

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

## GETTING STARTED

1. Make sure the line voltage corresponds to the voltage setting above the power inlet connector on the rear of the instrument
2. Place **MINIFLASH** on a bench top and connect the power supply cable to the power inlet on the rear side of the instrument and the mains voltage. Please pay attention to let the air flow freely from the air inlet on the rear side to the air outlet on the right-hand side of the tester.
3. 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**:

```
*****
Grabner Instruments      3.12.1999 11:52a

      Miniflash FLA

lid      open      single  printer  setup
*****
```

### Keypad functions:

**STOP** .....Stop measurement at any time  
**RUN** .....Start measurement  
**TASK** .....Execute a selected operation, indicated by\*  
**SHIFT** .....Executing special functions  
 $\Delta$  and  $\nabla$  .....Modify numbers  
 $\blacktriangle$   $\blacktriangledown$   $\blacktriangleright$   $\blacktriangleleft$  .....Change the cursor position

## MEASURING ACCORDING TO ASTM D6450

1. Use a **4ml test cup** with **1ml sample** for this test procedure.
2. In the start-up menu select the *measuring routine* **lid** (test cups **WITH** lid), **open** (test cups **WITHOUT** lid) or **single** (1 test cup **WITHOUT** lid) and press **TASK** is pressed. The display changes to the *programming mode*:

```
*****
1 *DIESEL  120-300F  10.0/min  √2.0 <0.6s  - %
2 *DIESEL  120-300F  10.0/min  √2.0 <0.6s  - %  (display example measuring routine lid & open)
3 *DIESEL  120-300F  10.0/min  √2.0 <0.6s  - %
4 *DIESEL  120-300F  10.0/min  √2.0 <0.6s  - %
5 *DIESEL  120-300F  10.0/min  √2.0 <0.6s  - %
6 *DIESEL  120-300F  10.0/min  √2.0 <0.6s  - %
7 *DIESEL  120-300F  10.0/min  √2.0 <0.6s  - %
8 *DIESEL  120-300F  10.0/min  √2.0 <0.6s  - %
*****
```

3. Move the cursor to \* before the sample ID and press **SHIFT** and **TASK**. You can switch the measuring program between the **free programmable menu for D6450** and the **fixed program for the new CCCFP**.
4. Shift the cursor to the 3<sup>rd</sup> column and set the value for the *Initial Temperature* (Ti) at least 8°C below the expected flash point temperature.
5. Move the cursor to the 4<sup>th</sup> column and set the *Final Temperature* (Tf) safely above the expected flash point temperature.

6. Set the **Heating Rate** in the 5<sup>th</sup> column to 5.5°C/min (10°F/min).
7. Set the **Step (ignition frequency)** in 6<sup>th</sup> column to 1°C (2°F).
8. Set the **Air injection** in the 7<sup>th</sup> column to 0.6s.
9. To activate the **sample stirrer** during a test press TASK on – in the 8<sup>th</sup> column:– changes to **S**. Don't forget to add a stirring magnet to the sample cup. To switch off the stirrer; press TASK again on **S**.
10. Fill the test cups with cooled sample (below the Initial Temperature) and put them on the carousel.  
**ATTENTION:**  
In case you selected the **lid** mode; don't forget to put the lids on the sample cups.  
In the test mode **open, single; DO NOT** use the lids!
11. Place the sample carousel onto the turn table; close the top of the tester and press RUN to start the test.
12. When MINIFLASH reaches the flash point temperature of the sample, the result will be displayed:  
**Tflash = xxx C (or F)**, or in case no flash point is detected: **No flash**
13. Pressing STOP will shut off the audio alarm. The oven is automatically cooled down to the starting temperature.
14. Press SHIFT and STOP simultaneously to switch back to the *programming mode*.
15. Tilt the tester when the GREEN LED is ON and take out the sample cup tray, drain and clean the cups, fill the samples and place the carousel. Press RUN to start the next measurement.  
You can stop each procedure any time by pressing the STOP key.

## MEASURING ACCORDING TO THE NEW CCCFP METHOD

1. Use a **7ml test cup** with **2ml sample** for this test procedure.
2. Select the *measuring routine lid*, **open** or **single** as described above for the ASTM D6450 method.
3. Switch the MINIFLASH into the **CCCFP measuring program** with **SHIFT** and **TASK** on \*
4. Select the **Initial Temperature** (Ti) and **Final Temperature** (Tf) as described above.
5. All other parameters for the **new CCCFP method** cannot be changed and are fixed programmed (see operation manual § 6.2.2. page 22).
6. Continue as described above in § 9 to 15 of the D6450 method.

## SAMPLE IDENTIFICATION

1. In the **Main menu**, shift the cursor to the required *measuring routine*; **lid, open** or **single** and press TASK.
2. Shift the cursor to a letter of the sample ID and change the letters with  $\Delta$  or  $\nabla$ .  
To switch faster through the alphabet and numbers you can press SHIFT together with the  $\Delta$  or  $\nabla$  key to overjump steps of 10 characters.

## SETUP MENU

1. In the Main menu; shift the cursor to **\*setup** and press TASK.
2. The temperature unit with or without barometric pressure correction can be chosen by shifting the cursor to  $\uparrow$ [C] and select with  $\Delta$  and  $\nabla$ .