



SHREDDER EXTRUDER RECYCLING PELLETIZING SYSTEM

3-in-1 Shredding · Extruding · Pelletizing — Integrated In-Plant Recycling

A Shredder Extruder Recycling Pelletizing System is an integrated 3-in-1 plastic-recycling platform that combines shredding, enforced feeding, plasticization, and pelletizing into a single continuous production flow. By eliminating the traditional crush-transport-feed-extrude workflow and merging shredding directly with the extruder, these systems handle large-format and high-strength feedstock — film rolls, bundled woven bags, plastic lumps, hollow parts, foamed materials — without requiring any pre-crushing step. The result: significantly lower labor costs, smaller floor-space requirements, dramatically reduced dust and noise, and energy savings of up to 15–20% compared to separate crusher + pelletizing setups.

Torontech offers two purpose-built configurations of this technology. The Single Screw Extrusion Line for Shredding and Pelletizing (ASP Series) is the heavy-duty production platform — developed in partnership with a European shredder supplier — featuring specialized shredding rotor sets directly combined with single-screw extruders, capable of pre-reducing and enforce-feeding film, bottles, raffia, woven bags, non-woven fabrics, purges, and lumps in any condition. The Mini Shredder Extruder Pelletizing Line is the compact, energy-efficient counterpart (~150 kg/h) designed for small-to-medium output needs, in-plant recycling of cleaned production scrap, and on-site recycling operations. Both share Torontech's premium engineering: single-screw extruders with long L/D ratios (single-stage performance equivalent to double-stage), proprietary SCF self-cleaning filtration capable of handling up to 5% contaminants (paper, wood, aluminum, unmelted plastic, rubber), die-face water-ring pelletizers with self-adjusting cutters, vibration-shaker drying systems, ABB inverter-controlled drives, optional metal-detector integration, and intelligent one-button control with Bluetooth remote monitoring.

Recycle In-Plant. Save Time, Space & Energy.

Every plastic manufacturer generates production waste — start-up scraps, edge trims, rejected rolls, purge lumps, off-spec parts. The companies that turn that waste into value are the ones that recycle it in-house, immediately, without the cost and complexity of shipping it to an external recycler. But traditional recycling workflows — crusher + transport + feeder + extruder + pelletizer — eat up floor space, labor, and energy. The Torontech Shredder Extruder Recycling Pelletizing System

changes the equation. By integrating shredding directly with the extruder, you eliminate the crusher, eliminate the dust and noise, eliminate inter-equipment material transfer, save 15-20% in energy costs, and turn production waste into virgin-quality recycled pellets within minutes of generation.

Whether you are equipping a large film or woven-bag manufacturing facility with the heavy-duty ASP Single Screw Extrusion Line, or specifying a compact Mini Shredder Extruder Pelletizing Line for facility-level recycling and small-to-medium operations, Torontech has the integrated 3-in-1 platform engineered to meet your exact needs. Equip your facility with the shredder-extruder pelletizing platform trusted by film manufacturers, bag producers, and circular-economy operators worldwide.

APPLICATIONS

Applications in Industries

- **Film & Bag Manufacturing** — In-plant re-processing of start-up scraps, edge trims, rejected rolls, and production waste — low-speed high-torque shredding minimizes degradation, preserving near-virgin physical properties for immediate re-use.
- **Woven Bag & Raffia Production** — Direct in-feed of bundled PP woven bags, non-woven fabrics, and raffia trim without pre-crushing — keeping the production floor clean and efficient.
- **Foamed Plastics Recycling** — Recovery and densification of EPS, XPS, and other foamed materials into reusable pellets for closed-loop manufacturing.
- **Engineering Plastics Re-Processing** — Re-pelletizing of ABS, PC, PS, PU, and other engineering plastics in regrind form for high-quality reuse in component manufacturing.
- **Bottle, Container & Hollow Parts Recycling** — Direct shredding and re-pelletizing of plastic bottles, hollow parts, containers, and large-format hollow products without pre-conditioning.
- **Production Purge & Lump Recovery** — High-torque shredding of solid factory purge lumps, sprues, and dense rejects directly into the recycling stream.

- **Highly Contaminated Post-Industrial Waste** — The proprietary SCF self-cleaning filtration enables continuous re-pelletizing of feedstock containing up to 5% paper, wood, aluminum, unmelted plastic, or rubber contaminants.
- **Small-Scale & On-Site Recycling Operations** — The Mini line's compact footprint and ~150 kg/h capacity make it ideal for facility-level recycling, niche recyclers, and cost-efficient circular-economy programs.

FEATURES

Why Choose Torontech for Your Shredder-Extruder Needs

With more than two decades of experience supplying advanced industrial equipment to recyclers, plastic manufacturers, and circular-economy operators across more than 60 countries, Torontech delivers premium shredder-extruder-pelletizing performance backed by global engineering and service expertise.

True 3-in-1 Integration — Engineered with European Shredder Expertise

Torontech's shredder-extruder lines are developed in partnership with an established European shredder supplier, combining specialized shredding rotor sets directly with single-screw extruders. The result is a true 3-in-1 system — shredding, extruding, and pelletizing in a single integrated platform — that eliminates the dust, noise, labor, and floor-space penalties of separate crushing and pelletizing operations.

SCF Self-Cleaning Filtration for Contaminated Feedstock

Both platforms can be equipped with Torontech's in-house developed SCF self-cleaning filtration system, capable of handling up to 5% contamination — paper, wood, aluminum, unmelted plastic, and rubber — without stopping the line. This is the most appropriate solution when feedstock quality varies and continuous production cannot be interrupted for screen changes.

Energy Efficiency Built In

Synchronized shredding and extrusion stages save up to 15–20% in electricity compared to separate crusher + pelletizer setups, because the material is heated through friction during shredding — significantly reducing the heating load on the extruder stage. Combined with energy-efficient vibration-shaker drying and centrifugal dewatering, total system energy consumption is among the lowest in the industry.

Premium Material Preservation

The low-speed, high-torque shredding technology minimizes material degradation during size reduction — ensuring that recycled pellets retain nearly the same physical properties as virgin resin. This is particularly important for in-plant production-waste recycling, where the recycled pellets must perform at the same quality level as the original feedstock.

Intelligent Automation & Smart Connectivity

Both platforms feature ABB inverter-controlled drives, intelligent one-button start/stop sequencing, emergency-stop architecture, and optional Bluetooth remote monitoring with program-transmission capability. Optional metal detectors are integrated directly into the control system to automatically stop feeding when ferrous contamination is detected, protecting the shredder rotors and extruder screw.

Cost-Effective Value & Global Support

Torontech delivers premium shredder-extruder performance at a transparent, competitive price point — backed by overseas installation, operator training, stocked spare parts with prompt global delivery, and offices and authorized partners across the USA, Canada, UAE, KSA, GCC, EU, India, APAC, Africa, and Latin America.

TECHNICAL SPECIFICATIONS

Product Comparison Table

Specification	Single Screw Extrusion Line (ASP)	Mini Shredder Extruder Pelletizing Line
Configuration	Heavy-duty 3-in-1: integrated shredder + single-screw extruder + pelletizing	Compact integrated shredder + crusher + extruder + pelletizer in a single small footprint
Throughput	Industrial-scale production capacity (large rolls, bundles, lumps in single feed)	~150 kg/h — compact, energy-efficient operation
Target Materials	Film, raffia, woven bags, non-woven, bottles, hollow parts, purges, foaming materials, large-roll & bundled scrap	Cleaned in-house film (HDPE/LDPE/PP), woven materials, trimmings, purges, hollow parts, containers, foamed plastics (EPS/XPS), rigid plastics (ABS/PC/PS/PU)
Shredding Technology	Specialized shredding rotor sets developed with European shredder partner; combined with single-screw extruder; low-speed, high-torque (minimizes material degradation)	High-speed blades cut incoming scraps; frictional heat shrinks material close to agglomeration; optional guiding structures compress & direct material to screw
Pre-Cutting Required	No — handles large rolls of film, bundled woven bags, high-strength plastic lumps directly	Best for cleaned, mostly pre-conditioned in-plant scrap
Feeding Options	Heavy-duty belt conveyor (standard); optional roll-hauling device; load-controlled feed-speed synchronization	Belt conveyor (standard); optional roll-hauling device; ABB inverter-controlled feed-speed automation
Metal Detection	Optional metal detector integrated with control system — auto-stop on contamination	Optional metal detector — auto-stop feeding if contamination detected
Extruder	Single-screw extruder with long L/D ratio (single-stage performs as double-stage)	Single-screw extruder with long L/D ratio — double-stage performance from single-stage layout

Filtration	Single-plate/piston double-station OR non-stop double-plate/piston four-station screen changers; optional SCF self-cleaning filter (up to 5% contaminants: paper, wood, aluminum, unmelted plastic, rubber)	Mid-line piston filter + optional end-stage filter; proprietary SCF self-cleaning filter option (up to 5% contaminants)
Pelletizing	Die-face water-ring pelletizer; self-adjusting head; auto-RPM blade control based on melt pressure; quick blade change	Die-face water-ring pelletizer (standard); self-adjusting cutter with auto blade-pressure & RPM control
Drying	Vibration drying shaker + horizontal centrifugal dewatering — high efficiency, low energy	Vibration sieve + horizontal centrifugal dewatering — efficient pellet drying
Control & Smart Features	One-button intelligent start & stop; emergency stop; remote monitoring with Bluetooth + program transmission; capacity online monitoring & quantitative weighing system	ABB inverter-controlled drives; intelligent control system; metal-detector-linked feed stop; one-button operation options
Energy Efficiency	Synchronized shredding + extrusion saves up to 15-20% energy vs separate crusher + pelletizing setup	Compact integrated layout reduces labor & space; optimized for small-to-medium output efficiency
Best Suited For	Large film & woven-bag manufacturers, in-plant production-waste recycling, high-volume continuous in-house re-pelletizing	Small-to-medium recyclers, on-site facility recycling, compact plant-recycling operations, foamed-plastic specialists



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