



CHARPY & IZOD PENDULUM IMPACT TESTER FOR PLASTICS

Precision Impact Testing for Plastics, Polymers, Composites & Thermoplastic Pipes

The Charpy & Izod Pendulum Impact Tester for Plastics is a precision laboratory instrument engineered to evaluate the impact resistance, toughness, and brittleness of polymer materials by measuring the energy absorbed during fracture. Operating on the time-tested energy-conversion principle, a calibrated pendulum hammer is released from a fixed height to strike a notched or unnotched specimen, and the difference between the pendulum's initial and post-impact energy reveals the material's true impact strength.

The Torontech family of plastics impact testers supports both the Izod method (vertical cantilever-beam specimen) and the Charpy method (horizontal simply-supported specimen) through interchangeable hammers, vises, and positioning fixtures. Every machine in the range is engineered for repeatability, with high-precision bearings, low-friction pendulum systems, shaftless photoelectric or rotary encoders for angle measurement, and integrated software that automatically compensates for energy losses caused by air resistance and bearing friction.

From compact, economical entry-level units rated at 5J for routine quality-control labs, up to fully-featured 50J multi-hammer systems and specialized ISO 9854-compliant testers for thermoplastic pipes, the Torontech impact tester portfolio is built to comply with the world's most demanding test standards ASTM D256, ASTM D6110, ISO 179, ISO 180, and ISO 9854 making every result globally recognized and audit-ready.

Elevate Your Impact Testing with Torontech

In today's quality-driven manufacturing environment, the reliability of your products is only as strong as the data behind them. Whether you are validating injection-molded components, certifying thermoplastic pipes for water and gas networks, developing next-generation polymer composites, or running routine batch acceptance in a busy production lab, the Torontech Charpy and Izod impact tester range gives you the precision, repeatability, and confidence to make decisions that move your business forward.

Don't compromise on the equipment that determines whether your products pass or fail. Equip your laboratory with the impact-testing platform trusted by quality-assurance professionals, R&D scientists, and production engineers worldwide. From the economical Toron-Impact CIT-5 and IZIT-5 to the full-featured Toron-Impact-50 and the specialized ISO 9854 Thermoplastic Pipes Tester, every Torontech machine is engineered to deliver world-class results backed by industry-leading service and support.

APPLICATIONS

Applications in Industries

Pendulum impact testing is one of the most widely deployed quality-assurance procedures in modern materials manufacturing. The Torontech Charpy & Izod impact tester range supports a broad spectrum of industrial, scientific, and research applications, including:

- **Plastics & Polymer Manufacturing** — Verification of impact strength in polyethylene, polypropylene, ABS, polycarbonate, PVC, polystyrene, nylon, and engineering thermoplastics to ensure product reliability and meet customer specifications.
- **Automotive Industry** — Validation of bumpers, dashboards, interior trim, under-hood components, and crash-relevant polymer parts where impact resistance is critical to vehicle safety.
- **Pipe & Fluid-Transport Industry** — ISO 9854-compliant testing of thermoplastic pipes (PE, PP, PVC, PVC-U) for water distribution, gas networks, sewerage, and industrial fluid handling.
- **Packaging & Consumer Goods** — Impact-strength validation of containers, caps, closures, household products, electronic housings, and toys to ensure they survive real-world handling.
- **Aerospace & Defense** — Toughness verification of advanced composites, fiber-reinforced polymers, and high-performance engineering plastics used in lightweight structural components.
- **Construction & Building Materials** — Quality control of polymer profiles, window frames, panels, insulation boards, and structural plastics where weathering and impact resistance directly affect service life.

- **Electrical & Electronics** — Impact testing of insulators, housings, connectors, cable jackets, and circuit-board substrates to ensure safe operation under mechanical stress.
- **Universities & Research Laboratories** — Fundamental research into polymer toughness, ductile-to-brittle transition behavior, the effects of additives and fillers, and the development of new composite materials.

FEATURES

Why Choose Torontech for Your Impact Testing Needs

With more than two decades of experience supplying advanced testing and analytical instruments to laboratories and production facilities across more than 60 countries, Torontech has earned a reputation as a trusted partner for precision impact-testing solutions. Choosing a Torontech Charpy and Izod impact tester means investing in more than a piece of equipment — it means partnering with a global organization committed to your long-term success.

Internationally Recognized Compliance

Every Torontech impact tester is engineered to comply with the most demanding international standards — ASTM D256, ASTM D6110, ISO 179, ISO 180, and ISO 9854. This compliance ensures your test data is universally accepted, regulatory-ready, and defensible in customer audits, certification reviews, and third-party verifications.

Comprehensive Product Range

From economical 5J Charpy testers ideal for routine QC, through versatile 50J multi-method systems for R&D, to specialized ISO 9854-compliant pipe testers, Torontech offers one of the broadest plastics impact-testing portfolios in the market. Whatever your specimen, standard, or budget, there is a Torontech model engineered to fit.

Advanced Engineering & Accuracy

Every instrument is built around high-precision pendulum bearings, low-friction shaftless or rotary encoders for angle measurement, and intelligent software that automatically compensates for air and mechanical friction losses. Touch-screen interfaces simplify operator workflow, while integrated data-logging streamlines reporting and traceability.

Expert Technical Support

Torontech's dedicated team of application engineers and product specialists is available across multiple time zones to support installation, operator training, calibration, and ongoing maintenance. With service offices and authorized distributors throughout the USA, Canada, UAE, KSA, GCC, EU, India, APAC, Africa, and Latin America, professional assistance is always within reach.

Cost-Effective Value

Torontech delivers premium-grade impact-testing performance at a transparent, competitive price point — eliminating the inflated cost structures of legacy brands while maintaining the accuracy, durability, and feature set that demanding professionals require.

TECHNICAL SPECIFICATIONS

Product Comparison Table

Choosing the right Charpy and Izod impact tester depends on test method (Izod vs. Charpy), required pendulum energy, applicable standards, and the specific material or product being evaluated. The table below provides a side-by-side comparison of the six Torontech impact testing models for plastics, helping you identify the configuration that best fits your laboratory or production environment.

Specification	ToronPI™ Series	Toron-Impact IZIT-5	Toron-Impact-50 (50J)	Thermoplastic Pipes Tester	Toron-Impact CIT-5	Charpy & Izod Pendulum Tester
Test Method	Izod & Charpy (interchangeable)	Izod only	Izod & Charpy (interchangeable)	Charpy (pipe specimens)	Charpy only	Izod & Charpy (combined)
Pendulum Energy	Configurable (multi-hammer)	5.5J	50J (multiple hammers)	Multi-energy per pendulum	5J	Configurable per model
Material Focus	Polymer materials, general plastics	Rigid plastics, polymers	Rigid plastics, composites	Thermoplastic pipes for fluid transport	Rigid plastic materials	Plastics, polymers, elastomers
Standards Compliance	ASTM & ISO (multi-standard)	ISO 180, ASTM D256	ISO 179-1, ISO 180, ASTM D256	ISO 9854	ISO 179, ASTM D6110	ASTM D256, D6110, ISO 179, ISO 180
Display / Interface	Software-assisted, pointer angle	10" full-color touchscreen	Touchscreen, auto-correction	User-friendly HMI, 10 results memory	Digital readout	Touchscreen, dedicated software
Hammer / Vise Change	Quick-change	Fixed (Izod fixture)	Interchangeable hammers	Single pendulum, multi-energy	Fixed (Charpy fixture)	Interchangeable hammers & vises
Specimen Positioning	Triangular block, vise & pin	Vertical cantilever clamp	Triangular block & vise	Pipe-specific fixture	Horizontal supports	Triangular block, vise & pin
Energy Correction	Software auto-correction	Automatic calculation	Automatic energy-loss correction	Auto-correction (air & friction)	Manual / digital	Software auto-correction
Friction Reduction	High-precision bearings	Low-friction bearings	Low-friction design	Shaftless photoelectric sensor	Standard bearings	High-precision bearings
Memory / Data	Software data logging	Auto calculation & storage	Software storage	Up to 10 test results stored	Basic / digital	Software-based data logging
Best Suited For	Versatile multi-method R&D	Dedicated Izod QC labs	Mid-range plastics & composites	Pipe manufacturers, water utilities	Entry-level Charpy QC	Universal plastics testing
Economy / Tier	Mid-range series	Economical entry	Mid-range full-featured	Specialized / premium	Economical entry	Versatile / category-leading

All Torontech plastics impact testers share core engineering principles — precision pendulum systems with low-friction bearings, advanced angle measurement (rotary or shaftless photoelectric encoders), automatic energy-loss correction, intuitive operator interfaces, and full compliance with international standards. The primary differences between models are the test methods supported, available pendulum energies, and specialization (e.g., thermoplastic pipe testing), allowing customers to match the instrument exactly to their testing requirements and budget.



TORONTECH

Torontech Inc.

251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada 🇨🇦

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC

601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA 🇺🇸

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

Torontech ME FZE

Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE 🇦🇪

Phone: +971 488 19252
Email: me@torontech.com



USA | Canada | EU | UAE | GCC | KSA | India | Africa | Latin America | Asia

