

## Calibration

Elmatear<sup>2</sup> Intelligent Digital Tear Tester has a unique calibration feature which will automatically zero the instrument and detect which Pendulum Weight is attached. It will also perform a Free-Swing Test which checks the pendulum mechanism for any mechanical friction. It is recommended to perform a Calibration on a weekly basis or when changing the Pendulum Weight, whichever is sooner.

Raise the Pendulum



Delete any previous test results then press the Cal key.

Raise the Pendulum-Arm to the start height and fit the required Pendulum Weight.

**X = no specimen in jaws !**

**SCREEN PROMPT:**

*If the Pendulum-Arm is not in the correct start position you will be prompted to "Please raise the pendulum".*

Close the Clamps



Remove any test specimen from the clamps and rotate the handles into a vertical position to close them. Remove any Check Weight which may be attached to the pendulum.

**X = no specimen in jaws !**

**SCREEN PROMPT:**

*You will be prompted to "Please remove any test specimen and close the clamps before releasing the pendulum. DO NOT FIT A CHECK WEIGHT".*

Release the Pendulum



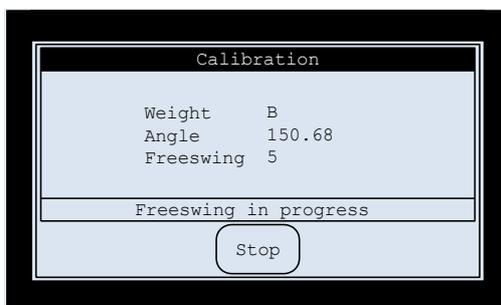
Press both of the Pendulum Switches at the same time to release the pendulum.

**X = no specimen in jaws !**

**SCREEN PROMPT:**

*After releasing the Pendulum-Arm the screen will display the Pendulum Weight (A-E), calibration angle and continue to do a Free-Swing Test.*

Free-swing



The Free-Swing Test monitors the pendulum mechanism for any mechanical friction and automatically stops after 36 cycles.

It can be stopped at any point by pressing the Stop key.

Press OK to complete the calibration.

**Perform a Test**

This example guides you through performing a tear test and sending the results to a Personal Computer via the Data Logger Software. It assumes you want the results in Newtons, have fitted the 16N Pendulum Weight 'B', are testing 1 specimen ply at a time and require the results to fall within 20% to 80% of the range.

Raise the Pendulum



Pull the Pendulum Lever down to lift the Pendulum-Arm to the start position.

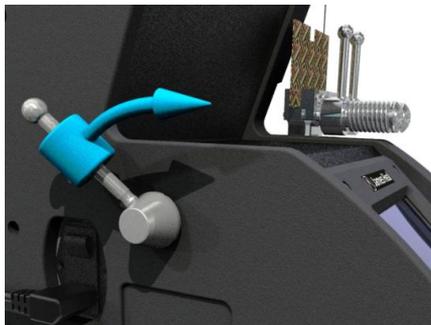
*SCREEN PROMPT:*  
If the pendulum is not in the correct start position you will be prompted to "Please raise the pendulum".

Clamp the Specimen



Place a test specimen centrally in the Clamps and rotate the handles into a vertical position to close them.

Notch the Specimen



Move the Knife Lever towards you to cut/notch the specimen and initialise a tear.

*SCREEN PROMPT:*  
If the specimen has not been notched you will be prompted to "Please clamp and notch the specimen". Once the specimen is notched the screen will display "Ready to release the pendulum".

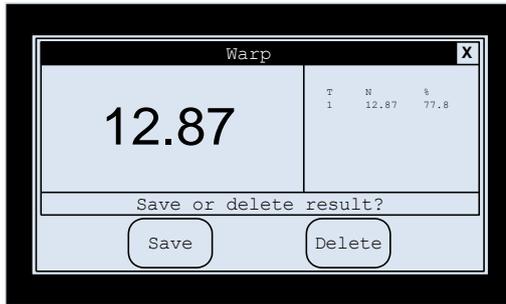
Release the Pendulum



Press both of the Pendulum Switches at the same time to release the Pendulum-Arm. Keep clear of the swinging mechanism.

After tearing the specimen, the Pendulum-Arm will come to a complete stop and the tear force will appear on the screen.

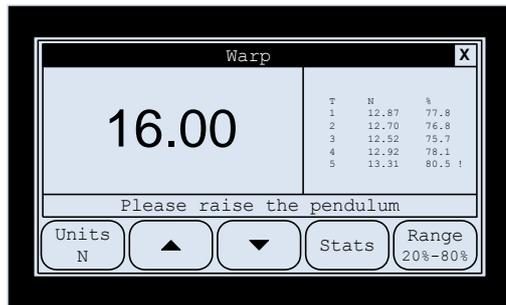
Save the Result



If you are satisfied with the result press **Save** to store it.

When using the **Range Warning** feature and the tear force falls outside the required range on specimen No.1, the "User prompt area" will guide you what to do next. For example, use a heavier or lighter pendulum or increase or reduce the number of ply to get the result to fall within the required range.

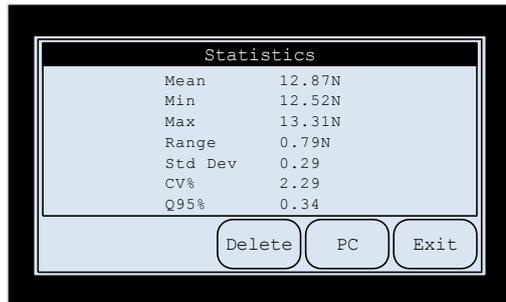
Add more tests



Repeat the previous steps until you have performed the required number of tests.

The results window shows last 5 test results. You can use the **up/down** arrow keys to scroll through other results. Press the **Units** key to change the tear force units.

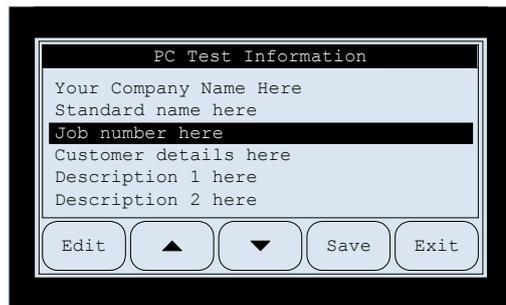
Statistical Analysis



Press the **Stats** key to display a statistical analysis then press the **PC** key.

Press the **Delete** key when you wish to start a new series of tests. Press **Exit** if you wish to add more tests.

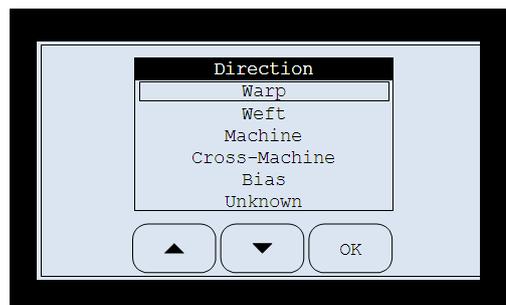
PC Test Information



Press **Edit** to fill in your required test information before pressing **Save** which sends the test report to the PC connected to the instrument's USB port.

*Note:*  
The PC must be connected and running the Elmatear<sup>2</sup> Data Logger Software.

Change Test Direction

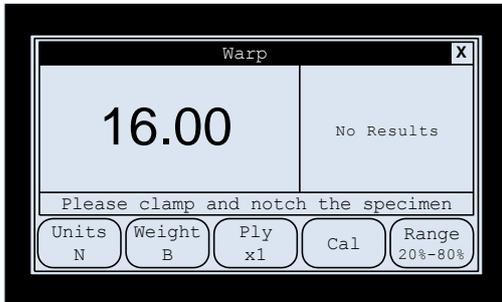


Touch the Direction Bar and a list of pre-set directions will be presented.

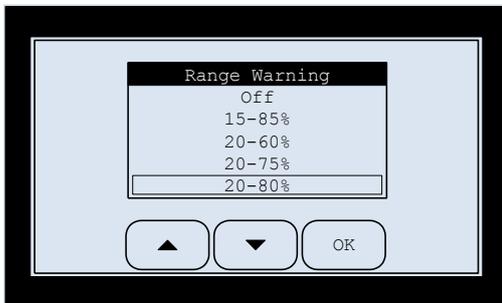
Use the up or down arrows to move to the new choice and then press **OK**.

## Range Warning

Elmatear<sup>2</sup> Intelligent Digital Tear Tester has a range warning feature which alerts you to results that fall outside of the required force range, and will guide you what to do next to get the results to fall within the required range. Set this feature to Off if not required.

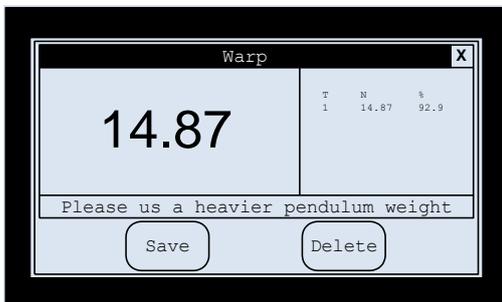


Press **Range** to display the Range Warning screen.



Use the **up/down** arrow keys to select the required range or select **Off** if this feature is not required.

Press **OK** when you have finished.



If the tear force falls outside the required range you will be guided what to do, in an attempt to get the result to fall within the required range:

- Use a heavier pendulum weight
- Use a lighter pendulum weight
- Increase the number of ply
- Decrease the number of ply

## Check Weight Ranges

Pendulum	Minimum Reading (Newtons)	Maximum Reading (Newtons)
A	3.956	4.135
B	7.91	8.27
C	15.82	16.54
D	31.65	33.08
E	63.30	66.16