



TWIN SCREW EXTRUDER

Twin Screw Extruder Machine for High-Capacity Plastic Processing

Conical & Parallel Co-Rotating Solutions for Plastic Compounding & Recycling

A Twin Screw Extruder is a versatile, high-performance plastic-processing machine in which two intermeshing screws rotate inside a heated barrel — melting, mixing, kneading, degassing, and extruding polymer materials with a precision and consistency that single-screw extruders simply cannot match. The intermeshing screw action generates the shear forces, residence-time control, and uniform thermal exposure required to produce homogeneous melt — making twin screw extruders the foundation of modern plastic compounding, recycling, reinforcement, and material modification.

Twin screw extruders are built in two principal geometries. Conical twin screw extruders use tapered screws (larger diameter at the feed end, narrower at the discharge) to deliver excellent control over pressure and shear forces — making them ideally suited to gentle, high-volume melting of rigid plastic scraps and recycled flakes. Parallel twin screw extruders use constant-diameter intermeshing screws and are co-rotating by design — delivering exceptional mixing, distribution, and homogenization that make them the workhorse of plastic compounding, masterbatch production, and reinforced-polymer manufacturing.

Torontech offers a complete twin-screw extrusion portfolio: the Conical Twin Screw Extruder TT-ACT, a specialized 400–2,000 kg/h recycling and re-pelletizing platform engineered to gently melt crushed PP, PE, ABS, PS, PVB, and PA scraps; and the Parallel Twin Screw Extruder TT-ATE, a high-performance modular co-rotating platform engineered for reinforcement, compounding, and alloy-mixing of advanced engineering polymers and fiber-filled compounds. Both share Torontech's premium-engineering foundation — bi-metal screws and barrels, high-torque gearboxes, intelligent PLC control, ABB / Schneider inverters and European-branded key electrical components, and vacuum-degassing systems — ensuring repeatable, regulator-ready, world-class extrusion performance shift after shift.

Compound, Recycle & Process with Confidence

Whether you are producing engineering compounds for automotive applications, masterbatches for global film production, fiber-reinforced polymers for consumer electronics, or recycled pellets that close the circular-economy loop, the twin-screw extruder is the heart of your operation. A poorly performing extruder means inconsistent product quality, lost batches, unplanned downtime, and degraded customer trust.

The compounders, recyclers, and manufacturers who consistently deliver world-class extrusion results are the ones equipped with twin-screw platforms built for precision, automation, and around-the-clock industrial reliability — and the Torontech twin-screw portfolio gives you exactly that.

Whether you are launching a new compounding line, expanding a recycling plant, scaling up a fiber-reinforced engineering-polymer operation, or upgrading from an outdated single-screw machine, Torontech has the twin-screw-extruder platform engineered to meet your exact needs. From the dependable TT-ACT conical recycling extruder to the modular high-performance TT-ATE parallel compounding platform, every Torontech machine delivers world-class extrusion performance backed by industry-leading service and support.

APPLICATIONS

Applications in Industries

- **Plastic Recycling & Re-Pelletizing** — High-capacity conversion of crushed PP, PE, ABS, PS, PVB, and PA scraps into clean, reusable granules for downstream blown-film, injection molding, and pipe extrusion.
- **Compounding & Masterbatch** — Production of color masterbatches, additive concentrates, and engineered compounds requiring uniform dispersion of pigments, fillers, and additives.

- **Reinforced Plastics & Fiber-Filled Compounds** — Compounding of PP, PA, PBT, ABS, AS, PC, POM, PPS, and PET with glass-fiber or carbon-fiber reinforcement for structural-grade engineering polymers.
- **Polymer Alloys & Blends** — Mixing of polymer alloys such as PC+ABS, PA+ABS, CPE+ABS, PP+EPDM, PA+EPDM, and PP+SBS for high-performance automotive, electronics, and consumer-product applications.
- **PVC Pipe, Profile & Sheet** — Twin-screw extrusion of PVC pipes, window profiles, sheets, and rigid PVC products requiring precise temperature control and efficient mixing.
- **Cable & Wire Compounds** — Compounding of cable insulation, jacketing, and flame-retardant compounds with controlled additive dispersion.
- **Rubber & Elastomer Processing** — Mixing, kneading, and shaping of thermoplastic elastomers, TPVs, and rubber-based compounds.
- **Specialty Materials & R&D** — Development of advanced composites, biodegradable polymers, food/pharmaceutical extrusion, and university research applications.

FEATURES

Why Choose Torontech for Your Twin Screw Extruder Needs

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

Two Purpose-Built Geometries — One Trusted Source

Whether you need the gentle, high-capacity TT-ACT conical platform for recycling rigid plastic scraps, or the high-performance modular TT-ATE parallel co-rotating platform for compounding, masterbatch, and fiber-reinforced applications, Torontech offers a coordinated portfolio that matches every material, throughput, and product-quality requirement.

Premium Bi-Metal Engineering

Every Torontech twin-screw extruder features bi-metal screws and barrels engineered for exceptional resistance to wear, corrosion, and abrasion — delivering significantly extended service life even when processing abrasive glass-fiber compounds, filled polymers, or contaminated recycled feedstock. High-torque gearboxes ensure stable, low-noise operation under demanding industrial loads.

Intelligent Automation & European-Branded Components

ABB and Schneider inverters, PLC-based control systems, European-branded key electrical components, level sensors with automatic feed control, optional magnetic frames for metal detection, and vacuum degassing systems combine to deliver a fully-automated extrusion platform that one trained operator can run reliably across a full production shift.

Modular & Customizable

The TT-ATE platform is highly modular — reconfigurable screw elements, segmented barrel sections, multiple feeding options (including side feeders for compounding), and three downstream cutting systems (water-strand, die-surface, and underwater pelletizing) allow Torontech to tailor a single extruder platform to virtually any compounding workflow.

Cost-Effective Value & Global Support

Torontech delivers premium twin-screw-extrusion performance at a transparent, competitive price point — without the inflated cost structures of legacy brands. With offices and authorized partners across the USA, Canada, UAE, KSA, GCC, EU, India, APAC, Africa, and Latin America, expert installation, operator training, and ongoing service are always within reach.

TECHNICAL SPECIFICATIONS

Product Comparison Table

Specification	Conical Twin Screw Extruder (TT-ACT)	Parallel Twin Screw Extruder (TT-ATE)
Screw Geometry	Conical (counter-rotating) — larger diameter at feed, tapering to discharge	Parallel co-rotating — constant-diameter intermeshing twin screws
Primary Use Case	High-capacity recycling & re-pelletizing of rigid plastic scraps	High-performance compounding, masterbatch & material modification
Throughput Range	400 - 2,000 kg/h	Configurable: from lab to ~1,000+ kg/h (basic & efficiency torque variants)
Target Materials	PP, PE, ABS, PS, PVB, PA flakes/regrinds/crushed plastics	PP, PA, PBT, ABS, AS, PC, POM, PPS, PET with glass/carbon-fiber filler; alloys (PC+ABS, PA+ABS, CPE+ABS, PP+EPDM, PP+SBS)
Screw & Barrel	Bi-metal screw & barrel — significantly prolonged lifespan; high-torque gearbox	Bi-metal twin-screw — superior homogenization & extended lifespan; modular screw elements
Heating System	Standard ceramic heaters + air-blower cooling; optional infrared heaters for faster heating, lower energy use, longer service	Cast-copper heaters with easy assembly/disassembly; precise multi-zone heating & cooling

Feeding	Integrated screw loader + screw feeder with ABB/Schneider inverter; level sensor for automatic feeding; optional magnetic frame for metal detection	Feeder with stirring screw (prevents blockages); hopper with level indicator; optional side feeders for compounding
Degassing	Vacuum degassing system integrated into extrusion unit	Vacuum system removes volatiles from agglomerates — enhances granule quality
Filtration	Optional standard single-plate / piston double-station OR non-stop double-plate / piston four-station screen changer	Optional screen changer compatible with downstream cutting/pelletizing
Cutting Systems	Self-adjusting pelletizing head with auto blade-pressure & speed control; quick blade changeover; centrifugal dewatering	Multiple options: water-strand, die-surface, and underwater cutting systems
Control System	PLC-based intelligent control; ABB/Schneider inverters	Relay + PLC control; European-branded key electrical components
Modularity	Optimized fixed configuration for recycling workflows	Highly modular — reconfigurable screw elements & barrel sections for diverse processes
Best Suited For	Plastic recyclers needing reliable, uninterrupted re-pelletizing of rigid PP/PE/ABS/PS scraps	Compounders, masterbatch producers, and processors needing reinforced & filled polymers, alloys, and fiber compounds



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