

# Flow-properties of lubrication grease according to Kesternich (DIN 51805)

## MINITEST FFK

Automatic  
Stand-alone Instrument

Temperature adjustable  
from - 60 to + 30 °C

Thermoelectric Cooling  
(Peltier Elements)  
No Cryostat needed!

Wide Pressure Range:  
0 - 200 kPa

Small, Lightweight  
and Portable



QUALITY  
• ISO 9001 •  
CERTIFIED

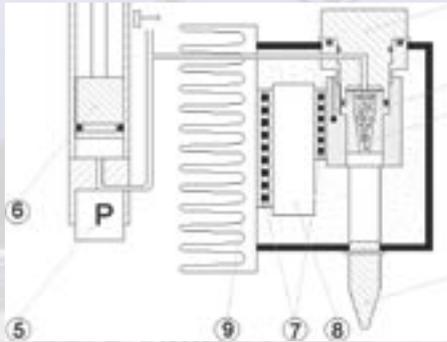
## Applications

Flow-properties of lubrication grease at low temperatures 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 5108). MINITEST FFK is an instrument for the determination of the flow pressure of lubricating grease at temperatures down to  $-60^{\circ}\text{C}$ .

## Advanced Technology

The original manual and time-consuming method is now automated in MINITEST FFK. The measuring range is extended far below the original test method. Temperature control is performed with Peltier elements and eliminates the use of a large and expensive cryostat. No further accessories are necessary!

## 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). The system is closed at the bottom with an Eppendorf flask (4) to protect the test nozzle against condensation of water. This flask is also collecting the lubrication grease after the test. 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 cascade block (8) with Peltier elements (7). Down to temperatures of  $-30^{\circ}\text{C}$  the heat is dissipated over a heat exchanger (9). For lower temperatures the heat exchanger has to be cooled with tap water.

## Sample Handling

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

## 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 can be set to limit 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, 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.

## Technical Data

Test temperature:	- 60 to + 30 °C (-76 to 86 °F)
Temperature resolution:	+/- 0.1°C (32.18 °F)
Pressure range:	0 to 200 kPa (0 to 29 psi)
Pressure resolution:	+/- 0.1 kPa (0.0145 psi)
Communication languages:	German, English
Power supply:	100/120/230/240 V, 50/60 Hz, 120 W 12V/ 10 A DC
W x H x D:	196 x 315 x 175 mm
Weight:	10 kg (22 lbs)

Your distributor:

## GRABNER INSTRUMENTS

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