sisco

Mini Fruit Hardness Meter
Operating Instruction

Thanks for purchasing the mini-digital fruit hardness meter:

The instrument has the advantages of high accuracy, easy operation and easy carrying.It can be used together with the special test bench to improve the measurement accuracy.(Special note: the scientific use of the measurement range of 10%~100% of the full range, the measurement department recommends not to use less than 1% of the full range part.）

1 Functional characteristics

1 High precision, high resolution.

2 The three measurement modes can switch freely (real-time, peak, first peak value).

3 Standard fruit hardness units in Kgf/cm2 are shown.

4 The upper and lower limits can be set for statistical analysis, and the buzzer can be set beyond the limit for the alarm.

5 Automatic shutdown function: can set automatic shutdown time, automatic shutdown without operation to achieve power saving effect.

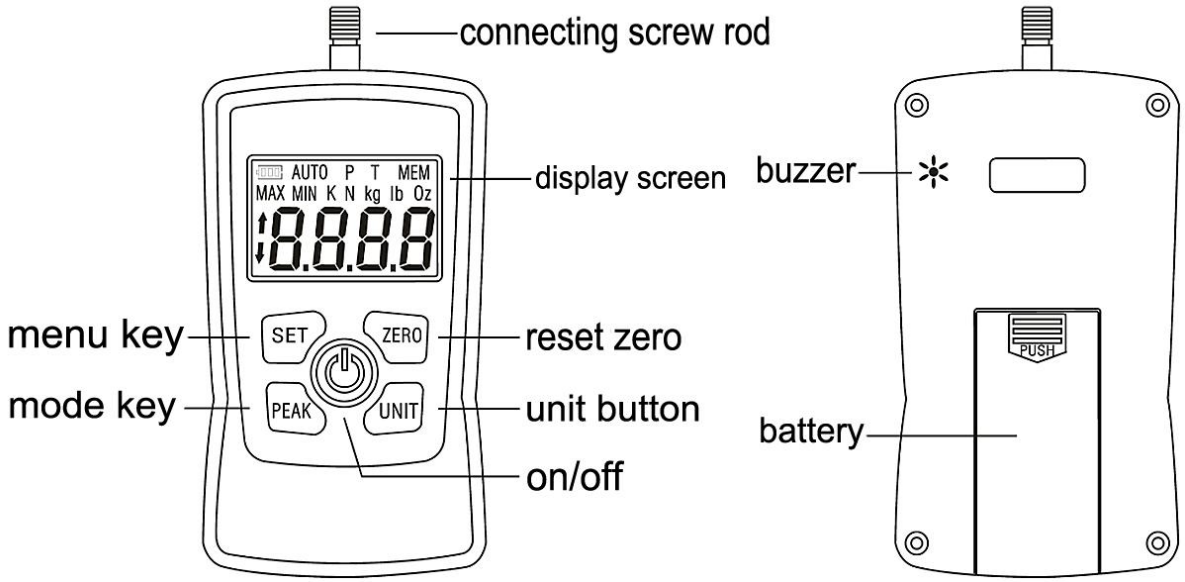
6 Power supply: 21.5V dry batteries.

7 Automatic backlight and buzzer alarm function.

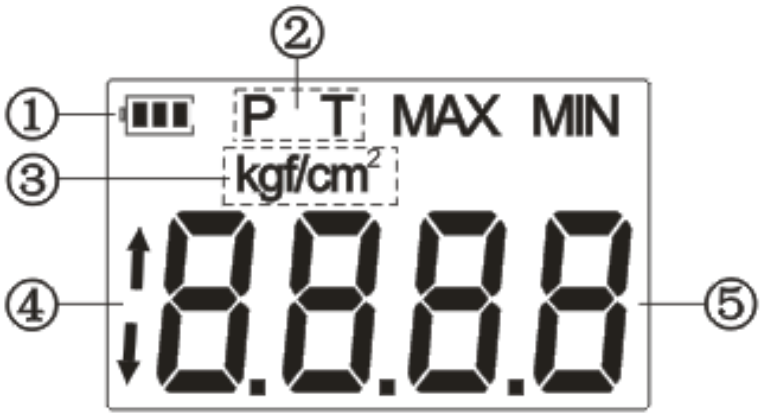
2 Technical parameter

model number	GY-M15	GY-M30
range	0.2～15 Kgf/cm^2 (×10^5 Pa)	0.4～30Kgf/cm^2 (×10^5 Pa)
Pressure head diameter	Φ11.1mm	Φ7.9mm
Load division value	0.01Kgf/cm^2	
accuracy	±2％(10% to 100% of the full range)	
Insertion depth of indenter	10mm	
power supply	2 Dry Battery # 7 (1.5V)	
working temperature	5℃～35℃	
Transportation temperature	-10℃～60℃	
relative humidity	15％～80％RH	
work environment	No focal source and corrosive media around	
net weight	About 0.4Kg	
contour	124×60×31(mm)	

3 Appearance structure



4 Video display



① battery capacity

②The screen displays both "P" and "T" as the first peak mode, representing the first wave peak measured during a time period of recording,Single "P" is the peak mode, indicating the maximum hardness value measured during a time period; press "PEAK" to switch peak and first peak mode freely.

③Unit display

④Force representation: hardness meter is motionless, the upper arrow shows pull, the lower arrow shows thrust

⑤Measuring force values are shown

5 Panel description

1 ⏻ ("Power on / off" key): When this key is pressed, the power supply is turned on and the measurement interface appears. When shut down, then press this key to shut down.

2 SET (Mode Switch key): This key gives access to the settings item interface.

3 ZERO ("Put the Zero" key): In the measurement interface, the test value on the screen is reset. When setting the interface, return the superior command.

4 PEAK ("Peak" key): Press the "PEAK" key at the measurement interface to freely select the required measurement mode.

①Real-time mode:

Enter the measurement interface, the system default real-time measurement mode, no mode words appear on the screen. In this mode, the display measurement varies with the load weight.

②Peak mode:

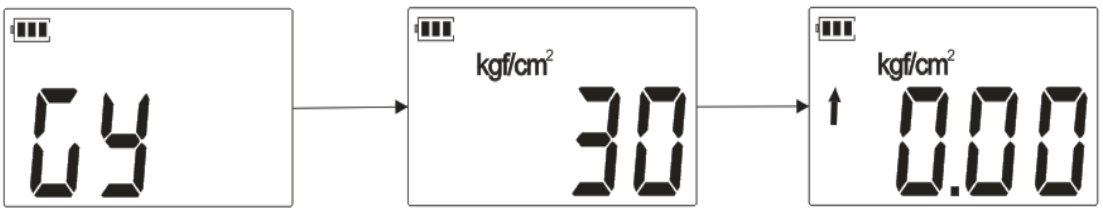
Press the "PEAK" key, and the word "P" displayed on the screen is the peak mode, where the hardness value is the maximum value.(When measured again, the displayed hardness value does not change if the hardness value is below the previous maximum, and will update the displayed hardness value if the hardness value is higher than the previous maximum.）

③First peak value pattern:

The screen displays both "P" and "T" as the first peak mode, representing the first wave peak measured during a time period of recording,Press the "ZERO" key to clear the zero before testing again. When setting the interface, do the flip down option. When setting the options, increase the value.

5 UNIT (Unit Switch): When setting the interface, turn the upward option. When in setting options, make the cursor back shift.

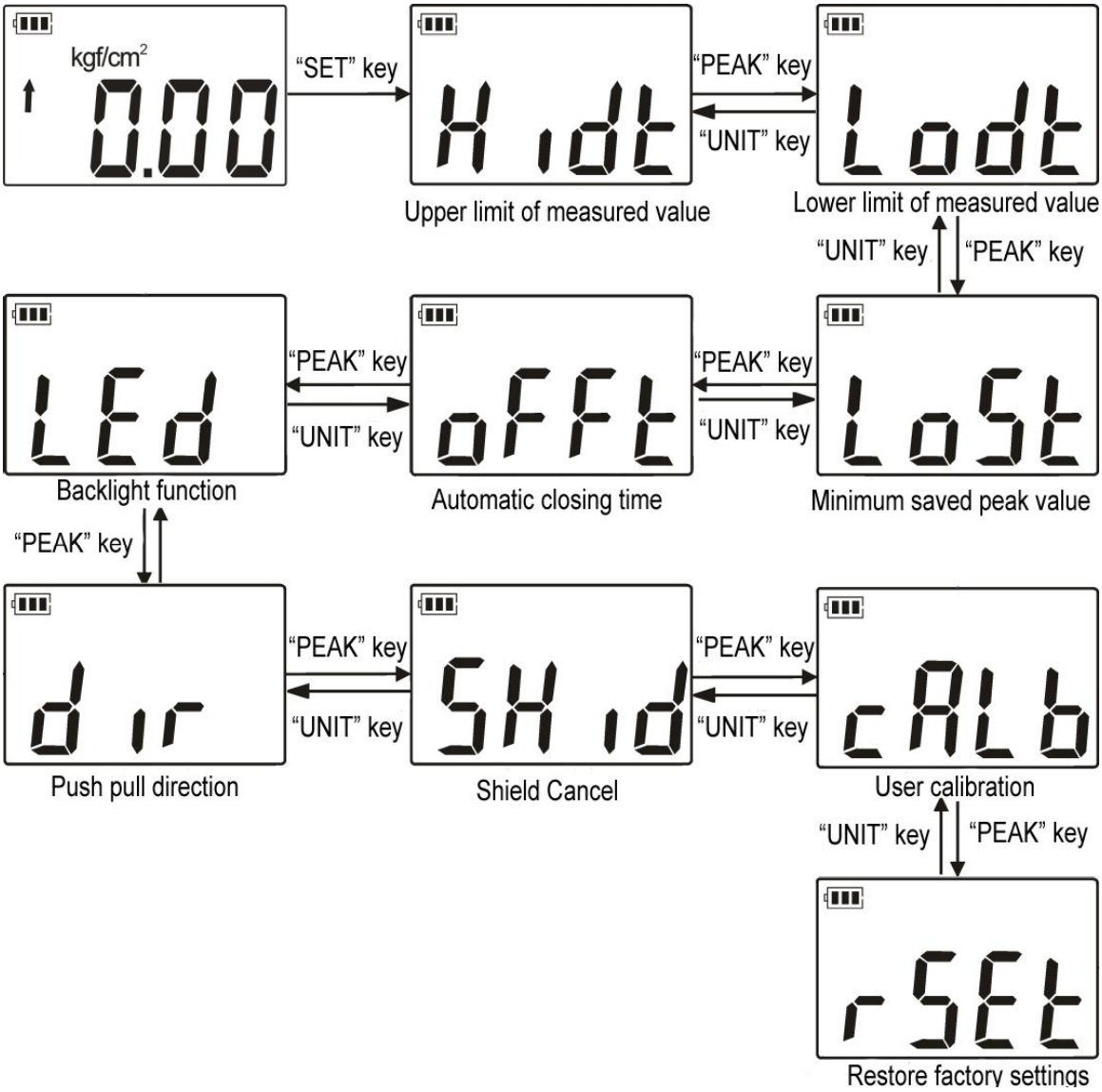
6 Power on display



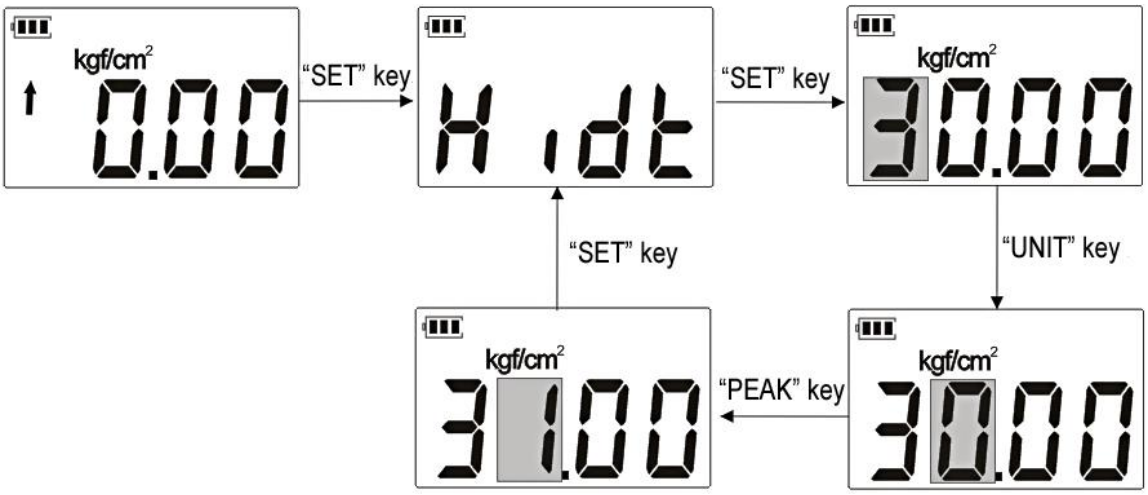
7 Function introduction

Settings:

After entering the measurement interface, press "SET" key, that is, enter the setting interface, and then press "PEAK" key to turn down and select the setting item, or press "UNIT" key to select the setting item, confirm to press "SET" key, exit and press "ZERO" key. As shown in the figure below:



H idt(HIDT) Hardness value upper limit setting: set the hardness value upper limit, the upper limit default is full range, the hardness value is above the upper limit for beyond the range, the screen shows "MAX" and the buzzer alarm ringing, the user can freely set the upper limit value. As shown in the figure below:



（Lodt）Lower limit setting of hardness value: set the lower limit of hardness value, the lower value default is 0, the hardness value is lower than the lower limit for beyond the range, the screen shows "MIN" and the buzzer alarm ringing. The user can freely set the lower limit, select the item menu to set the value, the same step as the upper limit.

(LoST) Peak minimum saved value: the minimum peak saved value. In the peak mode, when the current value is less than this value, the peak is not saved and displayed. Users can freely set the minimum save value, select the menu to set the value, the same steps as above.

(oFFt) Automatic shutdown time setting: the user can freely set the shutdown time of 0-15 minutes, select the menu and press the "SET" key to enter the shutdown time setting. Press "PEAK" or "UNIT" key to set the shutdown time value, press "SET" key to save the setting, the system default automatic shutdown time is 10 minutes.

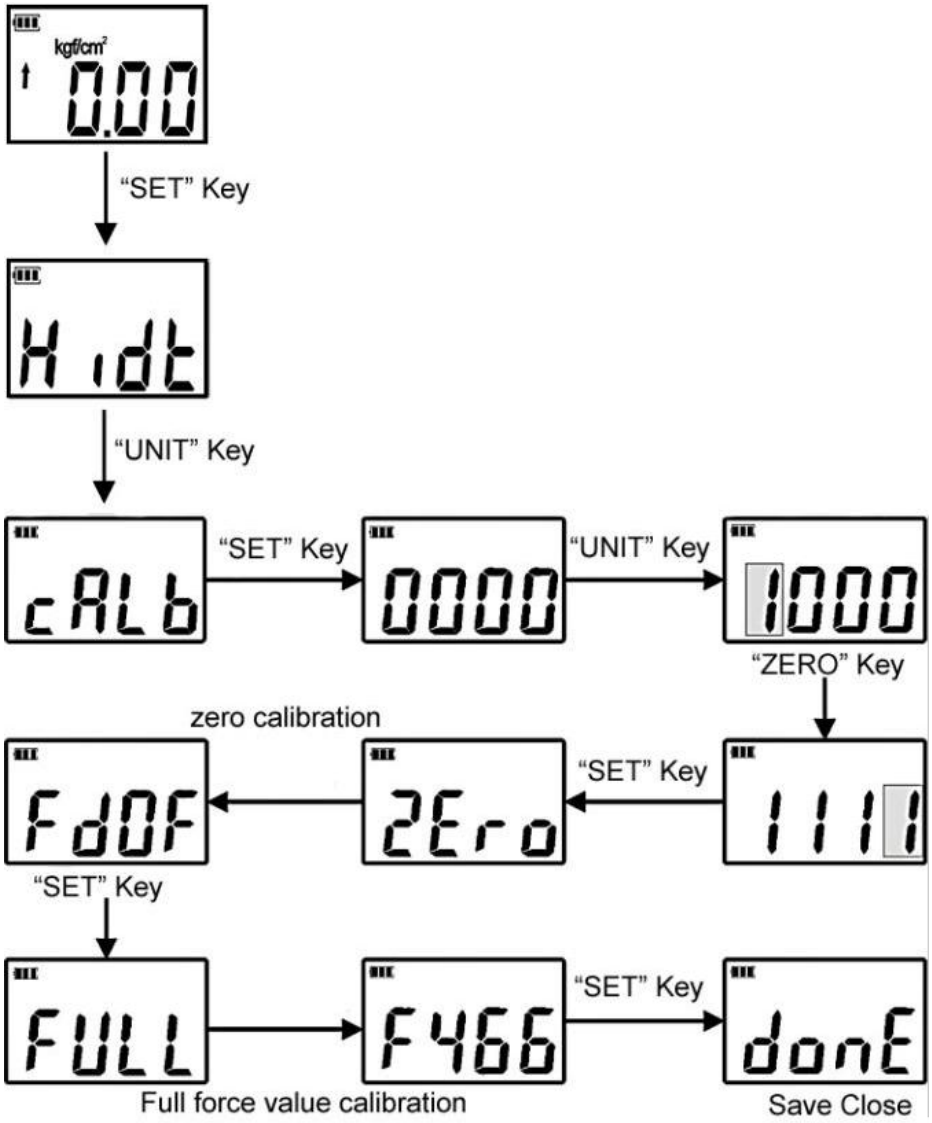
(LED) Backlighting function setting: this function has three setting modes,

AUTO is automatic mode, the instrument backlight is automatically off without operation; OPEN is normally open mode, the instrument is always backlight on; CLOS is off mode, the instrument is always on Backlit turn-off state. Select the menu, press "SET" key to enter the mode setting, press "UNIT" key to switch the mode freely, and then press "SET" key to save the setting.

(Dir) Push and pull direction setting: used to switch the display direction of the instrument.

(SHID)Cancel the product default display value: the product force value can be displayed from 0.1

(CALB) User calibration: This setting item is the instrument calibration and calibration function, select the item menu, and press the "SET" key to enter the password "1111" to enter the calibration and calibration interface. First display "ZERO" starts zero range calibration, calibration, press "SET" key, display "FULL", start full range calibration, calibration, press "SET" key to save the calibration, the instrument automatically shut down. As shown in the figure below:



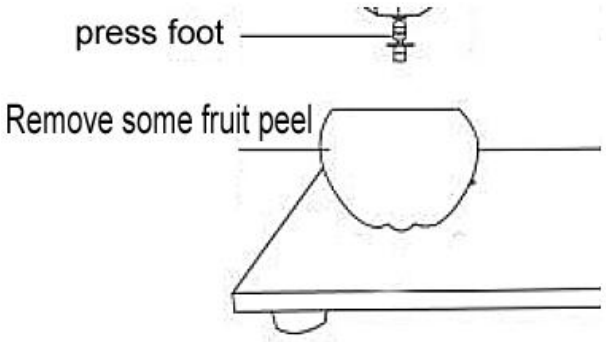
(RSET) Restore factory setting function: this setting is convenient for user setting, and can restore the factory setting state to be restored with one key. Enter the system menu, select the setting and press the "SET" key to restore the factory setting, and the instrument will automatically shut down. If you continue to use the instrument to press the power button, then the instrument has been restored to the factory default setting state.

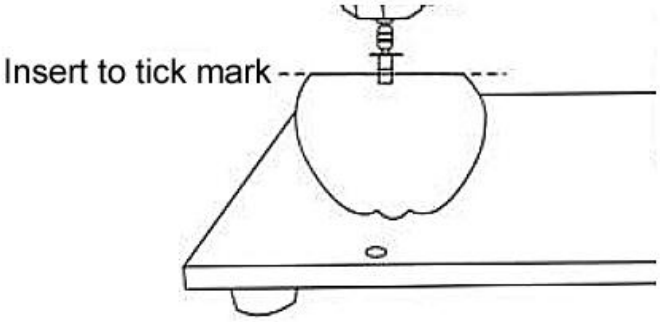
8 Test operation steps

1 Select the standard presser foot and install it at the corresponding position of the digital display meter. (See Figure 1) 2 Before measurement: firstly, peel off about 1cm2 of the fruit to be measured. When measuring, make the center of the fruit to be measured and the presser foot of the instrument in a straight line, so that the measured value can be more accurate. (See Figure 1)

3 Start measurement: press "ON / OFF" key to turn on the power. After the LCD display is stable, press "SET" key to enter the peak measurement mode (if the display is not zero, press "ZERO" key to clear zero). The counterhand handle 4 presses the pressing foot into the flesh of the tested fruit (evenly pressed into) until the engraving point. After all the measurement is completed, the value displayed on the screen is the hardness value of the fruit.(Figure 2)

4 After the test, remove the load, turn off the power, remove the clamp, clean the items and put them back into the tool box for next use.





9 Safety precautions

1 Note: If the operation error, it may damage the instrument or cause serious accident. This manual indicates the important matters to prevent accidents and the use method of the instrument. Please read the manual carefully before use, and keep it properly after reading it for reading again.

2 Warning matters:

A During destructive testing, wear protective masks and gloves to prevent harm the tester during the test

B Do not use damaged or badly bent and deformed test heads

C Do not exceed the maximum range to use the instrument. Otherwise, sensor damage or even accidents.

D When the test value exceeds 100% of the full scale, the buzzer will continue to sound, and the load should be reduced quickly. When the test value exceeds 120% of the full scale, the instrument may be damaged.

3 Solution to the crash state: When the instrument accidentally crashes, open the battery cover to take out the battery and reinstall it and restart the instrument.

4 Security matters:

A Please use the supporting battery with the correct parameters, otherwise it will cause a circuit failure, and even cause a fire.

B Do not touch the power battery with your wet hand, otherwise it may cause chronic battery damage.

C Please clean the machine with a soft cloth. Dip the cloth in water with detergent and wring it dry before removing dust and dirt. Note: Do not use volatile chemicals to clean the machine (such as volatiles, thinner, alcohol, etc).

D Do not operate the machine in

①Moisture environment ②A dusty environment ③Where the oils or chemicals are used ④There is a focal source around it

E Please use and store within the specified temperature and humidity range, otherwise the instrument may fail.

F Do not remove, repair or modify the machine by yourself, which may cause a permanent failure of the instrument.

Other matters to be paid attention to in safety production.

5 prompt message:

project	symptom	Causes or phenomena	method
electrical source	Press "on" and nothing happens	The battery has no electricity	Replace the battery
test value	The test value is inaccurate	Too much error	Back to factory calibration
other	Product collapse	Press any key without reaction	Removing the battery

10 Packing list

Dear customers:

Hello, thank you very much for choosing our mini fruit hardness tester. Please check whether the accessories are complete when purchasing.

1	Number show table	1
2	Large press foot (11.1mm) with 15kgf / cm2	1
3	Small press foot (7.9mm) with 30kgf / cm2	1
4	Instructions	1
5	Certificate and warranty card	1
6	Inspection certificate	1
7	Desiccant	1
8	Hexagon nut M6	1
9	Internal hexagonal cylindrical screw M4*6	4
10	Internal hexagonal cylindrical screw M4*8	4

Special statement:

Old batteries need to be handled by local laws and rules

The Company reserves the right to update and modify the design specifications and specifications, without further notice