MCTT (MULTI-CONTACT TRIBOLOGICAL TESTER)

The **Falex MCTT** is a versatile system for the evaluation of friction, wear, and abrasion characteristics of materials, coatings, and lubricants. This single system accommodates an ever-increasing number of test geometries and conditions. The FALEX MCTT allows investigations into a wide variety of materials, coatings and lubricants for wear rates, PV limits and determinations of static and dynamic coefficients of friction. The flexibility of controlled contact geometries, specimen materials, speed, pressures, temperatures, and motion make it one test apparatus that can meet many commercial and military test specifications and simulate the broadest range of field applications.

Applications:

- » Research & Development
- » Quality Control
- » Product Qualification
- » Performance Characteristics
- » Material Evaluation
- » Polymers
- » Lubricants
- » Coatings
- » Surface Treatments
- » Dry Films

Standard Test Methods

ASTM D3702	Standard Test for Wear Rate and Coefficient of Friction in Self-Lubricated Rubbing Contact Using a Thrust washer Testing Machine
ASTM G99	Standard Test Method for Wear Testing with a Pin on Disk Apparatus
Proposed	Standard Test Method for Predicting Coefficient of Friction and Wear Properties of Hydraulic Fluids Using a Cyclic Stress Vane Apparatus

Specifications & Features

Drive System (30-3600 RPM Standard)

Computer controlled servo motor (equivalent to 2 Hp) with ± 0.5% accuracy (full scale) configured for 220 V, Single Phase, 50 or 60 cycle operation.

The motor drives the upper vertical shaft while the lower vertical shaft is held stationary by the Torque Measurement System.

Drive System (options)

Pulley configurations are available for speed ranges 15 to 1800 rpm and 60 to 3600 rpm.

The optional Reversible Drive provides Oscillatory Motion Control from 5° to 720° (angle of motion dependent on test speeds and loads).

Degrees of Oscillation	Cycles per Minute, max
720°	150 (2.5Hz)
2°	1600 (19Hz)

Environments

Standard Systems provide fluid and test specimen initial temperature set point (ambient to 150°C) using liquid or dry environments.

Temperature Control

Standard Systems provide test table heaters (ambient to 150°C) for liquid and dry test environments.

Automated Test Temperature System with computer control.

User defined parameters for test temperature ramping rates, soaking times, and test cycle control. User programmable test alarms and shutdown levels.

Optional Accessories expand operating temperatures from ambient to 200°C with Heater Cups and Heating and/or Cooling Recirculating systems.

Friction Measurement

The lower shaft transmits a signal through a load cell for determining torque. The Standard System includes a 0 to 100 lb. Load Cell. The Falex SoftWEAR™ records and displays the test torque data and calculates a real-time Coefficient of Friction. User programmable test alarms and abort levels.

An Optional Low Range Load Cell (0 to 10 lbs.) is available for low range test torque measurements.

Wear Measurement

Dynamic Digital Wear Measurement System records and displays the real-time test system wear displacement. User programmable test alarms and abort levels.

Test Duration

Standard Systems include user defined alarms and abort levels for test time (H:MM: SS) and test cycles (shaft revolutions).

Utility Requirements

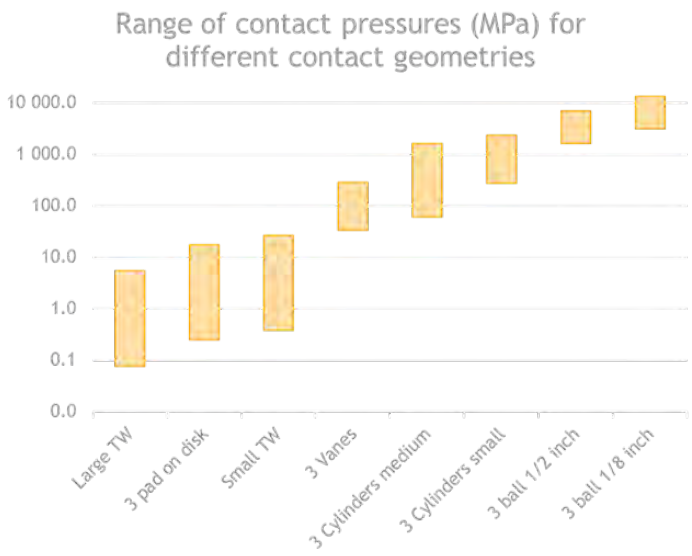
Power: 220 Volts, 60 cycle/50 cycle, single phase.

Pneumatics: 80 psig (5.5 bar) clean, dry air required for pneumatic load systems.

Space Requirements

Bench-top: 20 in. (L) x 28 in. (D) x 36 in. (H)
.6 m (L) x 0.7 m (D) x 1 m (H)

MCTT Point Contact



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Ordering Information

Part Number	Description	
Options		
100-200-049	Reversible Drive Motor System	
Accessories		
006-106-001	Heated Reservoir Test Cup Assembly	
006-108-052	Conductive Air Cooling Reservoir Assembly	
006-105-071	Standard Test Reservoir, 100 ml	
006-007-040	Test Reservoir, 25 ml	
006-109-001	Low Range Torque Strain Gage Assembly	
Available Adapters		
006-108-003	Three-Vane on Disk Test	(Line Contact)
006-108-004	Gear Lubricant Test	(Rolling Line Contact)
006-108-005	Single Pin on Disk Test	(Point Contact)
006-108-006	Large Thrust Washer	(Area Contact)
006-108-007	Small Thrust Washer Test	(Area Contact)
006-108-008	Three Pin on Disk Test	(Multipoint on Flat)
006-108-017	Large Three Ball on Disk Test	(Multipoint on Flat)
006-108-018	Small Three Ball on Disk Test	(Multipoint on Flat)
006-108-019	Single Ball on Disk Test	(Point on Flat)
006-108-021	Walking Cam Lubricant Test	(Rolling/Sliding Contact)
Custom Adapters Available on Quote		
006-108-049	Sheet Abrasion Test	(Different Contacts)
006-108-062	Sheet Metal Drawing and Forming	(Sliding/Plastic Deformation)
006-108-072	Powder Friction Test	(Powdered Friction)
006-108-073	Three Pad on Disk	(Area Contact)

Custom Lip,Face Seal, Timing Belt and O-Ring Adapters Available on request.

Part Number	Description	
Test Specimens		
Standard Specimens - Thrust Washer Configuration		**UOM**
006-560-041	Small Rotating Upper Specimen 1018 Steel, Rc 15-25, 14-18 rms	25/ Box
006-560-061	Large Rotating Upper Specimen 1018 Steel, Rc 15-25, 14-18 rms	25/ Box
006-560-001	Small Stationary Lower Specimen 1018 Steel, Rc 15-25, 14-18 rms	25/ Box
006-560-021	Large Stationary Lower Specimen 1018 Steel, Rc 15-25, 14-18 rms	15/ Box
Standard Specimens - Pin-On-Disk Configuration		**UOM**
006-560-131	Upper Rotating Pin 440C Stainless Steel, Rc 55-58	100/ Box
Standard Specimens - Vane Pump Configuration		**UOM**
006-500-191	Upper Rotating Vane (3 Per Test), M-2 Steel, Rc 58-62, 6-12 rms, 0.590 in. radius	100/ Box
006-500-014	High Stress Upper Rotating Vane (3 Per Test), M-2 Steel, Rc 58-62, 6-12 rms, 0.250 in. radius	100/ Box
006-560-182	Stationary Lower Specimen	25/ Box
	52100 Steel, Rc 58-62, 9-15 rms	
006-500-015	Cyclic Stress Lower Specimen	25/ Box
	52100 Steel, Rc 60-63, 9-15 rms	
Standard Specimens Gear Cam and Walking Cam Test		**UOM**
006-500-173	Upper Specimen Roller (2 Per Test) 8620 Steel, Rc 55-58, 24-30 rms	100/ Box
006-500-174	Upper Specimen Roller (2 Per Test) 8620 Steel, Rc 50-54, 24-30 rms	100/ Box
006-560-151	Lower Specimen Gear 8620 Steel, Rc 55-58, 24-30 rms	25/ Box
006-500-006	Lower Specimen Walking Cam 400 C Stainless Steel, Rc 55-58, 24-30 rms	25/ Box
Standard Specimens - Oscillating Roll/Slide		**UOM**
006-505-004	Test Specimen Insert (4 Required Per Test) 440C Stainless Steel, Rc 55-58, 14-18 rms	48/ Box

Falex Corporation follows a policy of continuous product improvement. Specifications are subject to change without notice.