FALEX TIMKEN Test Rig

The Falex Timken Extreme Pressure Test Rig is one of the first commercially manufactured and most widely recognized testers for evaluating the load carrying capacity of extreme pressure lubricants. Originally developed in the 1930's by The Timken Company, this tester evaluates fluid lubricants and greases containing extreme-pressure additives.

Manufactured by Falex Corporation since 1982, the Falex Timken Test Rig is supplied as a complete system to conduct ASTM Standard Test Methods D2509 and D2782.

Improvements include controlled rate test load and mechanical grease feeder systems, a test fluid recirculation system with temperature control, and an automatic fluid flow interrupter. Optional accessories include a variable speed motor and reservoir cooling system to improve versatility and performance.

STANDARD TEST METHODS

ASTM D 2509 - Standard Test Method for Measurement of Load-Carrying Capacity of Lubricating Grease (Timken Method)

ASTM D 2782 - Standard Test Method for Measurement of Extreme-Pressure Properties of Lubricating Fluids (Timken Method)

SPECIFICATIONS AND FEATURES

SPEED AND VELOCITY:
Variable Speed (850 rpm max), Unidirectional, 2 HP Motor with RPM Indicator.

LOAD:
Dead Weight Load applied through 10 : 1 Lever Arm.

MAXIMUM TEST PRESSURE:
Timken test block pressure (.022 in. scar width): 92,300 psi.

TEMPERATURE CONTROL:
Digital Temperature Control for Test Fluid Circulating System (80° C max)
Oil Reservoir Jacket for use with optional refrigerated system to cool test oil.

FLUID CIRCULATING SYSTEM:
3 liter reservoir with heater, oil pump and control valve.

AUTOMATIC GREASE FEEDER:
Electro/mechanical System to feed test grease at 45 ± 9 grams per minute.

AUTOMATIC LOADING DEVICE:
Pneumatic System to lower test weights at 2 to 3 lbs/sec

CABINETRY:
Heavy construction steel with electro/mechanical compartment, weight storage area, accessory drawer, and instrumentation panel.

WEAR:
Measurement of scar width at specified load.

FRICTION:
Friction Lever System and weights (optional)

SYSTEM DESCRIPTION

002-001-002 FALEX TIMKEN TEST MACHINE

Standard Items include:
Timken Lubricant Test Machine (1750), 220 VAC, 60 Hz
Pneumatic Loading Device (2 to 3 lbs/sec) *Air required*
Load Lever Arm Assembly
Variable Drive Motor with RPM Indicator (850 rpm max)
Temperature Controller (80ºC max)
Oil Reservoir Jacket
Grease Feeder (45 ± 9 grams g/min)
Test Weights (114 lbs)
Test Cabinet

SYSTEM OPTIONS

002-040-001 INSPECTION AND ALIGNMENT KIT:

For inspection and alignment of Timken Test Rig. Includes:
Dial Indicator (Shaft Run-out and Bearing End-play)
Magnetic Base (For use with Dial Indicator)
Insert Tool (Stud Insert to Shaft Taper)
Lever Level (Knife Edge to Shaft)
Digital RPM Indicator
Nozzle Tool (Nozzle to Shaft and Shaft Wear)
Tool Storage Case

002-101-001 FRICTION LEVER GROUP:

Complete Friction Lever Assembly, including: Friction Lever and Sliding Weight, Friction Lever Block, Stud Insert, and Friction Lever Stop.

LWM-016 CIRCULATION CHILLER:

230V, 50/60 Hz, Working temperature range: -10 to 40º C
For use with Test Oil Cooling System

OPTIONS AND ACCESSORIES

100-200-009 HIGH PRECISION SCAR MEASUREMENT SYSTEM:
Binocular microscope with X-Y base and digital micrometer. 0.001 mm display.

100-200-023 DIGITAL SCAR MEASUREMENT SYSTEM:
Binocular microscope with CCD camera and Falex SoftWEAR™ for image capture and scar measurement. 0.001 mm display.

002-200-004 TEST WEIGHT SET:
Calibrated Weight Set for Test Load Application

002-101-001 FRICTION LEVER GROUP:
Complete Friction Lever Assembly, including: Friction Lever and Sliding Weight, Friction Lever Block, Stud Insert, and Friction Lever Stop.

002-101-002 LOAD LEVER GROUP:
Complete Load Lever Assembly, including: Load Lever, Load Lever Weight Hanger, Load Lever Spring, and Top and Bottom Load Lever Inserts.

002-102-003 LOAD LEVER WEIGHT HANGER

002-027-002 LOAD LEVER SPRING

002-105-006 FRICTION LEVER BLOCK

002-011-011 STUD INSERT (KNIFE EDGE SUPPORT)

002-015-002 FRICTION LEVER STOP

002-011-006 LOAD LEVER INSERT (KNIFE EDGE) - TOP

002-011-007 LOAD LEVER INSERT (KNIFE EDGE) - BOTTOM

002-011-008 FRICTION LEVER INSERT

002-100-001 BUSHING, TEST SHAFT

002-016-001 TEST RING LOCK-NUT

659-200-070 SPANNER WRENCH FOR TEST RING LOCK-NUT

F-1502-42A CONTROL VALVE ASSEMBLY

002-007-003 TIMKEN SIZE CRESCENT GUIDE FOR LIQUID OR GREASE

002-028-002 OIL SPLASH GUARD

002-021-004 GREASE SPLASH GUARD

F-1502-43 FLUID THERMAL RESERVOIR

002-105-013 FALEX STANDALONE TIMKEN AIR LOADER

100-200-008 FALEX STANDALONE TIMKEN GREASE FEEDER

002-008-013 GREASE FEEDER TUBE

002-008-014 GREASE FEEDER END CAP (TOP)

F-1502-81 SPANNER WRENCH FOR GREASE FEEDER

TEST SPECIMENS

002-560-002 FALEX TIMKEN TEST BLOCK

(formerly F-45349 or F-25001) Conforms to ASTM D 2782 and D 2509
Box of 10 Blocks

Carburized Steel, 58 to 62 HRC, four ground test surfaces 0.485 ± 0.002 in. wide and 0.750 ± 0.016 in. long, 20 to 30 µin.

002-560-001 FALEX TIMKEN TEST RING (CUP)

(formerly F-48651 or F-25061) Conforms to ASTM D 2782 and D 2509
Box of 25 Rings

Carburized Steel, 58 to 62 HRC, axial surface roughness 20 to 30 µin. 0.514 ± 0.002 in. wide and 1.938 + 0.001, - 0.005 in. diameter, maximum radial run-out of 0.0005 in.

Falex test consumable pieces are available in a wide range of materials, surface finishes, and hardness, or from user supplied material. Please contact your Falex Representative for price and availability.

For All of Your Lubricant and Materials Testing

Lubricants

- Pin and Vee Block
- Block-on-Ring
- Timken EP
- Tapping Torque
- Panel Coker
- High Temperature/High Speed Bearing
- Four Ball Wear
- Four Ball EP
- High Temperature Wheel Bearing
- Thermal Oxidation Stability (L60-1)
- Fretting Wear
- Hydrolytic Stability
- Grease Corrosion Test
- Isothermal Oxidation
- Hydraulic Fluid Pump Stand (Vickers and Conestoga)

Fuels and Solvents

- Ball on Three Disk Fuel Lubricity
- Thin Film Evaporator
- Fuel Deposit Simulator

Materials

- Journal Bearing
- Multi-Specimen
- Crossed Cylinders
- Low Velocity Friction Apparatus
- Pin on Disk
- Coefficient of Stoption
- Magnetic Media and Paper Wear
- Life Performance Face Clutch System
- Thin Coating Wear (Electrical Contacts)
- Dual Drive Rolling Contact Fatigue
- High Speed Bearing/Mechanical Clutch

Abrasion and Erosion

- Dry Sand/Rubber Wheel
- Air Jet Erosion
- Miller Number Slurry

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