



SINGLE STAGE CUTTER COMPACTOR PELLETIZING LINE

High-Efficiency Plastic Regeneration

The Single Stage Cutter Compactor Pelletizing Line is an integrated 4-in-1 solution that combines crushing, compacting, plasticizing, and pelletizing into a single, seamless process. Designed for maximum throughput with a minimal footprint, this system is the ideal choice for manufacturers looking to turn plastic scrap into high-value raw materials.

By integrating the cutter-compactor directly with the extruder, the system pre-heats and densifies the material using frictional heat. This reduces energy consumption and ensures a stable, high-speed feeding process.

Why Choose the Single Stage System?

This line is engineered for versatility and cost-effectiveness. It is particularly effective for "light" materials that typically occupy a large volume but have low weight, such as films and foams.

- **Unified Processing:** Eliminate the need for separate shredding or densifying steps.
- **Superior Homogenization:** The specially engineered granulator ensures uniform flakes, leading to consistent pellet quality.
- **Energy Savings:** By utilizing the thermal energy generated during compaction, the extruder requires less power to reach melting temperature.
- **Turnkey Ready:** The output pellets are ready for immediate reuse in blown film, pipe extrusion, and injection molding applications.

APPLICATIONS

This system handles a wide array of polymers, including PE, PP, PS, ABS, XPS, EPS, and PVB.

1. Film & Flexible Recycling

Transform HDPE, LDPE, BOPP, and stretch films into high-density pellets. The high-speed friction in the compactor helps "flash off" surface moisture for a cleaner melt.

2. Woven Materials & Fibers

Efficiently process raffia strings, woven sacks (PP bags), and filaments that often tangle in standard feeding systems.

3. Foamed Plastic Recovery

Ideal for densifying bulky EPS and XPS foam into uniform granules, significantly reducing storage and transport costs for recycled materials.

4. Rigid Scrap & Bottles

The durable granulator blades are capable of grinding plastic bottles and small rigid injection scraps, making this a true multi-purpose recycling line.

FEATURES

Feeding System

FEEDING

Plastic scraps such as films, filaments, and raffia are conveyed into the compactor chamber by a belt system.

For rolls, an optional roll-hauling device ensures smooth transfer. Both systems operate with ABB inverters, automatically adjusting feeding speed to match chamber capacity.

Integrated metal detectors connected to the control system trigger warnings and shutdowns if contaminants are detected, preventing damage and ensuring operator safety.

Sliding Gate with Servo Motor

SLIDING GATE WITH SERVO MOTOR

The servo-driven sliding gate manages residence time inside the compactor.

This ensures only clean, pre-dried material moves into the barrel, while substandard feed is withheld.

Controlled by PLC, the gate precisely regulates forced feed quantities, optimizing efficiency and production consistency.

Intelligent Control System

INTELLIGENT CONTROL

Intelligent Start: Launches the entire line with a single button, synchronizing all modules.

Intelligent Stop: Shuts down all components instantly, ensuring fast and safe halts.

Emergency Stop: Integrated emergency protocols protect the system and operators from unexpected risks.

Remote Monitoring System

REMOTE MONITORING AND INFORMATION TRANSMISSION

The system is equipped with Bluetooth-based remote monitoring and data transmission.

Operators can track performance in real time, adjust parameters, and access production data for streamlined management and quick decision-making.

Crushing and Compacting System

CRUSHING AND COMPACTING

The compactor integrates cutting, friction heating, and air exhaust in one process.

As the rotor and stator knives cut and compress material, heat builds naturally, removing surface moisture and dust.

This eliminates the need for additional drying equipment, combining pre-heating, pre-drying, and size reduction into one efficient step.

Rotatory Blades of Compactor

ROTATORY BLADES OF COMPACTOR

High-speed rotating blades work with fixed blades to slice material into uniform flakes.

Frictional heat shrinks and preheats the flakes, preparing them for efficient extrusion while improving density and consistency.

Single Screw Extruder

SINGLE SCREW EXTRUDER

The precision single-screw extruder ensures uniform plasticizing and blending.

Built with bi-metal material, it offers outstanding resistance to wear and corrosion, ensuring a long and reliable operating life.

Extruder Barrel

BARREL

The extruder barrel, designed with a super L/D ratio, can perform like a double-stage extruder.

With the addition of double-piston screen filters, final product quality is further improved, ensuring higher purity and consistency.

Double Vacuum Degassing Zones

DOUBLE VACUUM DEGASSING ZONES

Dual vacuum zones effectively remove micro-molecules, volatile compounds, and moisture.

This process is ideal for printed or contaminated materials, resulting in higher-quality granules with improved stability.

Liquid Outlet

LIQUID OUTLET

The liquid outlet design improves melt filtration and supports higher production output.

In advanced configurations, multiple single-screw extruders feed into a second-stage extruder, further boosting quality and efficiency.

Non-stop Piston Filter

NON-STOP PISTON TYPE FILTER

This system uses either a single/double station piston screen changer or a continuous four-station option.

Large filter areas extend screen life, while quick-change functionality allows seamless operation without halting production.

Lower downtime means higher productivity and reduced operational costs.

Plate Type Filter

PLATE TYPE FILTER

Continuous dual filter plates ensure uninterrupted operation during screen changes.

Equipped with a ring-shaped heater, the system maintains stable and uniform temperature for consistent filtration.

Self-clean Filter

SELF-CLEAN FILTER

The SCF (Self-Cleaning Filtration) system enables continuous extrusion even with highly contaminated materials.

Capable of filtering out up to 5% impurities such as paper, wood, aluminum, and rubber, it ensures uninterrupted recycling and improved product purity.

Water Ring Pelletizing System

WATER RING PELLETIZING SYSTEM

The self-adjusting pelletizing head maintains blade pressure for consistent granule size.

Blade RPM adapts automatically to extrusion pressure, while quick-change pelletizer blades simplify maintenance and reduce downtime.

Underwater Pelletizing System

UNDERWATER PELLETIZING SYSTEM

A highly automated pelletizing system designed for high-MFI materials and demanding capacity requirements.

The setup includes pelletizer, valve, pipelines, vibrating dewatering screen, and silo for efficient large-scale pellet production.

Vibration Dry System

VIBRATION DRY

Advanced dewatering combines vibrating sieve technology with horizontal centrifugal drying.

Screw-assembled sieves simplify future replacements, reducing downtime and lowering maintenance costs.

Plastic Particles Output

PLASTIC PARTICLES

The end result is high-quality plastic granules, ready to be reused in manufacturing.

This recycling loop reduces waste and provides reliable raw material for producing new plastic products.

Packing System

PACKING SYSTEM

The final qualified granules are dried using a shaker and horizontal centrifuge, then packed with precision.

Continuous capacity monitoring and quantitative weighing systems guarantee accurate storage and shipment readiness.

System Advantages

ADVANTAGES

- Integrated crushing, compacting, and pelletizing in one system reduces labor costs
- Higher feeding efficiency for film, filament, raffia, and foaming materials
- Lower investment with a durable, long-lasting design
- Energy-efficient operation with increased production output

- Overseas installation and training services available
- Warranty support with stocked spare parts for fast delivery

TECHNICAL SPECIFICATIONS

Target Recycled Material	HDPE, LDPE, PP, BOPP, CPP, OPP, PA, PC, PS, PU, ABS					
System Composition	Belt Conveyor, Cutting Compactor, Single Screw Extruder, Filtration, Pelletizer, Water Cooling Device, Dehydration Section, Conveyor Fan, Product Silo.					
Material of Screw	38CrMoAlA (SACM-645), Bimetal (Optional)					
L/D of Screw	31/1, 32/1, 34/1, 36/1 (According to the characteristics of recycling)					
Heater of Barrel	Ceramic heater or Far-infrared heater					
Cooling of Barrel	Air cooling of fans through blowers					
Pelletizing Type	Water-ring pelletizing/ water-strands pelletizing/ Under-water pelletizing					
Technical Services	project design, factory construction, installation and recommendations, commissioning					
Machine Model	Compactor		Single Screw Extruder			
	Volume	Motor Power	Screw Diameter	L/D	Extruder motor	Output capacity
	(Liter)	(kw)	(mm)		(kw)	(kg/h)
TT-ACS-H300/80	300	37	80	36	AC 55	160-220
TT-ACS-H500/100	500	75	100	36	AC 110	300-380
TT-ACS-H800/120	800	110	120	36	AC 160	450-550
TT-ACS-H1000/140	1000	132	140	36	AC 200	600-700

TT-ACS-H1200/160	1200	160	160	36	AC 250	800-1000
TT-ACS-H1600/180	1600	200	180	36	AC 315	1000-1200



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