



LABORATORY INJECTION & COMPRESSION MOLDING EQUIPMENT

Laboratory Injection & Compression Molding Equipment

Lab Polymer Molding Equipment | Injection and Compression Systems for Polymer R&D and Specimen Preparation

Laboratory injection molding machines and compression molding presses from Torontech cover the full processing range for polymer specimen preparation, compound development, and small-batch production. The ToronIMM injection molding line spans electric, hydraulic, and pneumatic drive systems, from 165kg desktop units to 850kg research-grade platforms. The ToronMM™ LC compression molding press adds hydraulic flat-plate pressing for rubber vulcanization, thermoplastic sheet formation per ASTM D4703, and thermoset curing.

All systems run on standard 220V or 380V power and ship on casters to fit standard laboratory floor plans. Polymer scientists, materials engineers, and quality teams at universities, research institutes, and manufacturing facilities use this equipment for routine specimen preparation, formulation trials, and new material characterization aligned with ISO 294 and ASTM D638 test specimen requirements.

Why Choose Torontech for Your Laboratory Injection & Compression Molding Equipment

Torontech supplies testing and measurement equipment to laboratories and manufacturers across North America and worldwide, backed by responsive technical support and calibration service. The Laboratory Injection & Compression Molding Equipment range is built for reliable, standards-driven results, so you can standardize on one supplier as your testing needs grow. Our team helps you match the right configuration to your samples, applicable standards, and throughput, then supports you through installation and beyond.

Request a Quote

Tell us your material type, target specimen geometry, available power supply, and floor space, and we will recommend the right injection or compression molding system for your lab. [Contact the Torontech team](#) for pricing, lead times, and configuration support.

APPLICATIONS

Applications

This equipment family is used wherever polymers need to be formed into controlled specimens or small parts for testing, comparison, or research.

- Polymer and Materials Research: molding experimental formulations, blends, and composites into specimens for comparative mechanical, thermal, and optical property evaluation
- Rubber and Elastomer Vulcanization: compression molding natural and synthetic rubber compounds into flat sheets, gaskets, and test plaques under controlled temperature, time, and pressure
- Test Specimen Fabrication: producing tensile bars, flexural beams, impact bars, and color calibration plaques from thermoplastic and thermoset materials for standardized mechanical testing programs
- Compound and Additive Evaluation: injection molding or compression molding small batches of modified compounds to assess how additives, fillers, and compatibilizers affect processability and part properties
- New Material Screening: processing limited quantities of experimental polymer systems into first specimens for feasibility assessment before scaling to larger equipment
- Thermoset and Composite Specimen Preparation: curing epoxy laminates, BMC/SMC compounds, and fiber-reinforced prepreps under flat-plate compression at programmable temperature, time, and pressure
- Quality Control Sample Production: generating consistent reference specimens from incoming resin lots for acceptance testing, visual quality inspection, and production monitoring
- Polymer Processing Education: demonstrating injection and compression molding principles, process parameter relationships, and material behavior in academic and industrial training programs

TECHNICAL SPECIFICATIONS

Laboratory Injection & Compression Molding Equipment Range

The range covers five models across two processing technologies. Choose an injection molding system for shaped cavity specimens and small molded parts, or the compression press for flat sheet samples, rubber vulcanization, and composite curing.

Injection Molding Systems

Four ToronIMM systems offer different drive technologies and footprints to match the lab's power infrastructure, clamping force requirements, and space budget.

Model	Drive System	Clamping Force	Voltage	Description
ToronIMM™ B 18	All-Electric Servo	200kN	380V	Full servo-driven injection, clamping, and ejection; 25cm³ shots at up to 380°C; 850kg research platform for high-precision specimen programs and engineering thermoplastics
ToronIMM™ H 20	Servo-Hydraulic	150kN	380V	Servo-hydraulic clamping with 12-recipe formula storage; 28cm³ shots; wide engineering thermoplastic range for general-purpose laboratory molding at moderate capital cost
ToronIMM™ P 20	Pneumatic + Servo Screw	50kN	220V (110V is also available)	Compressed-air injection with planetary servo screw drive; oil-free; replaceable insert molds for rapid specimen geometry changes; suitable for offices and shared labs
ToronIMM™ PI 20	All-Servo Screw	30kN	220V (110V is also available)	Ultra-compact desktop design at 165kg and 950×470×600mm; 400°C barrel capability for engineering resins; entry-level screw-type molding for R&D and teaching

Compression Molding Press

The ToronMM™ LC laboratory compression molding press applies 300kN or 500kN of hydraulic force between heated platens (300×300mm or 400×400mm) to cure, consolidate, or form polymer materials at up to 400°C. Three physical configurations

address different lab needs: integrated heating and cooling platens, an upper-heat/lower-cool layout, and a vacuum variant for void-sensitive and moisture-sensitive materials. PLC touch screen control executes programmable preheating, exhaust degassing, constant-force cure hold, and water-cooled post-cure sequences automatically.

How to Choose the Right Lab Injection & Compression Molding Equipment

- For the highest injection precision and repeatability on a full servo platform: choose the ToronIMM™ B 18 — all-electric servo actuation on 380V with 200kN clamping and independent axis control
- For mid-capacity hydraulic injection molding on 380V with recipe management: choose the ToronIMM™ H 20 — servo-hydraulic with 150kN clamping and 12 stored process recipes for multi-material labs
- For oil-free injection molding on standard 220V with quick mold changeover: choose the ToronIMM™ P 20 — pneumatic drive, replaceable insert mold system, and no industrial power connection required
- For the most compact desktop option on 220V with high-temperature barrel capability: choose the ToronIMM™ PI 20 — 165kg, all-servo, 400°C maximum barrel temperature, and the smallest footprint in the lineup
- For flat-sheet rubber vulcanization, thermoplastic sheet pressing, or thermoset curing: choose the ToronMM™ LC — 300kN or 500kN hydraulic platen force with programmable exhaust and optional vacuum
- For programs where material quantity is limited: any 220V injection model (P 20 or PI 20) minimizes batch requirements; the PI 20's manual feed suits the smallest research quantities
- For maximum barrel or platen temperature across both technologies: both the ToronIMM™ PI 20 barrel and the ToronMM™ LC platens reach 400°C, covering high-temperature engineering resins and specialty thermoset compounds



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