Roll Stability Tester

RST-T200-P4

According to ASTM D 1831 / ASTM D 8022





Roll Stability Tester RST-T200-P4

(The actual appearance of the Instrument may differ slightly from the illustration)



Test cylinder and roller

Description

During this test the lubricating grease sample is submitted to stress similar to the use in a ball bearing. Further tests (i.e. cone penetration) reveal changes in the shear stability of the lubricating grease and allow an assessment of its durability.

The RST-T200-P4 is especially designed for long test runs and temperatures up to 200 °C.

Specifications

Rotation speed: 165 1/min
Test temperature: up to 200 °C

Supply voltage: 220 V / 240 V , 50 Hz (others available on request)

Power: 1,8 kW

Dimensions: 700 x 730 x 690 mm (W x H x D)

Weight: approx. 70 kg



Roll Stability Tester

RST-T200-P4

According to ASTM D 1831 / ASTM D 8022



Features

- Designed for long test runs at temperatures up to 200 °C
- High accuracy digital temperature controller
- Easy-to-use digital timer with two presets allows unattended operation
- Low noise operation
- Uniform heat distribution provided by fan and shielded heaters
- Protection against overheating

Accessories

- Test cylinders and rollers, stainless steel, incl. gasket
- Tool for closing and opening the cylinders
- Mounting support for test cylinders

Options

- Adjustable rotation speed of cylinders (100 200 1/min)
- Venting hood



Oxidation Roll Tester

Oxi-T200-P2





Oxidation Roll Tester Oxi-T200-P2

(The actual appearance of the Instrument may differ slightly from the illustration)

Description

The Oxidation Roll Tester OXI-T200-P2 submits grease to stress similar to the use in a ball bearing. The basic test principle is identical to the one used for roll stability tests according to ASTM D 1831. Additionally the OXI-T200-P2 offers the option of piping a **controllable flow of gas** through the test cylinders during rotation. Thus an adjustable testing atmosphere in direct contact with the grease sample is achieved.

Combining mechanical stress and adjustable atmosphere creates realistic conditions for examining various grease properties and thereby a unique possibility for **analyzing the degradation process** of grease.

By taking samples and/or using gas analysis a closer look at the chemical processes (oxidation, decomposition, etc.) taking place during the test is possible.

Results obtained by this method may be used for **efficient optimization** of greases.



Oxidation Roll Tester





The Oxidation Roll Tester is especially designed for long test runs and temperatures up to 200 °C. It is also capable to perform ASTM D 1831 test runs using 2 standard test cylinders of the Albers Engineering RST-T200-P4.

During the test period the exterior of the test apparatus is safe to touch at all times even at the highest temperature setting. This is due to the use of high-quality thermal insulation and cooling design.

The test rig is designed to process two grease samples simultaneously. Due to its rugged design the Oxidation Roll Tester is capable to perform test runs of 300 hours or more. The whole test procedure is controlled by a Programmable Logic Controller (PLC) equipped with a touch sensitive color display. The user interface allows changing test conditions especially rotation speed, temperature and air flow.

Specifications

Rotation Speed: 100-200 1/min
Air flow: 0-200 ml/min
Test temperature: up to 200 °C

Voltage: 220 V / 240 V , 50 Hz

Power: 1,8 kW

Dimensions: 700 x 780 x 690 mm (W x H x D)

Weight: ca. 75 kg

Features

- Controllable air flow during test period
- Possible analysis of grease degradation processes
- Designed for long test runs at temperatures up to 200 °C
- PLC with touch sensitive color display
- Low noise operation
- Uniform heat distribution
- Protection against overheating

Accessories

- 2 special stainless steel test cylinders
- 2 Stainless steel rollers (5 kg +/- 50 g)
- Mounting support for test cylinders



Venting Hood

for Roll Stability Tester RST-T200-P4







Venting hood mounted on RST

Venting hood

Description

The venting hood is an accessory device for the Roll Stability Tester RST-T200-P4. It is used to conduct tests at a stable ambient temperature.

Due to the friction between vessel and roller the air inside the test cabinet is constantly warming up. Therefore a test at room temperature as described in the ASTM method is virtually impossible.

Our venting hood fixes this problem. It increases the test cabinets volume and permanently exchanges the air inside using a small fan.

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WWT-P1-Multinorm

ASTM D 1264 * DIN 51807 - 2 * DIN ISO 11009





Water Washout Tester WWT-P1-Multinorm

The actual appearance of the instrument may differ slightly from the illustration.

Description

The Water Washout Tester "WWT-P1-Multinorm" is employed for evaluating the resistance of a dynamically stressed lubricating grease to washout by water from a bearing in accordance with the standards specified above.

For the test, a ball bearing is packed with lubricant grease, installed in a housing with defined openings, and turned at a specified constant rotational speed. A jet of water at a specified, constant test temperature impinges on the bearing housing at a constant flow rate. After a test duration of 60 +/- 1 min, the difference in the mass of lubricant present in the bearing before and after the test is determined. This difference is the amount of lubricant which has been washed out by the water and is thus a measure of its resistance to water washout. The test is performed twice, and the average value is employed for the evaluation.

The new tester "WWT-P1-Multinorm" is characterised by the following features:

- Advanced control and sensor technology
- Electronic data acquisition
- Easy operation and maintenance
- Available with two separate water tanks for duplicate or independent testing "WWT-P2-Multinorm"

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WWT-P1-Multinorm

ASTM D 1264 * DIN 51807 - 2 * DIN ISO 11009



Technical data

Rotational speed: 600 1/min - variable speed control optional

Test temperature: Up to 80 °C

Supply voltage: 220 V / 240 V , 50 Hz

Power consumption: 1,2 kW

Dimensions: 560 x 600 x 520 mm (W x H x D)

Weight: About 50 kg



Mounting of the test-bearing housing with snap-closure arresting pin

Features

- Tests in conformance with the current standards: ASTM D 1264, DIN 51807-2, DIN ISO 11009
- Central control unit with programmable controller for the automatic test sequence
- Precise sensor technology for continuous measurement of the flow rate and temperature
- Colour display for indicating all test parameters (actual and set values)
- Water tank equipped with controlled heating unit no preheating necessary
- Water tank equipped with drain valve convenient drainage after end of test
- All water-tank components resistant to salt water
- Convenient cleaning and maintenance of the water tank; hinged cover for easy accessibility
- Separate drive units for pump and bearing no belt necessary
- Magnetic clutch between the drive unit and test bearing
- Snap-closure arresting pin for easy installation and removal of the test-bearing housing USA & CANADA Distributor
- Precise manual control valve for the volume flow-rate setting



WWT-P2-Multinorm

ASTM D 1264 * DIN 51807 - 2 * DIN ISO 11009





Water Washout Tester WWT-P2-Multinorm

The actual appearance of the instrument may differ slightly from the illustration.

Description

The Water Washout Tester "WWT-P2-Multinorm" is employed for evaluating the resistance of a dynamically stressed lubricating grease to washout by water from a bearing in accordance with the standards specified above.

For the test, a ball bearing is packed with lubricant grease, installed in a housing with defined openings, and turned at a specified constant rotational speed. A jet of water at a specified, constant test temperature impinges on the bearing housing at a constant flow rate. After a test duration of 60 +/- 1 min, the difference in the mass of lubricant present in the bearing before and after the test is determined. This difference is the amount of lubricant which has been washed out by the water and is thus a measure of its resistance to water washout. The test is performed twice, and the average value is employed for the evaluation.

The new tester "WWT-P2-Multinorm" is characterised by the following features:

- Advanced control and sensor technology
- Electronic data acquisition
- Easy operation and maintenance
- Two separate water tanks for duplicate or independent testing



WWT-P2-Multinorm

ASTM D 1264 * DIN 51807 - 2 * DIN ISO 11009



Technical data

Rotational speed: 600 1/min - variable speed control optional

Test temperature: Up to 80 °C

Supply voltage: 220 V / 240 V , 50 Hz

Power consumption: 2.0 kW

Dimensions: 850 x 600 x 520 mm (W x H x D)

Weight: About 65 kg



Mounting of the test-bearing housing with snap-closure arresting pin



Two separate water tanks, jets and bearing housings for synchronous or independent testing

Features

- Tests in conformance with the current standards: ASTM D 1264, DIN 51807-2, DIN ISO 11009
- Central control unit with programmable controller for the automatic test sequence
- Precise sensor technology for continuous measurement of the flow rate and temperature
- Colour display for indicating all test parameters (actual and set values)
- Two separate water tanks, jets, and bearing housings for synchronous or independent testing
- Water tanks equipped with controlled heating unit no preheating necessary
- Water tanks equipped with drain valves convenient drainage after end of test
- All water-tank components resistant to salt water
- Convenient cleaning and maintenance of the water tanks; hinged cover for easy accessibility
- Separate drive units for pump and bearing no belt necessary
- Magnetic clutch between the drive unit and test bearing
- Snap-closure arresting pin for easy installation and removal of the test-bearing housing USA & CANADA Distributor
- Precise manual control valve for the volume flow-rate setting



Hydraulic Grease Press

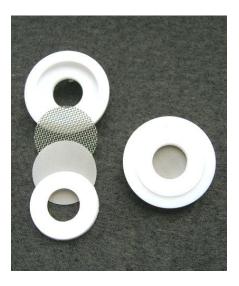
According to DIN 51813





Hydraulic Grease Press HGP

(The actual appearance of the Instrument may differ slightly from the illustration)



Sieves and holder

Description

Using this test apparatus the user is able to determine the amount of solid particles contaminating a grease. The method used conforms to DIN standard 51813 and is applicable to greases not containing any solid lubricants.

A certain amount of grease is pressed through a fine sieve. Particles contaminating the grease are retained in the sieve and are subject to further analysis.

Solid particles in greases cause severe problem during lubrication. They have an influence on the noise behavior of ball bearings and support wear.



Hydraulic Grease Press

According to DIN 51813



Technical data

Operating pressure: Up to 150 bar (2175 psi)

Test load at piston: 60-70 kN

Sample size: 0,5 kg (more on demand)
Supply voltage: 230 V AC (other on request)

Power consumption: 0,4 kW

Size: 500 x 750 x 1250 mm (W x D x H)

Weight: ca. 70 kg

Features

- Easy to operate
- Low noise operation
- Different sample volumes and sieves available

Supplied accessories

- Wrench (size 41)
- 10 x support sieves
- 10 x sieves (25 μm)
- 2 x PTFE-holder

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Hydraulic Grease Press HGP^{Plus}



Filterability of lubricants + and tests according DIN 51813



Hydraulic Grease Press HGPPLUS

(The actual appearance of the Instrument may differ slightly from the illustration)

Description

The Hydraulic Grease Press **HGP**^{Plus} is the extended version of Hydraulic Grease Press **HGP** and offers, in contrast to the base unit, the possibility of testing the filterability of greases and other viscous substances.

This is made possible by the controlled adjustment of the flow rate at the test sieve and the pressure within the grease cartridge. The adjustment range of both parameters is based on the range of parameters present in filters used in central lubrication systems. Results of such tests indicate to the user whether a fat suitable for the respective application.

In contrast to the base unit Hydraulic Grease Press **HGP**^{Plus} has a PLC with graphic display, via which all relevant process values can be set and monitored.

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Hydraulic Grease Press

HGP^{Plus}





Technical data

Operating pressure: Up to 150 bar (2175 psi)

Test load at piston: 60 - 70 kN

Sample size: 0,5 kg (more on demand)
Supply voltage: 230 V AC (other on request)

Power consumption: 0,4 kW

Size: 500 x 750 x 1250 mm (W x D x H)

Weight: ca. 75 kg

Features

- adjustable flow rate at the test sieve (range 0,5 1,5 m/min)
- adjustable maximum filtration pressure (0 60 bar)
- pressure measurement at the test sieve (0 60 bar)
- All process values recorded and display via PLC with graphical display
- Easy to operate
- Low noise operation
- Different sample volumes and sieves available

Supplied accessories

- 10 x support sieves
- 10 x sieves (25 μm)
- 2 x PTFE-holder
- Wrench (size 41)

Options

Higher operating pressure / higher pressure at the test sieve

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Hydraulic Grease Tester

HGT - 400 - 51813





Hydraulic Grease Tester HGT-400-51813

(The actual appearance of the Instrument may differ slightly from the illustration)

Description

The Hydraulic Grease Tester HGT-400-51813 is used to measure the compressibility of grease at pressures up to 400 bar (5800 psi). The required pressure is generated by means of an electrically driven hydraulic pump and then intensified and transferred via a hydraulic cylinder into the test cylinder. The data measured by a highly accurate position measuring system and a precision pressure transducer can be displayed numerically and graphically on a PC with the supplied software. The operation of the testing machine is controlled by a PLC. By optionally available upgrade components, it is also possible to perform flow pressure tests and test lubricants according to DIN 51813 determination of solid impurities).

Technical data

Operating pressure: Up to 250 bar (3625 psi)
Testing pressure: Up to 400 bar (5800 psi)

Sample volume: Up to 500 ml Voltage: 230 V / 50 Hz Weight: ca. 120 kg

Dimensions (ca.) 1200mm x 600mm x 750mm (WxDxH)



Hydraulic Grease Tester

HGT - 400 - 51813



Features

- Measurement of compressibility with detection of the relaxation of the grease by means of high-precision distance measuring system and pressure transducers
- adjustable pressure generation (Pressure and flow rate)
- Controlled by PLC with graphical interface
- electronic data acquisition
- Analysis and display of measurement data using the supplied PC software
- Automated pneumatic filling procedure. The filling is done by default from a 1 kg container. Larger containers up to 5 kg are optional.
- adjustable filling volume
- Possibilities to test long-term effects on compressed greases
- Possibility of expansion for pressure flow studies
- Possibility of expansion for tests according to DIN 51813 (determination of solid impurities).

Components

- Hydraulic unit with controllable drive for generating the operating pressure
- Pressure gauge 0-400 bar
- Hydraulic cylinder 200 mm stroke, max. pressure 300 bar
- Distance measurement, 0-10V, accuracy 1µm
- Pressure transducer 0-1000 bar, < 0,1%, adjustable range, 0-10 V
- · Test cylinder, test piston and test flange
- Control panel with PLC and pressure gauges
- PC software for analysis and display of measurement data
- Pneumatic filling device suitable for 1 kg Containers.

Options

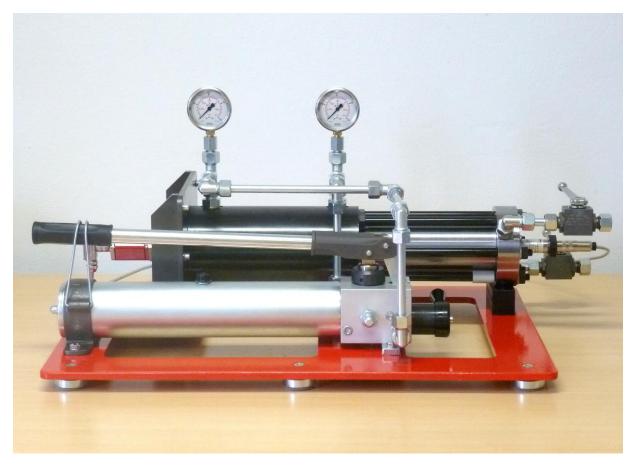
- Expansion for pressure flow studies consisting of:
 - pipe (Diameter and length by arrangement)
 - Pressure transducers (Number by arrangement)
 - Adapter for connection to the grease tester
- expansion for tests according to DIN 51813 consisting of:
 - test and support sieves according DIN 51813
 - sieve support
 - Adapter for connection to the grease tester

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Compressibility Tester

KMV 400 according to Bechem





Compressibility Tester KMV 400 according to Bechem

(The actual appearance of the Instrument may differ slightly from the illustration)

Description

The **Compressibility Tester KMV 400** according to Bechem measures the compressibility of greases at pressures up to 400 bar. The required pressure is generated by a hand pump and then intensified and transferred by a hydraulic cylinder into the test cylinder. The compressibility is measured by a highly accurate position measuring system and a precision pressure transducer. The obtained test data can be displayed numerically and graphically on a PC with the supplied software.



Compressibility Tester

KMV 400 according to Bechem



Technical data

Operating pressure: Up to 300 bar (4350 psi)
Testing pressure: Up to 400 bar (5800 psi)

Sample volume: Up to 235 ml Voltage: 230 V AC Power consumption: 12 W

Dimensions: 850 x 380 x 600 mm (W x H x D)

Weight: ca. 50 kg

Features

Easy to operate

Analysis and display of measurement data using the supplied PC software

Pressure resolution: < 0,01 bar</p>

■ Position resolution: < 2,5 μm

Components

- Hydraulic hand pump 2 stage
- Pressure gauge
- Hydraulic cylinder 150 mm stroke, max. pressure 300 bar
- Valve for switching operating direction
- Distance measurement, 0-10 V, accuracy 1μm
- Pressure transducer 0-1000 bar, < 0,1%, adjustable range, 0-10 V
- Test cylinder, test piston and test flange
- 16 bit data logger with PC software, accuracy 0,05 %

Options

Pneumatic filling device suitable for 1 kg Containers



Low Temperature Wear Tester





Low Temperature Wear Tester

(The actual appearance of the Instrument may differ slightly from the illustration)

Description

The **Low Temperature Wear Tester LTWT** is designed to identify the wear protection capabilities of lubrication greases at extremely low temperatures under mixed friction conditions.

To meet the particular demands of close to reality low temperature operation of lubricants the LTWT, in contrast to other roller bearing test facilities, sets up mixed friction conditions with a high contingent of slide friction selectively. The LTWT is characterised by its high repeatability and a user friendly, comfortable handling. Its test bearing cartridge can be withdrawn as an entire unit and is disassembled within a few minutes to remove the test bearings for further analysis.



Low Temperature Wear Tester



Technical Data

Test temperature: down to -73 °C (depending on external cooling device)

Axial load: 0-60 kN

Rotational speed: 0-50 rpm (optional 0-3000 rpm)

Torque measuring range: 0-2000 Nm

Supply voltage: 1 x 230 V / 50 Hz (others on request)

Power: 1,0 kW

Dimensions: $1700 \times 450 \times 300$ mm (W x H x D) Dimensions control unit: $500 \times 400 \times 250$ mm (W x H x D) Dimensions hydraulic system $500 \times 500 \times 500$ mm (W x H x D)

Weight: ca. 200 kg

Features

- 2 axial cylindrical roller bearings Type 81104 (high slide friction contingent)
- No axial load on the shaft because of a tandem alignment of the test bearings
- High-precision gauging of torque, test load, rotational frequency, bearing temperatures
 (up to 4) and total electrical resistance of each test bearing
- Electronically controlled drive, hydraulic test load generation
- Easy mount/dismount of the test bearings
- Integrated, enclosed cooling jacket
- Electronic data recording of measurements and environmental conditions
- Automated short tests: Stribeck-curve; revolution homogeneity (torque)

Scope of delivery

- Test apparatus with drive unit, hydraulic unit, gauging sensors and test bearing cartridge
- Cooling jacket with joints to connect to a cooling device
- Separate controlling unit incl. PLC with touch panel
- PC-software for data recording and analysis

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Grease Worker according to KLEIN

Klein'sche Scherung







Grease Worker

Gear type pump

Description

This test method is used to determine the shear stability of lubricating greases for ball and plain bearings.

A small horizontal gear type pump is operated in short circuit to work the grease. During the test changes of the test sample can be monitored. Afterwards changes in the consistency of the lubricant can be analyzed.

Grease Worker according to KLEIN

Klein'sche Scherung



Technical data

Test speed: 1550 rpm

Test temperature: Up to 70 °C

Supply voltage: 3 x 400 V, 50 Hz

Power consumption: 400 W

Size: 410 x 500 x 410 mm (W x H x D)

Weight: Approx. 30 kg

Features

- Only 40 g of grease are needed for testing
- Changes of the grease can easily be monitored through transparent top
- Grease temperature is monitored and displayed
- Assessment of grease quality is possible after very short time (approx. 90 min)
- Good reproducibility
- Temperature can be reduced by cooling on request!
- Overheating protection

Supplied Accessories

- Backup top with magnetic safety contact
- Wire hook for disassembly

USA & CANADA Distributor

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Flow Pressure Tester

FPT - P2

DIN 51805-2





Flow Pressure Tester FPT - P2 (Version with 2 test stations)

The appearance of a particular design version may differ somewhat from the illustration for technical reasons!

Description

The **Flow Pressure Tester FPT - P2** is employed for determining the flow pressure of lubricants in conformance with DIN 51805-2. This standard describes the automated version of the test method in **accordance with Kesternich**, DIN 51805.

A nozzle which is filled with the lubricant under investigation is cooled to the desired test temperature and subsequently subjected to pressure. The pressure is then increased stepwise until the lubricant emerges from the nozzle, and the pressurised gas escapes. This point characterises the flow pressure and is employed for determining the lower temperature limit for use of the lubricant.

The **Flow Pressure Tester FPT-P2** offers the possibility of carrying out a double determination in one measuring process.



Flow Pressure Tester

DIN 51805-2



Technical data

Test pressure: 0-2500 hPa, adjustable stepwise in conformance with DIN 51805

Test temperature: +20 °C to -50 °C without external cooling.

With external cooling down to -60 °C

Voltage: 230 V, 50 Hz (AC only)

Power consumption: 400 W

Dimensions: about 690 x 580 x 620 mm (L x W x H)

Weight: about 35 kg

Performance features

- Testing in conformance with the currently applicable standard, DIN 51805-2 (method in accordance with Kesternich)
- Calibrable test parameters
- Automation of the entire test sequence by means of a programmable controller
- Colour display for convenient control of the test instrument, as well as indication of the measured values and test parameters
- Electronic recording of the measured values and test parameters
- Evaluation and plotting of the test results with the use of the PC software supplied with the instrument
- Stepwise increase in pressure, adjustable in steps of 2, 4, and 25 hPa, in conformance with DIN 51805, beginning with 0 hPa
- Very economical due to simultaneous double determination
- User-friendly by simply inserting the test nozzles
- Easy to clean thanks to the integrated fat drawer and easily removable test head cover

