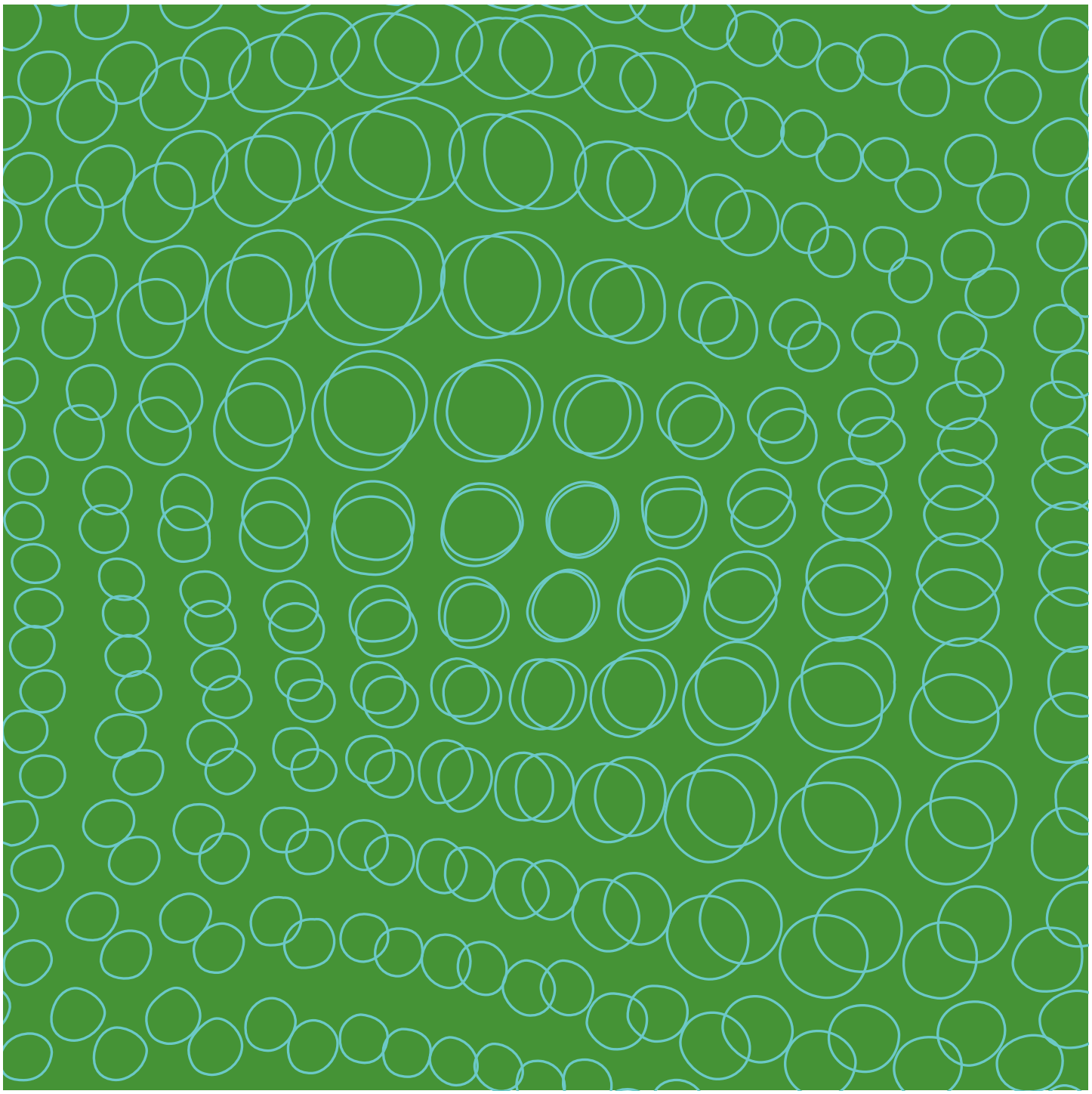
Bausano

Recycling
extrusion lines

Bausano's plastic recycling extruders efficiently process post-consumer and post-industrial plastics, ensuring premium material recovery for reuse in various applications, promoting sustainability.

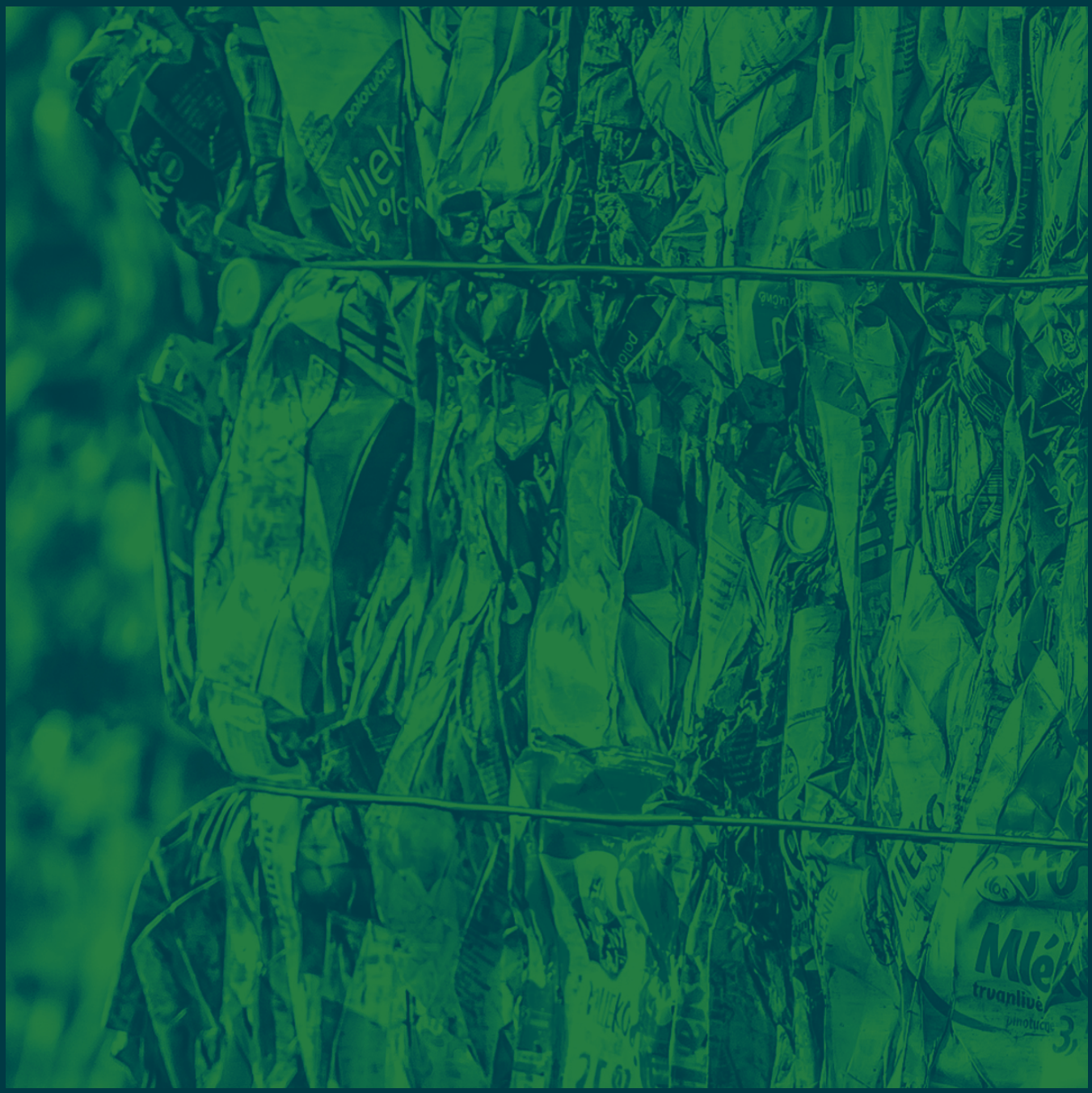


Recycling
extrusion lines

Bausano
Extrusion instinct

Efficient. Customizable. Ahead.

Each Bausano recycling extrusion line is a custom-built system, developed to transform post-consumer and post-industrial plastics into valuable resources. A solution engineered to support sustainable production with consistent quality and measurable efficiency.



Extrusion lines for HDPE-LDPE recycling

The widespread growth of recycled plastic in packaging, construction and industrial fields is due to its ability to maintain functionality and performance. Pellets derived from post-consumer and post-industrial waste become new raw materials for multiple applications, helping reduce environmental impact.

Their effectiveness comes from the versatility of thermoplastics, which can be reprocessed and formulated with specific additives. This makes it possible to obtain recycled compounds with improved fluidity, thermal resistance and mechanical properties – all tailored to the intended use of the final product.

Bausano designs complete extrusion lines for plastic recycling, integrating every phase of the process. Each line includes feeding, plasticising, degassing, filtration and pelletising units.
The technology ensures high material recovery, stable performance and efficient energy management.

The process begins with material pre-treatment, followed by extrusion through single screw systems equipped with degassing and filtration technology. The purified melt is then transformed into uniform, reusable granules via strand or underwater pelletising units.

Bausano's recycling solutions are developed to handle a wide range of materials and contamination levels. The flexibility of configuration and the high automation level allow for consistent, traceable results – even in demanding production contexts.

Made in Italy quality
Choosing Bausano means selecting a reliable partner in sustainable plastics processing.
The company designs and manufactures complete extrusion lines Made in Italy, for the recycling of thermoplastic materials into high-quality pellets. Technological excellence, combined with long-term know-how, drives resource circularity and reduces waste throughout the industry.

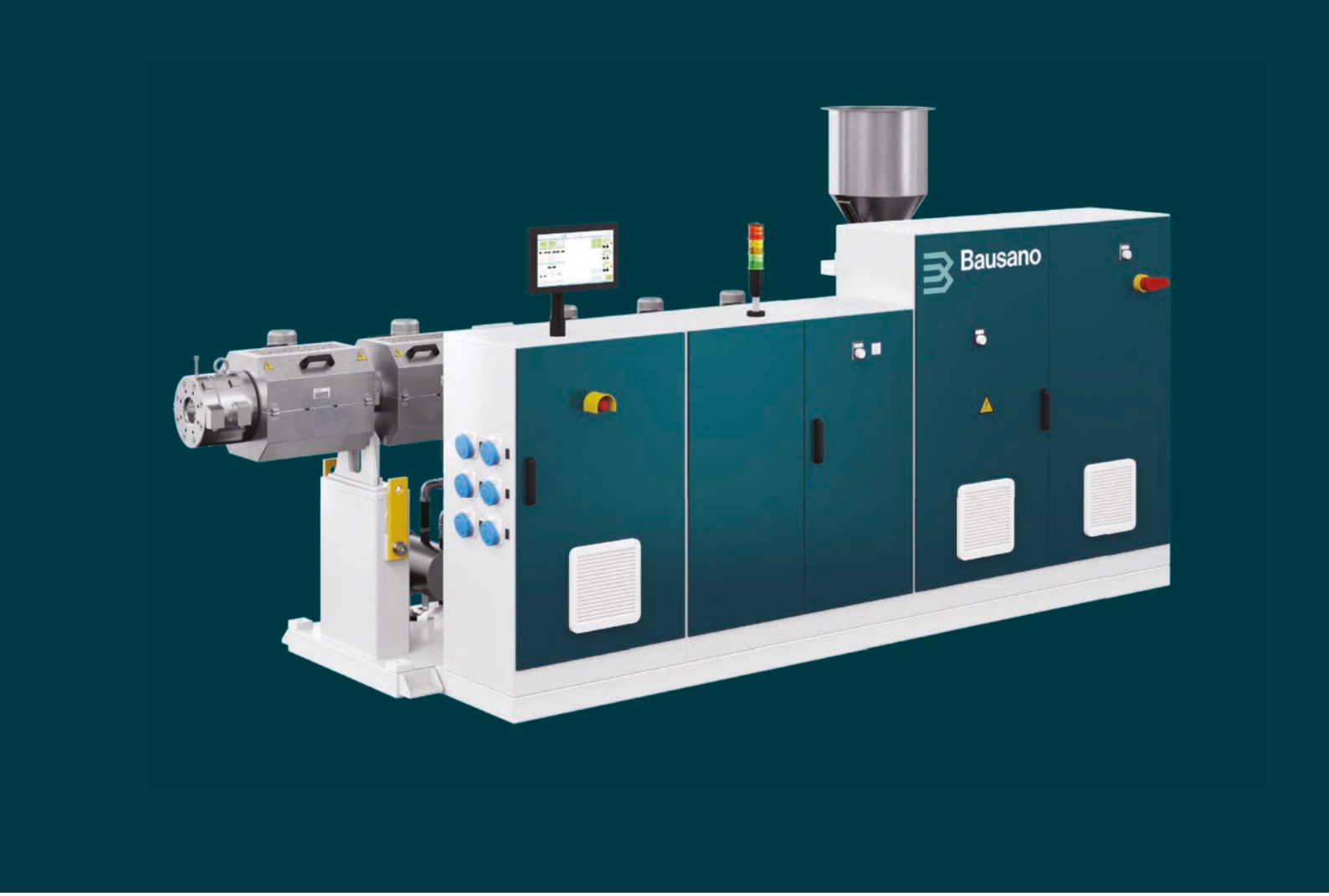
Single-screw extruder series

E-GO R is the single-screw line designed for recycling. Compact and reliable, it processes rigid plastics, films and densified materials with ease. The system ensures stable throughput, easy handling and high-quality pellet output, adapting to diverse production requirements.

E-GO R: high-performance recycling for post-industrial and post-consumer plastics
Bausano's E-GO R series reflects the company's long-standing commitment to offer complete, integrated solutions for plastic recycling.
Designed and manufactured entirely in-house, these single-screw lines combine compact design, energy efficiency and custom configuration for optimal recovery of rigid plastics, films and contaminated scraps. The result is a flexible and durable recycling system, suitable for the production of high-quality regranulates.

Applications
This technology is suitable for the processing of:
- Post-consumer and post-industrial rigid plastics.
- Lightly printed or high-moisture film materials.
- Compacted, densified and mixed scrap.
- LDPE, HDPE, PP and similar thermoplastics.

Key features
- High melt homogeneity through optimised screw geometry.
- Robust vacuum system for efficient degassing.
- Versatile feeding units to handle a wide range of input formats.
- Easy operation and minimal maintenance requirements.
- Compact footprint with high output per kWh.
- Compatible with IoT control systems for process monitoring and optimisation.



TECHNICAL DATA								
Models	**E-GO R 45**	**E-GO R 60 / DD**	**E-GO R 90 / DD**	**E-GO R 105 / DD**	**E-GO R 125 / DD**	**E-GO R 160 / DD**	**E-GO R 180 / DD**	**E-GO R 210**
Screw diameter (mm)	45	60	90	105	125	160	180	210
L/D ratio	37	37 / 44	37 / 44	37 / 44	37 / 44	37 / 47	37	37
Output heavy material kg/h	50-80	140-160	250-280	400-470	500-700	1000-1200	1200-1500	1700-2000
Output light material kg/h	30-50	120-150	180-250	350-450	450-650	900-1100	1100-1400	1500-1800
Motor power (kW)	30	37 / 45	70 / 80	110 / 132	200 / 210	315 / 355	425 / 525	640
Degassing zone	1	1 / 2	1 / 2	1 / 2	1 / 2	1 / 2	1 / 2	1
Cooling zone	5	5 / 7	5 / 7	6 / 8	6 / 8	8 / 10	9 / 11	10
Heating zone	5	5 / 7	5 / 7	6 / 8	6 / 8	8 / 10	9 / 11	10
Total power (kW)	50	75 / 95	100 / 140	180 / 220	300 / 330	470 / 540	605 / 750	860

Data contained in this catalogue are purely indicative and may change.

Feeding systems

Conical force feeding unit
The extruders can be configured with different material feeding systems, selected based on the characteristics of the input.

Specifically, Bausano offers a conical screw feeder designed to handle film, leaf, expanded, rigid, agglomerated and densified materials, as well as granules. Alternatively, a more economical cylindrical locking screw is available for processing rigid and densified materials.

The feeding unit includes a collection silo and three coordinated conveying elements: a constant-speed agitator with four blades positioned at the base of the silo, a horizontal extraction screw, and a vertical forcing screw. This sequence ensures continuous and controlled introduction of the material into the extruder.

Forcing screw power (kW)	Dosing auger power (kW)	Agitator power (kW)	Capacity (kg/h)
3	0,75	4	100-170
4	1,5	5,5	210-280
7,5	1,5	5,5	350-450
7,5	1,5	5,5	450-660
9	2,2	5,5	700-1300



Vertical single screw force feeders
The forced feeding system represents the most effective solution for introducing low bulk density, ground materials into the extruder – particularly in the case of thermoplastic films.

The unit consists of a collection silo and two main conveying stages: a variable-speed agitator with four blades, positioned at the base of the silo, continuously feeds the vertical forcing screw.
The screw operates at a constant speed, calibrated according to the specific properties of the material being processed.

This configuration enables the extruder to operate at full efficiency, regardless of the apparent density of the input material, ensuring uniform and reliable throughput.

Forcing screw power (kW)	Agitator power (kW)	Capacity (kg/h)
5,5	4	100-170
5,5	4	210-280
7,5	5,5	350-450
7,5	7,5	450-660
11	7,5	700-1300
15	7,5	1400-1700

Feeding systems

Conical feeding systems
The conical series features a specially designed conical screw, ideal for processing leaf, film, expanded, rigid, agglomerated and densified materials, as well as granules. Alternatively, a cylinder-shaped locking screw is available for rigid and densified plastics. The system supports both manual and automatic adjustment modes.

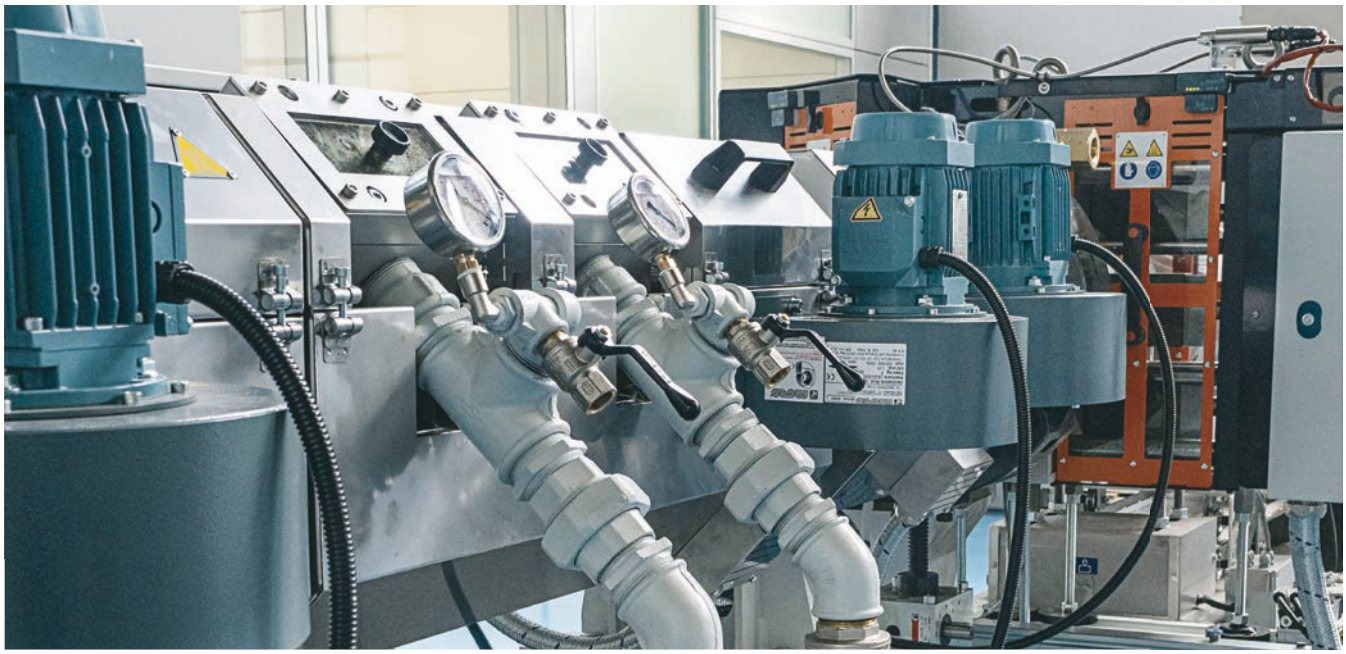
Forcing screw power (kW)	Capacity (kg/h)
3	100-170
4	210-280
7,5	350-450
7,5	450-660
9	700-1300



Volumetric dosing units
The volumetric dosing units are normally used to feed, or directly the extruder or the other feeding systems, with granules, pellets, rigid material and masterbatch.
The adjustment can be either manual or controlled type with special software that adjusts the flow according to the speed of the extruder screw.

Models	Capacity (kg/h)
DPM 1530	0,3-50
DPM 1550	1,3-300
DPM 1580	10-1500
DPM 15100	50-5000
DPM 1530	0,6-40
DPM 1550	2,8-170
DPM 1580	16-1000

Melt degassing



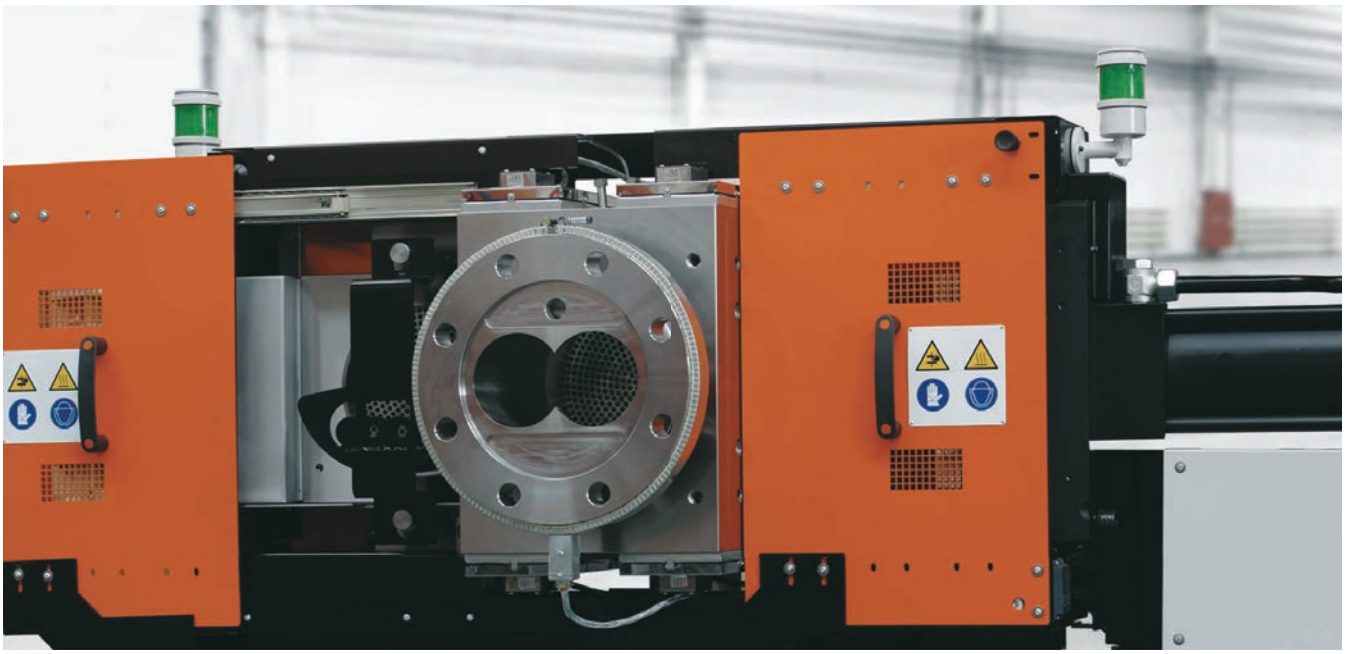
Degassing systems eliminate humidity, air and volatile substances from the molten polymer, improving product stability and appearance. Bausano designs vacuum technologies that ensure clean melt flow, reduce defects and enhance mechanical properties, even in high-moisture or contaminated plastic waste.

Degassing for material purity
Degassing – also referred to as hot melt venting or devolatilisation – is a critical step in extrusion, especially during plastic recycling. It removes residual moisture, air, solvents and decomposition by-products, ensuring the polymer is purified before reprocessing. Depending on the application, vacuum levels can be brought below 0.8 mbar to meet the desired quality standards.

Effective degassing improves free volume and reduces moisture content, while also enhancing odour, surface appearance and mechanical performance. It prevents bubbling, ensures uniform mixing and contributes to overall product stability.

Advanced vacuum technology by Bausano
Bausano equips its extrusion lines with next-generation vacuum systems, engineered to handle high vapour loads. These units offer superior suction performance and durability, even in the presence of condensable components inside the pump body. As a result, the melt remains stable and suitable for consistent, high-quality output – supporting reliable and energy-efficient recycling operations.

Melt filtration



Filtration ensures the removal of impurities from the molten plastic, supporting process continuity and final product quality. Bausano develops adaptable screen changer systems for different contamination levels, helping optimise melt purity, reduce maintenance and enhance the mechanical reliability of recycled granules.

Melt filtration for process stability
The screen changer is a key component in Bausano's recycling extrusion lines. Available in manual or automatic versions, it houses one or more filters used to remove impurities and foreign particles from the plasticised melt flow. Filtration is essential to ensure the quality of the recycled material and to prepare the melt for reuse in downstream applications.

Cleanliness levels directly influence the technical characteristics of the final granule. For this reason, the selection of the appropriate filtration system is based on both the type of input material and the intended use of the output pellets.

Configurations for demanding requirements
To ensure consistent performance, Bausano offers screen-changing systems suited to different melt flow rates and contamination levels. These include conventional non-stop single-plate double-station systems as well as two-piston double-station models for higher throughput.

Strand pelletizing system

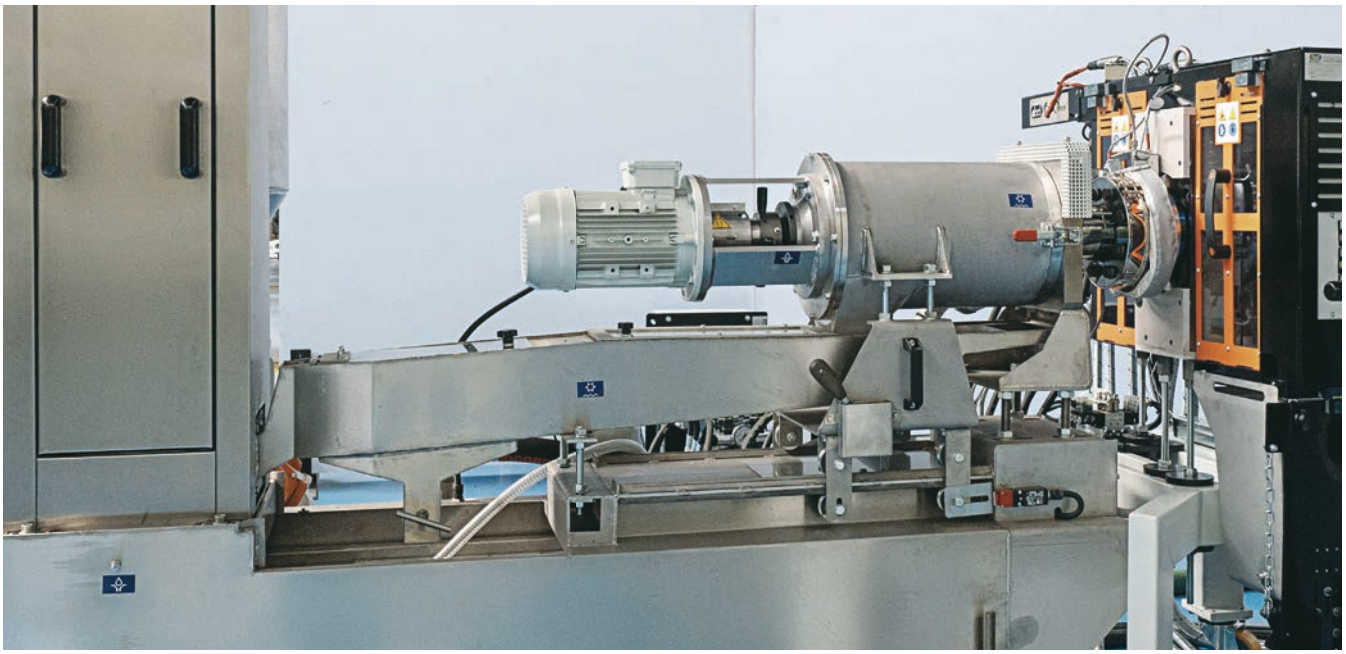


Strand pelletizer head designed for uniform and controlled cutting of plastic strands. Equipped with a precision rotor system, it ensures high pellet consistency and smooth operation, even with demanding materials. Ideal for integration in continuous extrusion and recycling processes.

Bausano offers strand pelletizing systems for the processing of HDPE, LDPE, PP and PE.
Available in both wet and dry cut versions, these solutions are designed to produce cylindrical pellets or microgranular compounds with a consistent shape, ready for downstream use.

Reliable and easy to maintain
The systems are designed for ease of use and cleaning. The cutting rotors feature multiple blades to ensure quiet operation and long-term efficiency, supporting continuous production with minimal maintenance needs.

Water ring pelletizing system



Water ring cutting system designed for immediate cooling of pellets inside a cylindrical chamber. The integrated water jet, separation unit and vertical centrifuge ensure effective drying, low noise emission and temperature control according to the production rate.

The pellet is cooled immediately after cutting inside a cylindrical chamber, where a tangential water jet ensures uniform temperature reduction. The mixture of water and material is conveyed and then separated before reaching the vertical drying centrifuge.

Controlled drying and noise reduction
The material is discharged via a cyclone equipped with a fan for humid air extraction and an optional flow sensor. Both the centrifuge and cyclone are soundproofed to comply with current noise regulations. A water-to-water heat exchanger helps maintain optimal cooling temperature according to production capacity.

Designed to give plastic new value

Recycling of industrial PVC waste allows the recovery of high-quality materials from pipes, profiles and production leftovers.
Through advanced extrusion processes, Bausano transforms rigid and flexible scrap into new compounds, reducing environmental impact and preserving the material's original performance.



Extrusion lines for PVC recycling

PVC (polyvinyl chloride) is a versatile thermoplastic that can be transformed into both short-life and long-life products, ranging from packaging materials for the food, medical and cosmetic sectors, to pipes, window profiles, flooring and roofing systems. The ability to recycle both pre-consumer and post-consumer PVC waste allows the material to enter a new lifecycle, contributing to a more circular and efficient plastic economy.

Mechanical recycling through extrusion represents a reliable method for reprocessing PVC, though it requires careful control of thermal and mechanical stress. Over multiple processing cycles, PVC may undergo changes in its morphology and properties due to shear forces and dehydrochlorination. For this reason, Bausano develops and supplies extrusion lines specifically engineered to process a wide range of PVC waste – from rigid and flexible materials to micronized or grinded forms – ensuring stability, consistency and high-quality output.

The recyclability of PVC extends to industrial waste, such as offcuts from pipe and profile production, medical-grade materials, cable insulation and foamed PVC components. These are often rich in functional additives, including plasticizers and stabilizers, which may vary depending on the generation of the product. Bausano's technology addresses these challenges by integrating advanced filtering and degassing systems, ensuring the recovery of a polymer with characteristics comparable to virgin material – and, when required, enriched with mineral fillers or fibres.

Thanks to decades of experience and continuous innovation, Bausano supports manufacturers in creating new value from PVC scrap. From window profiles to injection-moulded fittings, the company offers complete, customizable recycling solutions that combine performance, energy efficiency and compliance with evolving regulatory standards.

Parallel twin-screw extruder series

The extrusion process enables the production of plastic compounds for multiple industrial uses. Bausano offers parallel counter-rotating twin-screw extruders for every formulation and processing requirement.

Bausano offers quality and performance throughout every stage of the process – from feasibility analysis and machine design to production, commissioning and after-sales support. All steps are managed in-house to ensure complete control and consistency. This integrated approach allows Bausano to deliver tailor-made parallel counter-rotating twin-screw extruders for compounding applications.
These extruders are particularly suitable for processing complex formulations with high filler content, such as PVC combined with 100 p.h.r. calcium carbonate. This additive enhances the stiffness and impact resistance of the polymer, while improving the dispersion of all components within the blend. Each extruder in the series is available in multiple configurations, with different lengths and drive motors, to guarantee optimal plasticising and throughput. Moreover, the systems are fully synchronised with all downstream components, ensuring a stable and efficient process for every production requirement.

MD Series: parallel twin-screw technology

High specific output for gentle plasticization of PVC.

Optimized material feeding system for stable production of PVC-U powder.

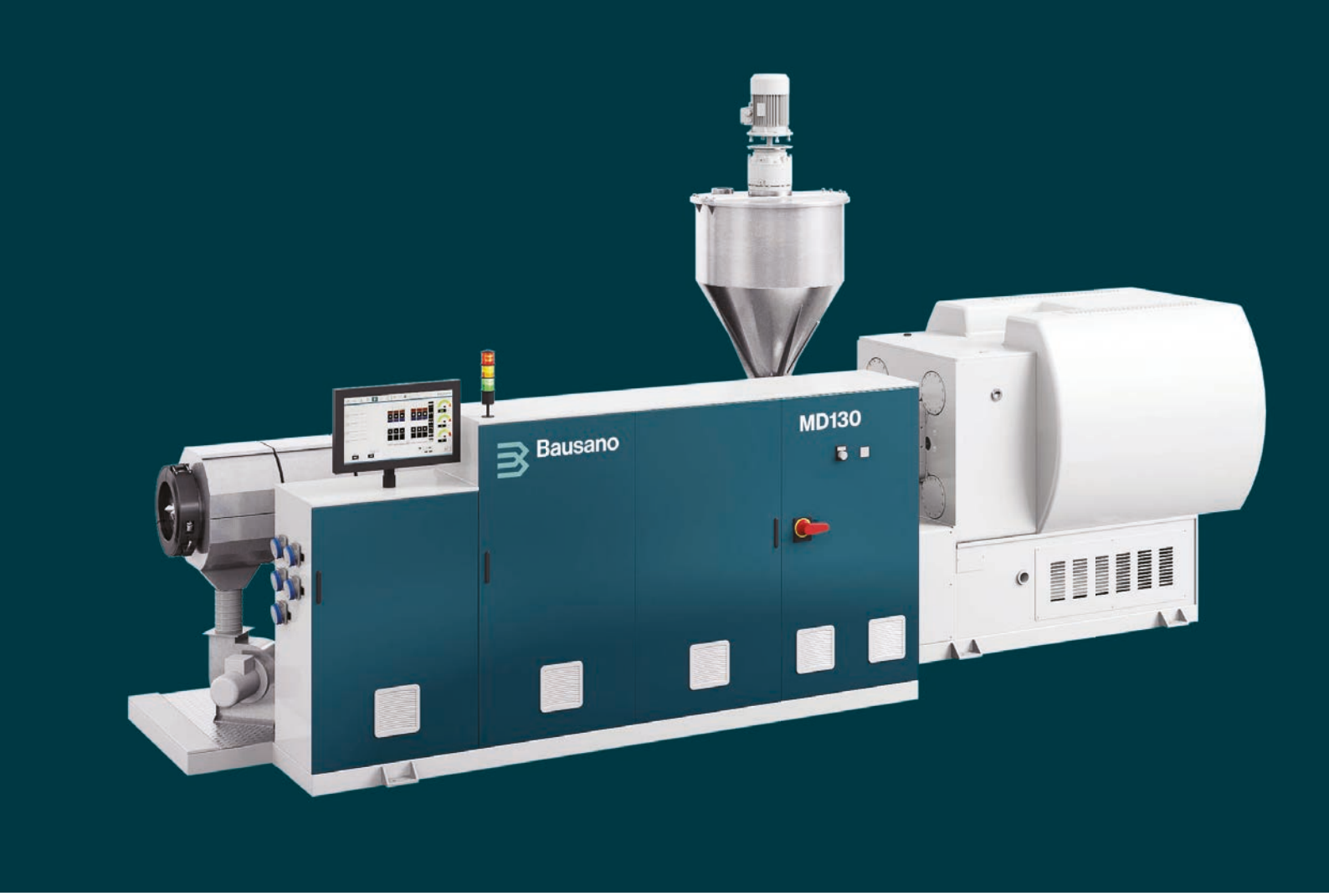
Optimized screw design for PVC and for customer needs.

Patented Multidrive system reduces stress on motor shafts, gears and screws with a positive impact in terms of both precision and energy savings.

AC motors for low energy consumption.

Induction barrel heating system, more efficient heating, and less dispersion.

IoT technologies enable full monitoring and analysis of production parameters, with a special focus on improving energy efficiency across the entire extrusion process.



TECHNICAL DATA		
Models	**MD 158**	**MD 170**
Screw diameter (mm)	158	170
L/D ratio	21 / 26 / 30	24 / 28
Heating zone	9 / 9 / 10	8 / 9
Cooling zone	7	8 / 9
Total power (kW)	260 / 286 / 338	411 / 435

Data contained in this catalogue are purely indicative and may change.

Feeding system

Horizontal volumetric feeder
Volumetric dosing is based on delivering a fixed volume of material per unit of time, offering a practical alternative to gravimetric systems, which rely on weight-based measurements.
This method is particularly effective for feeding granules, rigid plastics, and regrinds, where precision, repeatability and mechanical simplicity are essential for process stability.

Optimised flow control
Bausano's horizontal feeders are engineered with a specially designed screw, whose geometry ensures stable material transport and constant throughput. A vertical agitator, rotating at low speed, facilitates material descent from the hopper, preventing blockages and supporting continuous flow.
This setup is especially effective with recycled materials that are irregular in shape or prone to bridging, ensuring consistent feeding over time.

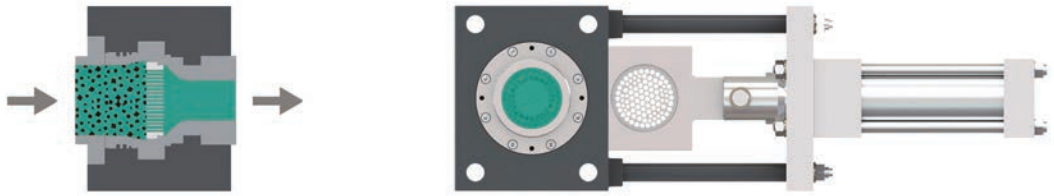
Vertical forced feeder
The vertical forced feeder developed by Bausano is a reliable solution for handling various materials – from powders and blends to lightweight regrinds. Thanks to its excellent sealing and accurate flow management, the system guarantees steady dosing while preventing leakage and fluctuations.
It's ideal for high-volume applications where material characteristics can vary significantly from batch to batch.

Efficient handling of recycled materials
Feeding consistency is ensured by a double mechanism: continuous pellet mixing within the hopper and a wide feed opening that avoids clogging and material buildup. These features make the system particularly suited for recycled inputs, whose density and flow behaviour often differ from virgin materials. The result is a uniform feed into the extruder, essential for maintaining extrusion quality and productivity.

Screen changer

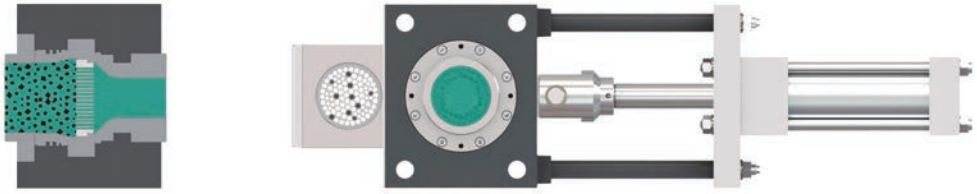
A
Position

100%



B
Position

100%



The melted material coming from the extruder flows to an inner channel crossed by a plate with appropriate filtering capacity (breakers), prepared to insert various sized nets based on the desired filtration level. This plate, which is activated by a cylinder controlled by a hydraulic control unit, slides in the work positions.

A
Position
During filtration, one of the two screen cavities is in the melt flow. Both safety guards are closed.
Once a certain level of contamination is captured by the filter in the melt flow, the operator drives the second screen into the melt flow by hydraulically displacing the slide plate.

B
Position
By displacing the slide plate, the contaminated screen is moved out of the melt flow into the screen changing position. Now the respective safety guard may be opened, and the filter may be changed.

Safe and efficient screen changer system

1
Extruder screw pull through.

2
Fully guarded and electronically interlocked.

3
Optimized flow channel design.

4
Available for a broad range of extruders.

5
Stainless steel main body.

Frontal air cutter



TGPO
The TGPO frontal air cutter by Bausano features a system of knives mounted on a self-centring rotor, directly rotating on the extruder's die plate. This configuration allows smooth and controlled cutting, ideal for temperature- and shear-sensitive plastics, while preserving material properties during processing.

The system ensures consistently low blade surface temperature, preventing the formation of residues or thermal degradation. Thanks to the precise alignment between the knives and die plate, the result is a clean cut with excellent pellet geometry and very low dust — a key factor in maintaining consistent product quality.

Operational benefits

A
Gentle and controlled cutting for heat- and shear-sensitive materials.

B
Precision blade alignment for high pellet uniformity and reduced fines.

C
Variable speed control via frequency converter for process optimisation.

D
Forced air cooling system for consistent pellet handling.

E
Integrated sliding support for fast and safe maintenance access.

F
Corrosion-resistant and durable materials for extended service life.



L4/M
The L4/M cutter is equipped with a system of three rotating blades mounted on a self-centring ball joint. This mechanism ensures constant and balanced contact with the granulating head, reducing wear and enabling precise, repeatable cuts. Blade adjustment is simplified, helping to maintain uniform pellet size over time.

The unit includes a robust 2.2 kW asynchronous motor, managed directly from the extruder's control panel via inverter.

The cutter is enclosed in a protective cover with forced air circulation and an integrated inspection lamp aimed at the granulation area. Mounted on sliding rails, the cutter is easy to access and maintain. Granules are conveyed through galvanized tubes and two water-cooled stainless steel elbows, ensuring optimal temperature control before reaching the cooling system via a dedicated blower.

TECHNICAL DATA			
Models	**L3/M**	**L4/M**	**TGPO**
Asynchronous motor (kW)	2,2	2,2	4
Granule blower (kW)	4	5,5	5,5-11

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Cooling system

Bausano has developed an advanced cooling system for plastic compound processing, designed to ensure high thermal efficiency and precise granule conditioning. The system includes a vertical transport pipe connected to the cyclone via a quick coupling, allowing fast and secure assembly.
The collecting cyclone, entirely made of stainless steel, integrates a mesh filter to retain fine particles, ensuring clean separation.

The vibrating cooling tray is self-cleaning and easily removable, simplifying maintenance operations. Cooling is carried out through holed stainless steel surfaces, with forced air circulation generated by vertical flow valves positioned in the machine base. The vibratory motion of the tray, regulated by dual counter-rotating mass vibrators, guarantees uniform granule distribution across the entire cooling surface.

Fan speed can be controlled via inverter, adapting the airflow to specific material and process needs. Air intake filters are wall-mounted and equipped with a quick-release system to facilitate inspection and replacement. At the end of the cooling line, a granule separator with selector discharge and interchangeable nets ensures precise separation and smooth transfer to subsequent processing stages.

Main features
- Quick coupling between pipe and cyclone for fast setup.
- Stainless steel cyclone with internal mesh filter.
- Removable vibrating tray with self-cleaning. function.
- Inverter-controlled fan speed for precise airflow management.
- Quick-release wall filters to prevent contamination.
- Counter-rotating vibrators for uniform granule distribution.
- Adjustable tray vibration intensity for cooling optimisation.
- Integrated separator with interchangeable filtering nets.

Granule quality and process efficiency
A reliable and efficient cooling phase is essential in pellet production, as it influences both dimensional stability and product integrity. Bausano's system ensures uniform air distribution, optimal surface contact and contamination-free flow.
Engineered to support high-throughput applications, it offers a dependable solution adaptable to a wide range of thermoplastic compounds.



TECHNICAL DATA				
	RG 1	RG 3	RG 4	RG 5
Total installed power (kW)	2	14	18	18
Water consumption at 15°C (m3/h)	-	-	1,6	1,6

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Bausano
Recycling extrusion lines

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Extrusion instinct

Bausano, international company founded in Italy in 1946, is a leader in developing high-tech industrial solutions for plastic processing.

Bausano

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