. This has been achieved, for example, with a new safety door featuring recessed handles. At the same time, the stroke has been widened to 1,400 millimetres to gain better access to the ejector area. Due to its smaller installation area, the new Allrounder fits into existing production grids and lines. Thanks to the new design, more machines can be set up in injection moulding production, resulting in an increased output per square metre.

Reliable, stable machine technology

The Allrounder 720 E Golden Electric features high-quality machine technology to ensure stable and reliable plastic parts production. This includes a toggle-type clamping unit and direct drives from the subsidiary AMK. With an electric mould height adjustment system, mould installation heights of up to 800 millimetres are possible. The drive components are optimised for a clamping force of 2,800 kN. The proven high-quality Arburg plasticising with the "aXw Control ScrewPilot" ensures reproducible injection and excellent moulded part quality. Optimised mould venting with two-stage mould locking also plays a part in this. For convenient maintenance, the new electric Allrounder has the same easily accessible control cabinet concept as the new hybrid machines. Lubrication unit and optional pneumatics are located on the operating side. The parts chute in the machine base has been widened to 850 millimetres, making it easily accessible.

Attractive price/performance ratio

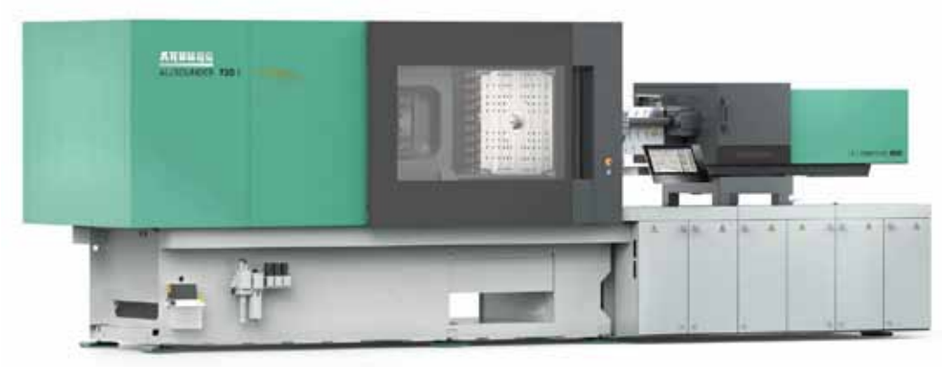
The electric machine is not limited to a specific product and has short delivery times, which is particularly advantageous when it comes to urgent replacement purchases and capacity expansions. It is equipped with the Selogica ND control system as standard. If required, additional options and functions such as core pulls and heating and cooling circuits can be easily integrated and programmed. As a result, the new electric injection moulding machine produces a wide range of plastic parts flexibly, efficiently and reliably.

Flexible automation and application

The Allrounder 720 E Golden Electric can be automated with all robotic systems from Arburg – from simple sprue pickers to Multilift linear robotic systems and six-axis robots. The exhibit is equipped with a Multlift V 30. The new 'golden' electric machine is interesting for almost every industry. It is particularly suitable for less complex products and cycle times of around 15 seconds or more. Typical areas of application include dimensionally stable housings for electromobility, thick-walled closures for household goods, precision components for medical technology and the construction, leisure and technical injection moulding sectors.

At NPE2024, the Allrounder 720 E Golden Electric with a clamping force of 2,800 kN and a size 800 injection unit will be producing razor covers from PP. A 24-cavity mould from Hack will be used. The cycle time is around 8.5 seconds and the moulded part weighs 1.2 grams.

www.arburg.com



World premiere at NPE2024: the new electric Allrounder 720 E Golden Electric is particularly streamlined in terms of installation area and price thanks to its new design and standardised equipment.

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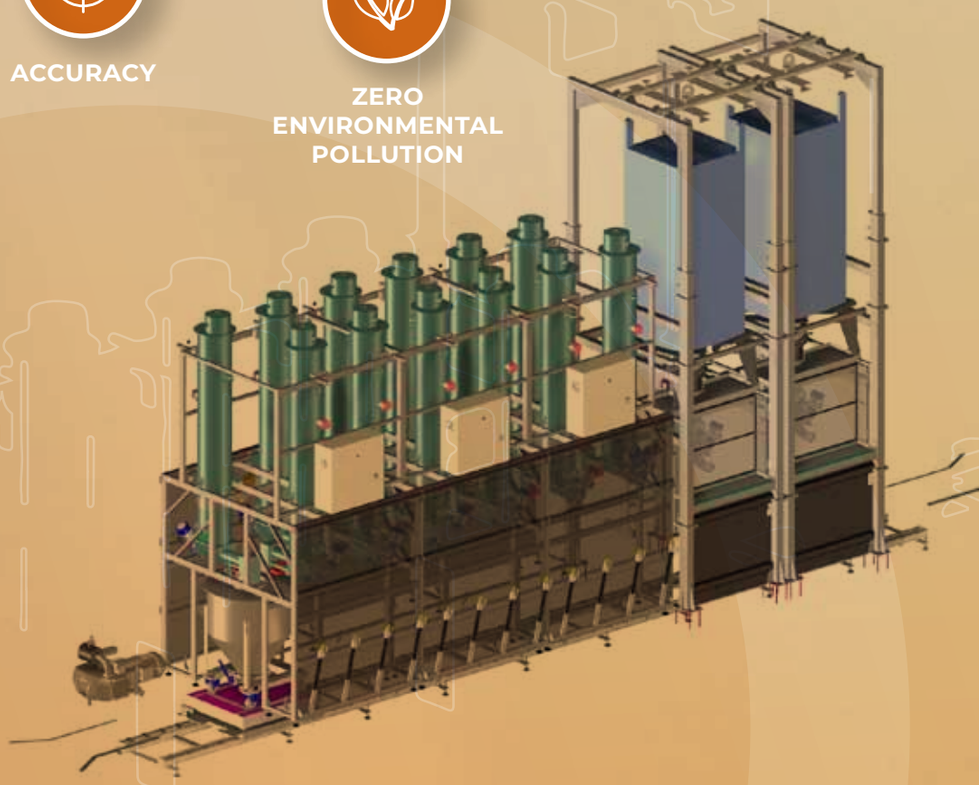
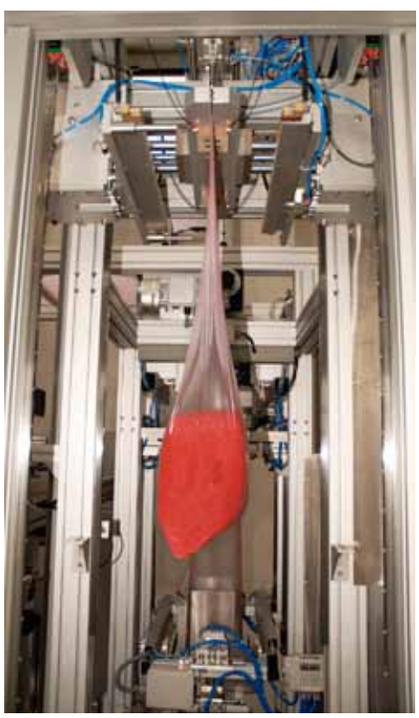
ZERO ENVIRONMENTAL POLLUTION

TRACEABILITY



AUTOMATIC BAG MANAGEMENT



SCREW FEEDER DOSING

DOSING DIRECTLY INTO THE CONE

Turnkey systems for sustainable food packaging

Triple Bubble® Technology for Recyclable, Flexible Barrier Shrink Bags

Kuhne's medium-sized Triple Bubble® blown film lines can achieve throughputs up to 250 kg/h when producing films for recyclable, flexible barrier shrink bags.
© Kuhne Anlagenbau

Kuhne Anlagenbau GmbH's focus at NPE 2024, in Orlando, Florida, USA will be on large turnkey lines for extruding flexible simultaneously biaxially oriented barrier shrink films that do not require polyamide (PA) or polyester (PET) as a layer to impart strength to the structure. Consequently, they can be easily recycled together with (at most 5%) EVOH in the PE recycling stream. The required robustness and puncture resistance are achieved inline during processing in the Triple-Bubble® process using gentle radiation crosslinking employed by Kuhne. This acts from the outside to a shallow depth of only 5 to 10 µm, without damaging the EVOH layer and reducing recyclability. As a result, there is no need for an additional post-processing step, which would increase costs. The resultant films are sufficiently flexible and elastic to achieve good levels of shrinkage. At the same time, however, they also provide the mechanical strength required to be able to reliably fill the bags, even with contents weighing several kilograms.

One-stop Shop

Kuhne supplies the entire technology used for this as turnkey lines for worldwide use. Tailored to particular product requirements, this one-stop package also includes the specification of the material formulations and gauges required for the seven to thirteen PE, adhesion promoter and EVOH layers, as well as all processing parameters. As a result, these systems can usually be commissioned very shortly after installation by Kuhne, and continuous production at the highest quality level is possible right from the outset. For manufacturers and distributors, the recyclable films mean lower extended producer responsibility (EPR) levies and assist compliance with the Circular Economy for Flexible Packaging (CEFLEX) sustainability guidelines drawn up by the flexible packaging value chain. Kuhne's lines stand out from the competition because capital costs are significantly lower when output is considered in relation to machinery costs under manufacturing conditions.

Kuhne Anlagenbau, which developed the Triple Bubble® process in-house back in 1996, has perfected the system and can offer processors access to the attractive combination of low film thicknesses with the high throughputs achievable with large-scale machinery. Thus, typical film thicknesses are material saving, ranging between 20 µm for lid films and 50 µm for shrink bags. A shrinkage of over 60 % is achievable. Optimized machine design and high cooling rates mean the lines can achieve throughputs of up to 250 kg/h or annual output exceeding 1500 metric tons of shrink bag film. Depending on current requirements in different regions and applications, intermediate layers made of PVDC instead of EVOH, as well as PA or PET outer layers to increase puncture resistance are possible.

Triple Bubble® Technology

The Triple Bubble® technology for manufacturing biaxially oriented blown films is named after the serial arrangement of three bubbles. In the first, the film is very quickly cooled using cold water quench technology. Kuhne has further optimized this process for large systems to increase efficiency. This quenching very effectively prevents crystallization processes, as is essential for uniform stretching in the subsequent, second stage. The resultant high degree of orientation at a molecular level is key to the films' excellent mechanical and barrier properties. Thermal relaxation in the third bubble is used to set the desired shrinkage behavior, so also making it possible to achieve very low shrinkage forces. Kuhne's current Triple Bubble® lines enable the production of shrink films with up to 13 layers at widths of up to 3000 mm double flat (6,000 mm film width). As Jürgen Schiffmann, Kuhne Anlagenbau's CEO, explains, "We have already delivered some 150 of our turnkey Triple Bubble® lines worldwide on time and according to requirements. Our combination of system development and production together with on-site installation, application-specific film formulation and pre-optimized process parameters make commissioning the line straightforward, and customers can start production immediately - reliably and without in-house development costs, even for challenging applications. Patented technology licenses are included."

www.kuhne-ab.de

NPE 2024: West Building Level 2, Expo Hall – W7789

Sales portion packaging for soft or angular pieces or meat and cheese are among typical applications for barrier shrink films produced using Kuhne's Triple Bubble® technology.
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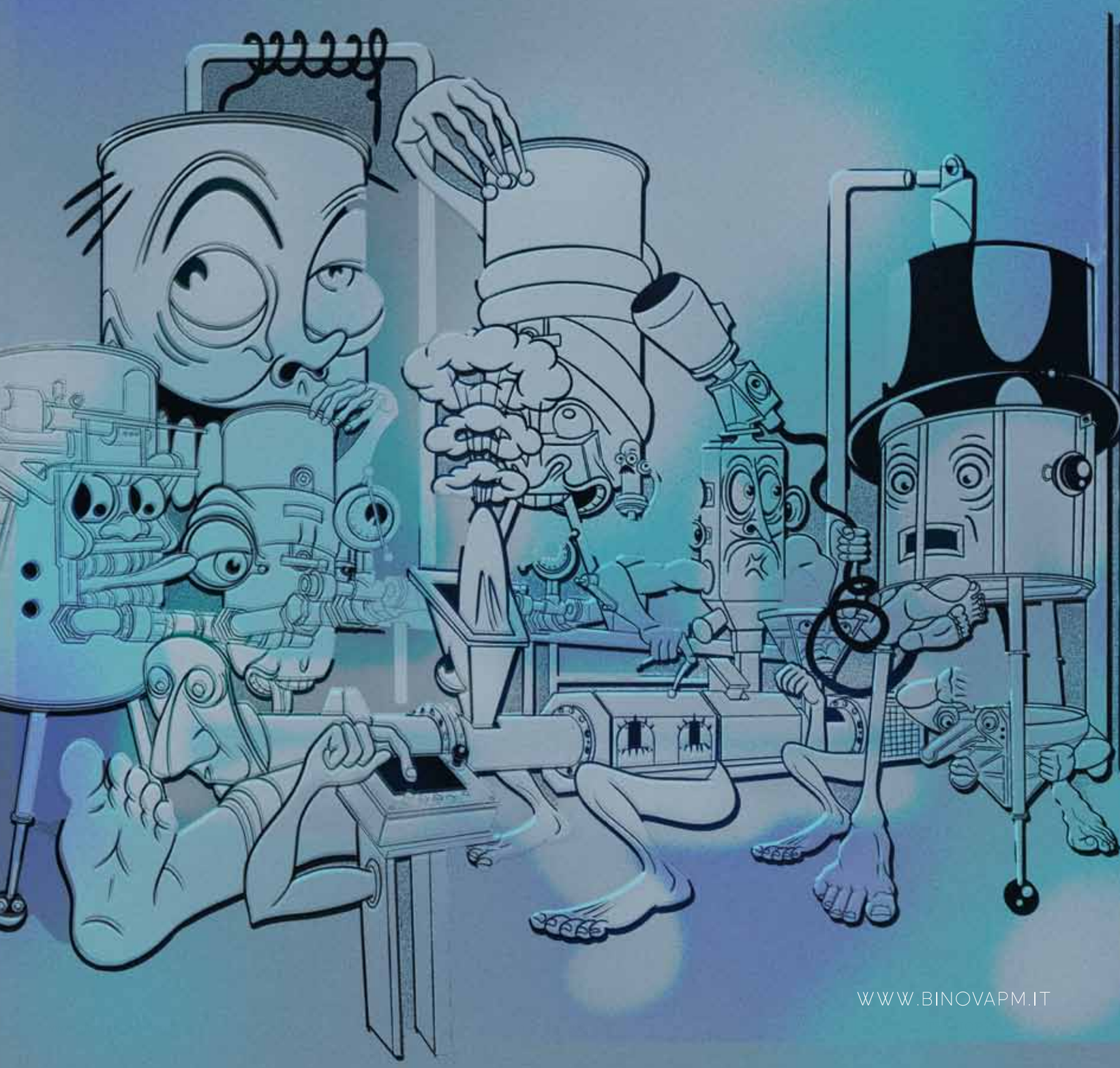

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Estro: the new rotomolding hybrid machine

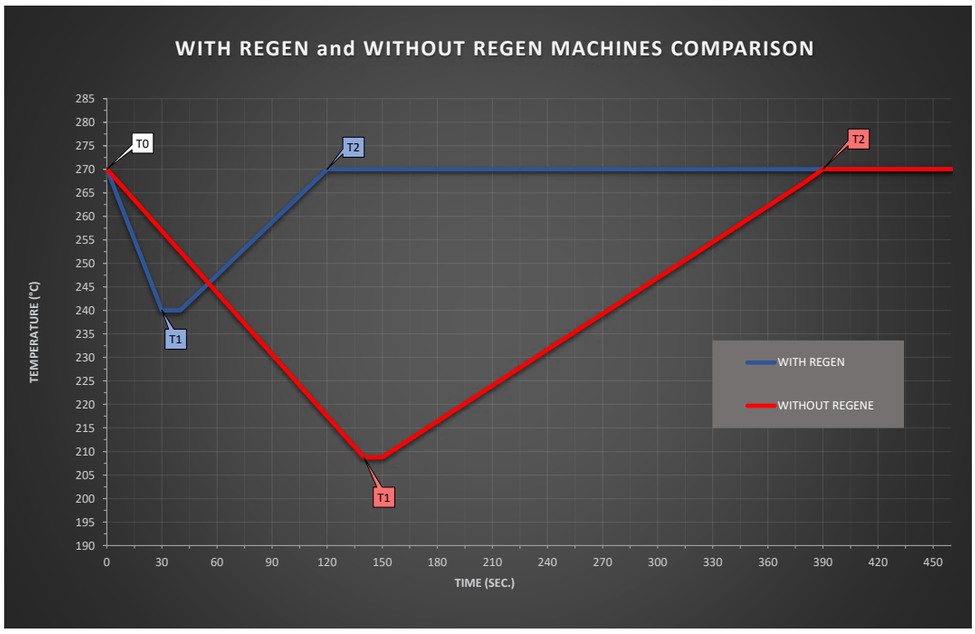
Rotational moulding is the best technique available for the production of small, medium, large and very large hollow articles up to liquid containers of 50,000 litres capacity.

Crucial to the production process is inducing a temperature inside the mould that allows polymerisation of the raw material, PE, PP, etc., to take place.

For almost all the machines in Europe, this phase is managed by an oven, consisting of a combustion chamber, where the digital gas burner is housed, and a moulding chamber connected to it, where the mould, kept in bi-axial rotation, is hit by the flow of hot air. An air circulation system is set up between the two chambers so that the cooler air, which has transferred heat to the mould, heats up again in the combustion chamber before returning to the moulding chamber.

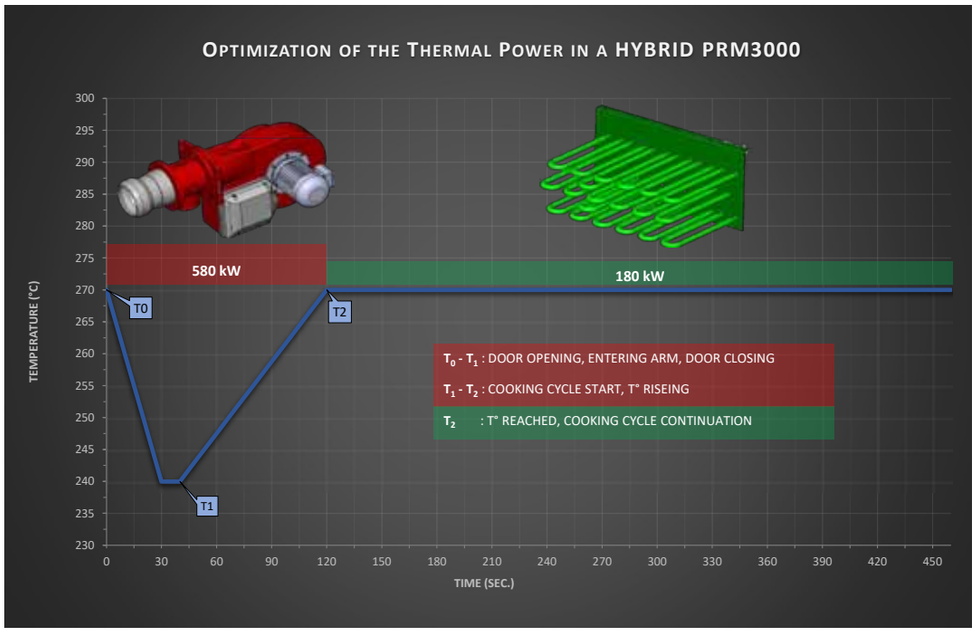
Characteristic elements of this system are the burner and the fan.

The maximum consumption of the burner occurs at the beginning of each heating cycle when the temperature set for each production recipe must be reached, the effective insulation and optimised flow management allows the desired values to be maintained with minimum consumption, as the machine is equipped with a digital burner, only at the end of the cycle when the doors are opened can the temperature drop by 30%. The rotational moulders know that a drop of this magnitude is already a benchmark, in fact this record is achieved thanks to a sophisticated control system that acts simultaneously on the burner, fan, fume extractor and door opening/closing motors.



The demand: alternative and renewable energy sources.

The power involved, especially for medium/large sized machines, does not allow for gas-fuelled burners (methane, LPG) to be ignored, and therefore even if they have zero polluting emissions, they have a greater environmental impact than electric systems, especially if powered by renewable sources. The general demand to reduce the ecological footprint and the concern raised by the dependence on gas supply markets motivated the search for an integrated heating system that optimises the regulation of the moulding temperature by combining traditional gas and electric power.



The ESTRO hybrid machine (Italian patent pending)

The innovation consists in the installation, inside the combustion chamber, of electric batteries that can be controlled in blocks that, when appropriately activated, bring the air temperature in the moulding chamber to the temperature set by the recipe. The machine is equipped with an advanced system for detecting the temperature at different points of the oven and, in the most advanced applications, even inside the mould, so as to have a real time picture of the situation and be able to intervene in burner modulation and activation of the electrical resistances. The burner is digital, which means that the fuel flow rate can be adjusted continuously, while the heating elements can be managed in blocks by partialising their intervention.

The operation of the hybrid machine

1. Start of the first moulding phase

The oven is cold and the burner intervenes to bring the temperature to the desired set (TS). At this stage the heating elements are switched off: the time and amount of energy required to reach TS with electricity alone would be too slow.

2. Material cooking phase
The probes continuously detect the temperature and once the TS has been reached, the management software starts to reduce the burner intervention and ignites the batteries of heating elements in sequence until the burner input is reduced to a minimum and electricity is used to the maximum. In this situation, the software maintains the TS by switching the heating elements on or off in sections. The burner is always ready to intervene should the set temperature need to be restored.

3. Mould rotation in the moulding chamber
Once the set moulding time has been reached (or automatically managed in the more advanced systems) the exit door of the oven opens, the mould leaves the oven, the exit door closes, the entrance door opens and the queued mould enters the oven and the entrance door closes. The opening/closing of the doors, although operated in conjunction with the burner shutdown and fan shutdown, causes a temperature drop from TS to T1. There is an average drop of 20% typically from 270° to 220°. In this phase, the restoration of TS is entrusted to the

burner which intervenes for between 2 and 3 minutes, leaving the task of maintaining TS to the heating elements already heated in the previous phase.

Reducing gas consumption
Operating the burner at reduced speed allows a reduction in gas consumption of between 30 and 50%, depending on the size of the machine and the production conditions: surface area of the mould(s), set temperature, ambient temperature, presence of Venturi, PE/PP, etc.

The condition to maximise
All Rotomachinery Group rotational moulding machines are equipped with the REGEN system, thanks to which not only the reactive energy produced during braking/deceleration is recovered and put back into circulation, but the stopping of the oven fans and the opening/closing speed of the doors at non-simultaneous intervals drastically reduce the drop in temperature and thus the amount of fuel and time needed to restore the set. In production sites equipped with photovoltaic solar panels or other renewable energy generation systems, the advantages of the hybrid system are conspicuous and so the switch to green installations also allows for a reduction in investment payback.

IDENTITY CARD

NAME
ESTRO
Rotomolding hybrid machine

PRODUCER
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+39 0321 772021
polivinil@polivinil.com
www.rotomachinery.com

Polivinil conquers the new world

Interview with Pierluigi Sacchi, President and founder of Polivinil.

Polivinil has been working in the rotomoulding sector for more than 50 years and is now a leading company both in Italy and abroad, particularly in the western and Anglo-Saxon world. With the expansion into the American continent, we wanted to meet again with the founder and therefore the creator of this company ....

How is the company structured and where are you present?
Among manufacturers of rotational moulding machines we are the only one with two production units, the second being a subsidiary in America, more precisely in Quebec, which is now even larger than the Italian site. It is a pre-existing business that was also involved in this industrial field. Having at one point dedicated itself entirely to the rotomolding sector, we decided to take it over. We had already intended to enter the American market; we had visited options in the US and then this opportunity came up and we didn't let it slip away. Once a year we go there in person, but it is also true that now with technology you can communicate perfectly in real time. It has been a gradual growth, of course, but it has led to the consolidation of an excellent reality of about 40 employees at present, and as I said, the size now exceeds that of Italy.
From this American production unit we follow the whole of North America and Australia but not South America, which is still in the hands of the Italian office. More than anything else we decided to differentiate on linguistic criteria, we wanted to group together the Anglo-Saxon market. Canada and Australia are perhaps the two most important countries for us for the non-European market, as opposed to the United States, which surprisingly from this point of view is more conservative, preferring manufacturers and products made in the USA. In the Asian sector, we have no direct production or service activities, only sales, we have agents, but we are not rooted in the region. more than anything else, Asian competition is still beyond our reach in terms of very low prices that neglect fundamental aspects of the production process: from the dimension of technological innovation to ethical issues such as the exploitation of labour.

But what is the ratio of foreign/Italian sales?
90% foreign, our points of reference are western countries, first European countries such as France and Germany, and then above all North America and Oceania. We also have customers in Eastern Europe, and a slice was also in Russia, however with the latest geopolitical events, our client network has now disappeared. Unfortunately, there was nothing we could do with the embargo, it also targeted our customs tariff and that tied our hands.

Secret of success replicated in the New World?
First of all, people, you need to have the right people in all the nerve centers, i.e. management, design and also sales. This allows you to exploit the idea or the winning product to the fullest and this cannot happen without efficient management and a winning sales department.

Will you be present at NPE in Orlando?
We have always done it, at least for thirty years, I even used to go when it was still in Chicago, but now with the new American branch they are obviously going with a representative stand. We say representative because we don't bring machines, just displays showing videos presenting our product range. On the continent it remains the most important trade fair, and since our US competitors are also there, the stand is a must.

Are you presenting anything new?
We present Infra-red is a sensor that reads the mould temperature and decides when moulding is finished. We have already presented it in Milan, now we must present it overseas.
With this new sensor, the decision that until now was deferred to the operator is entrusted to the sensor, making the entire process extremely more accurate and convenient from various points of view, first and foremost certainly energy saving. Even though the experimental phase has just been completed, it appears to be a very promising tool.

Made in Italy, is it a surplus?
I honestly can't say, but one thing is certain: we are the ones trying to enhance it, continuing to publicize it. We make a point of saying it constantly and pointing out that even the various components of the machines, if not Italian, are in any case of European origin, thus confirming quality standards of a certain level.

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NPE2024
The Plastics Show

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Smart Solutions for Plastics Recycling and Compounding

Coperion and Herbold Meckesheim will present a variety of advanced components and solutions for plastics recycling and processing at their Booth W1601 in West Hall Level 2.

The Schenck Process FPM MechaTron® Flat Bottom (FB) feeder is ideal for feeding low bulk density materials such as chopped films and scrap. Image: Schenck Process FPM, Whitewater, WI

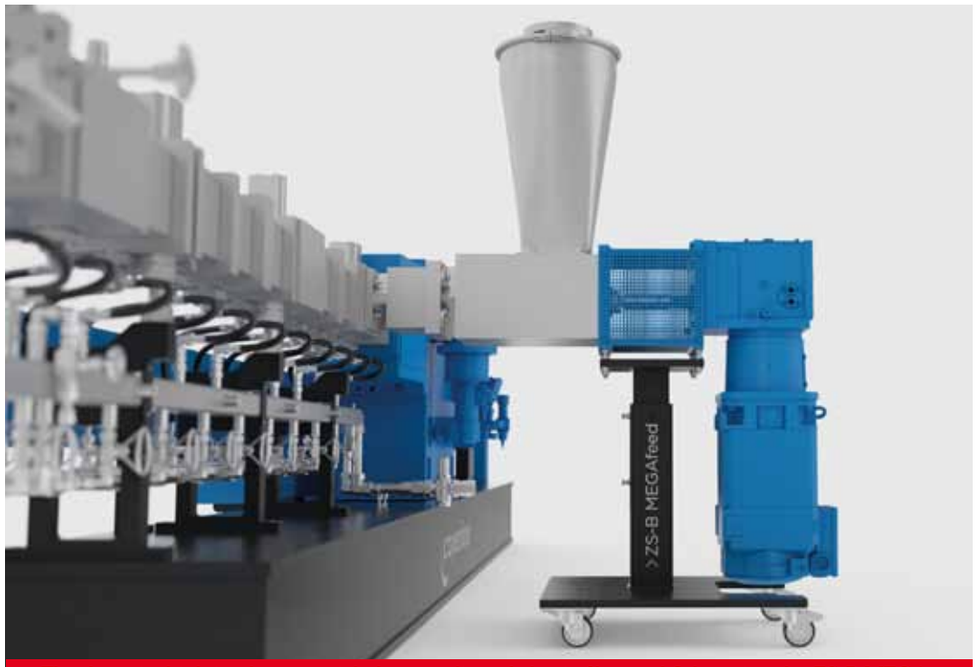
As a raw material, plastic can make a valuable contribution to environmental protection, the energy revolution and a circular economy. The key is efficient recycling of plastics. For this reason, plastics recycling is the focus of comprehensive development projects at Coperion and Herbold Meckesheim. The two companies will show the results of these projects at NPE 2024 by presenting combined process solutions and technologies for the economical recycling of various plastics while achieving the highest levels of product quality. On display in the booth will be a ZSK 58 Mc18 twin screw extruder configured for manufacturing high-quality PET using recycled materials as well as the recently introduced ZS-B 70 MEGAfeed side feeder for lightweight fiber and flakes recycling and a Herbold Meckesheim HV70 plastcompactor. Also on display will be a new Schenck Process FPM MechaTron® Flat Bottom (FB) feeder, a high-capacity stainless steel feeder that is designed specifically for handling materials with light and fluffy characteristics such as films and scrap. More equipment for feeding, dust collection, pneumatic conveying, and bulk material handling components will be on display in the joint Coperion and Schenck Process FPM Booth W1181.

From Single Components to Entire Plants

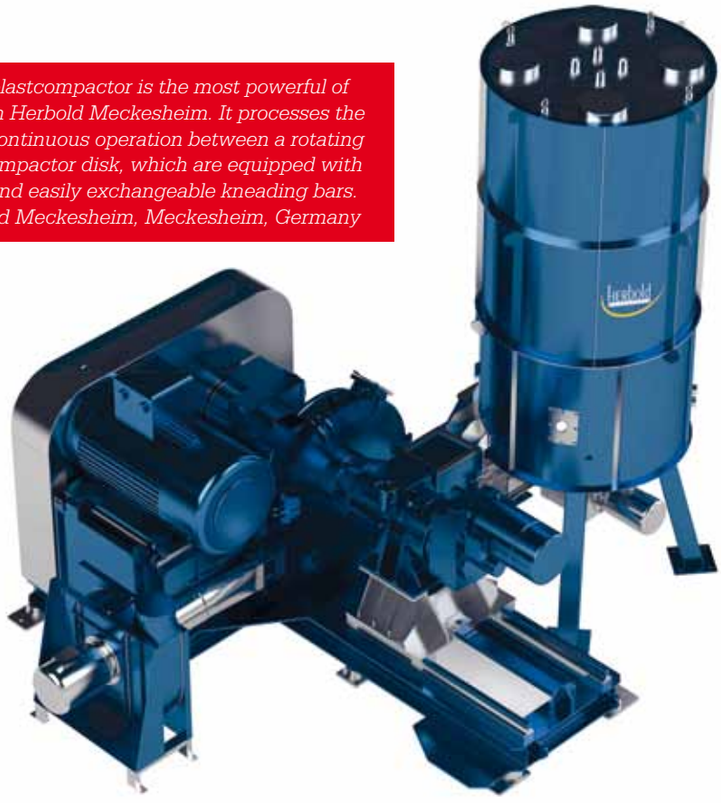
With the combination of Coperion and Herbold Meckesheim technology and know-how, the two companies are able to provide efficient plastics recycling solutions from mechanical processing – shredding, washing, separating, drying, and agglomerating of plastics – to bulk material handling, feeding and extrusion, as well as compounding, pelletizing and odor reduction, to complete systems. Customers have access to individual components as well as complete recycling systems from a single source, supplying highest end product quality and throughputs. Since their merger, both companies have continued to develop and optimally attune their technologies so that entire systems excel in operation with extremely high efficiency.

ZS-B MEGAfeed Side Feeder Makes Plastics Recycling Significantly More Economical

For feeding voluminous flakes and fibers (PET and other plastics) efficiently into a ZSK twin screw extruder, Coperion will show the innovative, recently developed Coperion ZS-B 70 MEGAfeed side feeder. Plastic recyclate with a bulk density starting as low as 20 kg/m³, long considered intake-limited and thus not worth recycling, can be reliably fed in large



Thanks to its high intake potential, the recycling of plastic fiber and flake using the ZS-B MEGAfeed side feeder from Coperion becomes much more economical or even possible in the first place. Photo: Coperion, Stuttgart, Germany



The HV 70 plastcompactor is the most powerful of the series from Herbold Meckesheim. It processes the feedstock in continuous operation between a rotating and a fixed compactor disk, which are equipped with screwed-on and easily exchangeable kneading bars. Photo: Herbold Meckesheim, Meckesheim, Germany

quantities into smaller sizes of Coperion's ZSK twin screw extruders and be concurrently recycled and compounded.

Conventional technologies for recycling PET require pre-drying and crystallization of flakes and fibers before they can be re-processed. Using Coperion's ZS-B 70 MEGAfeed side feeder, PET recyclate can be introduced directly into the ZSK extruder. Recyclers profit particularly from the very high end product quality. Thanks to the ZSK's very good devolatilization properties, volatile components such as monomers, oligomers and water are reliably removed. Savings in operating and logistics costs as well as reduced energy consumption are further advantages of Coperion systems for recycling PET. The high quality of recycled PET manufactured using this innovative Coperion process was approved by the U.S. Food and Drug Administration (FDA) for direct contact with food (letter of non-objection).

Herbold Meckesheim HV 70 plastcompactor - High Bulk Density, Minimal Thermal Impact

The high-performance HV 70 plastcompactor, also on display in the booth, is the most powerful of the series from Herbold Meckesheim. It processes the feedstock in continuous operation between a rotating and a fixed compactor disk, which are equipped with screwed-on and easily exchangeable kneading bars. HV plastcompactors can be used to agglomerate a wide variety of materials into products of high bulk density: thermoplastics such as fibers, fine particles, small tapes, foams, stretch or thin films, powders or shavings, as well as plastics that are difficult to convey, stock or mix. The HV 70 moreover combines high throughput and low wear costs with a fully automatic control system in which settings for different feedstocks can be recorded. Thanks to performance and temperature monitoring, the process is controlled in such a way that only a minimum of personnel is required.

Schenck Process FPM MechaTron® Flat Bottom (FB) Feeder for Light and Fluffy Materials

Also on display will be the Schenck Process FPM MechaTron® Flat Bottom (FB) feeder. This high-capacity stainless steel feeder is designed specifically for handling materials with light and fluffy characteristics. With a bottom driven vertical agitator and an auxiliary agitator, the MechaTron FB is perfect for hard to feed materials such as chopped polypropylene or PET plastic film when feeding to an extruder. Since 2023 Schenck Process FPM is part of Coperion; both brands present their joint forces for the first time at this year's NPE.

Chemical Recycling Solutions - For Large Amounts of Mixed Plastic Waste

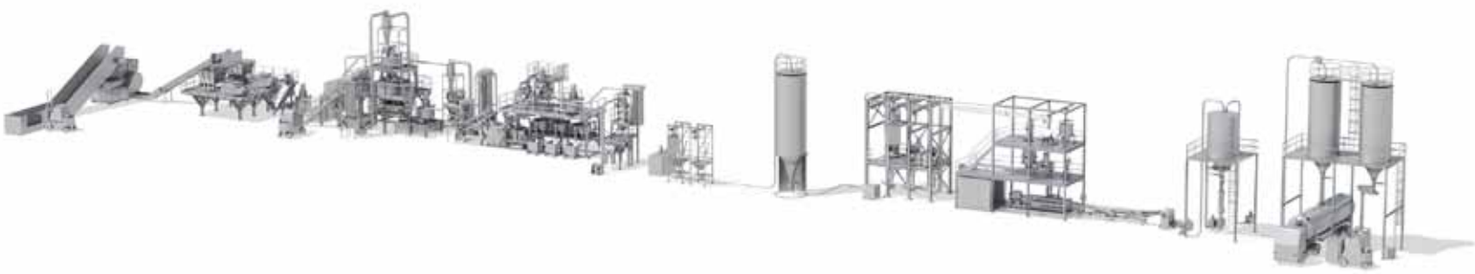
Coperion's twin screw extruder technology possess numerous advantages that are especially beneficial in chemical recycling of plastics. The technology is particularly well suited for an efficient energy addition and covers a broad range of throughputs. On larger ZSK extrusion machines, throughputs of up to 20 t/h ensure continuous feeding of the reactor.

Cameron Kheradi, Head of Process Technology at Coperion USA, said: "Plastics recycling is one of the core topics that we are emphatically promoting in order to better support the plastics industry on its path to a circular economy. We are very proud of our newly developed technologies and processes that achieve first-class product quality and make plastics recycling significantly more efficient. The innovative ZS-B MEGAfeed even makes it possible to recycle certain plastic fibers and flake in the first place. With our new Recycling Innovation Center, we have the optimal environment for developing further technologies and working together with our customers to optimize recycling processes."

Coperion & Schenck Process FPM Booth W1181 – Focus on feeding, dust collection, pneumatic conveying, and bulk material handling components

In Booth W1601 Coperion and Schenck Process FPM will present together for the very first time a variety of feeding, dust collection, pneumatic conveying, and bulk material handling components as well as representing their complete system solutions for plastic processors. By combining the complementary strengths of Coperion and Schenck Process FPM, the two trusted and reliable industry players offer enhanced comprehensive system solutions to customers around the world.

www.coperion.com/NPE2024
West Hall Level 2, Booth W1601



With complete systems for plastics recycling from a single source, Coperion and Herbold are setting new standards for the industry. Photo: Coperion, Stuttgart, Germany

BEYOND MANUFACTURING

At FAP, we don't just design and manufacture extrusion lines for the production of expanded film (foam), but we support our customers with expert technologists in order to ensure the best characteristics of the film and allow product diversification for multiple application areas:

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Clariant: balancing efficiency and sustainability with greater chemistry

Clariant to showcase a portfolio of next-generation additives at The Plastics Show in Florida: more sustainable and efficient, high-performance rice bran wax alternatives to conventional fossil-based carbon waxes

"Sustainability and innovation are key themes at Clariant, our passionate teams create cutting-edge solutions that answer the challenges of today and anticipate the ones of tomorrow" said Miao Zhigang, Head of Clariant's Polymer Solutions business. "We're looking forward to new collaborations with NPE2024 visitors to generate value and discover the path for a responsible use of resources."

Licocare® RBW Vita waxes accelerating the transition to renewable-based products.

Clariant's Licocare RBW Vita waxes are based on renewable bio-based rice bran wax feedstocks, a non-food raw material with at least 98% Renewable Carbon Index. They are well positioned to drive the chemical industry's transition from fossil- to renewable-based carbon materials.

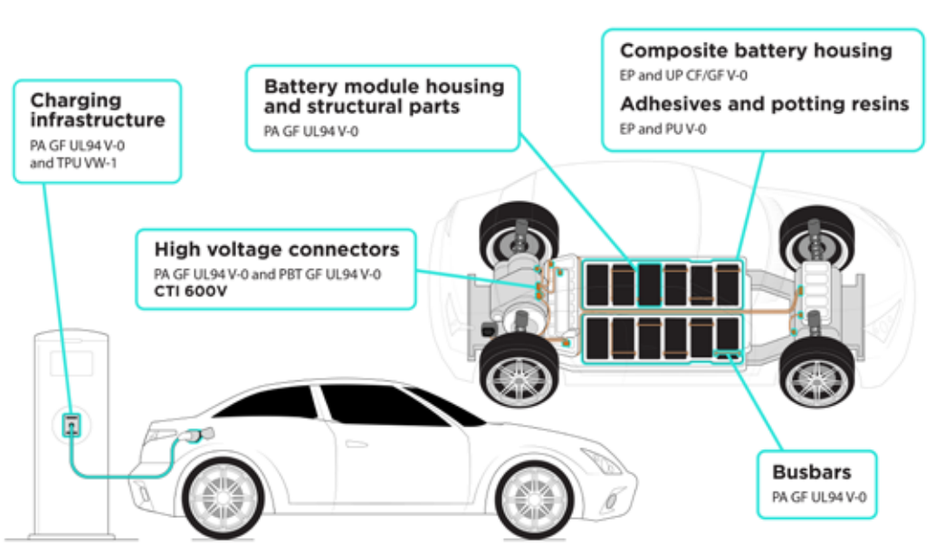
With superior performance and sustainability, they are a natural replacement to traditional coal-based montan waxes. Licocare RBWs are well suited for many polymers particularly Nylon, Polyester, PVC, and other engineering polymers. They offer the same attributes of lubrication, dispersion, release, and nucleation as their montan wax equivalents while supporting our customers in achieving their sustainability and efficiency targets.

Clariant grows its AddWorks portfolio with new stabilizers

Clariant is continuously developing its portfolio of additive solutions for the plastics industry to address technical challenges including light, thermal, and process stabilization, as well as flame retardancy. The AddWorks line focuses on both unique chemistries with specific performances and safer physical forms for easing material handling and processing.

AddWorks TFB 117 helps to improve the quality of nylon fibers, stabilizing and smoothing fiber production process. It protects color, improves heat stability and the mechanical properties of nylon fibers, ensuring smooth spinnability with less filament breakage, even at lower temperatures or high speeds.

AddWorks AGC 970 G and 102 G are new state-of-the-art light stabilization solutions for mulch and greenhouse films - key applications within the agricultural plastic film industry. The AddWorks AGC portfolio strives to address current and future market needs across the agricultural film industry, such as high crop yields, intensified use of agrochemicals and more sustainable use of plastics.



Exolit® OP 1400 – sustainability and performance for e-mobility

Clariant's Exolit OP 1400 is a high performance, halogen-free flame retardant addressing a key trend in e-mobility – charging at higher voltages for a faster charge.

The flow of 1000 volts in a modern charger, for example, compared to 12 volts to charge a traditional ICE battery requires a different risk scenario e.g., materials passing higher fire standards and increased tracking resistance. Exolit OP 1400 meets these requirements.

In addition, the Exolit OP Terra version, based on renewable carbon, will help the industry in the transition towards higher circularity.

"The new facility in Dayabay, China is completed and ready to support the rapidly growing worldwide demand for halogen-free solutions," comments Miao. "With operating sites now in two continents, our customers who manufacture innovative and more sustainable fire protection in E-mobility, electronics, transportation and 5G communications can rely on Clariant's high-quality products and services, especially in times of global supply chain disruptions."

www.clariant.com

NPE: booth S27083 in South Hall Level 1

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Macchi

Kiefel presents its KMD 90.1 Premium machine and new sustainable solutions

Cutting-edge technology for efficient polymer cups and fiber sip-lid production are some of the innovations that will be introduced at the show.

Kiefel is displaying its extensive portfolio of innovative, sustainable solutions for the packaging industry at Brueckner Group's booths W6361 and W6560 in the West Hall at NPE 2024, held from May 6 -10 in Orlando, Florida. Visitors will experience live demonstrations of two types of packaging machine showing some of the many products they can produce: the SPEEDFORMER KMD 90.1 Premium machine equipped with a 6-cavity Sencorp tool for 100% postconsumer recycled PET lids for aluminum ready-meal pans; and the NATUREFORMER KFT Lab producing natural fiber-based bowls.

Easy integration of existing tools into the KMD 90.1 Premium machine

At NPE 2024, one focus will be on the KMD 90.1 Premium steel rule cutting machine, presenting benefits such as its well-proven performance and process control, as well as its customized configuration with proven down-stacking and Pick&Place stacking. The KMD 90.1 Premium allows for efficient production of various types of high-quality thermoformed polymer packaging for food and non-food applications, including trays, containers, lids and technical packaging, among others.

"This technology solution stands out due to its compatibility with standard tooling, benefiting customers by allowing existing tools, like the Sencorp 2500 series, to be easily integrated into the KMD 90.1 Premium through a simple adaptation process", emphasizes Armin Dietrich, Global Director of the Polymer Packaging Division at Kiefel.

Furthermore, the KMD 90.1 Premium offers a faster, ergonomic, automated tool change in a unique tool block, taking only 1.5 hours. This facilitates film switching between production runs and increases machine utilization.

New SPEEDFORMER KTR 6.2 for increased output and taller polymer cups

In addition, Kiefel is providing a preview of its latest tilting machine, the SPEEDFORMER KTR 6.2 designed for the mass production of thermoformed polymer high-end cups. This cutting-edge machine presents a larger forming area and a faster forming time thanks to an improved cooling process.

The KTR 6.2 offers over a 30% higher output of cups and coffee capsules than its predecessor, depending on production parameters, such as the film material, amount of tool cavities and product characteristics. Furthermore, this new solution gives customer the opportunity to produce taller cups. Its more powerful drive system at the Trim-in-place station offers

more possibilities for processing a wider variety of materials.

Sustainable and innovative natural fiber packaging solutions

Kiefel is also a partner for brand-owners and converters who want to efficiently produce sustainable packaging such as lids and sip-lids, coffee capsules, bowls, cups, and flower pots, from biodegradable natural fibers. Its team of experts offers support from the very first steps of material research and testing, to complete turnkey projects, product development and technology demonstrations at its Customer Innovation Centers in Europe and the US.

"Kiefel is excited to announce the upcoming launch of our new lid production system, the KFL 90.1", highlights Richard Hagenauer, Head of Product Management of the Fiber Packaging Division at Kiefel. "This reliable system will allow customers to manufacture lids up to 40mm tall for various food applications including hot and cold drinks, margarine, fresh cheese, ice cream, hot brew, and more." This innovative solution will be part of the fiber thermoforming machine portfolio, which includes the compact KFT Lab machine -presented at the show- for research and development purposes, as well as the KFT 90.1 known for the highest process reliability thanks to enhanced Kiefel Steam Flow Technology, its precise temperature control and its optimized HMI interface.

www.kiefel.com

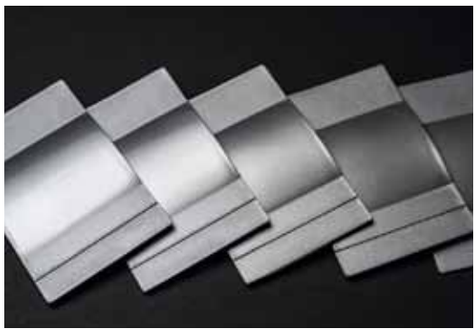
NPE: booths W6361 and W6560 in the West Hall

Effect pigment innovations for plastics

ECKART will present the plastics industry with a whole range of new products from the world of effect pigments for plastics. The new pigment solutions are not only visually impressive, but also offer functional benefits and interesting advantages in terms of sustainability

STAPA® AC Reflexal

STAPA® AC Reflexal are a new generation of aluminum pigments that can produce a chrome-like appearance through plastic mass coloration. This top-level quality aluminum pigment preparation provides highest levels of brightness and gloss. The special carrier enables very good compatibility with many polymer systems. Painted silver metallic plastic parts can be exchanged by simple mass coloring. This saves resources, reduces costs and is environmentally friendly. Highest metallic luster can now be achieved in mass coloring of plastics. Smooth, structureless metallic designs are just as feasible as shiny and reflective effects, depending on the grade used. The paint less solution with a molded-in-color metallic look increases the potential for energy efficiency. No paint scratching or peeling issues appear. The final part is achieved in a single step during molding, reducing finished part costs. A spray painting or coating process is no longer required. The technology eliminates painting problems such as overspray, thereby also improving sustainability.



NIR Silver

Automatic plastic sorting systems in recycling plants work with NIR sensors that do not always correctly identify certain colorants such as conventional silver shades.

With NIR Silver, ECKART has developed a pigment solution that is tailored to the needs of automatic sorting. NIR Silver are pigments specially optimized for their detectability, which support the recyclability of plastics. At the same time, they offer impressive silver metallic effects - especially to the packaging industry. The novel pigments of the NIR Silver series are tailored to the needs of automatic sorting and are suitable for a wide range of polymers.

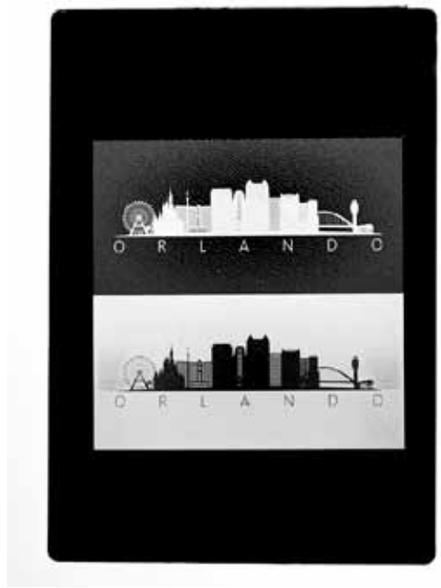
NIR spectroscopy uses the wavelength signature of specific polymers to distinguish between them. NIR Silver optimally reflects these specific wavelengths and thus supports the sorting of plastics. The pigments are easy to process in all conventional plastics and provide impressive silver metallic effects.

LASERSAFE 020

Laser design and the many possibilities offered by customization are becoming increasingly popular, especially in the packaging industry. LASERSAFE 020 is a new pigment for laser marking especially suited for bright marking on dark backgrounds. LASERSAFE 020 is very effective: very low pigment concentrations in the final application result in bright and high-contrast markings. The pigment can support highest marking speeds.

LASERSAFE 020 is suitable for all polymers like polyolefins (PE, PP), PS, PVC, PA, ABS, PC, PMMA and others as well as for liquid masterbatches. It is compliant for food contact applications.

With the new LASERSAFE 020 for dark substrates and the already established LASERSAFE 040 for bright substrates, ECKART now offers two options for bright and dark markings, e.g. automotive plastics parts, or packaging.



MASTERSAFE SYMIC Sahara Blue

MASTERSAFE SYMIC Sahara Blue is based on synthetic mica, coated with a combination of metal oxides titanium oxide and iron oxide. The unique color provides an extraordinary interference flop oscillating from soft shimmering rose with a beige undertone color to interference sky blue reflection. The extreme flop in plastics applications is exceptional. In flat viewing angles the beige-rose hue dominates, the blue shimmer becomes strongest visible at reflection angle 45°. The product is recommended for applications where a new special color effect is needed. Target applications are cosmetic and food packaging, household appliances, toys etc. This special effect cannot be achieved by mixing other effect pigments with colors. ECKART offers this extraordinary product in a convenient dust- free

and useful pellet version. Pigment level of MASTERSAFE SYMIC is generally 70%.

EDELSTEIN

EDELSTEIN is a highly chromatic effect series showing exceptional ultra-deep color effects. There are 4 different colors available: EDELSTEIN Sapphire Blue shows a deep, highly chromatic blue color - from any viewing angle. EDELSTEIN Ruby Red gives an extraordinary look - thanks to its intense, highly chromatic red combined with strong sparkle and shine. EDELSTEIN Topaz Orange displays the highest chroma in the orange color space currently available worldwide. EDELSTEIN Sunstone Champagne provides unique optical appearance: The pigment shows a very refined champagne shade and emits a silver-white shimmer, or a warm, mellow orange coloring based on the viewing angle. EDELSTEIN pigments are particularly impressive in household appliances and consumer electronics.

LUXAN C842 Spotlight Red

LUXAN C842 Spotlight Red sets new benchmarks in terms of sparkle and color intensity: Compared to competitive products, this pearlescent pigment offers more than twice the sparkle intensity. A small amount of this color-strong new pigment is enough to bring even simple base colors to an optical high gloss. Incoming light has the effect of a spotlight on LUXAN C842 Spotlight Red, and the pronounced sparkle is immediately visible because it reflects the light in an impressive way. The pigment owes this reflection to its highly efficient coating technology. LUXAN C842 Spotlight Red shows this spectacular effect at both very low and very high pigment concentrations.

www.eckart.net
NPE booth S38005

Anniversary Appearance for BOY Machines

This year marks the fiftieth anniversary of BOY Machines, Inc., based in Exton, Pennsylvania. The company will be showcasing a total of six injections molding machines at the exhibition.

The central themes of the NPE 2024 include digitization, automation, and the growing interconnectedness of the plastics industry. BOY will be presenting a range of innovate technologies and exciting developments. New to BOY is the Procan ALPHA® 6 control system. Featuring a 16:9 screen format, the control system is equipped with additional features, new visualization, and symbolism. The current Procan ALPHA® 4 will be gradually replaced by the Procan ALPHA® 6 control system.

BOY's E-series injection molding machines are highly energy-efficient, actively contributing to environmental conversation. They enable significant energy savings compared to machines utilizing older technologies, thus reducing CO2 Emissions.

Additionally, BOY will be showcasing its in-house development of a new cooling water distribution system, which will become standard on all injection molding machines in the future. The set flow rate is digitally recorded and displayed on the machine's screen. The preset target quantities and tolerances are visualized, monitored, and recorded in the process data. Optionally, this can also be implemented for the return temperature.

Another innovation in the electromechanical ejector, enabling motion independent of hydraulics. The electromechanical variant offers a synchronized motion operating mode. Two operating modes are possible; the movement can be coupled with BOY Handling LR5 gripper hand, or synchronized inversely to the opening stroke of the mold when used without handling. This ensures that the molded part experiences no horizontal acceleration during extraction from the mold.

BOY offers an application-technically unique hybrid for its injection molding with the electromechanical injection unit (ESP). A benefit of the electromechanically driven unit is the possibility of simultaneous operation without the use of a double pump. The servo motor drive for injection and retraction of the screw operates independently of the machine hydraulics, which is particularly advantageous for short cycle times and high dosing quantities.

Furthermore, BOY will introduce a manufacturing cell developed based on LR5. This demonstrates the versatility of the BOY LR5. In collaboration with a BOY 35E-VV overmolding machine, an additional input terminal, the LR5 handling device, and another assembly automation, metal insert parts are overmolded into T-shaped handles, removed from the mold by the LR5, and fed to an assembly automation. There, the four bits individually selected by the visitor are inserted into the plastic handle. Subsequently, the assembled set are placed by the LR5 onto a conveyor belt, and the visitor received a self-configured set of tools. Should you have any questions or require further information, please do not hesitate to contact us. We look forward to welcoming you at the BOY booth during the NPE Show.

Solution with Modular System

Additionally, at the trade fair, an Operational Data Acquisition System (ODA) will be demonstrated. It will be connected to all exhibited BOY machines. Operational Data Acquisition (ODA) with EUROMAP 77/87 is the interface between the injection molding machine and the Manufacturing Execution System (MES). It covers three central functional areas; production planning and control, quality control, and operating cost controlling. The ODA system software from ProSeS BDE GmbH accesses the internal machine control BOY Procan ALPHA® 6. Machine settings, operating parameters, and production data such as injection quantities, temperatures, pressures, etc., can be captured and reused. This data can be queried via the machine's network interface and used for the desired ODA functional fields.

http://www.dr-boy.de/
NPE: Booth W2101

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Targi Kielce Plastpol with the latest technology for the industry

The latest moulding solutions and extruders, cutting-edge raw materials and services from around the world responding to the challenges of the plastics and rubber processing industry - 21 to 24 May at Targi Kielce. It is worth registering, purchasing a ticket at plastpol.com website and learning about solutions that may revolutionise enterprises.

Plastpol Expo is the Central and Eastern Europe's most prominent event for plastics processing industry. - Several hundred companies from all corners of the world, primarily from Europe, Asia and the Middle East, will present impressive solutions for the industry; - says Kamil Perz, director of the Plastpol project at Targi Kielce. Visitors will see thousands of machines working live, primarily high-technology injection molding machines that use polyethene and polyprophylene granulates, extruders, entire production lines, production management systems, and plastic recycling devices. The seven expo halls of Targi Kielce will turn into a working factory again. - The exceptional development pace fuelled by Industry 4.0 means that we can expect abundant technology presentations with artificial intelligence on board. Innovations pave the way for new opportunities for producers, and increased efficiency and quality of products, which is particularly important considering the need to use recyclates. These groundbreaking solutions not only revolutionise the industry, but also contribute to the pursuit of sustainable development - highlights Kamil Perz.

The latest generations of optimal solutions aim to reduce production costs, maximise work precision, and respond to the challenges posed by legal regulations. The presentation of machines is complemented by an offer of robots, tools, moulds, granulates, dyes and recyclates. Expopo stands will be put up by companies offering services and solutions for the industry, such as transport, logistics and many others. - It is worth being with us from 21 to 24 May and learning about the industry's challenges - invites Kamil Perz.

The Plastpol International Fair of Plastics and Rubber Processing is held from 21 to 24 May - to take part in the show it is worth registering at plastpol.com and purchasing a ticket. Visitors can choose - one day ticket or a ticket for all four days. The online purchasse before the event starts now; this is much cheaper option than purchasing at the box office on expo days.

Knowledge, conferences, and discussions at the Plastpol Expo

Four days at Targi Kielce - this time is primarily about leraning about the latest technologies, establishing contacts and concluding agreements. Plastpol is a knowledge mine for acquiring the necessary knowledge. Once again, Targi Kielce, in cooperation with the tworzywa.pl website will organise the PLASTECH INFO Technical Seminar. The PlasticsEurope Polska Foundation will once again prepare a conference which addressed key issues for the plastics processing industry. Another industry meeting at Targi Kielce's Plastpol is held under the banner of "Sustainable approach to green transformation in polymer materials". Registration is required for this conference prepared by TMBK Partners. Omniplast is one such initiative that has long complemented the expo - the competition aims to disseminate and popularise knowledge of plastic processing and the related processing technologies. The competition targets all companies exhibiting at the 28th International Fair of Plastics and Rubber Processing PLASTPOL. The first stage in which you can register to participate lasts until the end of March.

Plastpol is held from 21 to 24 May 2024.
https://www.targikielce.pl/plastpol

beccaria.it

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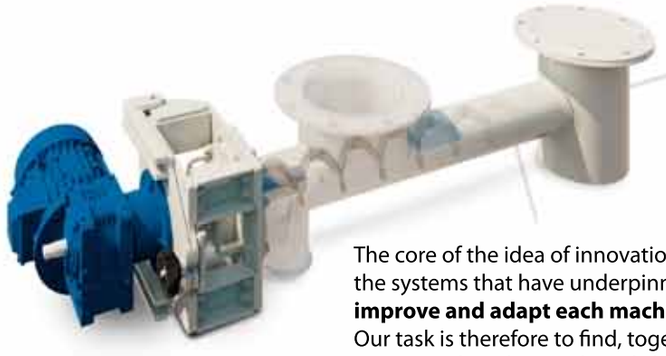
INNOVAZIONE SENZA FINE



The core of the idea of innovation in our industry cannot, and should not, be to revolutionising the systems that have underpinned our work for decades, but is instead that of **finding ways to improve and adapt each machine to new and emerging needs that the market demands.**
Our task is therefore to find, together with our customers and partners, the best solution to accommodate the needs and challenges posed to us by those who work every day, and every day want to improve the quality of their company and their product.
One example, therefore, is for us this type of **extractable spiral screw conveyor**, suitable for all those applications that require **frequent levels of control and cleaning**, and which therefore requires a system for extracting and handling mechanical parts designed to make ordinary operation **easy, safe and non-fatiguing** for operators.
In detail, most of the residual product is recovered through an additional discharge by **rotating the motor in the opposite direction to the direction of travel. At this point, for total cleaning rotate the gearmotor unit, which is bound to a solid hinge**, and then **pull out the spiral**, allowing access to the internal part of the screw.
During normal operation, sealing against any product spillage is ensured by means of an air blowing system.

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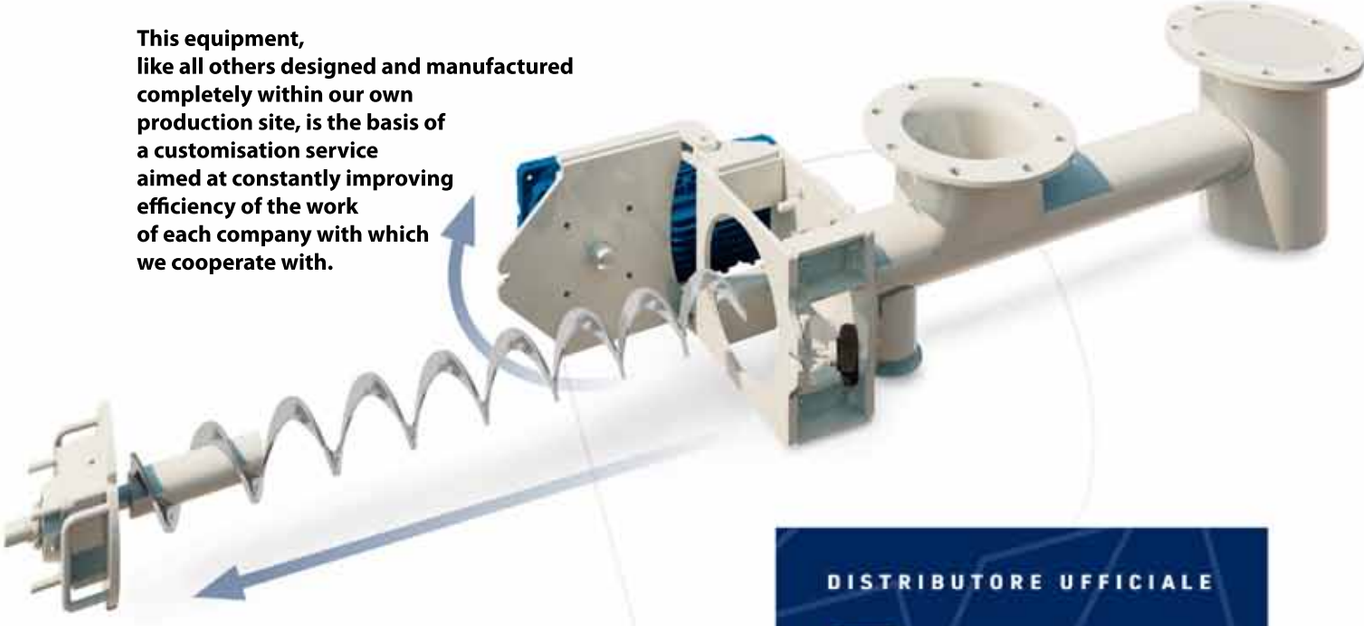

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Plastics Recycling Show Europe Returns to Amsterdam 19-20 June

The world's largest event dedicated to plastics recycling, Plastics Recycling Show Europe returns to the RAI Amsterdam from 19-20 June.

prs Plastics Recycling Show EUROPE
19-20 June 2024 RAI, Amsterdam

"PRS Europe is set to be bigger and better event than ever in 2024 with over 450 exhibiting companies and organisations," says Matt Barber, Global Events Director at Crain Communications. "We have a great mix of long-established and first-time exhibitors, with over 125 exhibiting for the first time this year."

"PRS Europe is an unmissable event for the industry in Europe, attracting each actor of the plastics recycling value chain," says Ton Emans, Plastics Recyclers Europe President. "It is the perfect platform to explore cutting-edge technical innovations, track commercial developments, and stay up to date with the legislative landscape for plastics circularity."

Leading industry figures already confirmed to speak include:

- Emmanuelle Maire, Head of Unit 'Circular economy, Sustainable Production and Consumption', DG Environment, European Commission
- Feliks Bezati – Global Circular Packaging Director, Mars
- Gian De Belder – Technical Director - R&D Packaging Sustainability, Procter & Gamble
- Hugo-Maria Schally – Adviser for international environmental negotiations, DG Environment, European Commission
- Adrian Sen, Sr. Packaging Sustainability & Innovation Manager, Colgate-Palmolive
- Therese Litsin – Raw material leader plastics and chemicals, IKEA
- Dragos Popa – Principal, Roland Berger
- Scott R. Trenor – Technical Director, The Association of Plastic Recyclers (APR)

Conference sessions will cover the latest political, legislative, market and technological developments in plastics recycling. Key topics will include the future of plastic recycling in Europe, market analysis and forecasts, and in-depth analysis of the EU legislative landscape. In particular, the spotlight will be on the Packaging and Packaging Waste Regulation (PPWR), alongside dedicated sessions on measures

to achieve recycled content targets and explore the latest advancements in chemical recycling.

Panel discussions will promote the debate on possible strategies for enhancing and harmonising collection and sorting, design for recycling, and the latest updates on the advancement of plastics circularity on a global scale. Dedicated plastic streams focus sessions will tackle the challenges, issues and opportunities in the recycling of PET, PO films, PVC, HDPE, PP and ELV & WEEE.

The winners the Plastics Recycling Awards Europe 2024 will be announced on 20 June, with all finalists being showcased in the exhibition.

In 2023, PRS Europe attracted more than 8,500 visitors from across Europe and more than 80 different countries internationally.

To register to visit PRS Europe 2024, visit:
https://www.prseventeurope.com/

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FAIRS

Chinaplas
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www.chinaplasonline.com

NPE
6-10 May 2024
Orlando, Florida
With more than 55,000 leaders from over 110 countries representing every industry—from automotive to healthcare to consumer products to construction and more, NPE® is the largest plastics trade show in the Americas and one of the most innovative business events in the world
www.npe.org

Solids Parma
5-6 June 2024
Parma, Italy
All sectors embracing granules, powders and bulk solids technologies on one platform
www.solids-parma.de

PRSE, Plastics Recycling Show Europe
19-20 June 2024
Amsterdam, The Netherlands
The pan-European exhibition and conference dedicated to plastics recycling
www.prseventeurope.com

Fakuma
15-19 October 2024
Friedrichshafen, Germany
At the world's leading trade event for industrial plastics processing, almost 1,500 exhibitors present their international range of products and services. Fakuma offers a comprehensive overview of all plastics technologies
www.fakuma-messe.de

Ipack-Ima
27-30 May 2025
Milano, Italy
The fair specialized in food and non-food processing and packaging
www.ipackima.com

Powtech
23-25 September 2025
Nurember, Germany
Leading trade fair for powder & bulk solids processing and analytics
www.powtech.de

K Show
8-15 October 2025
Duesseldorf, Germany
The leading business platform for the plastics and rubber industry.
www.k-online.com

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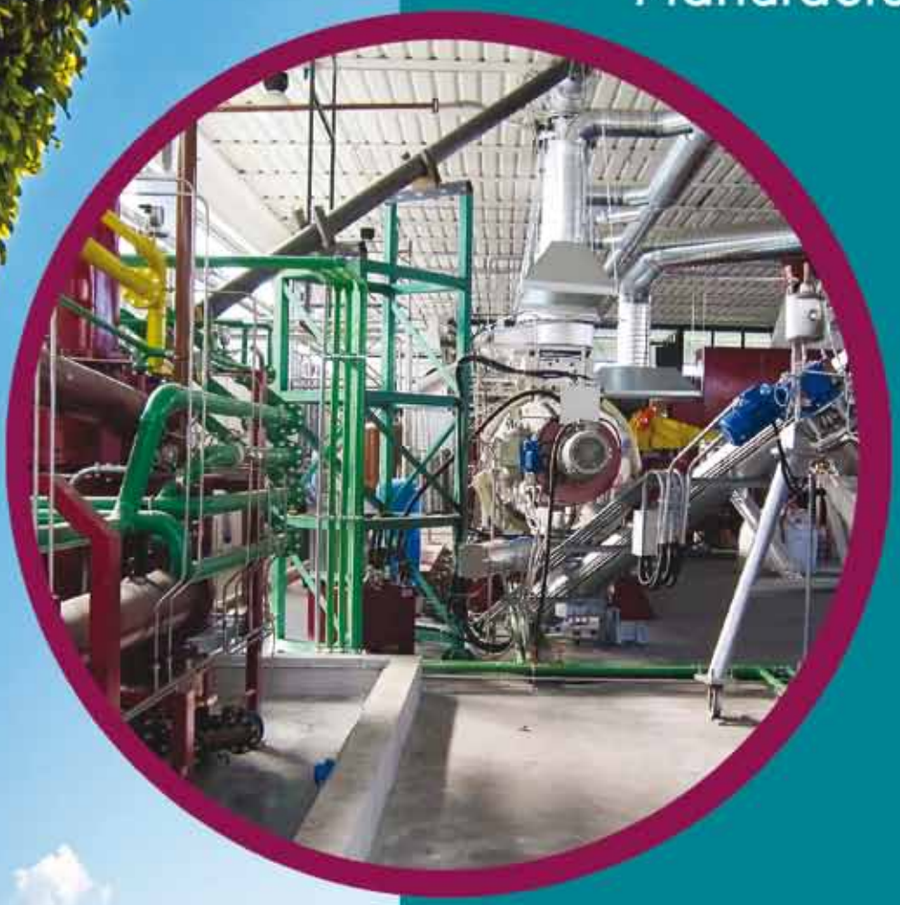

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