About the Timken O.K. Load Tester

The Timken O.K. Load Tester is a lubricant oil/grease testing instrument based on the machine produced by the Timken Company from 1935 to 1972, which originally was used to evaluate the load carrying capacity of lubricants. It is a quick and reliable test that can evaluate fundamental properties involved the research, development, and quality of lubricants.

The O.K. Load Tester uses a steel bearing race which is pressed against a steel test block creating a line contact which is representative of many tribological contacts encountered in real life applications. The bearing race is attached to a spindle which rotates the race while the test block is pressed against it. A reservoir for lubricant oil rests below the bearing race. If using grease, there is a system that feeds the grease into the contact area.

The test load is then increased until the film between the bearing race and the block is broken. The maximum load before scoring occurs is reported as the “O.K. Load”. The minimum load applied required to cause scoring is reported as the “Score Load”. The O.K. Load is essentially used to measure the ability of a lubricant to protect under EP as well as boundary lubrication conditions.

This instrument is especially useful for Research & Development and Quality Assurance activities. Samples are easily available and can be set up quickly, making it a good choice for lubricant and EP additive evaluation and qualification, O.K. Load quantification, EP protection, Wear Prevention (WP), and frictional characteristics.

Ducom offers a variety of options and advanced software control and data acquisition to make testing convenient and repeatable.

Applications
- Evaluation of tribological properties of lubricating oils and lubricating greases.
- Extreme Pressure, Wear Preventive and Friction testing.

Features
- ASTM D2509 and ASTM D2782 compliance.
- Software control and data acquisition.
- CompariView® for multiple result comparison and reporting.
Options

Tribological test requirements for lubricants often extend beyond the scope of standard tests. Ducom offers a range of options for added test capabilities, measurements and reporting.

Automated Loading to allow user programmed loading cycles for testing. Possibility to apply constant load, step load and ramp load with user defined time durations. Reduces operator involvement and errors.

Automated Grease Feeder allows users to continually feed test grease to the contact.

Image Acquisition System is a stand alone USB based system with software that allows users to make quick sample images, log test information, make measurements and create reports.

Ultrasonic Cleaner is used for sample preparation. This stand alone system can be used for cleaning compatible samples for a variety of tests.

(If you do not see an option that meets your requirement, please consult Ducom for customized solutions)

Ducom Timken OK Load Tester with safety enclosure

Machine control and data acquisition

TriboAcquire is a proprietary integrated control and data acquisition software. Its user friendly user interface allows operators to quickly set up test parameters and initiate tests. The software also has capabilities to log sample information as entered by the operator for future reference and comparison. The data acquisition system acquires test outputs for online viewing and storage. Acquired data is stored and can be displayed for evaluation. The CompariView module allows users to view up to four separate test results in the same graph for comparison and reporting.

Acquired data is processed in a variety of ways:

- Result of multiple tests can be seen together for comparison.
- Any acquired parameter can be plotted as a function of another.
- Selected portion of a graph can be zoomed.
- Data can be exported in ASCII to other software.
Technical specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Min</th>
<th>Max</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Speed</td>
<td>RPM</td>
<td></td>
<td>800</td>
<td>Variable speed</td>
</tr>
<tr>
<td>Automated Loading</td>
<td>Kg/sec</td>
<td>0.9</td>
<td>1.3</td>
<td>Optional. Pneumatic supply required for operation.</td>
</tr>
<tr>
<td>Grease Feeder</td>
<td>g/min</td>
<td></td>
<td>45 +/- 9</td>
<td></td>
</tr>
<tr>
<td>Fluid Feeder</td>
<td>liter</td>
<td>3.8</td>
<td></td>
<td>Recirculating pump and heater.</td>
</tr>
</tbody>
</table>

Test Area in a Ducom Timken OK Load Tester before loading

Ordering Information

**Basic test system** includes the Timken OK Load test system comprising of the test instrument, TriboAcquire control and data acquisition software, connecting cables (power and data), operating and maintenance manuals and tool kit.
Ordering code: LUB/0004/BA/0001

**Options**

**Automated Loading**
Ordering code: LUB/0004/OP/1001

**Automated Grease Feeder**
Ordering code: MAT/0008/OP/1002

**Image Acquisition System**
Ordering code: LUB/0004/OP/1003

**Ultrasonic Specimen Cleaner**
Ordering code: LUB/0004/OP/1004

**Standards**

The Ducom Timken OK Load Tester is capable of conducting tests in accordance with the following standards:

- ASTM D 2509
- ASTM D 2782
- IP 240
- IP 326
- JIS K2220
- JIS K2519

*NOTE:* Specifications may change without notice. Images depict the general class of machines. Appearance of actual machine may vary.
Other facilities and services by Ducom

**CONTRACT TEST LAB:**
Ducom is a preferred partner for tribological tests for several Fortune 500 companies as well as small industries and research labs. Our facilities include a variety of Tribometers, Mechanical Testers and Petro Testers at two locations: Bangalore (India) and Evanston, IL (USA). Contract testing on custom development testers are also offered. Ducom also offers the facility to video-witness tests—saving on costs involved with physically witnessing critical tests.

Ducom Test Facility has been in service since 1999, providing tribological testing facilities to academics and industries. Ducom ensures that customers get great value by offering these services on advanced tribometers that are regularly calibrated and checked for repeatability of their results. The test facility is run by experienced staff with more than five decades of cumulative testing experience in the field of tribological testing alone. Advantages of choosing Ducom Test Facility as your testing service provider:

- No capital investment on a tester
- No additional man-power requirement
- No maintenance and AMC costs
- No training requirement
- Excellent security - limited access facility and strongly enforced non-disclosure agreement
- Excellent reporting - test reported in accordance with applicable test standards

**About Ducom Instruments**

Ducom is a multi-faceted test instrument manufacturer. Instruments capabilities span macro, micro and nano scale characterization with installations in over 2000 labs worldwide. Ducom test instruments are trusted for their excellent repeatability, high technology and robust design.

A dedicated in-house Research & Development group works on development of new technologies and test methods to bring state-of-the-art characterization techniques to research labs and industries.

- Since 1978
- ISO 9001: 2008 Certified
- CE certified testers
- State-of-the-art R&D
- In-house CNC manufacturing
- In-house design, electronics & software

**Ducom Instruments (USA) Inc.**
820 Davis Street, Suite 405, Evanston, IL—60201 (USA)
Ph: +1 (847) 737 1590 │ Fax: +1 (847) 737 1590

**Ducom Instruments Pvt. Ltd.**
477/A 4th Phase, PIA, Bangalore—560058 (India)
Ph: +91 (80) 4080 5555 │ Fax: +91 (80) 4080 5510