

SINGLE SCREW EXTRUDER



Dependable Recycling & Re-Pelletizing of Rigid & Contaminated Plastics

A Single Screw Extruder is the foundational machine of modern plastic processing and recycling — a precision-engineered system in which a single rotating screw conveys, melts, plasticizes, degasses, and homogenizes polymer material inside a heated barrel before forcing it through a die to form pellets, film, sheet, pipe, or profile. Compared to twin-screw machines, single screw extruders offer simpler construction, lower investment, easier maintenance, and lower energy consumption — making them the workhorse of plastic recycling and re-pelletizing applications worldwide, particularly when feedstock has been pre-cut and pre-conditioned into uniform regrinds or flakes.

Torontech offers a comprehensive single-screw extrusion portfolio engineered to handle the full spectrum of plastic recycling challenges. The Single Screw Extruder TT-ASE is the dependable standalone platform — combining plasticization and pelletizing in a single step, ideal for re-pelletizing crushed regrinds and flakes of PE, PP, ABS, PS, HIPS, PC, and PET. The Double Stage Cutter Compactor Recycling Pelletizing Line TT-ADS combines a cutter compactor with a single-screw extruder for high-quality processing of dense rigid flakes (100–1,000 kg/h based on screw diameter). The Excellent Degassing and Filtering Pelletizing Line TT-ASE PRO is the flagship — a super-long L/D single-screw platform with the proprietary SCF self-cleaning filtration system, double vacuum degassing zones, European Rittal IP54 electrical cabinet, and Bluetooth remote monitoring — purpose-built for the most contaminated and heavily printed plastic waste streams.

Every Torontech single-screw extruder is built around premium engineering: bi-metal screws and barrels with exceptional resistance to wear and corrosion; advanced single-screw designs delivering gentle plasticization and superior homogenization; high-strength hardened reducers with precision motor-to-gearbox couplings; intelligent PLC-based control systems; vacuum degassing zones; and configurable filtration options from single piston screens through dual-filter setups to fully automatic self-cleaning systems. The result is reliable, repeatable, regulator-ready pellet output — the foundation of every modern circular-economy recycling operation.

Re-Pelletize with Reliability & Precision

Every successful plastic-recycling operation depends on the consistent, reliable performance of a single, often-overlooked machine: the extruder that melts, mixes, degasses, filters, and pelletizes the recovered material into clean, uniform, market-ready granules. A poorly performing single-screw extruder means inconsistent pellet quality, lost batches, unplanned downtime, and a finished product that downstream customers won't accept. The recyclers and manufacturers who consistently deliver world-class recycled pellets are the ones equipped with single-screw extruders built for precision, durability, and around-the-clock industrial reliability — and the Torontech single-screw portfolio gives you exactly that.

Whether you are setting up a new recycling line for clean post-industrial scrap, upgrading an existing operation to handle dense flake feedstock, or commissioning a state-of-the-art line for heavily contaminated post-consumer waste, Torontech has the single-screw-extruder platform engineered to meet your exact needs. From the standalone TT-ASE to the double-stage TT-ADS and the flagship TT-ASE PRO, every Torontech machine delivers world-class extrusion performance backed by industry-leading service and support.

APPLICATIONS

Applications in Industries

- **Rigid Plastic Recycling** — Re-pelletizing of crushed flakes and regrinds of PE, PP, ABS, PS, HIPS, PC, and PET into clean, uniform granules for downstream manufacturing.
- **Film Production** — Production of recycled pellets for blown film, stretch film, and flexible packaging applications.
- **Pipe & Profile Extrusion** — Recycled granules engineered for downstream extrusion of pipes, profiles, and structural plastic products.
- **Plastic Injection Molding** — Production of injection-grade recycled pellets for containers, housings, components, and consumer-product manufacturing.
- **Contaminated & Printed Post-Consumer Waste** — Processing heavily printed films, post-consumer packaging, and waste streams with up to 5% pollutants using the TT-ASE PRO's SCF self-cleaning filtration.

- **Compounding & Material Modification** — Optional side-feeder configurations support addition of fillers, additives, and colorants for compounding workflows.
- **Industrial Plastic Scrap Recovery** — In-line re-pelletizing of production scrap from injection molding, blow molding, and extrusion operations — closing the loop inside the manufacturing facility.

FEATURES

Why Choose Torontech for Your Single Screw Extruder Needs

With more than two decades of experience supplying advanced industrial equipment to recyclers, manufacturers, and plastic processors across more than 60 countries, Torontech delivers premium single-screw-extrusion performance backed by global engineering and service expertise.

Three Purpose-Built Platforms — One Trusted Source

Whether you need the dependable standalone TT-ASE for re-pelletizing clean rigid regrinds, the TT-ADS double-stage cutter-compactor line for pre-cut chunks and dense flakes (100–1,000 kg/h), or the flagship TT-ASE PRO for highly contaminated and heavily printed feedstock, Torontech offers a coordinated single-screw portfolio that matches every material, throughput, and pellet-quality requirement.

Premium Bi-Metal Engineering

Every Torontech single-screw extruder features bi-metal screws and barrels engineered for exceptional resistance to corrosion and abrasive wear — delivering significantly extended service life even when processing filled or contaminated recycled feedstock. Advanced single-screw designs ensure gentle plasticization and superior homogenization without thermal degradation.

Advanced Degassing & Filtration

From the standard double-piston screen filter on the TT-ASE, through the two-stage configuration on the TT-ADS, to the SCF self-cleaning filtration system + double vacuum degassing zones on the TT-ASE PRO, Torontech delivers configurable filtration and degassing across the full contamination spectrum — handling clean post-industrial scrap up through heavily polluted post-consumer waste with 5% impurities.

Industry-Leading Safety & Smart Connectivity

Every Torontech single-screw extruder is engineered with comprehensive safety architecture: emergency-stop functions, electrical safety switches on every operating position and rotating part, optional metal-detection, and PLC-protected motor drives. The TT-ASE PRO adds Bluetooth connectivity for remote monitoring, allowing supervisors to track machine status from anywhere on the plant floor.

Cost-Effective Value & Global Support

Torontech delivers premium single-screw-extrusion performance at a transparent, competitive price point — backed by overseas installation, operator training, machine warranty inclusive of stocked spare parts, and prompt global delivery. With offices and authorized partners across the USA, Canada, UAE, KSA, GCC, EU, India, APAC, Africa, and Latin America, expert support is always within reach.

TECHNICAL SPECIFICATIONS

Product Comparison Table

Specification	TT-ASE Single Screw Extruder	TT-ADS Double Stage Cutter Compactor Line	TT-ASE PRO Excellent Degassing & Filtering Line
Configuration	Standalone single-screw extruder + pelletizing	Double-stage: cutter compactor + single-screw extruder + pelletizing	Single-screw extruder with super-long L/D (acts as double-stage) + SCF self-cleaning filter
Feed Form	Crushed regrinds or flakes (manual / belt feed)	Chunks or dense flakes auto-conveyed into compactor	Film, filament, raffia scraps via belt conveyor; optional roll-haul-off
Throughput	Configurable to match downstream line	100 – 1,000 kg/h (based on screw diameter)	Scalable single-stage with double-stage performance
Target Materials	PE, PP, ABS, PS, HIPS, PC, PET — rigid plastic scrap	PE, PP, ABS, PS, HIPS, PC, PET — rigid scrap and regrinds	PE, PP, PS, ABS — highly polluted (up to 5%) & heavily printed
Screw & Barrel	Bi-metal screw & barrel — corrosion / wear resistant; advanced single-screw design for gentle plasticization	Bi-metal barrel — corrosion / wear resistant; high-strength hardened reducer with compact structure	Bi-metal extruder with exceptional corrosion / wear resistance and long lifespan
L/D Ratio & Performance	High L/D — single-stage performs like double-stage	Two-stage configuration with mid-line piston screen	Super-long L/D — single-stage with double-stage capability
Feeding	Hopper with stirring screw (prevents bridging) + level indicator; optional side feeders for compounding	Stirring screw + hopper with level indicator; optional side feeders for compounding	Belt conveyor (standard) or roll-haul-off (optional) into compactor

Degassing	Vacuum degassing — removes volatiles, micro-molecules, moisture	Vacuum degassing zone — gentle plasticization with superior homogenization	Double vacuum degassing zones AFTER filtering — enhanced volatilization (heavily printed materials)
Filtration	Middle double-piston screen filter + optional end filter (dual-filter setup)	Single-screen filter as standard; optional advanced configurations	Double-piston screen changer (wide area, long lifetime) + SCF self-cleaning filtration system
Pelletizing	Compatible with standard die-face or water-ring pelletizing	High-quality granules — pellets ready for film blowing, pipe, injection	Standard die-face pelletizing with stable ring-heater output
Control & Safety	PLC-based intelligent control; precision motor-to-gearbox coupling	Compact reducer with precision motor coupling; minimal bending stress; bearing-life optimized	European Rittal IP54 cabinet; SSR + PLC control; emergency stop; electrical safety switches on every rotating part; Bluetooth remote monitoring
Best Suited For	Standalone re-pelletizing of clean rigid regrinds & flakes — most flexible single-screw building block	Recyclers processing pre-cut chunks / dense flakes needing higher melt quality through 2-stage processing	Heavily contaminated post-consumer waste, printed films, color/ink-heavy feedstock requiring premium pellet purity



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