



# LUBRICANTS & MATERIALS

TRUSTED BRANDS



### **ERACHECK CFC-Free Oil-in-Water Testing by QCL-IR Technology**

Ultimate high-speed, precision solution for low, and sub- ppm concentrations of FOG or total hydrocarbons up to 1,000 ppm.

For ASTM D7678.

#### **EC01 ERACHECK PRO**

For detection from .5 to 2,000 mg/L.

#### **EC02 ERACHECK**

Eco-friendly, cost-cutting extraction with cyclohexane.



### **ERAFLASH**

#### **EF01 ERAFLASH**

High-speed operation, continuously closed measuring chamber, small sample size (1-2ml) and the widest temperature range available in a single instrument (-25 to 420°C / -13 to 788°F).

For D6450 and D7095.

#### **EF510 ERAFLASH S-10**

With 10-position auto sampler for unattended operation.



### **E001 ERASPEC-OIL**

Patented, rugged FTIR spectrometer for high-speed lubricant oil condition monitoring. Delivers a detailed fingerprint of used oil on-site and check for degradation and contamination within seconds.

For D7214, D7414, D7624, DIN51452, DIN 51453, E2412, JOAP.



### **EV01 ERAVAP Vapor Pressure Analyzer**

User-friendly, fast and accurate vapor pressure analyzer with completely self-contained unit. Tests up to 145 psi with optional 10-position sample changer.

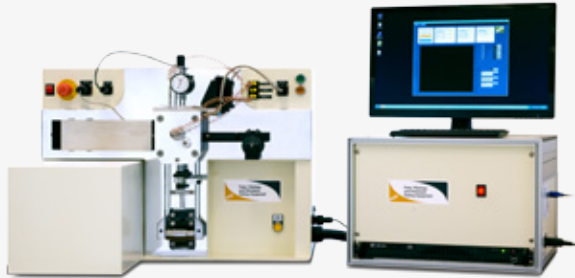
For ASTM D5188, D5845, D5191, D6377, D6378, D6897.



## 0 Pin & Vee Block, Computer-Controlled

Evaluates wear, friction, and extreme pressure properties of lubricants, coatings, and materials. Manual and automated systems for easy operation, calibration, data acquisition, and test reports.

For FD2625, D2670, D3233, D5620, Chrysler 461-C-84-01, Chrysler 461-C-84-02, Chrysler 461-C-84-03, Ford Motor Company FMC-BJ1-1, FTM-791-3807.1, FTM-791-3812.1, IP 241.



## 1 Block-on-Ring

Evaluates the friction and wear characteristics of materials and various coatings and lubricants in many simulated test conditions. User-controlled load, speed and environment of the test and downloadable results with Falex 330 SoftWEAR™.

For ASTM D2509, D2782, D2981, D3704, G77, D2714.

## 2 Timken

Evaluates the load carrying capacity of extreme pressure fluid lubricants and greases containing extreme pressure additives. Optional variable speed motor and reservoir cooling system.

For ASTM D2509 and D2782.

## 6 Falex MultiSpecimen

The Falex MultiSpecimen is the most versatile commercial system for evaluating friction, wear, and abrasion characteristics. Numerous adapters meet many test specifications and can accurately simulate a broad range of field applications.

For ASTM D2266, D3702, D4172, D5183, G99.



## 10 Dry Sand/Rubber Wheel

Rugged, reliable, accurate testing of abrasion resistance on weldment overlays, cements and polymers in abrasive conditions. Wet sand option includes slurry chamber front piece and O-Ring.

For ASTM B611, G65, G105.

## 18 4-Ball EP Tester

Tests high-Hertzian contact in pure sliding, or pure rolling motion to determine load carrying properties of lubricant at high test loads. Determines Load-Wear Index (LWI), Last Non-Seizure Load (LNSL) and Weld Point (WP).

For ASTM D2596, D2783, CEC-L-45-A-99, IP 300.

## 19 4-Ball Wear Tester

Evaluates wear-preventing lubricants and greases in sliding and rolling applications using the average size of the scar diameters worn from the traditional ball tester apparatus. Rotational speeds up to 7,200 rpm.

Only test machine to meet ASTM D2266 and D4172.



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### 079 Miller Machine

Used to determine the relative abrasivity of any slurry (Miller Number), or the response of different materials to abrasivity of different slurries (SAR Number).

For ASTM G75.

### 81 Falex Fretting Wear Test Machine

Evaluate the ability of lubricating greases to provide fretting wear protection to oscillating bearings. The Falex Fretting Wear Tester is the only test rig to meet ASTM D4170 requirements.

For ASTM D4170.



### 450 Falex Thermal Fouling Tester (FT2) (SAE)

Designed specifically for the SAE ARP 5996B Evaluation of Coking Propensity of Aviation Lubricants Using the Single Phase Flow Technique Test Method. Convenient, flexible programming along with extensive, customizable safety and shutdown protocols. Aluminum and stainless steel tubes available.



### Tapping Torque Technology Labtap

Tests the effectiveness of lubricating media with a torque-controlled thread tapping machine complemented with standardized measuring devices (TTT Standard), recommendations (TTT Methods) and a specialized evaluation and analysis software.



### CNOMO Complete System for CNOMO Foam Testing

Includes a variable speed centrifugal pump and controller, jacketed cylinder and tubing. Thermostat supplied separately.

For NF T-60-185.

### NA-0941688 Air Release Properties of Petroleum Oil

Determines the ability of an oil to separate entrained air in hydraulic, turbine and other lubricating oils. Includes temperature controller and two glassware positions to simultaneously measure density and air flow.

For ASTM D3427.



**NA-23963 Ash From Petroleum Products**

Determines ash in the range 0.001-0.180 mass percentage from distillate and residual fuels, gas turbine fuels, crudes oils, lubricating oils, waxes, and other petroleum products with potential ash-forming properties.

For ASTM D482.

**PENETROMETERS**

Designed to measure penetration of semi-solid and solid bituminous materials, waxes, petrolatums and personal care products with ease and accuracy.

For ASTM D5, D217, D1321, D1403.



NA-941731



NA-941734

**NA-941731 Manual Penetrometer**

Features a large table on leveling feet with spirit level, a manual release mechanism and a dial indicator in 0.01 mm. Needle, holder, sample containers weight to be ordered separately.

**NA-941734 Automatic Penetrometer**

Automatic surface positioning, user-friendly software and full auto approach on conductive products and hard bitumen.



NA-941643



NA-942545

**NA-941643 Foam Tester**

Determines the foaming characteristics of lubricating oils at 24°C and 93.5°C.

For ASTM D892.

**NA-942545 Demulsibility Apparatus**

Semi-automatic demulsibility test featuring a 7- place unit: five for test cylinders and two for sample conditioning.

For ASTM D1401.

**CLEVELAND FLASH POINT TESTER**

For ASTM D92.



NCL 120



NCL 440

**NCL 120 Manual Cleveland Flash Point Tester**

Manual heater, heating slope regulator, temperature reading and pilot flame. Includes cup and thermometer.

**NCL 220 Semi-Automatic Cleveland Flash Point Tester**

Featuring digital display with manual pilot flame detection. Uses Pt 100 probe and electronic regulator+F69.

**NCL 440 Cleveland Open Cup Flash Point**

Detects both flash and fire point in operating range between ambient temp to +400 C. Optional six position sample changer available.



NMC 210



NPM 440

**NMC 210 Semi-automatic Micro Conradson Tester**

Economical, automatic apparatus performs tests automatically under a program-controlled atmosphere.

For ASTM D4530.

**NMC 440 Automatic Microcarbon Residue Test (MCRT) with ash capability**

Measures carbon residue formed after evaporation under certain conditions. Ambient temperature use : 15 to 30°C.

For ASTM D4530 and D189.



NPM 121



NPM 450

**PENSKY-MARTENS FLASH POINT TESTER**

Tests the flash point of distillate fuels, lubricating oils and homogenous liquids in the temperature range from ambient to 360° C by the oldest, most reliable method.

For ASTM D93.

**NPM 121 Manual Pensky-Martens Closed Cup Flash Point Tester**  
Easy switch from A to B testing.

**NPM 221 Semi-Automatic Pensky-Martens Closed Cup Tester**  
Automatic flash point detection, stirring, heating slope and temperature measurement by Pt 100 probe.

**NPM 450 Automatic Pensky-Martens Closed Cup Flash Point Apparatus**

Double flash point detection by ionization ring and thermocouple and a hydrocarbon detector for safety. For procedures A, B and C.



NTE 450



NTL 450

**NTE 450 Fully Automated Cloud and Pour Point Tester**

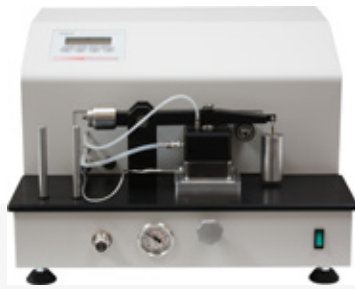
Simultaneous pour and cloud point testing that mimics the standard method. Continuous visual monitoring of different cooling steps with user-chosen detection every 3 °C or 1 °C.

For ASTM D97, D2500.

**NTL 450 Fully Automated Cold Filter Plugging Point**

Determines the cold filter plugging point (CFPP) of diesel and domestic heating fuels using automated equipment. Continuous visual monitoring of different cooling steps, sucking up and release time and possible use of a linear cooling slope.

For ASTM D6371.



### **ABS Ball-on-Cylinder Lubricity Evaluator (BOCLE)**

Microprocessor-controlled Ball-on-Cylinder wear test system for fast, repeatable testing for lubricity of aviation turbine fuels.

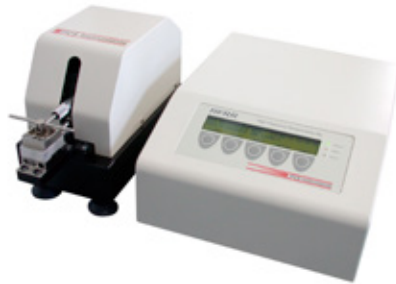
For ASTM D5001.



### **ABSSL Scuffing Load Ball-on-Cylinder Lubricity Evaluator (SL-BOCLE)**

Fully automated to carry out lubricity testing of diesel (middle distillate) fuel. Standard ABS test equipment can be modified for SL-BOCLE testing or ABSSL test equipment supplied as new.

For ASTM D6078.



### **HFRR High Frequency Reciprocating Rig for Diesel Fuel Lubricity**

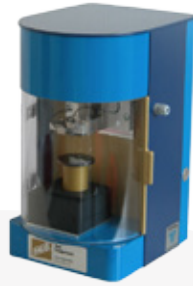
Microprocessor-controlled reciprocating friction and wear test system for fast, repeatable assessment of fuels and lubricants. Wear tests diesel fuels and boundary friction measurements of engine oils, greases and other compounds.

For ASTM D6079, D7688.



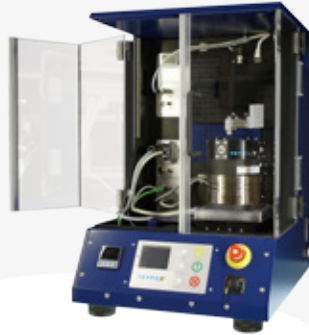
### **MPR Micro Pitting Rig**

Duplicates lubricated contact conditions which lead to micro or macropitting in rolling contact fatigue failure mechanisms. Detects micropits less than 100 microns wide.



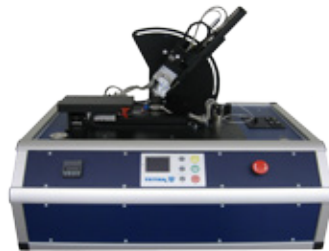
### Basalt-N®

Combines the advantages of an AFM or Nanoindenter precision with those of a conventional tribometer. Highest precision in the 50  $\mu\text{N}$  to 1 N force range with exchangeable cantilever sensor. Realistic contact pressures for many applications



### Basalt®-N2

Most advanced Basalt N® available, with time multiplying features like 24/7 automation capabilities and ability to handle 1,000 samples per second. Maximum 250N load



### Basalt®-Peel Tester

Measures adhesive force between a substrate and an adhesive film and film strength or adhesion of any material against another in the microNewton range. Software provides two output files of raw data and average experiment data.



### Basalt®-PS Piston Simulator

First commercially available real piston cylinder segment simulator for additive screening of engine lubrication, piston and cylinder materials testing. Features TETRA BASALT® design principle in drivers, sensors, stations, specimens and software. 100 N load per contact, 50 Hz motion.



### Basalt®-S2 Pin on Disc Tribometer

Reproducible measurement and enhanced, high-resolution view in local and temporal dimensions of tribomechanics. Features same high-precision sensor head found in Basalt®-N2.