Quick Start MINITEST FFK

This short manual is no replacement of the actual MINITEST FFK manual!
Please, read the manual first to ensure complete functionality of the instrument.

GETTING STARTED

The keys on the front panel have the following functions:

STOP / ESCAPE .....Stop measurement at any time / Escape from a menu
RUN .....Start measurement
TASK / ENTER .....Execute a selected operation / Enter a value or name
SHIFT .....Execute special functions
+ and -.....Modify characters
▲□□▼□and ◀□□▶ .....Change the cursor position

Place the MINITEST FFK on a bench top. Check correct voltage setting
Connect the cooling water circuit (2 connecters on the back panel of the instrument) to a tap water supply in case you want to measure below -30°C.
Switch on the instrument with the power switch above the power connector.
The display of the instrument is now illuminated and shows the main menu:

```
*****************************************
MINITEST FFK  VERS. 1.00  06/01/2003 09:37
*Measure        *Printer       *Setup
*****************************************
```

THE SETUP MENU

1. Shift the cursor to *Setup in the main menu and press TASK.
2. Select the communication language; shift the cursor to ↕US and make a selection with ⇑ and ⇓.
3. Next, shift the cursor to *timing and press TASK.
4. Then move the cursor to tTemp= and enter the value for the equilibrium time (2 hours according to DIN 51805).
5. Shift the cursor to twait= and enter the value for the waiting time after every pressure increase (standardized to 30 s).
6. Shift the cursor to T=↕[C] and select the unit for temperature with the ⇑ or ⇓ keys.
7. Then shift the cursor to P=↕[kPa] and select the unit for pressure with the ⇑ or ⇓ keys.
8. Select the test method with the ⇑ or ⇓ keys.
   ↕Step: standardized method (DIN 51805)
   ↕Ramp: continuous pressure increase according to programmed rate.

Note: 35%; calculation of the cascade temperature to be regulated. DO NOT CHANGE THIS VALUE!!

PERFORMING MEASUREMENTS ACCORDING TO DIN 51805

1. Shift the cursor to *Measure in the main menu and press TASK.
2. If the Step method is selected in the timing menu, the display will show:

```
***************************************
← *V   *Test#      Tm =  -10.0 [C]
     ∆p = 1.0    p0 = 0.0 [kPa]
***************************************
```

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To change the sample identification (*Test#), please refer to the Operation manual.

1. Enter the value for the test temperature Tm= xx.x [C]
2. Then enter the value for the gradual pressure increase Δp (defined by DIN 51805) according to the table below:

Expected flow pressure (hPa)	Pressure increase (hPa) within 30 s
0—60	2
60—210	4
› 210	25

3. Finally enter the value for the initial pressure p0 to accelerate the measurement: the default value (applied automatically) is 20 hPa, even if you have entered a value lower than 20 hPa.

Preparation of the lubricating grease sample:

1. Apply a layer of the lubricating grease, free of air bubbles, on a glass plate.
2. Press the measuring nozzle with the big aperture on to the grease layer; the measuring nozzle is then removed by shifting it to the side of the glass plate.
3. Repeat this procedure a maximum of 6 times and until an excess amount of grease emerges out of the small aperture of the measuring nozzle, free of any air bubbles.
4. Cut off this excess amount with a spatula.
5. Insert the nozzle, filled with the grease, into the black thermostatic block of the MINITEST FFK.
6. Shift the cursor to *V and press TASK to open the valve to atmospheric pressure in the measuring system (You will hear a "click").
7. Close the measuring chamber, place the black knob into the opening of the thermostatic block.
8. Place the plastic Eppendorf cuvette into the outlet opening underneath the thermostatic block.
9. Press RUN to start the measurement. The temperature equilibrium starts after the thermostatic block has reached the measuring temperature:

```
**************************************
RUN   Test3          Tm =  -10.0 [C]
 t-equilibrium         p = 0.0 [kPa)
**************************************
```

10. The test continues when the equilibrium time has expired: MINITEST FFK increases the pressure according to the programmed step or ramp.
11. The last measured pressure, at the moment when the grease is pushed out of the test nozzle, is reported as the result:

```
**************************************
END   Test3          Tm =  -10.0 [C]
flow pressure          p = 90.0 [kPa)
**************************************
```

1. Note the result and press STOP to return to the main menu.

PERFORMING MEASUREMENTS ACCORDING TO THE RAMP MODE

Enter the value for the ramp rate **R= x.x kPa/min** and continue as described above.

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