

LOAD-CARRYING CAPACITY TESTERS



Load-Carrying Capacity Testers

The load-carrying capacity of a lubricant is its ability to maintain a protective film between metal surfaces under progressively increasing contact pressure, preventing scuffing, scoring, and catastrophic surface failure. For industrial gear oils, hydraulic fluids, metalworking lubricants, and greases operating under high contact loads, load-carrying capacity is a fundamental performance parameter that must be quantified and specified to ensure reliable equipment operation.

The Timken test is one of the most widely referenced load-carrying capacity methods in industrial lubricant specifications — measuring the OK load (the maximum load under which no scoring occurs) using a rotating steel ring pressed against a stationary block. Torontech offers two Timken load-carrying capacity tester configurations — the ToronTT5A and the standard Timken load tester — providing industrial petroleum laboratories with the tools needed for complete lubricant load-carrying capacity evaluation.

APPLICATIONS

Application

Load-carrying capacity testing is applied across a range of industrial lubricant and machinery applications:

- Industrial gear oils: Timken OK load testing per ASTM D2782 is a standard requirement for ISO VG gear oil specifications and industrial OEM lubricant approval programs.
- Grease load-carrying capacity: Timken testing of greases per ASTM D2509 evaluates the load-carrying capacity of greases for open gears, wire ropes, and heavy-duty bearing applications.
- Hydraulic fluids: Load-carrying capacity verification for high-pressure hydraulic fluids operating in mobile and industrial hydraulic systems.
- Cutting and metalworking oils: Timken OK load provides a measure of extreme pressure lubricating capability for metal cutting, drawing, and forming operations.

- Compressor oils: Load-carrying capacity assessment for reciprocating and screw compressor lubricants operating under high cylinder and rotor pressures.
- Lubricant additive development: Timken testing enables rapid screening of EP additive packages and their load-carrying performance in gear oil and industrial lubricant formulations.
- Mining and construction equipment lubricants: Lubricants for draglines, haul trucks, and excavators require verified high load-carrying capacity for reliable operation in severe-duty applications.

FEATURES

Why Choose Torontech's Series for Your Load-Carrying Capacity Testing?

Torontech's Timken load-carrying capacity tester range provides reliable, standards-compliant testing for industrial lubricant evaluation:

- ASTM D2782 and D2509 Compliance: Torontech's Timken testers are designed for compliance with ASTM D2782 (lubricating oils) and ASTM D2509 (greases) — the principal standards for Timken OK load determination in petroleum product specifications.
- Two Configuration Options: The ToronTT5A and the standard Timken load tester provide flexibility for laboratories requiring different levels of automation, data acquisition, or test configuration capability.
- Consistent Load Application: Precise, calibrated load application is critical to Timken OK load determination accuracy. Torontech's testers deliver consistent, reproducible loading that meets method requirements for reliable load-carrying capacity ranking of lubricant formulations.
- Complementary to Four-Ball Testing: Timken testing provides a complementary load-carrying capacity evaluation to the four-ball EP test — different contact geometry and loading mode — giving a more complete picture of a lubricant's extreme pressure performance when both methods are used together.
- Industrial Specification Support: Many industrial lubricant specifications and OEM approvals require Timken OK load data. Torontech's instruments ensure laboratories can produce the compliant Timken test results needed for product qualification programs.



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