



LINEAR RECIPROCATING TRIBOMETERS

Linear Reciprocating Tribometers - Reciprocating Wear Tester | ASTM G133 Friction and Wear Testing

Linear reciprocating tribometers measure friction force and coefficient of friction under controlled reciprocating sliding contact, following ASTM G133. Laboratories in materials science, automotive, aerospace, and surface engineering use these instruments to characterize metals, ceramics, coatings, and lubricants. Both models apply load automatically and record real-time friction data. The ToronLRT™ series spans standard laboratory conditions and extended temperature test environments.

Why Choose Torontech for Your Linear Reciprocating Tribometer

Torontech supplies testing and measurement equipment to laboratories, quality teams, and manufacturers, backed by responsive technical support and calibration service. The linear reciprocating tribometer range is built for reliable, standards-driven results, so you can source confidently from a single partner. 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

Friction and wear characterization requirements vary widely, from ambient coating screening to cryogenic lubricant evaluation at -120°C . Tell us your test temperature range, contact geometry, and target materials, and our team will match you to the right ToronLRT™ tribometer. [Contact the Torontech team](#) to request a quote or discuss your application.

APPLICATIONS

Applications

ToronLRT™ linear reciprocating tribometers serve research and quality-control laboratories evaluating friction and wear behavior across a broad range of materials, coatings, and operating temperatures.

- Surface Coating Characterization: evaluates PVD, CVD, DLC, and thermal spray coatings under reciprocating contact to verify friction behavior and wear resistance before deployment
- Lubricant and Grease Testing: measures the friction-reducing effectiveness of oils, greases, and synthetic lubricants under high-frequency reciprocating contact, including at service temperatures
- Engineering Material Screening: compares friction coefficients and wear rates of metals, ceramics, and polymers to guide material selection during product development
- Automotive Tribology: simulates valve train, piston ring, and cam-follower contact conditions to evaluate material and lubricant pairs at operating temperatures
- Aerospace Component Testing: tests surface treatments and specialty alloys under oscillating contact conditions representative of actuators, hinges, and bearing surfaces
- Cryogenic and High-Temperature Research: characterizes materials and lubricants at temperature extremes for LNG infrastructure, gas turbines, and applications where ambient testing does not reflect service behavior

TECHNICAL SPECIFICATIONS

Linear Reciprocating Tribometer Range

The ToronLRT™ line includes two linear reciprocating tribometers, differentiated by temperature range and contact pair configuration.

1. ToronLRT™ 02

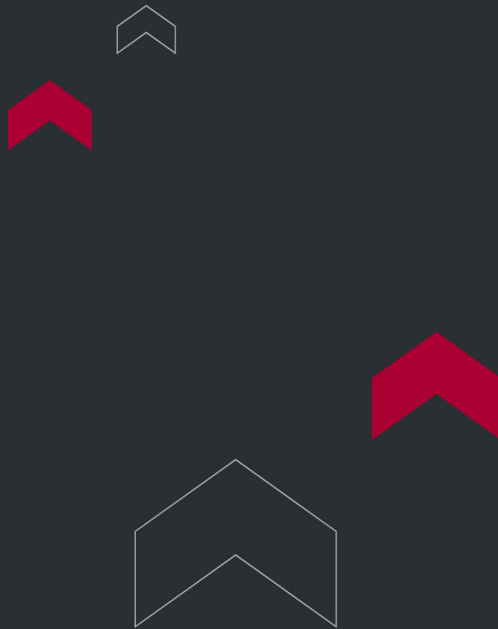
The ToronLRT™ 02 is a linear reciprocating tribometer for ambient and moderately elevated temperature conditions. It supports ball-on-flat, pin-on-flat, and cylinder-on-flat contact configurations, applies loads to 200 N automatically across a stepless 0 to 20 Hz range, and runs a maximum stroke of 40 mm. An optional high-temperature module extends testing to 600°C for elevated-temperature coating and lubricant evaluation.

2. ToronLRT™ 02GL

The ToronLRT™ 02GL adds combined high- and low-temperature capability to the same 200 N reciprocating platform, covering ambient to 800°C and –120°C to ambient. It uses pin-on-disc and ball-on-disc contact pairs with all specimen materials customizable on request, and reduces stroke to 10 mm at high or low temperature to accommodate the thermal enclosure. This model suits laboratories that need service-representative friction and wear data for cryogenic, metallurgical, aerospace, or high-temperature lubricant applications.

How to Choose the Right Linear Reciprocating Tribometer

- For ambient and moderately elevated temperature testing: choose the ToronLRT™ 02; the optional module extends coverage to 600°C without the full temperature platform
- For high-temperature testing above 600°C (ceramics, refractory coatings, gas turbine materials): choose the ToronLRT™ 02GL, rated to 800°C
- For cryogenic testing at –120°C (LNG, aerospace cold zones, cold-start lubricants): choose the ToronLRT™ 02GL, the only model in the series that reaches sub-ambient temperatures
- For three-geometry testing (ball-on-flat, pin-on-flat, cylinder-on-flat): choose the ToronLRT™ 02, which supports all three standard contact pair configurations
- For customized contact pair materials: choose the ToronLRT™ 02GL; all pin, ball, and disc specimens are available in customizable materials on request



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