



MINITEST FFK

Flow-properties of Lubricating Grease

MINITEST FFK is a fully automated tester for the measurement of lubricating greases according to the DIN 51805 Kesternich Method.

Applications

Flow-properties of lubricating greases at low temperature are a measure of great significance for central lubrication systems of vehicles and machineries. This property can best be measured according to the method of Kesternich (DIN 51805). MINITEST FFK is an instrument for the determination of the flow pressure of lubricating grease at temperatures down to -50°C.

Advanced Technology

The original manual and time-consuming method is fully automated in MINITEST FFK. The measuring

range is extended far below the original test method. Temperature control is performed with Peltier elements which eliminate the use of a large and expensive cryostat. No further accessories are necessary!

Sample Handling

A layer of the grease to be tested is put on a glass plate without air bubbles. The measuring nozzle is simply pressed a few times onto the layer of lubrication grease until it is filled with grease. The nozzle is then inserted into the thermostatically controlled metal block of the tester and the chamber is airsealed.

Key Features

- Automatic measurement
- Reproducible determination of the flow-pressure
- No accessories needed
- Precise temperature control
- Thermoelectric cooling to -50°C
- RS232 serial interface for direct printer/PC-connection
- Interface for direct connection of an external keyboard
- Simple handling and programming
- Multilingual display
- Built-in safety feature programs
- Low weight, portable
- Optional power supply from vehicle battery



MEASURING PROCEDURE

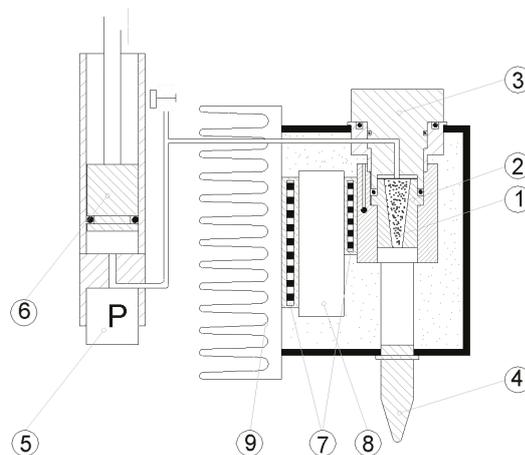
The test temperature, the equilibrium time, the expected flow pressure and the pressure increase for each step are programmed. For high flow pressures, a starting pressure above barometric pressure can be set to accelerate the measuring time. The test is performed automatically. When the test temperature is reached, the equilibrium

time of up to two hours is started. After the equilibrium time the pressure above the sample nozzle is increased in steps until a sudden pressure decrease is observed, indicating that the grease is pressed through the nozzle. The test is stopped and the last pressure value is displayed as the flow pressure according to Kesternich.

DESIGN OF MINITEST FFK

The instrument has a standardized measuring nozzle (1) and a thermostatic block (2). The measuring system is firmly closed with a seal stopper (3). At the bottom there is an Eppendorf flask receiving the grease after the test and (4) to avoid condensation of water inside. The test pressure is generated by a motor-

driven piston (6) and measured with a precision pressure transducer (5). The required low temperature is regulated by a cascaded block (8) of Peltier elements (7). Down to temperatures of -30°C the heat is dissipated over a heat exchanger (9). For lower temperatures the heat exchanger can be cooled with tap water.



TECHNICAL DATA

Test temperature	-50 to + 30°C (-58 to 86°F)
Temperature resolution	+/- 0.1°C (+/- 0.18°F)
Pressure range	0 to 300 kPa (0 to 43.5 psi)
Pressure resolution	+/- 0.1kPa (0.0145 psi)
Communication languages	German, English
Power supply	100/120/230/240V 50/60Hz 200W optional: 12V/10A DC
Dimensions	W 196 x H 315 x D 175 mm
Weight	10 kg (22 lbs)

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